RESULTS

OF THE

MAGNETICAL AND METEOROLOGICAL

OBSERVATIONS

MADE AT

THE ROYAL OBSERVATORY, GREENWICH,

IN THE YEAR

1897:

UNDER THE DIRECTION OF

W. H. M. CHRISTIE, C.B., M.A., F.R.S.,

ASTRONOMER ROYAL.

PUBLISHED BY ORDER OF THE BOARD OF ADMIRALTY, IN OBEDIENCE TO HER MAJESTY'S COMMAND.

EDINBURGH:

PRINTED FOR HER MAJESTY'S STATIONERY OFFICE,

BY NEILL & Co., LIMITED, OLD FISHMARKET CLOSE.

1899

ERRATA.

MAGNETICAL AND METEOROLOGICAL OBSERVATIONS, 1894.

Page *vi*, Line 8, *for* 60, *read* 40.
Page *li*, Line 25, *for* 61, *read* 40.

MAGNETICAL AND METEOROLOGICAL OBSERVATIONS, 1895.

Page *li*, Line 20, *for* 61, *read* 40.

MAGNETICAL AND METEOROLOGICAL OBSERVATIONS, 1896.

Page *li*, Line 20, *for* 61, *read* 40.
Page *lviii*, Line 19, *for* oservations, *read* observations.

MAGNETICAL AND METEOROLOGICAL OBSERVATIONS, 1897.

Page (xvii) Column 3.	Apparent Value of	A_2.	March 16^d 15^h, *for* 0·08608, *read* 0·08601.
Page (xvii) Column 3.	,, ,,	A_2.	December 17^d 13^h, *for* 0·08580, *read* 0·08588.
Page (xix) Column 2.	,, ,,	A_1.	January 15^d 14^h, *for* 4571·2, *read* 4571·1.
Page (xix) Column 3.	,, ,,	A_2.	November 25^d 14^h, *for* 4546·0, *read* 4525·1.
Page (xix) Column 3.	,, ,,	A_2.	September 15^d 15^h, *for* 4553·3, *read* 4553·4.

INDEX.

INTRODUCTION. PAGE

Personal Establishment and Arrangements . . . . *iii*

General Description of the Buildings and Instruments . . . . *iii*

The Magnetical and Meteorological Observatory . . . . *iii*
Positions of the Instruments . . . . *iii to vi*
Experiments to determine the effect of masses of iron on the Declination Magnet . . . . *vi*
Erection of the new Physical Observatory on the South Ground, and of the New Altazimuth . *vii*

Subjects of Observation . . . . *viii*

Magnetic Instruments.

Upper Declination Magnet . . . . *viii*

Its Suspension: Stand: Double Box: Collimator: and Theodolite . . . . . . *viii and ix*
Its Collimation Error: Torsion Effect of its Suspending Skein . . . . *x and xi*
Determination of the reading of the Azimuthal Circle of the Theodolite corresponding to the Astronomical Meridian . . . . *xi*
Method of Making and Reducing Observations for Magnetic Declination . . . . *xi and xii*
Determination of Correction for Effect of Iron in Neighbouring Buildings . . . . *xii and xiii*

Lower Declination Magnet . . . . *xiii*

General Principle of Photographic Registration . . . . *xiv*
Arrangements for recording the Movements of the Lower Declination Magnet . . . *xv and xvi*
Scale for measurement of Ordinates of the Photographic Curve . . . . *xvi*

Horizontal Force Magnet . . . . *xvii*

Magnet Carrier: Suspension Skein: Suspension Pulleys . . . . *xvii*
Plane Mirror, Telescope, and Scale for Eye-observation . . . . *xviii*
Adjustment of the Magnet . . . . *xviii and xix*
Determination of the value of the Scale . . . . *xx*
Eye-observations: Photographic Record . . . . *xx and xxi*
Scale for measurement of Ordinates of the Photographic Curve . . . . . . *xxi*
Temperature coefficient . . . . *xxii*

Vertical Force Magnet . . . . *xxiii*

Supporting frame, Carrier, and Knife-edge . . . . *xxiii*
Plane Mirror, Telescope, and Scale for Eye-observation . . . . *xxiii*
Time of Vibration in the Vertical and Horizontal Planes . . . . *xxiv*
Determination of the value of the Scale . . . . *xxiv*
Eye-observations: Photographic Record . . . . *xxv*
Scale for measurement of Ordinates of the Photographic Curve . . . . . . *xxv*
Temperature coefficient . . . . *xxvi*

INDEX.

INTRODUCTION—*continued.*

PAGE

DIP INSTRUMENT . . . *xxvi*

Description of the Instrument . . . *xxvi*

Method of making Observations of Dip . . . *xxvii*

Determination of Correction for Effect of Iron in Neighbouring Buildings . . . *xxviii*

DEFLEXION INSTRUMENTS . . . *xxix*

Description of the Unifilar Instrument, Gibson No. 3 . . . *xxix*

Method of reducing the Observations . . . *xxix to xxxi*

New Unifilar and Declinometer, Elliott No. 75 . . . *xxxi*

Determination of Corrections for Effect of Iron in Neighbouring Buildings . . . *xxxii*

EARTH CURRENT APPARATUS . . . *xxxiii*

Earth Connexions: Wire Circuits . . . *xxxiii*

Arrangements for Photographic Registration . . . *xxxiii and xxxiv*

Abnormal disturbances in the Earth Current Registers . . . *xxxiv*

MAGNETIC REDUCTIONS . . . *xxxiv*

Treatment of the Photographic Curves . . . *xxxv*

Temperature of the Horizontal and Vertical Force Magnets . . . *xxxv*

Results in terms of Gauss's Absolute Unit . . . *xxxvii*

Harmonic Analysis of the Diurnal Inequalities of Magnetic Declination, Horizontal Force, and Vertical Force . . . *xxxvii to xxxix*

Magnetic Diurnal Inequalities for quiet days in each month . . . *xxxix*

Magnetic Disturbances and Earth Currents . . . *xl*

Scale Values of the different Magnetic Elements, and Comparative Values for different Absolute Units . . . *xli and xlii*

Notes referring to the Plates . . . *xliii*

METEOROLOGICAL INSTRUMENTS.

STANDARD BAROMETER . . . *xliii*

Its Position: Diameter of Tube: Correction for Capillarity . . . *xliii*

Correction for Index Error: Comparison with Kew Standard . . . *xliii*

Height above Sea-Level: Hours of Reading . . . *xliv*

PHOTOGRAPHIC BAROMETER . . . *xliv*

Arrangements for Photographic Registration . . . *xliv*

Determination of the Scale . . . *xliv*

DRY AND WET BULB THERMOMETERS . . . *xlv*

Revolving Frame, carrying ordinary Dry and Wet Bulb Thermometers . . . *xlv*

Standard Thermometer . . . *xlv*

Corrections for Index Error . . . *xlv*

Thermometers in Stevenson screen, and on roof of Magnet House . . . *xlvi and xlvii*

PHOTOGRAPHIC DRY AND WET BULB THERMOMETERS . . . *xlvii to xlix*

RADIATION THERMOMETERS . . . *xlix*

EARTH THERMOMETERS . . . *xlix and l*

INDEX.

INTRODUCTION—*concluded.* PAGE

Osler's Anemometer . . . . . *l*

Method of registering the Direction and Pressure of the Wind . . . . . *l and li*

Its Rain-gauge . . . . . *li*

Special Arrangement for enlarging the time-scale . . . . . *li*

Robinson's Anemometer . . . . . *lii and liii*

Rain-Gauges . . . . . *liii and liv*

Electrometer . . . . . *liv*

Instrument employed: General description . . . . . *liv*

Method of collecting the Electricity of the Atmosphere . . . . . *liv and lv*

System of Photographic Registration . . . . . *lv*

Sunshine Recorder . . . . . *lvi*

Ozonometer . . . . . *lvii*

Meteorological Reductions . . . . . *lviii*

System of Reduction . . . . . *lviii*

Deduction of the Temperature of the Dew-Point, and of the degree of Humidity . . . . . *lix*

Average Daily Temperature . . . . . *lx*

Rainfall: Clouds and Weather: Electricity . . . . . *lxi to lxiii*

Monthly Meteorological Averages . . . . . *lxiii*

Changes of the Direction of the Wind: Electric Potential of the Atmosphere . . . . . *lxiv*

Observations of Luminous Meteors . . . . . *lxiv*

RESULTS OF MAGNETICAL AND METEOROLOGICAL OBSERVATIONS IN TABULAR ARRANGEMENT:—

Results of Magnetical Observations . . . . . (i)

Table I.—Mean Magnetic Declination West for each Civil Day . . . . . (ii)

Table II.—Monthly Mean Diurnal Inequality of Magnetic Declination West . . . . . (ii)

Table III.—Mean Horizontal Magnetic Force (diminished by a Constant) for each Civil Day . . . . . (iii)

Table IV.—Mean Temperature for each Civil Day within the box inclosing the Horizontal Force Magnet . . . . . (iv)

Table V.—Monthly Mean Diurnal Inequality of Horizontal Magnetic Force . . . . . (v)

Table VI.—Monthly Mean Temperature at each Hour of the Day within the box inclosing the Horizontal Force Magnet . . . . . (v)

RESULTS OF MAGNETICAL AND METEOROLOGICAL OBSERVATIONS—*continued.*

PAGE

TABLE VII.—Mean Vertical Magnetic Force (diminished by a Constant) for each Civil Day . (vi)

TABLE VIII.—Mean Temperature for each Civil Day within the box inclosing the Vertical Force Magnet . . . . (vii)

TABLE IX.—Monthly Mean Diurnal Inequality of Vertical Magnetic Force . . . . . . (viii)

TABLE X.—Monthly Mean Temperature at each Hour of the Day within the box inclosing the Vertical Force Magnet . . . . (viii)

TABLE XI.—Mean Magnetic Declination, Horizontal Force, and Vertical Force, in each Month . (ix)

TABLE XII.—Mean Diurnal Inequalities of Magnetic Declination, Horizontal Force, and Vertical Force, for the year . . . . (x)

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 . . (xi)

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 . . . . (xi)

TABLE XV.—Values of the Coefficients in the Periodical Expression—

$$V_t = m + a_1 \cos t + b_1 \sin t + a_2 \cos 2t + b_2 \sin 2t + \&c.$$

for the Magnetic Diurnal Inequalities . . . . (xii)

TABLE XVI.—Values of the Coefficients and Constant Angles in the Periodical Expressions—

$$V_t = m + c_1 \sin (t + \alpha) + c_2 \sin (2t + \beta) + \&c.$$

$$V_{t'} = m + c_1 \sin (t' + \alpha') + c_2 \sin (2t' + \beta') + \&c.$$

for the Magnetic Diurnal Inequalities . . . . (xiii)

TABLE XVII.—Separate Results of Observations of Magnetic Dip . . . . (xiv)

TABLE XVIII.—Monthly and Yearly Means of Magnetic Dip, and General Mean . . . . (xv)

TABLE XIX.—Determinations of the Absolute value of Horizontal Magnetic Force . . . (xvi)

MAGNETIC DIURNAL INEQUALITIES FOR THE MEAN OF FIVE SELECTED QUIET DAYS IN EACH MONTH . . . . (xx)

TABLE XX.—Monthly Mean Diurnal Inequality of Magnetic Declination West . . . . (xx)

TABLE XXI.—Monthly Mean Diurnal Inequality of Horizontal Magnetic Force . . . . (xxi)

TABLE XXII.—Monthly Mean Diurnal Inequality of Vertical Magnetic Force . . . . (xxii)

RESULTS OF MAGNETICAL AND METEOROLOGICAL OBSERVATIONS—*continued.*

PAGE

MAGNETIC DISTURBANCES AND EARTH CURRENTS . . . . (xxiii)

Brief description of Magnetic Movements (superposed on the ordinary diurnal movement) exceeding 3′ in Declination, 0·001 in Horizontal Force, or 0·0003 in Vertical Force, taken from the Photographic Register . . . . (xxiv)

Explanation of the Plates of Magnetic Disturbances . . . . (xxxvi)

PLATES I. to VI., photo-lithographed from tracings of the Photographic Registers of Magnetic Disturbances.

PLATE VII., photo-lithographed from tracings of the Photographic Registers of Magnetic Movements, as types of the Diurnal Variations, at four seasons of the year.

RESULTS OF METEOROLOGICAL OBSERVATIONS . . . . (xxxvii)

Daily Results of the Meteorological Observations . . . . (xxxviii)
Highest and Lowest Readings of the Barometer . . . . (lxii)
Absolute Maxima and Minima Readings of the Barometer for each Month . . . . . (lxiv)
Monthly Results of Meteorological Elements . . . . (lxv)
Monthly Mean Reading of the Barometer at every Hour of the Day . . . . . . (lxvi)
Monthly Mean Temperature of the Air at every Hour of the Day . . . . (lxvi)
Monthly Mean Temperature of Evaporation at every Hour of the Day . . . . . . (lxvii)
Monthly Mean Temperature of the Dew-Point at every Hour of the Day . . . . . (lxvii)
Monthly Mean Degree of Humidity at every Hour of the Day . . . . (lxviii)
Total Amount of Sunshine registered in each Hour of the Day in each Month . . . . (lxviii)
Readings of Dry-Bulb Thermometers placed in a Stevenson screen near the ordinary stand, and of those mounted in a louvre-boarded shed on the roof of the Magnet House . . . (lxix)
Readings of the Wet-Bulb Thermometer placed in a Stevenson screen . . . . . . (lxxxi)

Earth Thermometers :—

(I.) Reading of a Thermometer whose bulb is sunk to the depth of 25·6 feet (24 French feet) below the surface of the soil, at Noon on every Day . . . . . . (lxxxiv)

(II.) Reading of a Thermometer whose bulb is sunk to the depth of 12·8 feet (12 French feet) below the surface of the soil, at Noon on every Day . . . . . (lxxxiv)

(III.) Reading of a Thermometer whose bulb is sunk to the depth of 6·4 feet (6 French feet) below the surface of the soil, at Noon on every Day . . . . . . (lxxxv)

(IV.) Reading of a Thermometer whose bulb is sunk to the depth of 3·2 feet (3 French feet) below the surface of the soil, at Noon on every Day . . . . . . (lxxxvi)

(V.) Reading of a Thermometer whose bulb is sunk to the depth of 1 inch below the surface of the soil, at Noon on every Day . . . . (lxxxvii)

(VI.) Reading of a Thermometer within the case covering the Deep-sunk Thermometers, whose bulb is placed on a level with their scales, at Noon on every Day . . . . (lxxxviii)

RESULTS OF MAGNETICAL AND METEOROLOGICAL OBSERVATIONS—*concluded.*

	PAGE
Abstract of the changes of the Direction of the Wind, as derived from the Records of Osler's Anemometer	(lxxxix)
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	(xcviii)
Mean Electrical Potential of the Atmosphere, from Thomson's Electrometer, for each Civil Day	(xcix)
Monthly Mean Electrical Potential of the Atmosphere, from Thomson's Electrometer, at every Hour of the Day	(c)
Monthly Mean Electrical Potential of the Atmosphere, from Thomson's Electrometer, on Rainy Days, at every Hour of the Day	(ci)
Monthly Mean Electrical Potential of the Atmosphere, from Thomson's Electrometer, on Non-Rainy Days, at every Hour of the Day	(cii)
Amount of Rain collected in each Month by the different Rain-Gauges	(ciii)
OBSERVATIONS OF LUMINOUS METEORS	(cv)

ROYAL OBSERVATORY, GREENWICH.

RESULTS

OF

MAGNETICAL AND METEOROLOGICAL OBSERVATIONS.

1897.

GREENWICH MAGNETICAL AND METEOROLOGICAL OBSERVATIONS, 1897.

Introduction.

§ 1. *Personal Establishment and Arrangements.*

During the year 1897 the personal establishment in the Magnetical and Meteorological Department of the Royal Observatory consisted of William Carpenter Nash, Superintendent, aided by one Established Computer, David J. R. Edney, and four Computers. The Computers employed during the year were:—Albert Walter, Percival D. Beadle, Thomas Percy Marchant, Cedric A. F. Davies, and Charles William Jeffries.

Mr. Nash 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 Magnetical and Meteorological Observatory was erected in the year 1838. Its northern face is distant about 170 feet south-south-east from the nearest point of the South-East Dome, and about 35 feet south from the carpenters' workshop. On its east stands the New Library (erected at the end of the year 1881), in the construction of which non-magnetic bricks were used, and every care was taken to exclude iron. The Magnetical and Meteorological Observatory is based on concrete and built of wood, united for the most part by pegs of bamboo; no iron was intentionally admitted in its construction, or in subsequent alterations. Its form is that of a cross, the arms of the cross being nearly in the direction of the cardinal magnetic points as they were in 1838. The northern arm is longer than the others, and is separated from them by a partition, and used as a Computing Room; the stove which warms this room, and its flue, are of copper. The remaining portion, consisting of the eastern, southern, and western arms, is known as the Upper Magnet Room. The upper declination magnet and its theodolite, for determination of absolute declination, are placed in the southern arm, an opening in the roof allowing circumpolar stars to be observed by the theodolite, for determination of its reading for the astronomical meridian. Both the magnet and its theodolite are supported on piers built from the ground. In the eastern arm is placed the Thomson electrometer for photographic record of the variations of atmospheric electricity, its water cistern rests on four glass insulators supported by a platform fixed to the western side of the southern arm, near the ceiling. The Standard barometer is suspended near the junction of the southern and western arms. The sidereal clock, Grimalde and Johnson, is fixed at the junction of the eastern and southern arms, and there is in addition a mean solar chronometer, McCabe No. 649, for general use. A mean solar clock (Molyneux), transferred from the Astronomical Department, was set up in the northern arm during the year 1883.

Until the year 1863 the horizontal and vertical force magnets were also located in the Upper Magnet Room, the upper declination magnet being up to that time employed for photographic record of the variations of declination, as well as for absolute measure of the element. But experience having shown that the horizontal and vertical force magnets were exposed in the upper room to large variations of temperature, a room known as the Magnet Basement (in which the variations of temperature are very much smaller) was excavated in the year 1864 below the Upper Magnet Room, and the horizontal and vertical force magnets, as well as a new declination magnet for photographic record of declination, were mounted therein. The Magnet Basement is of the same dimensions as the Upper Magnet Room. The lower declination magnet and the horizontal force and vertical force magnets, as now located in the Basement, are used entirely for record of the variations of the respective magnetic elements. The declination magnet is suspended in the southern arm, immediately under the upper declination magnet, to avoid mutual interference; the horizontal and vertical force magnets are placed in the eastern and western arms respectively, in positions nearly underneath those which they occupied when in the Upper Magnet Room. All are mounted on or suspended from supports carried by piers built from the ground. A photographic barometer is fixed to the northern wall of the Basement, and an apparatus for photographic registration of earth currents is placed near the southern wall of the eastern arm. A mean solar clock of peculiar construction for interruption of the photographic traces at each hour is fixed to the pier which supports the upper declination theodolite. Another mean solar clock is attached to the western wall of the southern arm. For better ascertaining the variations of temperature of the Basement, a Richard metallic thermograph was added in February 1886. It is placed on the pier carrying the horizontal force magnet, and gives a continuous register of temperature on a scale of 5° to 1 inch, the scale for time being 24 hours to $5\frac{1}{3}$ inches. On the northern wall, near the photographic barometer, is fixed the Sidereal Standard clock of the Astronomical Observatory, Dent 1906, communicating with the chronograph and with clocks of the Astronomical Department by means of underground wires. This clock is placed in the Magnet Basement, because of its nearly uniform temperature.

The Basement is warmed, when necessary, by a gas stove (of copper), and ventilated by means of a large copper tube nearly two feet in diameter, which receives the flues from the stove and all gas-lights, and passes through the Upper Magnet Room to a revolving cowl above the roof. In January 1889 two additional gas stoves were provided, with the object of maintaining a higher temperature during the winter, and so rendering the Basement temperature more uniform throughout the year. One of these stoves is placed in the northern corner of the eastern arm, and the other in the middle of the western wall of the western arm. In December 1894 the eastern stove was removed to Magnetic Office, No. 5. Each of the arms of the Basement has a well window facing the south, but these wells are usually closely stopped up with bags packed with straw or jute. In January 1886 a line of 9-inch pipes was laid underground from the Basement southward to a distance of about 155 feet, at which point there is an inlet from the atmosphere, for the purpose of ventilating the Basement by air which has acquired the temperature of the soil at a depth of several feet below the surface, and of thus obtaining greater uniformity of temperature. The depth of the line of pipes below the surface varies from 5 feet at the inlet in the south ground to 11 feet 6 inches at the entrance to the Basement.

A platform erected above the roof of the Magnet House is used for the observation of meteors. A rain gauge is placed on a table on this platform, and there are also thermometers (placed in a louvre-boarded shed or screen, with free circulation of air) for observation of the temperature of the air in an exposed situation at a height of 20 feet above the ground.

An apparatus for naphthalizing the gas used for the photographic registration is mounted in a small detached zinc-built room adjacent to the Computing Room on its western side.

The Dip instrument and Deflexion apparatus are placed in the New Library. Each instrument rests on a heavy slate slab supported by strong wooden frame-work rising from brick-work built into the ground.

To the south of the Magnet House, in what is known as the Magnet Ground, is an open shed, consisting principally of a roof supported on four posts, under which is placed the photographic dry-bulb and wet-bulb thermometer apparatus. On the roof of this shed there is fixed an ozone box and a rain gauge, and close to its north-western corner are placed the earth thermometers, the upper portions of which, projecting above the ground, are protected by a small wooden hut. About 13 feet to the north of the photographic thermometers is situated the revolving stand carrying the thermometers used for ordinary eye observations, and adjacent to the thermometer stand are three rain gauges and a Stevenson screen containing dry-bulb, wet-bulb, and maximum and minimum thermometers. South-east of the Magnet House are placed the thermometers for solar and terrestrial radiation ; they are laid on short grass, and freely exposed to the sky.

Until 1894 November 5 the Magnet Ground was bounded on its south side by a range of seven rooms, known as the Magnetic Offices. On the above-mentioned date the Offices were shifted to the western side of the Magnet Ground, the original site being required for the North Wing of the new Physical Observatory.

Two Anemometers—Osler's, giving continuous record of direction and pressure of wind, and amount of rain, and Robinson's, giving continuous record of velocity—are fixed, the former above the north-western turret of the Octagon Room (the ancient part of the Observatory), the latter above the small wooden building on the roof of the Octagon Room. Since 1896 February 6 the sunshine instrument has also been mounted on the same building which carries the Robinson Anemometer.

On 1883 March 3 the iron tube of the Lassell reflecting telescope was brought into the South Ground, and on March 9 the iron supports of the same. On 1883 December 31 the iron-work of the dome was brought into the same ground, and on 1884 June 26 the iron gutter of the dome, in 16 pieces, weighing together about 2 tons 6 cwts. A careful examination of the magnetic registers on each of these occasions shows that no disturbance of the declination, horizontal force, or vertical force magnets was caused by the location of these masses of iron in the South Ground, at a distance of more than 100 feet from the magnets.

In order to determine the effect of a mass of iron on the magnets, experiments were made on 1884 July 2, with 4, 8, 12, and 16 pieces of the gutter respectively, placed at a distance of 25 feet from the declination magnet in a direction south-east (magnetic) from it, so that the maximum effect would be produced. The following are the results for the deflexions of the Upper Declination magnet :—

	Mean Deflexion.	
	′	″
With 4 pieces of the iron gutter - - - - -	1	4
,, 8 pieces ,, - - - - -	2	2
,, 12 pieces ,, - - - - -	3	12
,, 16 pieces ,, - - - - -	3	40

Each piece weighs nearly 3 cwts.

As the effect of a mass of iron on a magnet varies as the sine of twice its magnetic azimuth divided by the cube of its distance from the magnet, these experiments show that the deflexion caused by the whole of the iron in the Lassell instrument and dome (which is at a distance of 100 feet and very nearly in the magnetic meridian of the declination magnet) would be quite insensible.

In the year 1891 the Central Octagon of the new Physical Observatory was erected in the South Ground, and in the year 1893 the South Wing was added to the building, considerable masses of iron being introduced, viz., 10 tons in the case of the Central Octagon, the centre of which is about 115 feet from the declination magnet on a bearing 12° East of South (magnetic), and 16 tons in the South Wing at a mean distance of about 145 feet on a bearing 5° East of South (magnetic) from the declination magnet. The principal masses of iron were brought into the South Ground as follows:—On 1891 March 24 and 25, 7 and 3 tons respectively; and on 1893 February 11 and 14, $3\frac{3}{4}$ and $5\frac{1}{2}$ tons respectively. In no case could any disturbance of the magnetic registers be detected. On 1894 November 8 work for the erection of the North Wing was commenced, and the erection of the new Altazimuth building on the north side of the Magnetical Observatory was also commenced about the same time. Both buildings were in progress during the year 1895, further considerable masses of iron being introduced, viz., 12 tons on January 16, $2\frac{1}{2}$ tons on April 2, $1\frac{1}{3}$ tons on December 16, for the new Physical Observatory; and 4 tons on March 29, 5 tons on May 2, 2 tons on June 7, $1\frac{1}{3}$ tons on June 21, for the new Altazimuth building. The principal masses of iron were placed in position in the North Wing of the Physical Observatory in July 1895, and this seems to have produced the increase of declination shown from August 1895, the permanent effect being an increase of about 4′. On 1896 February 19 the iron base and other parts of the new Altazimuth instrument were received, and were subsequently mounted in the new Altazimuth Pavilion, the total weight of iron being about 8 cwts. On 1896 October 27 and following days the iron castings of the new Thomson Photographic Equatorial were received, and were subsequently mounted in the central dome of the Physical Observatory at a distance of about 115 feet from the declination magnet. Their total weight is about 10 tons.

Regular observation of the principal magnetical and meteorological elements was commenced in the autumn of the year 1840, and has been continued, with some additions to the subjects of observation, to the present time. Until the end of the year 1847 observations were in general made every two hours, but at the beginning of the year 1848 these were superseded by the introduction of the method of photographic registration, by which means a continuous record of the various elements is obtained.

For information on many particulars concerning the history of the Magnetical and Meteorological Observatory, especially in regard to alterations not recited in this volume, which have been made from time to time, the reader is referred to the Introduction to the Magnetical and Meteorological Observations for the year 1880 and previous years, and to the Descriptions of the Buildings and Grounds, with accompanying Plans, given in the volumes of Astronomical Observations for the years 1845 and 1862.

§ 3. *Subjects of Observation in the year* 1897.

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, and of the earth currents indicated in two distinct lines of wire; eye observations of the ordinary meteorological instruments, including the barometer, dry and wet-bulb thermometers, and 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, and amount of ozone; observations of some of the principal meteor showers; general record of ordinary atmospheric changes of weather, including numerical estimation of the amount of cloud, and occasional phenomena.

From the beginning of the year 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. In previous years the time used throughout the magnetic section was Greenwich astronomical time, reckoning from noon to noon; and generally, in the meteorological section, Greenwich civil time, reckoning from midnight to midnight.

§ 4. *Magnetic Instruments.*

UPPER DECLINATION MAGNET AND ITS THEODOLITE.—The upper declination magnet, employed solely for the determination of absolute declination, is by Meyerstein of Göttingen. It is a bar of hard steel, 2 feet long, 1½ inches broad, and about ¼ inch thick, attached by a pinching screw to the magnet carrier, also by Meyerstein, but since altered by Troughton and Simms. To a stalk extending upwards from the magnet carrier is attached the torsion-circle, which consists of two circular brass discs, one turning independently of the other on their common vertical axis, the lower and graduated portion being firmly fixed to the stalk of the magnet carrier; to the upper portion carrying the vernier is attached, by a hook, the suspension skein. This is of silk, and consists of several fibres united by juxtaposition, without apparent twist; its length is about 6 feet.

The magnet, with its suspending skein, &c., is carried by a braced wooden tripod stand, whose feet, passing through holes cut in the floor, rest on slates covering brick piers, built from the ground and rising through the Magnet Basement nearly to its ceiling. The upper end of the suspension skein is attached to a short, square, wooden rod sliding in the corresponding square hole of a fixed wooden bracket. To the upper end of the rod is fixed a leather strap, which, passing over two brass pulleys carried by the upper portion of the tripod stand, is attached to a cord which passes down to a small windlass fixed to the stand. Thus, in raising or lowering the magnet—an operation necessary in determinations of its collimation-error—no alteration is made in the length of the suspension skein. The magnet is inclosed in a double rectangular wooden box (one box within another), both boxes being covered externally and internally with gilt paper, and having holes at their south and north ends, for illumination of the magnet collimator and for viewing the collimator with the theodolite telescope respectively. The holes in the outer box are covered with glass. The magnet collimator is formed by a diagonally placed cobweb-cross, and a lens of 13 inches focal length and nearly 2 inches aperture, carried by two sliding frames fixed by pinching screws to the south and north arms of the magnet respectively. The cobweb-cross is in the principal focus of the lens, and its image in the theodolite telescope is well seen. From the lower side of the magnet carrier a rod extends downwards, terminating below the magnet box in a horizontal brass bar immersed in water, for the purpose of checking small vibrations of the magnet.

The theodolite, by which the position of the upper declination magnet is observed, is by Troughton and Simms. It is planted about 7 feet north of the magnet. The radius of its horizontal circle is 8·3 inches, and the circle is divided to 5′, and read, by three verniers, to 5″. The theodolite has three foot-screws, which rest in brass channels let into the stone pier placed upon the brick pier which rises from the ground through the Magnet Basement. The length of the telescope is 21 inches, and the aperture of its object-glass 2 inches: it is carried by a horizontal transit-axis 10½ inches long, supported on Y's carried by the central vertical axis of the theodolite. The eyepiece has one fixed horizontal wire and one vertical wire moved by a micrometer-screw, the field of view in the observation of stars being illuminated through the pivot of the transit-axis on that side of the telescope which carries the micrometer-head. Early in 1893 the theodolite was thoroughly repaired by Messrs. Troughton and Simms, and a new striding level was applied. The value of one division of this level is 1″·5. The opening in the roof of the Magnet House permits of observation of circumpolar stars as high as δ Ursæ Minoris above the pole, and as low as β Cephei below the pole. A fixed mark, consisting of a small hole in a plate of metal, placed on one of the buildings of the Astronomical Observatory, at a distance of about 270 feet from the theodolite, affords an additional check on its continued steadiness.

The inequality of the pivots of the axis of the theodolite telescope was redetermined on 1893 February 7 and March 28, after the above-mentioned repairs, and it was found that the correction required is $-4^{\text{div}}\cdot5$ equivalent to −6″·75, with illuminated pivot west, the position for observation of a circumpolar star.

The value in arc of one revolution of the telescope-micrometer is 1′.34″·2

The reading for the line of collimation of the theodolite telescope was found by ten double observations on 1897 April 22 to be $100^{\text{r}}\cdot225$; on 1897 August 30, $100^{\text{r}}\cdot264$; on 1897 September 17, $100^{\text{r}}\cdot247$; and on 1897 November 24, $100^{\text{r}}\cdot243$. The value used throughout the year 1897 was $100^{\text{r}}\cdot245$.

The effect of the plane glass in front of the outer box of the declination magnet at that end of the box towards the theodolite was determined by ten double observations made on 1895 December 12, which showed that in the ordinary position of the glass the theodolite readings were diminished by 20″·1. Two other sets of observations, made on 1896 December 1, and 1897 November 24, gave 20″·9 and 20″·0 respectively. The mean of these, 20″·3, has been added to all readings throughout the year 1897.

The error of collimation of the magnet collimator is found by observing the position of the magnet, first with the collimator in the usual position (above the magnet), then with the collimator reversed (or with the magnet placed in its carrier with the collimator below), repeating the observations several times. The value used during the year 1897 was 26′.3″·2, being the mean of determinations made on 1893 December 7, 1894 December 10, 1895 December 12, 1896 December 2, and 1897 December 1, giving respectively 26′.6″·5, 26′.1″·8, 26′.8″·5, 26′.4″·0, and 25′.55″·0. With the collimator in its usual position, above the magnet, the quantity 26′.3″·2 has been subtracted from all readings.

The effect of torsion of the suspending skein is eliminated by turning the lower portion of the torsion-circle until the torsion bar (an oak bar of the same size as the magnet, and weighted with lead weights to be also of equal weight), inserted n place of the magnet, rests in the plane of the magnetic meridian. The bar is thus inserted usually about once a month, and whenever the adjustment is found not to have been sufficiently close, the observed positions of the magnet are corrected for displacement of the magnet from the meridian by the torsion of the skein. Such correction is determined experimentally, with the magnet in position, by changing the reading of the torsion-circle by a definite amount, usually 90°, thus giving the skein that amount of azimuthal twist, and observing, with the theodolite, the change in the position of the magnet thereby produced, from which is derived the ratio of the couple due to torsion of the skein to the couple due to the earth's horizontal magnetic force. This ratio was found to be $\frac{1}{133}$ on 1895 December 13, $\frac{1}{140}$ on 1896 December 2, and $\frac{1}{142}$ on 1897 December 1. During the year 1897 the plane in which the suspension skein was free from torsion so nearly coincided with the magnetic meridian, that no correction of the absolute measures of magnetic declination for deviation of the plane of no torsion was required.

The time of vibration of the upper declination magnet under the influence of terrestrial magnetism was found on 1896 December 2 to be $30^{s}\cdot77$, and on 1897 November 24, $30^{s}\cdot72$.

The reading of the azimuthal circle of the theodolite corresponding to the astronomical meridian is determined about twice in each month by observation of the stars Polaris or δ Ursæ Minoris. The fixed mark is usually observed weekly. The concluded mean reading of the circle for the south astronomical meridian (deduced entirely from the observations of the polar stars), used from January 1 to June 1, was $27^{\circ}\ 2'.51''\cdot4$, and from June 2 to December 31, $27^{\circ}\ 2'.44''\cdot3$.

In regard to the manner of making observations with the upper declination magnet:—The observer, on looking into the theodolite telescope, sees the image of the diagonal cross of the magnet collimator vibrating alternately right and left. The time of vibration of the magnet being about 30 seconds, he first applies his eye to the telescope about one minute, or two vibrations, before the pre-arranged time of observation, and, with the vertical wire carried by the telescope-micrometer, bisects the magnet-cross at its next extreme limit of vibration, reading the micrometer. He similarly observes the next following extreme vibration, in the opposite direction, and so on, taking in all four readings. The mean of each pair of adjacent readings of the micrometer is taken, giving three means, and the mean of these three is adopted. In practice this is done by adding the first and fourth readings to twice the second and third, and dividing the sum by 6. Should the magnet be nearly free from vibration, two bisections only of the cross are made, one at the vibration next before the pre-arranged time, the other at the vibration following. The verniers of the theodolite-circle are then read. The excess of the adopted micrometer-reading above the reading for the line of collimation of the telescope being converted into arc and applied to the mean circle-reading, and also the corrections for collimation of the magnet and for collimation of the plane glass in front of its box, the concluded circle-reading corresponding to the position of the magnet is found. The difference between this reading and the adopted reading of the circle for the south astronomical meridian gives, when, as is usually the case, no correction for torsion of the skein is necessary, the observed value of absolute declination, afterwards used for determining the value of the photographed base line on the photographic register of the lower declination magnet. The times of observation of the upper declination magnet are usually $9^h. 10^m$, $13^h. 10^m$, $15^h. 10^m$, and $21^h. 10^m$ of Greenwich civil time, reckoning from midnight.

The accuracy of the measure of absolute declination by the upper declination magnet depends on the condition that this magnet should be vertically over the lower magnet. But the arrangements are such that, with the gradual decrease of declination, the upper magnet has to be shifted more and more to the west in order that it may be viewed by its theodolite, the position of which on its pier cannot be altered. In order to determine whether the consequent change in the relative position of the two magnets has in late years increased to such an extent that any measurable mutual influence would exist, the upper magnet has on two different occasions (once in the year 1887, and once in the year 1889) been temporarily removed to the ante-room, where its influence would be quite insensible. On both occasions the photographic register of the lower magnet showed no perceptible change of position. Conversely, the removal of the lower magnet would not influence the position of the upper one, which is used for absolute measure.

The results of the determinations of magnetic declination are, to a certain extent, affected by the iron in the new Physical Observatory and in the new Altazimuth Pavilion. To eliminate this effect as far as circumstances would allow, observations have been made on or near the site selected for the new Magnetic Pavilion in Greenwich Park, which is presumably free from any disturbing effect of iron. The results of these observations are given in the following table :—

RESULTS OF OBSERVATIONS OF MAGNETIC DECLINATION MADE IN GREENWICH PARK AND AT THE ROYAL OBSERVATORY.

Time of Observation.	Declination West.		Correction to the Dec. as determined at the Royal Observatory.
	In Greenwich Park.	At the Royal Observatory.	
d h m	° ′	° ′	′
1896. August 7. 12.10	16. 59·1	17. 2·0	− 2·9
„ 28. 12.32	16. 55·1	17. 3·0	− 7·9
September 21. 15. 7	16. 51·3	16. 59·0	− 7·7
„ 24. 13.34	16. 53·5	17. 1·0	− 7·5
October 9. 12.22	16. 58·1	17. 5·0	− 6·9
„ 9. 15. 0	16. 59·1	17. 4·5	− 5·4
November 9. 13.10	16. 53·7*	16. 57·9	− 4·2
„ 10. 10.59	16. 52·7*	16. 54·5	− 1·8
1897. October 25. 14.21	16. 48·8	16. 50·8	− 2·0
„ 29. 12.18	16. 52·3	16. 54·2	− 1·9
1898. February 14. 12.18	16. 52·0	16. 56·0	− 4·0
Mean Correction,	......	.....	− 4·7

LOWER DECLINATION MAGNET.—The lower declination magnet is used simply for the purpose of obtaining photographic register of the variations of magnetic declination. It is by Troughton and Simms, and is of the same dimensions as the upper declination magnet, being 2 feet long, 1½ inches broad, and ¼ inch thick. The magnet is suspended in the Magnet Basement, immediately below the upper declination magnet, in order that the absolute measure of declination by the upper magnet should not be affected by the proximity of the lower magnet.

The manner of suspension of the magnet is in general similar to that of the upper declination magnet, the suspension pulleys being carried by a small pier built on one of the crossed slates resting on the brick piers rising from the ground. The length of free suspending skein is about 6 feet, but, unlike the arrangement adopted for the upper magnet, the skein is itself carried over the suspension pulleys.

* Observed by Mr. Watson with Professor Rücker's Surveying Instrument.

The position of the azimuthal plane in which the torsion bar rests, when substituted for the magnet, is examined from time to time, and adjustment made as necessary, to keep this plane in or near the magnetic meridian—such exact adjustment as is required for the upper declination magnet not being necessary in this case.

To destroy the small accidental vibrations to which the magnet would be otherwise liable, it is encircled by a damper consisting of a copper bar, about 1 inch square, which is bent into a long oval form, the plane of the oval being vertical; a lateral bend is made in the upper bar of the oval to avoid interference with the suspension piece of the magnet. The effect of the damper is to reduce the amplitude of the oscillation after every complete or double vibration of the magnet in the proportion of 5 : 2 nearly.

In regard to photographic arrangements, it may be convenient, before proceeding to speak of the details peculiar to each instrument, to remark that the general principle adopted for obtaining continuous photographic record is the same for all instruments. For the register of each indication a cylinder of ebonite is provided, the axis of the cylinder being placed parallel to the direction of the change of indication to be registered. If, as is usually the case, there are two indications whose movements are in the same direction, both may be registered on the same cylinder: thus, the movements in the case of magnetic declination and horizontal magnetic force, being both horizontal, can be registered on different parts of one cylinder with axis horizontal: so, also, can two different galvanic earth currents. The movements in the case of vertical magnetic force, and of the barometer, being both vertical, can similarly be registered on different parts of one cylinder having its axis vertical, as also can the indications of the dry-bulb and wet-bulb thermometers. In the electrometer, the movement being horizontal, a horizontal cylinder is provided.

The cylinder is in each case driven by chronometer or accurate clock-work to ensure uniform motion. The pivots of the horizontal cylinders turn on anti-friction wheels; the vertical cylinders rest each on a circular plate turning on anti-friction wheels, the driving mechanism being placed below. A sheet of sensitized paper being wrapped round the cylinder, and held by a slender brass clip, the cylinder thus prepared is placed in position, and connected with the clock-movement: it is then ready to receive the photographic record, the optical arrangements for producing which will be found explained in the special description of each particular instrument. The sheets are removed from the cylinders, and fresh sheets supplied every day, usually at noon. On each sheet a reference line is also photographed, the arrangements for which will be more particularly described in each special case. All parts of the apparatus and all parts of the paths of light are protected, as found necessary, by wood or zinc casings or tubes, blackened on the inside, in order to prevent stray light from reaching the photographic paper.

In June 1882 the photographic process employed for so many years was discarded, and a dry paper process introduced, the argentic-gelatino-bromide paper, as prepared by Messrs. Morgan and Kidd of Richmond (Surrey), being used with ferrous oxalate development. The greater sensitiveness of this paper permits diminution of the effective surface of the magnet mirrors, and allows also the use of smaller gas flames. In the case of the vertical force magnet the old and comparatively heavy mirror has been replaced by a small and light mirror with manifest advantage, as will be seen in the description of the vertical force magnet. The new paper acts equally well at all seasons of the year, and any loss of register on account of photographic failure is now extremely rare.

Referring now specially to the lower declination magnet, there is attached to the magnet carrier, for the purpose of obtaining photographic register of the motions of the magnet, a concave mirror of speculum metal, 5 inches in diameter (reduced by a stop, on the introduction of the new photographic paper, to an effective diameter of about 1 inch), which thus partakes in all the angular movements of the magnet. The revolving ebonite cylinder is $11\frac{1}{2}$ inches long and $14\frac{1}{4}$ inches in circumference. It is supported, in an approximately east and west position, on brass uprights carried by a metal plate, the whole being planted on a firm wooden platform, the supports of which rest on blocks driven into the ground. The platform is placed midway between the declination and horizontal force magnets, in order that the variations of magnetic declination and horizontal force may both be registered on the same cylinder, which makes one complete revolution in 26 hours.

The light used for obtaining the photographic record is that given by a flame of coal gas, charged occasionally with the vapour of coal naphtha. A vertical slit, about $0^{in.}3$ long and $0^{in.}01$ wide, placed close to the light, is firmly supported on the pier which carries the magnet. It stands slightly out of the straight line joining the mirror of the magnet and the registering cylinder, and its distance from the mirror is about 25 inches. The distance of the axis of the registering cylinder from the mirror is 134·4 inches. Immediately above the cylinder, and parallel to its axis, are placed two long reflecting prisms (each 11 inches in length), extending from end to end of the cylinder, and facing opposite ways towards the mirrors carried by the declination and horizontal force magnets respectively. The front surface of each prism is convex, being a portion of a horizontal cylinder. The light of the declination lamp, after passing through the vertical slit, falls on the concave mirror, and is thence reflected as a converging beam to form an image of the slit on the convex surface of the reflecting prism, by the action of which it is reflected downwards to the paper on the cylinder as a small spot of light. The concave mirror can be so adjusted in azimuth on the magnet, that the spot shall fall, not at the centre of the cylinder, but rather towards its western side, in order that the declination trace shall not interfere with that of horizontal force, which is made to fall towards the eastern side of the cylinder. The special advantage of the arrangement here described is that the registers of both magnets are made at the same part of the circumference of the cylinder, a line joining the two spots being parallel to its axis, so that when the traces on the paper are developed, the parts of the two registers which appear in juxtaposition correspond to the same Greenwich time.

By means of a small prism, fixed near the registering cylinder, the light from another lamp is made to form a spot of light on the cylinder in a fixed position, so that, as the cylinder revolves, a reference or base line is traced out on the paper, from which, in the interpretation of the records, the ordinates are measured.

A clock of special construction, arranged by Messrs. E. Dent and Co., acting upon a small shutter placed near the declination slit, cuts off the light from the mirror two minutes before each hour, and admits it again two minutes after the hour, thus producing at each hour a visible interruption in the trace, and so ensuring accuracy as regards time scale. By means of another shutter the observer occasionally cuts off the light for a few minutes, registering the times at which it was cut off and admitted again. The visible interruptions thus made at definite times in the trace obviate any possibility of error being made by wrong numeration of the hourly breaks.

The usual hour of changing the photographic sheet is noon, but on Sundays, and occasionally on other days, this rule is not strictly followed. To obviate any uncertainty that might arise on such occasions from the interference of the two ends of a trace slightly longer than 24 hours, it has been arranged that one revolution of the cylinder should be made in 26 hours. The actual length of 24 hours on the sheet is about 13·3 inches.

The scale for measurement of ordinates of the photographic curve is thus determined. The distance from the concave mirror carried by the magnet to the surface of the cylinder, in the actual path of the ray of light through the prism, is practically the same as the horizontal distance of the centre of the cylinder from the mirror, 134·4 inches. A movement of 1° of the mirror produces a movement of 2° in the reflected ray. From this it is found that 1° of movement of the mirror, representing a change of 1° of magnetic declination, is equal to 4·691 inches on the photographic paper. A small strip of cardboard is therefore prepared, graduated on this scale to degrees and minutes. The ordinates of the curve, as referred to the base line, being measured for the times at which absolute values of declination were determined by the upper declination magnet, usually four times daily, the apparent value of the base line, as inferred from each observation, is found. The process assumes that the movements of the upper and lower declination magnets are precisely similar. The separate base line values being divided into groups, usually monthly, a mean base line value is adopted for use through each group. This adopted base line value is written upon every sheet. Then, with the cardboard scale, there is laid down, conveniently near to the photographic trace, a new base line, whose ordinate represents some whole number of degrees or other convenient quantity. Thus every sheet carries its own scale of magnetic measure. From the new base line the hourly ordinates (see page *xxxv*) are measured.

HORIZONTAL FORCE MAGNET.—The horizontal force magnet, for measure of the variations of horizontal magnetic force, was made by Meyerstein of Göttingen, and like the two declination magnets, is 2 feet long, $1\frac{1}{2}$ inches broad, and about $\frac{1}{4}$ inch thick. For support of its suspension skein, the back and sides of its brick pier rise through the eastern arm of the Magnet Basement to the Upper Magnet Room, being there covered by a slate slab, to the top of which a brass plate is attached, carrying, immediately above the magnet, two brass pulleys, with their axes in the same east and west line; and at the back of the pier, and opposite to these pulleys, two others, with their axes similarly in an east and west line: these constitute the upper suspension piece, and support the upper portions of the two branches of the suspension skein. The two lower pulleys, having their axes in the same horizontal plane, and their grooves in the same vertical plane, are attached to a small horizontal bar which forms the upper portion of the torsion-circle: it carries the verniers for reading the torsion-circle, and can be turned independently of the lower and graduated portion of the torsion-circle, below which, and in rigid connexion with it, is the magnet carrier.

The suspension skein is led under the two pulleys carried by the upper portion of the torsion-circle; its two branches then rise up and pass over the front pulleys of the upper suspension piece, thence to and over the back pulleys, thence descending to a single pulley, round which the two branches are tied: from this pulley a cord goes to a small windlass fixed to the back of the pier. The effective length of each of the two branches of the suspension skein is about $7^{ft.}\ 6^{in.}$. The distance between the branches of the skein, where they pass over the upper pulleys, is $1^{in.}\cdot 14$; at the lower pulleys the distance between the branches is $0^{in}\cdot80$. The two branches are not intended to hang in one plane, but are to be so twisted that their torsion will maintain the magnet in a direction very nearly east and west magnetic, the marked end being west. In this state an increase of horizontal magnetic force draws the marked end of the magnet towards the north, whilst a diminution of horizontal force allows the marked end to recede towards the south under the influence of torsion. An oval copper bar, exactly similar to that used with the lower declination magnet, is applied also to the horizontal force magnet, for the purpose of diminishing the small accidental vibrations.

Below the magnet carrier there is attached a small plane mirror to which is directed a small telescope for the purpose of observing by reflexion the graduations of a horizontal opal glass scale attached to the southern wall of the eastern arm of the basement. The magnet, with its plane mirror, hangs within a double rectangular box, covered with gilt paper in the same way as was described for the upper declination magnet. The numbers of the fixed scale increase from east to west, so that when the magnet is inserted in its usual position, with its marked end towards the west, increasing readings of the scale, as seen in the telescope, denote increasing horizontal force. The normal to the scale that meets the centre of the plane mirror is situated at the division 51 of the scale nearly, the distance of the scale from the centre of the plane mirror being 90·84 inches. The angle between the normal to the scale, which coincides nearly with the normal to the axis of the magnet, and the axis of the fixed telescope, is about 38°, the plane of the mirror being therefore inclined about 19° to the axis of the magnet.

To adjust the magnet so that it shall be truly transverse to the magnetic meridian, which position is necessary in order that the indications of the instrument may apply truly to changes in the magnitude of horizontal magnetic force, without regard to changes of direction, the time of vibration of the magnet and the reading of the fixed scale are determined for different readings of the torsion-circle. In regard to the interpretation of such experiments, the following explanation may be premised.

Suppose that the magnet is suspended in its carrier with its marked end in a magnetic westerly direction, not exactly west, but in any westerly direction, and suppose that, by means of the fixed telescope, the reading of the scale is taken. The position of the axis of the magnet is thereby defined. Now let the magnet be taken out of its carrier, and replaced with its marked end easterly. The terrestrial magnetic force will now act, as regards torsion, in the direction opposite to that in which it acted before, and the magnet will take up a different position. But by turning the torsion-circle so as to reverse the direction of the torsion produced by the oblique tension of the two branches of the suspending skein, the magnet may be made to take the same position as before, but with poles reversed, which will be proved by the reading of the scale, as seen in the fixed telescope, being the same. We thus obtain two readings of the torsion-circle corresponding to the same direction of the magnet axis, but with the marked end opposite ways, without, however, possessing any information as to whether the magnet axis is accurately transverse to the magnetic meridian, inasmuch as the same operation can be performed whether the magnet axis be tranverse or not.

But there is another observation which will indicate whether the magnet axis is or is not accurately transverse. Let, in addition, the time of vibration be taken in each position of the magnet. Resolve the terrestrial magnetic forces acting on the poles of the magnet each into two parts, one transverse to the magnet, the other longitudinal. In the two positions of the magnet, marked end westerly and marked end easterly, the magnitude of the transversal force is the same, and the changes which the torsion undergoes in a vibration of given extent are the same, and if there were no other force, the time of vibration would also be the same. But there is another force, the longitudinal force, and when the marked end is northerly this tends from the centre of the magnet's length, and when it is southerly it tends towards the centre of the magnet's length; and in a vibration of given extent this force, in one case increases that due to the torsion, and in the other case diminishes it. The times of vibration will therefore be different. There is only one exception to this, which is when the magnet axis is transverse to the magnetic meridian, in which case the longitudinal force vanishes, and the times of vibration in both positions of the magnet become the same.

The criterion, then, of the position truly transverse to the meridian is this. Find the readings of the torsion-circle which, with the magnet in reversed positions, will give the same readings of the scale and the same time of vibration for the magnet. With such readings of the torsion-circle the magnet is, in either position, transverse to the meridian, and the difference of circle-readings is the difference between the position in which the terrestrial magnetism acting on the magnet twists it one way, and the position in which the same force twists it the opposite way, and is therefore double of the angle of torsion of the suspending lines for which, in either position, the force of terrestrial magnetism is neutralized by the torsion.

The present suspension skein was mounted on 1880 December 30. On 1896 December 31 the following observations were made for determination of the angle of torsion :—

1896, Day.	The Marked End of the Magnet.							
	West.				East.			
	Torsion-Circle Reading.	Scale-Reading.	Difference of Scale-Readings for change of 1° of Torsion-Circle Reading.	Mean of the Times of Vibration.	Torsion-Circle Reading.	Scale-Reading.	Difference of Scale-Readings for change of 1° of Torsion-Circle Reading.	Mean of the Times of Vibration.
	°	div.	div.	s	°	div.	div.	s
Dec. 31	146	53·67		21·24	231	52·93		20·84
			8·43				8·30	
	147	62·10		21·04	232	61·23		21·00
			8·07				7·05	
	148	70·17		20·80	233	68·28		21·20

From these observations it appeared that the times of vibration and scale-readings were sensibly the same when the torsion-circle read 146° 55′, marked end west, and 232° 3′, marked end east, the difference being 85° 8′. Half this difference, or 42° 34′, is therefore the angle of torsion when the magnet is transverse to the meridian.

The value adopted in the reduction of the observations during the year 1897 was 42° 30′.

The adopted reading of torsion-circle, for transverse position of the magnet, the marked end being west, was 147° throughout the year.

The angle through which the magnet turns to produce a change of one division of scale-reading, and the corresponding variation of horizontal force in terms of the whole horizontal force, is thus found.

The length of 30^{div}·85 of the fixed scale is exactly 12 inches, and the distance of the centre of the face of the plane mirror from the scale, 90·84 inches; consequently, the angle at the mirror subtended by one division of the scale is 14′.43″·2, or for change of one division of scale-reading the magnet is turned through an angle of 7′.21″·6.

The variation of horizontal force, in terms of the whole horizontal force, producing angular motion of the magnet corresponding to change of one division of scale-reading = cotan angle of torsion × value of one division in terms of radius. Using the numbers above given, the change of horizontal force corresponding to change of one division of scale-reading was found to be 0·002337, which value has been used throughout the year 1897 for conversion of the observed scale-readings into parts of the whole horizontal force.

In regard to the manner of making observations with the horizontal force magnet, a fine vertical wire is fixed in the field of view of the observing telescope, across which the graduations of the fixed scale, as reflected by the plane mirror carried by the magnet, are seen to pass alternately right and left as the magnet oscillates, and the scale-reading for the extreme points of vibration is easily taken. The hours of observation are usually $9^h\ 5^m$, $13^h\ 5^m$, $15^h\ 5^m$, and $21^h\ 5^m$ of Greenwich civil time (reckoning from midnight). Remarking that the time of vibration of the magnet is about 20 seconds, and that the observer looks into the telescope about 40 seconds before the pre-arranged time, the manner of making the observation is generally similar to that already described for the upper declination magnet.

A thermometer, the bulb of which reaches considerably below the attached scale, is so planted in a nearly upright position on the outer magnet box, that the bulb projects into the interior of the inner box containing the magnet. 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 Greenwich civil time. An index correction of $-0^\circ{\cdot}3$, has been applied to all readings.

The photographic record of the movements of the horizontal force magnet is made on the same revolving cylinder as is used for record of the motions of the lower declination magnet, and, as described for that magnet, there is also attached to the carrier of the horizontal force magnet a concave mirror, 4 inches in diameter, reduced by a stop (on the introduction of the new photographic paper) to an effective diameter of about 1 inch. The arrangements, as regards lamp, slit, and other parts, are precisely similar to those for the lower declination magnet already described, and may be perfectly understood by reference to that description (pages *xiv* and *xv*), in which was incidentally included an explanation of some parts specially referring to register of horizontal force. The distance of the vertical slit from the concave mirror of the magnet is about 21 inches, and the distance of the axis of the registering cylinder from the concave mirror is 136·8 inches, the slit standing slightly out of the straight line joining the mirror and the registering cylinder. The same base line is used for measure of the horizontal force ordinates, and the register is similarly interrupted at each hour by the clock, and occasionally by the observer, for determination of time scale, the length of which is, of course, the same as that for declination.

The scale for measure of ordinates of the photographic curve is thus constructed. The distance from the concave mirror to the surface of the cylinder, in the actual path of the ray of light through the prism, is (as for declination) practically the same as the horizontal distance of the centre of the cylinder from the mirror, or 136·8 inches. But, because of the reflexion at the concave mirror, the double of this measure, or 273·6 inches, is the distance that determines the extent of motion on the cylinder of the spot of light, which, in inches, for a change of 0·01 part of the whole horizontal force, will therefore be 273·6 × tan angle of torsion × 0·01. Taking for angle of torsion 42° 30′, the movement of the spot of light on the cylinder for a change of 0·01 of horizontal force is thus found to be 2·507 inches, and with this unit the cardboard scale for measure of the ordinates was prepared. The ordinates being measured for the times at which eye observations of the scale were made, combination of the measured ordinates with the observed scale-readings converted into parts of the whole horizontal force, gives an apparent value of the base line for each observation. These being divided into groups, mean base line values are adopted, written on the sheets, and new base lines laid down, from which the hourly ordinates (see page *xxxv*) are measured, exactly in the same way as described for declination.

The indications of horizontal force are in a slight degree affected by the small changes of temperature to which the Magnet Basement is subject. 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 thereby produced. This process seems preferable to others in which was observed the effect which the magnet, when enclosed within a copper trough or box, and artificially heated by hot water or hot air to different temperatures, produced on another suspended magnet, since the result obtained includes the entire effect of temperature upon all the various parts of the mounting of the magnet, as well as on the magnet itself. Referring to previous volumes for details, it is sufficient here to state that, from a series of experiments made between January 3 and February 21 of the year 1868, on the principle mentioned, in temperatures ranging from 48°·2 to 61°·5, it appeared that when the marked end of the horizontal force magnet was to the west (its ordinary position), a change of 1° of temperature (Fahrenheit) produced an apparent change of ·000174 of the whole horizontal force, a smaller number of observations made with the marked end of the magnet east, in temperatures ranging from 49°·0 to 60°·9, indicating that a change of 1° of temperature produced an apparent change of ·000187 of horizontal force, increase of temperature in both cases being accompanied by decrease of magnetic force. It was concluded that an increase of 1° of temperature produces an apparent decrease of ·00018 of horizontal force. In the years 1885 and 1886 further observations on the same general plan were made, with the result that the decrease of horizontal force for increase of 1° of temperature was found to be somewhat greater at the higher than at the lower temperatures. A discussion of all the observations taken in 1885 and 1886, details of which are given at the end of the Introduction for 1886, shows that the correction for reduction to temperature 32° (expressed in terms of the horizontal force) is $(t-32) \times \cdot0000936 + (t-32)^2 \times \cdot000002074$, in which t is the temperature in degrees Fahrenheit. The decrease of horizontal force for an increase of 1° of temperature (Fahrenheit) would thus be ·00021 at 60°, ·00023 at 65°, and ·00025 at 70°.

VERTICAL FORCE MAGNET.—The vertical force magnet, for measure of the variations of vertical magnetic force, is by Troughton and Simms. It is 1 ft. 6 in. long and lozenge-shaped, being broad at the centre and pointed at the ends; it is mounted on a solid brick pier capped with stone, situated in the western arm of the Basement, its position being nearly symmetrical with that of the horizontal force magnet in the eastern arm. The supporting frame consists of two pillars, connected at their bases, on whose tops are the agate planes upon which rest the extreme parts of the continuous steel knife edge, attached to the magnet carrier by clamps and pinching screws. The knife edge, 8 inches long, passes through an aperture in the magnet. The axis of the magnet is approximately transverse to the magnetic meridian, its marked end being east; its axis of vibration is thus nearly north and south magnetic. The magnet carrier is of iron; at its southern end there is fixed a small plane mirror for use in eye observations, whose plane makes with the vertical plane through the magnet an angle of $52\frac{3}{4}°$ nearly. A telescope, fixed to the west side of the brick pier supporting the theodolite of the upper declination magnet, is directed to the mirror, for observation by reflexion of the divisions of a vertical opal glass scale fixed to the pier that carries the telescope, very near to the telescope itself. The numbers of this fixed scale increase downwards, so that when the magnet is placed in its usual position with the marked end east, increasing readings of the scale, as seen in the telescope, denote increasing vertical force.

The magnet is placed excentrically between the bearing parts of its knife edge, nearer to the southern side, leaving a space of about 4 inches in the northern part of the iron frame, in which the concave mirror used for the photographic register is planted. Two steel screw stalks, carrying adjustable screw weights, are fixed to the magnet carrier, near its northern side; one stalk is horizontal, and a change in the position of the weight affects the position of equilibrium of the magnet; the other stalk is vertical, and change in the position of its weight affects the delicacy of the balance, and so varies the magnitude of its change of position produced by a given change in the vertical force of terrestrial magnetism.

In the year 1882 Messrs. Troughton and Simms substituted for the old mirror of 4 inches diameter a much lighter mirror of 1 inch diameter, and also lowered the position of the knife-edge bar with respect to the magnet, so as to permit of a diminution of the adjustable counterpoise weights, which, as well as the mirror, appear to largely affect the temperature-correction of this balance magnet. The use of a smaller and much lighter mirror was rendered possible by the greater sensitiveness of the new photographic paper introduced in 1882 June.

The whole is enclosed in a rectangular box, resting upon the pier before mentioned, and having apertures, covered with glass, opposite to the two mirrors carried by the magnet.

The time of vibration of the magnet in the vertical plane is observed usually about once in each week. From 72 observations made during the course of the year this was found to be $18^s\cdot860$.

The time of vibration of the magnet in the horizontal plane is determined by suspending the magnet with all its attached parts from a tripod stand, its broad side being in a plane parallel to the horizon, so that its moment of inertia is the same as when in observation. A telescope, with a wire in its focus, being directed to the plane mirror carried by the magnet, a scale of numbers is placed on the floor, at right angles to the long axis of the magnet, so as to be seen, by reflexion, in the fixed telescope. The magnet is observed only when swinging through a small arc. Observations made in the way described on 1897 December 30 gave for the time of vibration of the magnet in the horizontal plane $16^s\cdot509$. This value has been used throughout for the year 1897.

The length of the normal to the fixed vertical scale that meets the face of the plane mirror is 186·07 inches, and $30^{div.}85$ of the scale correspond to 12 inches. Consequently the angle which one division of the scale subtends, as seen from the mirror, is $7'.11''\cdot2$, or the angular movement of the normal to the mirror, corresponding to a change of one division of scale-reading, is $3'.35''\cdot6$.

But the angular movement of the normal to the mirror is equal to the angular movement of the magnet multiplied by the sine of the angle which the plane of the mirror makes with a vertical plane through the magnet. This angle, as already stated, is $52\frac{3}{4}^\circ$. Therefore, dividing the result just obtained, $3'.35''\cdot6$, by sin $52\frac{3}{4}^\circ$, the angular motion of the magnet corresponding to a change of one division of scale-reading is found to be $4'.30''\cdot9$.

The variation of vertical force, in terms of the whole vertical force, producing angular motion of the magnet corresponding to a change of one division of scale-reading = cotan dip $\times \left(\frac{T'}{T}\right)^2 \times$ value of one division in terms of radius, in which T' is the time of vibration of the magnet in the horizontal plane, and T that in the vertical plane. Assuming $T' = 16^s\cdot509$, $T = 18^s\cdot860$, and dip $= 67^\circ\ 13'$, the change of vertical force corresponding to change of one division of scale-reading was found to be 0·0004227, and this value has been used throughout the year 1897 for conversion of the observed scale-readings into parts of the whole vertical force.

The hours of observation of the vertical force magnet are the same as those for the horizontal force magnet, and the method of observation is precisely similar, the time of vertical vibration being substituted for that of horizontal. The wire in the fixed telescope is here horizontal, and as the magnet oscillates, the divisions of the scale are seen to pass upwards and downwards in the field of view.

As in the case of the horizontal force magnet, a thermometer is provided whose bulb projects into the interior of the magnet box. Readings are taken usually at 9^h, 10^h, 11^h, 12^h, 13^h, 14^h, 15^h, 16^h, and 21^h Greenwich civil time. An index-correction of $-0^\circ\cdot3$ has been applied to all readings.

The photographic register of the movements of the vertical force magnet is made on a cylinder of the same size as that used for declination and horizontal force, driven also by chronometer movement. The cylinder is here placed vertical instead of horizontal, and the variations of the barometer are also registered on it. The slit is horizontal, and other arrangements are generally similar to those already described for declination and horizontal force. The concave mirror carried by the magnet is 1 inch in diameter, and the slit is distant from it about 22 inches, being placed a little out of the straight line joining the mirror and the registering cylinder. There is a slight deviation in the further optical arrangements. Instead of falling on a reflecting prism (as for declination and horizontal force), the converging horizontal beam from the concave mirror falls on a system of plano-convex cylindrical lenses, placed in front of the cylinder, with their axes parallel to that of the cylinder. The trace is made on the western side of the cylinder, the position of the magnet being so adjusted, that the spot of light shall fall on the lower part of the sheet to avoid interference with the barometer trace. A base line is photographed, and the record is interrupted at each hour by the clock, and occasionally by the observer, for establishment of time scale, in the same way as for the other magnets. The length of the time scale is the same as that for the other magnetic registers.

The scale for measure of ordinates of the photographic curve is determined as follows :—The distance from the concave mirror of the magnet to the surface of the registering cylinder is 100·2 inches. But the double of this measure, or 200·4 inches, is the distance that determines the extent of motion on the cylinder of the spot of light, which, in inches, for a change of 0·01 part of the whole vertical force, will therefore be $= 200\cdot4 \times \tan \text{dip} \times \left(\frac{T}{T'}\right)^2 \times 0\cdot01$. Using the values of T, T', and of dip, before given, (page *xxiv*), the movement of the spot of light on the cylinder for a change of 0·01 of vertical force is thus found to be 6·227 inches, and with this unit the scale for measure of the ordinates was constructed for use throughout the year. Base line values were then determined and written on the sheets, and new base lines laid down, from which the hourly ordinates (see page *xxxv*) were measured, exactly in the same way as was described for declination.

In regard to the temperature-correction of the vertical force magnet, it is only necessary here to say that, according to a series of experiments made 1882 October 17 to 23, in a similar manner to those for the horizontal force magnet (page *xxii*), and in temperatures ranging from 59°·3 to 64°·9, it appeared that an increase of 1° of temperature (Fahrenheit) produced an apparent increase of 0·00020 of vertical force, a value which succeeding experiments have closely confirmed. The value of the coefficient is thus much less than was found in the old state of the magnet with the large mirror, although still not following the ordinary law of increase of temperature producing loss of magnetic power. Further observations made in the years 1885 and 1886, of which particulars are given at the end of the Introduction for 1886, showed that through the range of temperature to which the magnet is usually exposed the increase of vertical force for increase of 1° of temperature is uniformly 0·000212, no term depending on the square of the temperature being here necessary, as in the case of horizontal force.

DIP INSTRUMENT.—The instrument with which the observations of magnetic dip are made is that which is known as Airy's instrument. It was constructed by Messrs. Troughton and Simms, and is mounted in the New Library on a slate slab supported by a braced wooden stand built up from the ground independently of the floor. The plan of the instrument was arranged by the late Sir G. B. Airy so that the points of the needles should be viewed by microscopes, and, if necessary, observed whilst the needles were in a state of vibration; that there should be power of employing needles of different lengths; and that the field of view of each microscope should be illuminated from the side opposite to the observer, in such way that the needle point should form a dark image in the bright field.

The instrument is adapted to the observation of needles of 9 inches, 6 inches, and 3 inches in length. The main portion of the instrument, that in which the needle under observation is placed, consists of a square box made of gun metal (carefully selected to ensure freedom from iron), with back and front of glass. Six microscopes, so planted as to command the points of the three different lengths of needles, turn on a horizontal axis so as to follow the points of the needles in the different positions which in observation they take up. The needle pivots rest on agate bearings. The object-glasses and field-glasses of the microscopes are within the front glass plate, their eye-glasses being outside, and turning with them on the same axis. Upon the plane side of each field-glass (the side next the object-glass and on which the image of the needle point is formed) a scale is etched, by means of which the position of the needle points is noted. And on the inner side of the front glass plate is etched the graduated circle, $9\frac{3}{4}$ inches in diameter, divided to 10′, and read by two verniers to 10″. The verniers (thin plates of metal, with notches instead of lines, for use with transmitted light) are carried by the horizontal axis, inside the front glass plate, their reading lenses, attached to the same axis, being outside. A suitable clamp with slow motion is provided. The microscopes and verniers can be illuminated by one gas lamp, the light from which, falling on eight corresponding prisms, is thereby directed to each separate microscope and vernier. The prisms are carried behind the back glass plate on a circular frame in such a way that, on reversion of the instrument in azimuth, the whole set of prisms can at one motion of the frame be shifted so as to bring each one again opposite to its proper microscope or vernier.

Since the instrument has been placed in the New Library, artificial light has not been employed in making the observation.

The whole of the apparatus is planted upon a circular horizontal plate, admitting of rotation in azimuth. A graduated circle near the circumference of the plate is read by two fixed verniers.

A brass zenith-point needle, having points corresponding in position to the three different lengths of dip needles, is used to determine the zenith-point for each particular length of needle.

The instrument carries two levels—one parallel to the plane of the vertical circle, the other at right angles to that plane—by means of which the instrument is adjusted in level from time to time. The readings of the first-mentioned level are also regularly employed to correct the apparent value of dip for any small outstanding error of level; the correction seldom exceeds a very few seconds of arc.

Observations are made only in the plane of the magnetic meridian, and the following is a description of the method of proceeding. The needle to be used is first magnetised by double touch, giving it nine strokes on each of its sides: it is then placed in position in the instrument, the microscope scale-readings are taken, and the verniers of the vertical graduated circle are read: the readings of the level parallel to the plane of this circle are also read. The instrument is then reversed in azimuth, and a second observation made. The needle pivots are then reversed on the agate bearings, and two observations in reversed positions of the instrument again made. The needle is then removed from the instrument and re-magnetised, so as to reverse the direction of its poles, and four more observations are made in the way just described. The mean of the eight partial values of dip thus found, corrected for error of level, gives the final value of dip which appears in the printed results.

The needles in regular use are of the ordinary construction; they are two 9-inch needles, B_1 and B_2; two 6-inch needles, C_1 and C_2; and two 3-inch needles, D_1 and D_2.

The observed dip given by the 9-inch needles is, as usual, smaller than that given by the 6-inch needles, and that given by the 6-inch needles smaller than that given by the 3-inch needles. In the *Philosophical Magazine* for March 1891, Professor Schuster, referring to a remark of Dr. Joule's, that the flexure of a dip needle tends to diminish the apparent dip, has estimated the effect on the observed dip of the displacement of the centre of gravity by the flexure of the needle, for the Greenwich needles of 3 inches, 6 inches, and 9 inches in length, and finds that a great part of the difference observed at Greenwich could be thus accounted for. It would appear that, for absolute determination of dip, empirical corrections should be applied to the results found from the longer needles, but there is at present much uncertainty as to the data for computing these corrections.

Additional observations were also made in Greenwich Park and in the New Library alternately with a Kew Dip-Circle (Dover 74) kindly lent by Professor Rücker, in order to determine the correction to the dip due to the effect of the iron in the surrounding buildings. The results of these observations are given in the following table :—

RESULTS OF OBSERVATIONS OF MAGNETIC DIP WITH PROFESSOR RÜCKER'S DIP-CIRCLE (DOVER 74) IN GREENWICH PARK AND IN NEW LIBRARY IN THE YEAR 1897.

1897, Day.		Needle, 3-inch.	Magnetic Dip. In Greenwich Park.	Magnetic Dip. In New Library.	Correction to Dip in New Library.
March	22	A1	67° 13′·1	67° 7′·6	+ 5′·5
May	19	A2	67. 14·1	67. 7·9	+ 6·2
,,	19	A1	67. 15·4	67. 8·4	+ 7·0
June	18	A2	67. 14·8	67. 8·5	+ 6·3
,,	25	A2	67. 12·7	67. 6·8	+ 5·9
July	1	A2	67. 15·5	67. 8·2	+ 7·3
,,	1	A1	67. 14·4	67. 8·6	+ 5·8
August	5	A1	67. 15·1	67. 9·0	+ 6·1
,,	18	A2	67. 15·5	67. 8·4	+ 7·1
September	3	A1	67. 11·6	67. 6·0	+ 5·6
,,	24	A2	67. 14·6	67. 7·5	+ 7·1
,,	24	A1	67. 14·2	67. 8·1	+ 6·1
October	21	A1	67. 13·5	67. 7·4	+ 6·1
,,	21	A1	67. 13·3	67. 7·5	+ 5·8
Means (14 obs^ns.)		...	67. 14·1	67. 7·8	+ 6·3

From these observations it appears that the dip, as determined in the New Library, requires to be increased by 6′·3.

DEFLEXION INSTRUMENTS.—The observations of deflexion of a magnet in combination with observations of vibration of the deflecting magnet, for determination of the absolute measure of horizontal magnetic force, are made with a *Unifilar Instrument*, Gibson No. 3, which, with the exception of some slight modification of the mechanical arrangements, is similar to those issued from the Kew Observatory. The instrument is adapted to the determination of horizontal force in British (foot-grain-second) measure. It is mounted in the New Library on a slate slab 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 deflexion the deflecting magnet is placed on the transverse deflexion 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, and generally the Kew notation, 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. $K = 0{\cdot}66643$; at temperature 90°, log. $K = 0{\cdot}66679$.

The distance on the deflexion rod from $1^{ft}{\cdot}0$ east to $1^{ft}{\cdot}0$ west of the engraved scale, at temperature 62°, is too long by 0·0034 inch, and the distance from $1^{ft}{\cdot}3$ east to $1^{ft}{\cdot}3$ 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 entirely independent determination made at the Royal Observatory, giving log. K at temperature 30° $= 0{\cdot}66727$.

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

Then, if in the two deflexion 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 deflexion,

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

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

$$P = \frac{A_1 - A_2}{\frac{A_1}{r_1^2} - \frac{A_2}{r_2^2}}$$ [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 :—

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

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

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

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 $\frac{H}{F} = \frac{\theta}{90° - \theta}$, 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 deflexion, corrected for temperature, rate of chronometer, semi-arc of vibration, induction, and torsion force.

From the combination of the values of $\frac{m}{X}$ and mX, m and X are immediately found. The computation is made with reference to English measure, taking as units of length and weight the foot and grain, but it is desirable to express X also in metric measure. If the English foot be supposed equal to α times the millimètre, and the grain equal to β times the milligramme, then, for reduction to metric measure, $\frac{m}{X}$ and mX must be multiplied by α^3 and $\alpha^2\beta$ respectively, or X must be multiplied by $\sqrt{\frac{\beta}{\alpha}}$. Taking the mètre as equal to 39·37079 inches, and the gramme as equal to 15·43249 grains, the factor by which X is to be multiplied in order to obtain X in metric (millimètre-milligramme-second) measure is $0{\cdot}46108 = \frac{1}{2{\cdot}1689}$. The values of X in metric measure thus derived from those in English measure are given in the proper table. Values of X in terms of the centimètre and gramme, known as the C.G.S. unit (centimètre-gramme-second unit), are readily obtained by dividing those referred to the millimètre and milligramme by 10.

In the year 1891 an additional *Unifilar Instrument*, Elliott No. 75, fitted also as a *Declinometer*, was obtained. The instrument is adapted to the determination of horizontal force in C.G.S. measure: it is of portable character, and, when employed, is mounted on the tripod stand furnished with it. The deflecting and deflected magnets, 75 A and 75 C respectively, are generally similar in dimension and construction to those of the Gibson instrument. In observations of deflexion the deflecting magnet is placed on the transverse rod at the distances of 30 and 40 centimètres of the engraved scale from the deflected magnet, the observations being otherwise made as with the Gibson instrument. The horizontal circle is 6 inches in diameter: it is graduated to 20′, and read by two verniers to 20″.

The instrumental constants of Elliott No. 75, kindly determined, as for the Gibson instrument, at the Kew Observatory, are as follows:—

The increase in the magnetic moment of the deflecting magnet produced by the inductive action of unit magnetic force in the C.G.S. system of absolute measurement = μ. Log. μ = 0·77768.

The correction for decrease of the magnetic moment of the deflecting magnet required in order to reduce to the temperature 0° centigrade = c = $0{\cdot}000433\ (t - 0) + 0{\cdot}00000148\ (t - 0)^2$; t representing the temperature (in degrees centigrade) at which the observation is made.

Moment of inertia of the deflecting magnet = K. At temperature 0° centigrade, log. K = 2·44750; at temperature 30° = 2·44782.

A new determination of K was made in 1897, the value found for log. K at temperature 10° centigrade being 2·44215. This value has been used from 1896 June.

The distance on the deflexion rod, from $30^{cms.}$ east to $30^{cms.}$ west, and from $40^{cms.}$ east to $40^{cms.}$ west of the engraved scale, at temperature 0° centigrade, is in each case too short by $0^{cms.}020$. The coefficient of expansion of the scale for 1° centigrade is ·000018.

The value of P is calculated from the expression $P = (\text{Log. } A_1 - \text{Log. } A_2) \times 4737$. In other respects the formulæ, as before given, are employed.

Additional observations were made with both instruments during the months of May to December in Greenwich Park, in order to obtain determinations of Horizontal Magnetic Force sensibly free from any effect of the iron in the Observatory buildings.

The results of these observations are printed on pages (xvii) and (xix). From these results it appears that the mean in metric measure for the months of May to December for the Gibson Instrument in Greenwich Park is 1·8357, and in the New Library is 1·8384, showing a correction to the determinations in the New Library of −0·0027. For the Elliott Instrument the results are 1·8352 and 1·8446 respectively, and the correction to the Library determinations with this instrument is therefore −0·0094.

In the course of the observations made at different stations in 1896 it was found that the results with the Elliott Instrument were affected by the position of the tripod stand, which appears to be not altogether free from magnetic material. The observations with this instrument in 1897 were all made with the stand in the same position relatively to the magnetic meridian.

EARTH CURRENT APPARATUS.—For observation of the spontaneous galvanic currents, which, in some measure, are almost always discoverable in the earth, and which are occasionally very powerful, two insulated wires having earth connexions at Angerstein Wharf (on the bank of the River Thames near Charlton) and Lady Well for one circuit, and at the Morden College end of the Blackheath Tunnel and the North Kent East Junction of the South-Eastern Railway for the other circuit, have been employed. The connecting wires, which are special and used for no other purpose, pass from the Royal Observatory to the Greenwich Station of the South-Eastern Railway, and thence, by kind permission of the Directors of the South-Eastern Railway Company, along the lines of the Railway to the respective earths, in each case a copper plate. The direct distance between the earth plates of the Angerstein Wharf—Lady Well circuit is 3 miles, and the azimuth of the line, reckoning from magnetic north towards east, 49°; in the Blackheath—North Kent East Junction circuit the direct distance is 2½ miles, and the azimuth, from magnetic north towards west, 47°. The actual lengths of wire in the circuitous courses which the wires necessarily take in order to reach the Observatory registering apparatus are about 7½ miles and 5 miles respectively. The identity of the four branches is tested from time to time as appears necessary.

In each circuit at the Royal Observatory there is placed a horizontal galvanometer, having its magnet suspended by a hair. Each galvanometer coil contains 150 turns of No. 29 copper wire, or the double coil of each instrument consists of 300 turns of wire, the resistance, as found by direct measurement, being 7·3 ohms. For registration of the larger earth currents, a portion only of the current is allowed to pass through the galvanometer, while the greater part flows through a shunt, consisting of a short coil of fine copper wire, the resistance of which is 1·33 ohms. The amplitude of the movement, having regard to the diminution of resistance in the circuit due to the shunt, is by this reduced in the ratio of 6·3 to 1 nearly in both circuits. On a few days in each month registers on a large scale, for determination of the small diurnal inequality in earth currents, are obtained by removing the shunts, but no discussion of these registers has yet been made, on account of the difficulty of eliminating the effect of certain small dislocations of the Angerstein Wharf—Lady Well register, which occur usually shortly after sunset and before sunrise. It is suspected that these are due to electric lighting in the neighbourhood of the Angerstein Wharf earth plate. The galvanometers are placed on opposite sides of the registering cylinder, which is horizontal. One galvanometer stands towards one end of the cylinder, and the other towards the other end, and each carries, on a light stalk extending downwards from its magnet, a small plane mirror. Immediately above the cylinder are placed two long reflecting prisms, which, except that they are each but half the length of the cylinder, and are placed end to end, are generally similar to those used for magnetic declination and horizontal force, the front convex surfaces facing opposite ways, each towards the mirror of its respective galvanometer. In each case the light of a gas lamp, passing through a vertical slit and a cylindrical lens having its axis vertical, falls upon the galvanometer mirror, which reflects the converging beam to the convex surface of the reflecting prism, by whose action it is made to form on the paper on the cylinder a small spot of light; thus all the azimuthal motions of the galvanometer magnet are registered. The extent of trace for each galvanometer is thus confined to half the length of the cylinder, which is of the same size as those used for the magnetic registers. The arrangements for turning the cylinder, automatically determining the time scale, and forming a base line, are similar to those which have been before described. When the traces on the paper are developed, the parts of the registers which appear in juxtaposition correspond, as for declination and horizontal force, to the same Greenwich time, and the scale of time is of the same length as for the magnetic registers.

Towards the end of the year 1890 serious disturbances began to be experienced in both earth current registers. These interruptions were found in the early part of the year 1891 to be due to the passage of trains on the new City and South London Electric Railway, distant about $2\frac{1}{2}$ miles from the nearest earth plate (at the North Kent East Junction of the South-Eastern Railway), and about $4\frac{1}{2}$ miles from the Observatory. The abnormal excursions recorded indicate frequent changes of potential, varying from a small fraction of a volt to one-third of a volt or more, and the amount of change is approximately the same both in the Blackheath—North Kent East Junction circuit, which is perpendicular to the course of the electric railway, and in the Angerstein Wharf—Lady Well circuit, which is parallel to the line of railway, with one earth plate (Angerstein Wharf) near the river. At night when the trains are not running, the interruptions entirely cease.

§ 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 1897 which are classed as days of great disturbance. Other days of lesser disturbance are January 2–3; February 25–26, 26–27, 27–28; March 10–11; April 1–2, 20–21, 23–24, 24–25; May 20–21; September 4–5; October 1–2, 2–3; December 11, 20–21, 21–22. 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, the measures being entered in a form having double argument—the vertical argument ranging through the 24 hours of the civil day (0^h to 23^h), and the horizontal argument through the days of a calendar month; the means of the numbers standing in the vertical columns giving the mean daily value of the element, and the means of the numbers in the horizontal columns the mean monthly value at each hour of the day. 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 omissions have been made on account of disturbed days, in the formation of Tables I. and II. for declination, Tables III. to VI. for horizontal force, and in Tables VII. to X. for vertical force; but on account of the magnet being under adjustment, December 30 and 31 are omitted in Tables VII. to X.

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

The temperature of the horizontal and vertical force magnets was maintained so nearly uniform through each day, that the determination of the diurnal inequalities of horizontal and vertical force should possess great exactitude. By means of the additional stove placed in the western arm of the Basement, as mentioned on page *v*, the temperature of the Basement has also been kept nearly constant throughout the year, the endeavour being to keep the temperature as near to 67° as possible. In years preceding 1883 the results for horizontal and vertical force were given uncorrected for temperature, leaving the correction to be applied when the results for series of years are collected for discussion; but from the beginning of the year 1883 it has been considered desirable to add also, in

Tables III., V., VII., and IX., results corrected for temperature, in order to render them more immediately available. In Tables XI. and XII., only results corrected for temperature are given. The corrected mean daily and mean hourly values of horizontal force given in Tables III. and V. respectively are obtained by applying to the uncorrected values the correction $(t-32) \times \cdot0000936 + (t-32)^2 \times \cdot000002074$ (page *xxii*) where t is the temperature in degrees Fahrenheit, and to those of vertical force, Tables VII. and IX., the correction $-(t-32) \times \cdot000212$ (page *xxvi*). The corrections applied 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 entered into a form having double arguments as for the magnets, the mean hourly values deduced therefrom giving for each month the variation through the day, and the mean daily values the variation through the month. 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 January 1, which should be taken as 1154 for comparison with the following value, 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 terms of ·00001 of Gauss's absolute unit, as referred to the metrical system of the millimètre-milligramme-second.

The factors for conversion from the former to the latter system of measures are as follows:—

For variation of declination, expressed in minutes, the factor is

$$\text{H.F. in metrical measure} \times \sin 1' = 1{\cdot}8357 \times \sin 1' = 0{\cdot}0005340.$$

For variation of horizontal force, the factor is

$$\text{H.F. in metrical measure} = 1{\cdot}8357,$$

and for variation of vertical force

$$\begin{aligned}\text{V.F. in metrical measure} &= \text{H.F. in metrical measure} \times \tan \text{dip}, \\ &= 1{\cdot}8357 \times \tan 67^\circ{\cdot}13' = 4{\cdot}3705.\end{aligned}$$

The measures as referred to the millimètre-milligramme-second system are readily convertible into measures on the centimètre-gramme-second (C.G.S.) system by dividing by 10.

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 *xxxv*), 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 the coefficients contained in Table XV. have been thus computed, 0 representing the value at 0^h (midnight), 1 that at 1^h, and so on.

$$m = \frac{1}{24}(0+1+2 \;.\;.\;.\;.\;.\; 22+23).$$

$$\begin{aligned}12\,a_1 = 0-12 &+ \{(1+23)-(11+13)\}\cos 15^\circ + \{(2+22)-(10+14)\}\cos 30^\circ \\ &+ \{(3+21)-(9+15)\}\cos 45^\circ + \{(4+20)-(8+16)\}\cos 60^\circ \\ &+ \{(5+19)-(7+17)\}\cos 75^\circ.\end{aligned}$$

$$
\begin{aligned}
12\,b_1 = 6-18 &+ \{(5+7) - (17+19)\}\sin 75^\circ + \{(4+8) - (16+20)\}\sin 60^\circ \\
&+ \{(3+9) - (15+21)\}\sin 45^\circ + \{(2+10) - (14+22)\}\sin 30^\circ \\
&+ \{(1+11) - (13+23)\}\sin 15^\circ.
\end{aligned}
$$

$$
\begin{aligned}
12\,a_2 = (0+12) - (6+18) &+ \{(1+11+13+23) - (5+7+17+19)\}\cos 30^\circ \\
&+ \{(2+10+14+22) - (4+8+16+20)\}\cos 60^\circ.
\end{aligned}
$$

$$
\begin{aligned}
12\,b_2 = (3+15) - (9+21) &+ \{(2+4+14+16) - (8+10+20+22)\}\sin 60^\circ \\
&+ \{(1+5+13+17) - (7+11+19+23)\}\sin 30^\circ.
\end{aligned}
$$

$$12\,a_3 = (0+8+16)-(4+12+20)+\{(1+7+9+15+17+23)-(3+5+11+13+19+21)\}\cos 45^\circ.$$

$$12\,b_3 = (2+10+18)-(6+14+22)+\{(1+3+9+11+17+19)-(5+7+13+15+21+23)\}\sin 45^\circ.$$

$$
\begin{aligned}
12\,a_4 = &(0+6+12+18)-(3+9+15+21) \\
&+ \{(1+5+7+11+13+17+19+23) - (2+4+8+10+14+16+20+22)\}\cos 60^\circ.
\end{aligned}
$$

$$12\,b_4 = \{(1+2+7+8+13+14+19+20) - (4+5+10+11+16+17+22+23)\}\sin 60^\circ.$$

The values of the coefficient c_1 and of the constant angles α contained in Table XVI. are then determined by means of the following relations :—

$$\frac{a_1}{b_1} = \tan\alpha \qquad\qquad c_1 = \frac{a_1}{\sin\alpha} = \frac{b_1}{\cos\alpha}.$$

Similarly for c_2, β, &c.

Finally, the values of the angles α', β', &c. were thus found. Calling the Sun's hour-angle east at mean midnight $= h$, then—

$$
\begin{aligned}
\alpha' &= \alpha + h \\
\beta' &= \beta + 2h \\
\&c. &= \&c.,
\end{aligned}
$$

a mean value of h for the month being employed.

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 :—

1897.	a_5.	b_5.
Declination	$-0'\cdot05$	$-0'\cdot01$
Horizontal Force	$+0\cdot5$	$-1\cdot9$
Vertical Force	$+0\cdot4$	$-0\cdot6$

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 (xii), corresponding to the single terms of the expressions on page (xiii), 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.

For the Year 1897.	Declination.	Horizontal Force.	Vertical Force.
Sums of Squares of Observed Values (Table XII.)	219′·19	226254·9	13586·5
Sums of Squares of Residuals after the introduction of m	107·86	39888·1	3602·8
” ” a_1 and b_1	34·39	9087·8	1493·5
” ” a_2 and b_2	5·36	1548·1	239·5
” ” a_3 and b_3	0·75	621·3	29·4
” ” a_4 and b_4	0·03	56·7	9·2
” ” a_5 and b_5	0·00	11·6	3·1

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 six 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 instruments 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 has been made with the Sub-Committee of the Kew Committee of the Royal Society, by which five quiet days are to be 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. The particular days selected are given on page (xx), 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.

No numerical discussion of Earth Current records is contained in the present volume.

In the treatment of disturbed days it was formerly the custom to measure out for each element all salient points of the curves, and to print the numerical values. But, since the year 1882, it has been considered preferable to give instead of these tables reduced copies of the actual photographic curves (reproduced by photo-lithography from full-sized tracings of the original photographs), adding thereto copies of the corresponding earth current curves. In the present year no copies of earth current curves have been given because of the interruption produced by the trains running on the City and South London Electric Railway. The registers thus exhibited are those for the days of lesser disturbance mentioned on page *xxxv*.

The list of these days since the year 1889 has been selected in concert with M. Mascart, so that the two Observatories 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 1897, 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 (xxxvi).

An additional plate (VII) 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 earth currents on these days are very small.

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 page *xxxvi*, 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 :—

—	Length in Inches.					
	Of 1° of Declination.		Of 0·01 of Horizontal Force.		Of 0·01 of Vertical Force.	
	in.	mm.	in.	mm.	in.	mm.
On the Photographs	4·691	119·15	2·507	63·68	6·227	158·16
On the Plates	2·580	65·53	1·379	35·02	3·425	86·99

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. (See page *xlii.*)

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 = 67° 13′]
= Horizontal Force × 2·3808 ;

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

—	LENGTH OF UNIT, EQUIVALENT TO 0·01 OF HORIZONTAL FORCE.					
	For Declination Curve.		For Horizontal Force Curve.		For Vertical Force Curve.	
	in.	mm.	in.	mm.	in.	mm.
On the Photographs -	2·68	68·1	2·51	63·7	2·61	66·4
On the Plates -	1·47	37·4	1·38	35·0	1·44	36·5

It may be convenient to give also comparative scale values for the different systems of absolute measurement, viz. :—

Foot-grain-second,	or British unit, in terms of which Mean H.F. for 1897	= 3·9813
Millimètre-milligramme-second,	or Metric unit, ,, ,, ,,	= 1·8357
Centimètre-gramme-second,	or C.G.S. unit, ,, ,, ,,	= 0·18357

Dividing, therefore, the scale values last given by 3·9813, 1·8357, and 0·18537 respectively, the following comparative scale values for each of the elements on the photographs and on the plates as referred to 0·01 of these units respectively are found :—

UNIT.	LENGTH OF 0·01 OF UNIT.											
	Declination.				Horizontal Force.				Vertical Force.			
	On the Photographs.		On the Plates.		On the Photographs.		On the Plates.		On the Photographs.		On the Plates.	
	in.	mm.	in.	mm.	in.	mm.	in.	mm.	in.	mm.	in.	mm.
British - -	0·67	17·1	0·37	9·4	0·63	16·0	0·35	8·8	0·66	16·7	0·36	9·2
Metric - -	1·46	37·1	0·80	20·4	1·37	34·7	0·75	19·1	1·42	36·2	0·78	19·9
C.G.S. - -	14·6	371	8·0	204	13·7	347	7·5	191	14·2	362	7·8	199

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 $9^h\ 30^m$, $13^h\ 30^m$, and $20^h\ 30^m$ Greenwich civil time, and at somewhat different times on Sundays. A weekly clearing of the gas pipes also causes a somewhat longer interruption, usually at about 10^h.

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 the late 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 the then Transit Room, now the Astronomer Royal's Official Room. (*Philosophical Transactions*, 1831.)

The barometer is read at 9^h, 12^h (noon), 15^h, 21^h (civil reckoning) on week days; and at 10^h, noon, and 20^h on Sundays. 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, the register being arranged to fall on the upper half of the cylinder, on its eastern side. 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 blackened mica, 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 = $4^{in.}\cdot39$ 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 *lviii*) 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 dry and wet bulb thermometers and maximum and minimum self-registering thermometers, both dry and wet, are mounted on a revolving frame planned by the late Sir G. B. Airy. A vertical axis, fixed in the ground in a position about 14 feet south of the southern arm of the Magnetic Observatory, 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.

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 and wet bulb thermometers are Negretti and Zambra, Nos. 45354 and 45355 respectively. The correction $-0^\circ\cdot3$ has been applied to the dry-bulb and wet-bulb readings throughout the year.

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. To the readings of Negretti and Zambra, No. 83760, for maximum temperature of the air, and to those of Negretti and Zambra, No. 38338, for minimum temperature of the air, no corrections are required. The readings of Negretti and Zambra, No. 79224, for maximum temperature of evaporation, required no correction, and to those of Negretti and Zambra, No. 2048, for minimum temperature of evaporation, a correction of $+0^{\circ}\cdot4$ has been applied throughout.

The dry and wet bulb thermometers are read at 9^h, 12^h (noon), 15^h, 21^h (civil reckoning) on week days, and at 10^h, noon, and 20^h on Sundays. Readings of the maximum and minimum thermometers are taken at 9^h and 21^h on week days, and at 10^h and 20^h on Sundays. Those of the dry and wet bulb thermometers are employed to correct the indications of the photographic dry and wet bulb thermometers.

In January 1887, three thermometers—a dry-bulb, a maximum, and a minimum, to which a wet-bulb thermometer was added in February—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 6 feet to the eastward of the revolving frame carrying the ordinary dry-bulb and wet-bulb 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 $-0^{\circ}\cdot2$ has been applied. The wet-bulb is Hicks No. 268525, to the readings of which a correction of $+0^{\circ}\cdot1$ has been applied. The maximum thermometer is Negretti and Zambra, No. 68725, to the readings of which a correction of $-0^{\circ}\cdot1$ has been applied. To the readings of the minimum thermometer, Negretti and Zambra, No. 68873, a correction of $+0^{\circ}\cdot2$ has been applied. The observation of the dry and wet bulb thermometers is omitted on Sundays and a few other days.

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.

At the beginning of the year 1886 three thermometers were mounted on the platform above the Magnet House, in a louvre-boarded shed or screen, so constructed as to give free circulation of air with protection from radiation. No. 45356, by Negretti and Zambra, is for eye observation of the temperature of the air, and a correction of $-0^\circ\cdot3$ has been applied to its readings throughout. No. 37467, also by Negretti and Zambra, is a self-registering maximum thermometer, to the readings of which a correction of $-0^\circ\cdot5$ has been applied. No. 342663, by Hicks, is a self-registering minimum thermometer, to the readings of which corrections have been applied as follow: 20° to 33° $-$ 0°·1, 33° to 40° 0°·0, 40° to 46° + 0°·1, 46° to 53° + 0°·2, 53° to 58° + 0°·3, 58° to 62° + 0°·4, and above 62° + 0°·5. The bulbs of all these thermometers are 4 feet above the platform, and about 20 feet above the ground. The observation of the thermometer No. 45356 is omitted on Sundays and a few other days.

The order of reading the thermometers in the Stevenson screen and on the roof of the Magnet House is reversed on successive days, the readings being taken alternately before and after those of the thermometers on the revolving stand, in order that the diurnal change may not produce any systematic difference in the comparison of the results.

PHOTOGRAPHIC DRY-BULB AND WET-BULB THERMOMETERS.—The apparatus now in use was constructed in the year 1884 by Messrs. Negretti & Zambra from designs furnished by me, and was mounted in the year 1885, but from various causes it was not brought into regular use until 1887 January 1. Until February 1891 it stood nearly in the centre of the South Ground: it was then removed to the Magnet Ground, being placed in the position formerly occupied by the old apparatus, which had been previously dismantled. It is placed under a shed, 8 feet square, standing upon posts about 8 feet high. This shed is open to the north, and is generally similar to that provided for the old apparatus, excepting that the roof inclines somewhat towards the south, and that the protecting boards (fixed as far as necessary on the eastern, southern, and western sides) are double, with spaces between to ensure a free circulation of air while screening the thermometers from the direct rays of the sun. The thermometers are further protected from sky and ground radiation by boards on the thermometer stand as described below. The photographic register is received on paper placed on a vertical ebonite cylinder 11½ inches high and 14¼ inches in circumference, and I have arranged that the dry and wet bulb traces shall fall on the same part of the cylinder, as regards time scale, a long air-bubble in the wet-bulb thermometer column giving 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 ½ 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.

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 Magnet Ground, south-east of the Magnet House. 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. 72540. The thermometer for radiation to the sky is a self-registering spirit minimum thermometer of Rutherford's construction, by Horne and Thornthwaite, No. 3120. The thermometers are laid on short grass; 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 at the north-west corner of the photographic thermometer shed.

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 day at noon, and the readings are given without correction. The index-errors of Nos. 1, 2, 3, and 4 are unknown; No. 5 appears to read too high by 0°·2, and No. 6 by 0°·4, but no corrections have been applied.

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 ($9^{ft.}$ $2^{in.}$ 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 1⅓ 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 1⅓ 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.

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—no pressure greater than about 30 lbs. has been recorded, with the exception of those on 1893 December 12 and 1894 February 11.

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. On 1893 April 22, Mr. Kullberg applied a special gearing to the clock, which is so arranged that the table carrying the record can either be driven at the usual rate, or 12 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 2 hours instead of 24. This arrangement continued in use until 1894 July, when the gearing was again modified, so that the registering sheet could be carried at twenty-four times its usual rate instead of twelve times as at first arranged.

ROBINSON'S ANEMOMETER.—This instrument, made by Mr. Browning, is constructed on the principle described by the late 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.

It is assumed, in accordance with the experiments made by Dr. Robinson, that the horizontal motion of the air is three times the space described by the centres of the cups. To verify this conclusion, experiments were made in the year 1860 in Greenwich Park with the anemometer by Negretti and Zambra, which was in use from 1859 until the introduction of the larger instrument by Browning in 1866 October. The instrument was fixed to the end of a horizontal arm, which was made to revolve round a vertical axis. For more detailed account of these experiments see the Introduction for 1880 and for previous years. With the arm revolving in the direction N., E., S., W., opposite to the direction of rotation of the cups, for movement of the instrument through 1 mile, 1·15 was registered; with the arm revolving in the direction N., W., S., E., in the same direction as the rotation of the cups, 0·97 was registered. This was considered to confirm sufficiently the accuracy of the assumption. The hemispherical cups of the instrument with which these experiments were made were each $3\frac{3}{4}$ inches in diameter, the distance between the centres of the opposite cups being 13·45 inches.

From 1889 April 22 to May 8, both of the above instruments were sent to Mr. W. H. Dines, who kindly tested them on his whirling machine then erected at Hersham. The particulars of these experiments are given at the end of the Introduction for 1889. The results appear to show that the instrumental results in the case of high velocities of the wind are too great for both anemometers, but it has been thought better, for the sake of continuity, not to apply any corrections to the recorded values, which consequently indicate velocities corresponding to three times the space described by the centres of the cups.

RAIN GAUGES.—During the year 1897 eight rain gauges were employed, placed at different elevations above the ground, complete information in regard to which will be found at page (ciii) 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 complete information on the rate of the fall of rain.

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.

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.

Gauges Nos. 6, 7, and 8 are also 8-inch circular gauges, placed on the ground south of the Magnetic Observatory; No. 6 is the old daily gauge, No. 7 the old monthly gauge, and No. 8 an additional gauge brought into use in July 1881 as a check on the readings of Nos. 6 and 7, the monthly amounts collected by these gauges having occasionally shown greater differences than seemed proper. On 1894 November 6, gauge No. 8 was shifted 40 feet eastwards. 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.

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 electrometer, constructed by White, of Glasgow.

For a full description of the principle of the electrometer, reference may be made to Sir William Thomson's "Report on Electrometers and Electrostatic Measurements," contained in the *British Association Report* for the year 1867. It will be sufficient here to give a general description of the instrument which, with its registering apparatus, is planted in the Upper Magnet Room on the slate slab which carries the suspension pulleys of the Horizontal Force Magnet. A thin flat needle of aluminium, carrying immediately above it a small light mirror, is suspended, on the bifilar principle, by two silk fibres from an insulated support within a large Leyden jar. A little strong sulphuric acid is placed in the bottom of the jar, and from the lower side of the needle depends a platinum wire, kept stretched by a weight, which connects the needle with the sulphuric acid—that is, with the inner coating of the jar. A positive charge of electricity being given to the needle and jar, this charge is easily maintained at a constant potential by means of a small electric machine or replenisher forming part of the instrument, and by which the charge can be either increased or diminished at pleasure. A gauge is provided for the purpose of indicating at any moment the amount of charge. The needle hangs within four insulated quadrants, which may be supposed to be formed by cutting a circular flat brass box into quarters, and then slightly separating them. The opposite quadrants are placed in metallic connexion.

Sir William Thomson's water-dropping apparatus is used to collect the atmospheric electricity. For this purpose a rectangular cistern of copper, capable of holding above

30 gallons of water, is placed near the ceiling on the west side of the south arm of the Upper Magnet Room. The cistern rests on four pillars of glass, each one encircled and nearly completely enclosed by a glass vessel containing sulphuric acid. A pipe passing out from the cistern, through the south face of the building, extends about 6 feet into the atmosphere, the nozzle (about 10 feet above the ground) having a very small hole, through which the water passes and breaks almost immediately into drops. The cistern is thus brought to the same electrical potential as that of the atmosphere, near the nozzle, and this potential is communicated by means of a connecting wire to one of the pairs of electrometer quadrants, the other pair being connected to earth. The varying atmospheric potential thus influences the motions of the included needle, causing it to be deflected from zero in one direction or the other, according as the atmospheric potential is greater or less than that of the earth—that is, according as it is positive or negative.

The small mirror carried by the needle is used for the purpose of obtaining photographic record of its motions. The light of a gas lamp, passing through a slit and falling upon the mirror, is thence reflected, and by means of a plano-convex cylindrical lens is brought to a focus at the surface of a horizontal cylinder of ebonite, nearly 7 inches long and 16 inches in circumference, which is turned by clock-work. A second fixed mirror, by means of the same gas lamp, causes a reference line to be traced round the cylinder. The actual zero is found by cutting off the cistern communication, and placing the pairs of quadrants in metallic connexion with each other and with earth. The break of register at each hour is made by the driving-clock of the electrometer cylinder itself. Other photographic arrangements are generally similar to those which have been described for other instruments.

The scale of time is the same as that of the magnetic registers.

Interruptions sometimes occur through cobwebs making connexion between the cistern or its pipe and the walls of the building, and in winter, from the occasional freezing of the water in the exit pipe.

The electrometer having been in use for ten years, it was removed by Messrs. Elliott on 1888 July 12 for thorough cleaning and repair. After return it was found that its indications were altogether changed. The instrument was not again brought into use during the year 1888, and it was finally sent to the maker, Mr. White, of Glasgow, who restored it to its normal state, excepting that the amplitude of motion of the spot of light is considerably increased. The instrument was brought into use again in October 1889.

SUNSHINE RECORDER.—Until the end of the year 1886 the instrument with which the record given in the printed volume was made was that presented to the Royal Observatory by the late Mr. J. F. Campbell, by whom this method of record was devised. This instrument is fully described in the Introductions to previous volumes. Commencing with the year 1887, the record is that of a modification of the Campbell form of instrument, as arranged by Sir G. G. Stokes for use at the observing stations of the Meteorological Office. By employing this instrument, the manipulation of which is more simple, there is the further advantage that the Greenwich results become strictly comparable with those of the Meteorological Office Stations. A very complete account of the Campbell-Stokes instrument is given in the *Quarterly Journal of the Royal Meteorological Society*, vol. vi. page 83. 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.

A comparison between the two instruments for one complete year, 1886 June 1 to 1887 May 31, will be found at the end of the Introduction to the volume for the year 1887.

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.

A comparison of the old and new glass balls was maintained throughout 1897, and the results for each month are exhibited in the following table:—

	New Ball.	Old Ball.	Excess with New Ball.
	h	h	h
1897 January	19·8	10·8	9·0
February	34·1	24·2	9·9
March	123·4	101·7	21·7
April	144·7	124·8	19·9
May	251·6	220·6	31·0
June	178·3	145·8	32·5
July	252·7	213·7	39·0
August	219·8	183·9	35·9
September	114·5	90·8	23·7
October	111·7	85·9	25·8
November	41·7	29·7	12·0
December	50·3	36·5	13·8
Totals for the year	h 1542·6	h 1268·4	h 274·2

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

OZONOMETER.—This apparatus is fixed on the south-west corner of the roof of the Photographic Thermometer shed, at a height of about 10 feet from the ground. The box in which the papers are exposed is of wood: it is about 8 inches square, blackened inside, and so constructed that there is free circulation of air through the box, without exposure of the paper to light. The papers exposed at 9^h, 15^h, and 21^h are collected respectively at 15^h, 21^h, and 9^h, and the degree of tint produced is compared with a scale of graduated tints, numbered from 0 to 10. The value of ozone for the civil day is determined by taking the degree of tint obtained at each hour of collection as proportional to the period of exposure. Thus, to form the value for any given civil day, three-fourths of the value registered at 9^h, the values registered at 15^h and 21^h, and one-fourth of that registered at the following 9^h, are added together, the resulting sum (which appears in the tables of "Daily Results of the Meteorological Observations") being taken as the value referring to the civil day on a scale of 0 to 30. The means of the 9^h, 15^h, and 21^h values, as observed, are also given for each month in the footnotes.

§ 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 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 *xxxv*), 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 factors by which the dew-point given in these tables is calculated were found by Mr. Glaisher from the comparison of a great number of dew-point determinations obtained by use of Daniell's hygrometer, with simultaneous observations of dry and wet bulb thermometers, combining observations made at the Royal Observatory, Greenwich, with others made in India and at Toronto. The factors are given in the following table.

TABLE OF FACTORS by which the DIFFERENCE between the READINGS of the DRY-BULB and WET-BULB THERMOMETERS is to be MULTIPLIED in order to PRODUCE the CORRESPONDING DIFFERENCE between the DRY-BULB TEMPERATURE and that of the DEW-POINT.

Reading of Dry-bulb Thermometer.	Factor.	Reading of Dry-bulb Thermometer.	Factor.	Reading of Dry-bulb Thermometer.	Factor.	Reading of Dry-bulb Thermometer.	Factor.
10°	8·78	33°	3·01	56°	1·94	79°	1·69
11	8·78	34	2·77	57	1·92	80	1·68
12	8·78	35	2·60	58	1·90	81	1·68
13	8·77	36	2·50	59	1·89	82	1·67
14	8·76	37	2·42	60	1·88	83	1·67
15	8·75	38	2·36	61	1·87	84	1·66
16	8·70	39	2·32	62	1·86	85	1·65
17	8·62	40	2·29	63	1·85	86	1·65
18	8·50	41	2·26	64	1·83	87	1·64
19	8·34	42	2·23	65	1·82	88	1·64
20	8·14	43	2·20	66	1·81	89	1·63
21	7·88	44	2·18	67	1·80	90	1·63
22	7·60	45	2·16	68	1·79	91	1·62
23	7·28	46	2·14	69	1·78	92	1·62
24	6·92	47	2·12	70	1·77	93	1·61
25	6·53	48	2·10	71	1·76	94	1·60
26	6·08	49	2·08	72	1·75	95	1·60
27	5·61	50	2·06	73	1·74	96	1·59
28	5·12	51	2·04	74	1·73	97	1·59
29	4·63	52	2·02	75	1·72	98	1·58
30	4·15	53	2·00	76	1·71	99	1·58
31	3·70	54	1·98	77	1·70	100	1·57
32	3·32	55	1·96	78	1·69		

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

The excess of the mean temperature of the air on each day above the average of 50 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 fifty years 1841–1890. 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 1890 on 24 hourly readings from the photographic record. The smoothed numbers are given in the following table.

ADOPTED VALUES of MEAN TEMPERATURE of the AIR, deduced from the OBSERVATIONS for the Fifty Years 1841–1890.

Day of the Month.	January	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	38°.5	39°.7	40°.2	45°.4	49°.2	57°.2	61°.3	62°.2	59°.7	54°.1	46°.7	40°.6
2	38.5	39.7	40.4	45.7	49.4	57.7	61.4	62.1	59.7	53.8	46.5	40.6
3	38.5	39.7	40.5	46.0	49.7	58.0	61.7	62.1	59.6	53.5	46.3	40.8
4	38.4	39.8	40.7	46.2	50.0	58.2	61.9	62.2	59.4	53.2	46.1	41.1
5	38.3	39.8	40.9	46.2	50.3	58.3	62.1	62.3	59.3	53.0	45.9	41.3
6	38.2	39.7	41.1	46.2	50.6	58.3	62.2	62.4	59.1	52.7	45.5	41.3
7	38.1	39.4	41.0	46.1	50.8	58.2	62.1	62.5	58.9	52.5	45.1	41.0
8	38.0	39.1	40.9	45.9	51.0	58.2	62.0	62.5	58.7	52.1	44.6	40.6
9	37.9	38.7	40.8	45.6	51.2	58.2	62.0	62.5	58.5	51.7	44.0	40.3
10	37.9	38.4	40.7	45.5	51.5	58.2	62.1	62.5	58.3	51.3	43.6	39.9
11	37.9	38.3	40.6	45.5	51.7	58.4	62.3	62.5	58.1	51.0	43.2	39.8
12	37.9	38.5	40.7	45.7	52.0	58.6	62.6	62.5	58.0	50.6	42.9	39.9
13	38.0	38.8	40.9	46.0	52.3	58.8	62.9	62.4	57.9	50.3	42.8	40.1
14	38.2	39.2	41.2	46.4	52.6	58.9	63.1	62.3	57.8	50.1	42.6	40.2
15	38.3	39.6	41.4	46.9	52.8	59.0	63.2	62.1	57.7	49.9	42.5	40.3
16	38.5	39.8	41.5	47.3	53.1	59.0	63.2	62.0	57.5	49.8	42.4	40.2
17	38.5	39.8	41.6	47.7	53.3	59.1	63.1	61.8	57.3	49.6	42.3	40.0
18	38.5	39.7	41.6	48.1	53.6	59.2	63.0	61.6	56.9	49.5	42.2	39.7
19	38.5	39.6	41.5	48.3	53.9	59.5	63.0	61.4	56.5	49.3	42.2	39.3
20	38.4	39.5	41.4	48.5	54.2	59.9	63.0	61.3	56.1	49.0	42.1	39.0
21	38.3	39.5	41.4	48.5	54.6	60.3	63.0	61.1	55.7	48.8	42.1	38.8
22	38.3	39.6	41.5	48.5	55.0	60.7	62.9	61.0	55.4	48.5	42.2	38.6
23	38.4	39.8	41.8	48.4	55.3	61.0	62.8	60.9	55.2	48.2	42.1	38.4
24	38.5	39.9	42.1	48.4	55.6	61.2	62.6	60.8	55.1	47.9	42.1	38.3
25	38.8	40.0	42.4	48.4	55.7	61.3	62.4	60.8	55.0	47.6	42.0	38.3
26	39.0	40.1	42.9	48.4	55.9	61.4	62.3	60.8	54.9	47.4	41.9	38.4
27	39.3	40.1	43.3	48.5	56.0	61.4	62.3	60.7	54.9	47.3	41.6	38.4
28	39.5	40.2	43.7	48.6	56.0	61.3	62.3	60.6	54.8	47.2	41.3	38.5
29	39.7		44.1	48.8	56.2	61.2	62.3	60.3	54.6	47.0	41.0	38.6
30	39.8		44.6	49.0	56.5	61.2	62.3	60.1	54.4	47.0	40.7	38.6
31	39.8		45.0		56.8		62.3	59.9		46.8		38.6
Means	38.5	39.5	41.7	47.2	53.1	59.4	62.4	61.6	57.2	50.0	43.2	39.7

The mean of the twelve monthly values is 49°.5.

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 (lxv) and (ciii), 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. Occasionally, during interruption of photographic registration, the results depend on eye observations.

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 (xxxix) to (lxi), and in the abstract table, page (lxv), 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 fifty years 1841–1890.

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; observations of thermometers in a Stevenson screen and on the roof of the Magnet House, and of the earth thermometers; 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; rain results; and observations of 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 (lxvi) and (lxvii), do not in some cases agree with the monthly means given in the daily results, pages (xxxviii) to (lx), and in the table on page (lxv), 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 (lxxxix), exhibits every change of direction of the wind occurring throughout the year, whenever such change amounted to two nautical points or $22\frac{1}{2}^\circ$. 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 $11\frac{1}{4}^\circ$. From the numbers given in this table the monthly and yearly excess of motion, page (xcvii), 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 $0^{\text{in}}\cdot 020$, 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 (ci) and (cii) 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 1897 were Mr. Edney, Mr. Beadle, Mr. Marchant, and Mr. Davies. Their observations are distinguished by the initials E, B, M, and D respectively.

W. H. M. CHRISTIE.

ROYAL OBSERVATORY, GREENWICH,
1899 *August* 12.

ROYAL OBSERVATORY, GREENWICH.

RESULTS

OF

MAGNETICAL OBSERVATIONS,

1897.

The absolute values of the Magnetic Elements are to some extent affected by the masses of iron introduced in building the North Wing of the new Physical Observatory and the new Altazimuth Pavilion. *See* Introduction.

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

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

1897.

Day of Month.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
	16°	16°	16°	16°	16°	16°	16°	16°	16°	16°	16°	16°
d	′	′	′	′	′	′	′	′	′	′	′	′
1	53·4	53·1	52·4	51·0	50·6	51·1	50·8	50·3	50·1	49·2	50·1	49·8
2	56·0	52·9	52·5	51·9	52·3	51·0	50·7	49·9	50·0	48·4	49·6	49·9
3	52·5	53·7	52·7	50·7	50·7	50·5	50·4	50·3	50·7	48·4	49·1	50·0
4	52·9	52·3	52·1	51·4	51·0	51·4	51·0	49·3	49·7	49·3	49·9	50·1
5	52·7	52·9	52·1	51·0	50·7	51·4	50·2	49·8	49·4	48·7	49·9	49·4
6	52·8	52·8	52·2	51·0	51·7	50·2	50·2	49·5	49·0	49·4	49·9	49·3
7	52·9	53·7	52·2	51·3	50·8	49·8	50·4	50·0	49·8	49·9	49·3	48·4
8	53·6	52·7	51·5	52·1	50·1	50·3	50·6	49·3	49·8	49·8	49·3	48·5
9	53·3	52·9	52·5	51·0	50·4	50·3	50·3	50·0	49·9	49·0	49·0	48·9
10	53·9	52·1	52·1	51·6	50·3	50·8	50·2	49·3	50·2	48·3	49·3	49·0
11	53·9	52·4	52·8	51·0	51·3	51·0	50·4	49·9	49·6	48·8	50·2	47·5
12	52·7	53·0	52·9	51·2	51·1	50·2	50·6	49·7	48·9	49·1	49·7	48·9
13	54·2	52·6	51·4	51·1	51·0	50·4	50·2	50·6	49·4	49·4	48·9	48·5
14	53·6	53·1	52·2	51·1	50·7	50·6	50·7	50·4	50·0	49·5	49·1	47·8
15	53·6	53·2	52·7	50·7	50·7	50·5	50·5	50·2	48·9	49·3	50·6	49·0
16	53·6	53·0	52·3	50·4	50·4	50·3	50·0	50·1	48·8	48·3	50·4	48·0
17	53·9	53·2	51·5	51·7	50·9	50·8	50·9	50·1	49·1	49·5	51·5	47·1
18	53·5	52·9	52·7	50·4	50·5	50·7	50·5	50·4	49·6	49·8	48·9	47·9
19	53·8	52·6	52·3	50·2	49·8	51·3	50·4	50·3	50·0	49·1	49·3	47·9
20	53·5	52·5	52·8	50·5	49·4	50·2	50·6	50·5	49·3	49·5	49·7	47·9
21	53·6	52·7	52·5	51·7	50·7	50·7	50·2	48·7	50·1	49·2	48·9	47·2
22	53·6	52·5	51·9	51·5	49·8	49·3	48·5	50·2	49·6	49·9	48·9	48·1
23	54·3	52·7	51·8	50·7	49·8	49·7	50·4	49·6	48·8	49·5	49·2	48·6
24	53·5	52·5	52·7	50·2	49·4	49·6	50·3	50·0	...	...	49·4	48·4
25	53·6	53·4	52·4	51·7	50·2	49·2	50·2	49·7	49·5	...	48·5	48·5
26	53·7	52·3	52·4	51·2	50·0	51·0	49·9	50·5	49·4	48·8	49·2	48·5
27	54·3	51·6	52·6	51·2	50·4	50·4	50·1	50·1	49·9	50·2	48·0	47·7
28	53·8	52·3	51·8	51·4	50·5	51·2	50·3	50·3	49·3	48·1	48·4	47·6
29	54·3		51·2	51·4	50·2	50·9	49·4	50·2	49·1	49·5	48·9	48·6
30	53·6		52·0	50·9	50·7	51·1	50·9	49·6	48·8	49·8	48·7	46·6
31	53·7		51·3		50·6		52·0	50·0		50·3		47·8

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

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

1897.

Hour, Greenwich Civil Time.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
Midn.	0·2	0·5	0·6	1·9	2·7	2·7	2·7	1·7	0·9	0·4	0·4	0·7
1^h	0·4	0·8	0·8	2·2	2·6	2·5	2·4	1·6	1·0	0·7	1·2	0·9
2	0·5	1·0	1·1	2·2	2·5	2·5	2·1	2·0	1·0	0·9	1·6	1·2
3	0·7	1·2	1·2	2·2	2·1	2·3	1·9	1·9	1·1	1·1	1·8	1·5
4	1·0	1·3	1·3	2·4	1·7	1·8	1·4	1·5	0·8	1·2	1·7	1·7
5	1·3	1·5	1·2	2·6	1·1	0·8	0·6	0·8	0·7	1·3	1·7	2·0
6	1·3	1·2	1·2	1·9	0·6	0·0	0·1	0·1	0·3	1·1	1·9	2·2
7	1·1	1·0	0·8	0·7	0·0	0·0	0·0	0·0	0·0	0·6	2·2	2·0
8	1·0	0·7	0·0	0·0	0·1	0·4	0·3	0·4	0·2	0·1	2·2	2·0
9	1·5	0·8	0·2	0·8	1·1	1·3	0·8	1·5	1·0	0·3	2·2	2·0
10	2·3	1·7	1·7	2·9	3·3	3·4	2·3	3·5	2·9	1·9	2·8	2·3
11	3·2	3·4	4·3	5·7	6·3	6·0	4·8	6·1	5·3	4·2	3·8	2·9
Noon.	4·3	4·8	6·8	8·4	8·3	7·9	7·2	8·3	7·4	5·5	4·9	4·2
13^h	4·9	5·3	8·5	10·1	9·1	9·0	8·3	9·6	8·1	6·0	5·3	4·4
14	4·0	5·4	8·6	9·9	8·7	9·0	8·5	9·2	7·5	5·4	4·9	4·1
15	3·2	4·5	7·4	8·5	7·5	8·5	7·8	7·9	6·2	4·4	4·1	3·2
16	2·9	3·4	5·5	6·6	6·4	7·4	6·6	5·9	4·5	3·4	3·7	3·0
17	2·7	2·9	4·0	4·9	5·3	6·1	5·3	4·4	3·4	2·7	3·1	2·4
18	2·5	2·4	2·9	3·2	4·3	5·1	4·3	3·6	2·8	1·9	2·5	1·5
19	1·7	1·8	2·2	2·6	3·7	4·6	3·8	3·5	2·5	0·8	1·7	0·8
20	0·5	1·1	1·7	2·2	3·3	4·3	3·4	3·1	1·9	0·1	1·0	0·6
21	0·0	0·4	0·7	1·8	3·0	4·0	3·1	2·4	1·6	0·0	0·3	0·0
22	0·0	0·0	0·0	1·5	3·0	3·6	3·1	2·0	1·2	0·0	0·1	0·2
23	0·0	0·0	0·1	1·6	2·7	3·1	2·9	2·0	0·9	0·2	0·0	0·6
Means	1·72	1·96	2·62	3·62	3·73	4·01	3·49	3·46	2·63	1·84	2·30	1·93

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.)*

1897.

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	577	154	494	078	618	207	533	125	619	206	715	340	774	404	668	298	843	401	820	407	737	319	711	267
2	254	831	514	096	589	164	531	123	702	282	803	383	800	435	705	340	796	371	727	319	733	298	663	243
3	265	849	480	050	550	139	572	142	640	241	733	310	841	449	700	347	778	341	714	301	707	313	622	209
4	389	957	468	052	464	058	548	149	647	227	713	297	791	371	705	372	751	304	679	292	746	333	657	234
5	440	012	530	138	516	086	576	172	620	240	725	341	812	384	675	368	694	269	734	309	709	293	665	240
6	480	043	557	137	509	098	504	084	647	231	715	340	838	422	690	380	736	342	672	249	705	285	676	248
7	503	092	507	099	525	124	530	117	586	192	750	363	744	326	740	400	757	339	720	307	701	290	686	263
8	535	112	540	115	481	073	574	161	663	259	691	287	738	330	751	406	780	348	765	337	719	351	726	310
9	522	097	585	189	493	092	567	168	662	251	723	305	735	336	835	470	767	335	775	347	782	376	687	252
10	554	134	588	187	593	185	559	148	654	250	758	335	759	382	779	414	753	321	689	273	777	357	591	180
11	513	097	556	167	563	143	571	175	571	151	744	352	763	381	762	412	686	270	663	257	729	321	487	093
12	461	050	585	189	628	191	615	207	548	149	749	355	730	336	729	357	690	272	663	240	755	361	539	104
13	474	058	577	181	568	157	610	211	597	181	773	393	742	350	755	361	708	292	662	249	836	423	657	217
14	494	062	625	214	605	187	639	233	585	162	736	359	780	400	748	356	701	309	703	290	801	385	718	317
15	504	050	609	213	606	210	612	187	584	168	775	371	726	349	757	368	709	301	806	393	797	369	709	315
16	516	062	630	190	651	235	611	219	585	160	763	345	695	342	756	360	734	333	758	374	759	355	730	336
17	500	046	592	181	647	258	595	203	615	221	603	161	700	357	757	365	723	315	834	421	782	376	716	312
18	539	074	605	199	683	246	595	182	625	236	628	229	704	351	770	378	739	314	771	363	760	364	734	314
19	527	095	625	233	649	250	570	171	675	269	620	207	738	390	772	373	710	287	783	394	743	325	739	328
20	538	101	670	271	626	237	457	063	655	223	639	243	739	396	803	395	720	319	826	391	716	305	612	206
21	567	109	609	213	694	295	515	119	571	182	698	309	793	445	761	357	750	342	810	373	715	311	521	105
22	570	118	601	214	683	287	581	170	610	209	746	352	720	360	765	345	748	325	826	418	720	292	612	194
23	579	104	622	226	655	259	522	135	594	195	723	348	744	372	764	339	742	329	835	410	701	288	671	224
24	521	084	640	222	689	257	457	056	633	213	715	362	728	383	796	371	...	...	803	390	705	289	655	220
25	478	070	719	315	657	241	490	096	662	261	725	353	689	354	810	387	789	407	815	385	610	230	601	183
26	514	062	582	202	684	290	543	156	665	249	806	410	708	348	830	398	798	416	772	373	639	226	613	181
27	528	084	498	097	696	256	596	197	704	276	801	400	737	360	813	397	798	404	770	357	717	309	628	246
28	488	056	557	156	657	258	652	232	677	276	783	418	754	360	795	375	834	438	745	322	735	317	724	325
29	456	031			590	160	598	214	708	300	745	385	757	373	799	383	819	413	710	318	704	276	661	265
30	476	058			539	131	641	230	742	334	741	373	781	416	824	411	808	400	721	327	714	308	685	293
31	445	027			578	179			699	307			653	300	798	370			739	347			696	300

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.

1897.

Day of Month.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
d	°	°	°	°	°	°	°	°	°	°	°	°
1	66·8	67·1	67·3	67·4	67·2	68·8	69·0	69·0	66·0	67·2	67·0	65·9
2	66·8	67·0	66·7	67·4	66·9	66·9	69·2	69·2	66·7	67·4	66·3	66·9
3	67·1	66·4	67·3	66·5	67·8	66·8	68·1	69·7	66·2	67·2	68·0	67·2
4	66·4	67·1	67·5	67·8	66·9	67·1	66·9	70·5	65·8	68·3	67·2	66·7
5	66·6	68·1	66·5	67·6	68·6	68·4	66·6	71·5	66·7	66·7	67·1	66·7
6	66·2	66·9	67·3	66·9	67·1	68·8	67·1	71·4	68·0	66·8	66·9	66·7
7	67·3	67·4	67·7	67·2	68·0	68·3	67·0	70·1	67·0	67·2	67·3	66·7
8	66·8	66·7	67·4	67·2	67·6	67·6	67·4	70·0	66·4	66·6	69·1	67·2
9	66·6	67·9	67·7	67·8	67·2	67·0	67·8	69·2	66·4	66·6	67·5	66·3
10	66·9	67·7	67·4	67·3	67·6	66·8	68·7	69·2	66·4	67·1	66·9	67·3
11	67·1	68·2	66·9	67·9	66·9	68·1	68·5	69·8	67·1	67·5	67·4	67·9
12	67·3	67·9	66·2	67·4	67·8	68·0	67·9	68·9	67·0	66·8	68·0	66·3
13	67·1	67·9	67·3	67·8	67·2	68·6	68·1	68·0	67·1	67·2	67·2	66·1
14	66·4	67·3	67·0	67·5	66·8	68·7	68·6	68·1	68·1	67·2	67·1	67·8
15	65·5	67·9	67·9	66·7	67·2	67·6	68·7	68·2	67·4	67·2	66·6	68·0
16	65·5	66·1	67·1	68·1	66·7	67·0	69·7	67·9	67·7	68·4	67·6	68·0
17	65·5	67·3	68·2	68·0	68·0	66·0	70·1	68·1	67·4	67·2	67·5	67·6
18	65·0	67·5	66·2	67·2	68·2	67·8	69·7	68·1	66·7	67·4	67·9	66·9
19	66·4	68·1	67·8	67·8	67·5	67·2	69·9	67·8	66·8	68·2	67·0	67·3
20	66·2	67·8	68·2	68·0	66·4	67·9	70·1	67·4	67·7	66·3	67·3	67·5
21	65·3	67·9	67·8	67·9	68·2	68·2	69·9	67·6	67·4	66·2	67·6	67·1
22	65·6	68·3	67·9	67·3	67·7	68·0	69·4	66·9	66·8	67·4	66·6	67·0
23	64·6	67·9	67·9	68·3	67·8	68·8	68·9	66·7	67·2	66·7	67·2	65·8
24	66·2	67·0	66·4	67·7	66·9	69·8	70·0	66·7	...	67·2	67·1	66·3
25	67·4	67·6	67·1	68·0	67·7	68·9	70·4	66·8	68·5	66·5	68·6	67·0
26	65·6	68·6	68·0	68·3	67·1	67·9	69·4	66·4	68·5	67·8	67·2	66·4
27	65·9	67·7	66·1	67·8	66·6	67·7	68·7	67·1	68·0	67·2	67·4	68·5
28	66·4	67·7	67·8	66·9	67·7	69·2	68·0	66·9	67·9	66·8	67·0	67·8
29	66·7		66·5	68·4	67·4	69·4	68·4	67·1	67·5	68·1	66·6	67·9
30	67·0		67·4	67·3	67·4	69·1	69·2	67·2	67·4	68·0	67·5	68·1
31	67·0		67·7		68·1		69·7	66·6		68·1		67·9
Means	66°·36	67°·54	67°·30	67°·58	67°·43	68°·01	68°·75	68°·33	67°·17	67°·24	67°·32	67°·12

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.)*

1897.

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
Midnight.	23	51	53	60	110	125	196	203	164	173	145	159	145	164	141	158	141	160	115	129	18	37	15	37
1h	27	53	51	60	106	121	191	200	152	161	143	157	135	152	132	149	135	152	108	122	21	38	16	35
2	33	54	53	60	109	119	188	195	142	149	131	143	132	147	127	139	129	141	103	113	23	37	24	41
3	41	57	55	57	110	117	182	187	134	138	119	128	133	145	122	134	128	138	105	115	33	43	36	48
4	54	63	61	61	111	114	185	185	127	129	114	121	128	138	116	126	125	132	109	114	44	51	51	58
5	69	76	73	70	116	116	189	186	119	119	103	110	120	127	105	112	122	127	118	120	54	59	57	62
6	80	84	77	74	123	121	185	182	92	92	77	82	100	107	87	92	113	116	122	124	58	60	62	65
7	82	84	83	80	120	118	154	154	55	55	47	49	74	79	60	62	87	90	114	116	60	62	66	69
8	62	64	67	67	86	84	110	110	21	21	28	30	45	48	26	28	49	49	74	74	52	54	56	59
9	40	40	33	33	34	32	63	63	2	2	14	14	18	18	5	5	15	15	28	28	27	27	36	39
10	16	16	4	6	3	1	16	16	0	0	0	0	0	0	0	0	0	0	0	0	5	5	16	19
11	0	0	0	0	0	0	0	0	18	15	16	16	3	6	18	18	10	10	5	5	0	0	0	0
Noon.	12	14	9	6	20	18	37	34	38	38	37	37	19	22	60	60	59	62	34	36	19	19	14	17
13h	31	33	32	29	53	51	84	81	63	63	60	65	46	51	92	94	90	95	64	66	35	35	13	13
14	39	43	54	49	83	81	129	124	99	99	86	91	91	98	105	110	112	119	81	88	27	32	15	18
15	34	41	55	48	104	102	172	167	142	144	120	127	128	138	118	125	115	125	88	95	23	30	14	19
16	27	34	57	47	120	118	202	195	181	181	138	147	148	160	125	132	115	125	85	95	30	37	12	17
17	38	45	66	51	129	122	230	220	222	222	164	173	162	177	144	154	125	137	91	98	42	52	20	27
18	46	60	77	60	136	127	255	243	243	240	191	200	178	193	167	177	140	152	104	111	43	53	27	37
19	38	54	91	74	140	133	257	242	235	230	204	213	192	209	184	196	147	159	112	119	37	49	24	34
20	20	36	94	77	148	141	246	229	217	209	198	207	192	209	182	194	144	159	112	119	28	40	22	32
21	17	33	91	74	139	134	232	220	198	190	182	191	179	198	168	182	140	157	109	116	19	31	21	31
22	24	45	76	64	129	127	215	208	183	180	168	180	164	183	153	167	137	156	112	119	23	37	13	25
23	22	48	67	69	118	128	206	208	174	178	155	169	152	174	148	162	140	159	116	128	20	39	11	30
Means corrected for Temperature.	47·0		53·2		97·9		160·5		126·2		117·0		122·6		115·7		114·0		93·7		38·6		34·7	

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

1897.

Hour, Greenwich Civil Time.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	For the Year.
	°	°	°	°	°	°	°	°	°	°	°	°	°
Midnight.	67·1	68·0	67·9	68·1	67·8	68·3	69·1	68·7	67·6	67·6	67·8	67·7	67·98
1h	67·0	68·1	67·9	68·1	67·8	68·3	69·1	68·7	67·5	67·6	67·7	67·6	67·95
2	66·8	68·0	67·7	68·0	67·7	68·2	68·9	68·5	67·3	67·5	67·6	67·5	67·81
3	66·6	67·8	67·6	67·9	67·6	68·1	68·8	68·5	67·2	67·4	67·4	67·3	67·68
4	66·3	67·7	67·4	67·7	67·5	68·0	68·7	68·3	67·1	67·2	67·3	67·1	67·52
5	66·2	67·6	67·3	67·6	67·4	68·0	68·6	68·3	67·0	67·1	67·2	67·0	67·44
6	66·1	67·6	67·2	67·6	67·4	67·9	68·6	68·2	66·9	67·1	67·1	66·9	67·38
7	66·0	67·6	67·2	67·7	67·4	67·8	68·5	68·1	66·9	67·0	67·1	66·9	67·35
8	66·0	67·7	67·2	67·7	67·4	67·8	68·4	68·1	66·8	67·0	67·1	66·9	67·34
9	65·9	67·7	67·2	67·7	67·4	67·7	68·3	68·0	66·8	67·0	67·0	66·9	67·30
10	65·9	67·8	67·2	67·7	67·4	67·7	68·3	68·0	66·8	67·0	67·0	66·9	67·31
11	65·9	67·7	67·3	67·7	67·3	67·7	68·4	68·0	66·8	67·0	67·0	66·8	67·30
Noon.	66·0	67·7	67·2	67·6	67·4	67·8	68·4	68·0	66·9	67·1	67·0	66·9	67·33
13h	66·0	67·6	67·2	67·6	67·4	67·8	68·5	68·1	67·0	67·1	67·0	66·8	67·34
14	66·1	67·5	67·2	67·5	67·4	67·9	68·6	68·2	67·1	67·3	67·2	66·9	67·41
15	66·2	67·4	67·2	67·5	67·5	68·0	68·7	68·3	67·2	67·3	67·3	67·0	67·47
16	66·2	67·3	67·2	67·4	67·4	68·1	68·8	68·3	67·2	67·3	67·3	67·0	67·46
17	66·2	67·1	67·1	67·3	67·4	68·1	68·9	68·4	67·3	67·3	67·4	67·1	67·47
18	66·5	67·0	66·9	67·2	67·3	68·1	68·9	68·4	67·3	67·3	67·4	67·2	67·46
19	66·6	67·0	66·9	67·1	67·2	68·1	69·0	68·5	67·3	67·3	67·5	67·2	67·48
20	66·6	67·0	67·0	67·0	67·1	68·1	69·0	68·5	67·4	67·3	67·5	67·2	67·48
21	66·6	67·0	67·1	67·2	67·1	68·1	69·1	68·6	67·5	67·3	67·5	67·2	67·52
22	66·8	67·2	67·3	67·4	67·3	68·2	69·1	68·6	67·6	67·3	67·6	67·3	67·64
23	67·0	67·8	67·6	67·8	67·6	68·3	69·1	68·6	67·6	67·5	67·8	67·6	67·86

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.)*

1897.

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	043	309	937	184	967	223	925	183	913	175	982	206	071	291	059	281	934	221	913	181	832	092	692	954
2	145	403	934	186	943	209	855	115	910	170	946	221	066	290	051	265	941	212	924	176	823	091	694	950
3	116	359	938	200	949	207	886	157	911	156	963	223	060	305	052	255	945	224	920	174	840	075	692	933
4	072	324	952	199	953	196	887	124	893	149	977	227	036	309	080	266	918	201	937	174	818	070	681	937
5	037	299	957	215	920	188	898	148	923	152	016	238	000	271	108	273	930	177	890	152	800	050	662	918
6	021	294	932	203	927	187	876	132	885	141	031	253	002	264	109	276	960	197	869	129	791	049	656	910
7	037	278	954	201	925	164	877	129	870	105	026	269	002	266	097	289	947	203	860	110	784	031	664	920
8	034	288	928	199	948	187	860	116	875	104	017	260	990	246	085	281	930	198	849	117	812	043	670	924
9	035	301	961	202	931	170	883	118	885	128	991	243	980	223	059	273	929	197	827	089	785	039	648	927
10	025	279	961	215	918	174	918	157	865	108	977	231	987	213	051	265	916	182	837	084	771	027	661	902
11	038	296	975	201	894	160	887	128	847	105	991	232	999	225	054	255	922	172	840	087	771	027	703	940
12	050	310	971	208	882	163	871	129	850	100	001	242	993	236	052	276	916	170	841	105	779	022	697	951
13	051	307	960	195	888	135	876	117	835	095	017	243	992	229	019	260	923	173	833	083	773	029	678	940
14	024	295	939	197	893	136	878	138	832	092	047	273	012	234	006	245	943	178	826	086	787	032	694	937
15	989	272	961	215	913	163	863	121	832	094	022	272	017	239	002	233	933	185	811	075	780	044	708	951
16	975	256	924	190	890	144	875	114	830	088	010	278	015	218	995	236	933	178	846	085	779	022	708	947
17	971	250	954	204	922	159	863	102	882	123	960	239	040	234	006	243	933	187	850	104	786	036	719	973
18	942	238	948	198	893	166	889	147	908	147	991	232	041	244	008	245	906	174	869	123	797	036	711	979
19	968	224	952	197	915	156	885	126	915	165	975	233	042	238	008	255	887	151	882	115	789	045	706	968
20	970	245	950	200	935	170	920	157	875	154	975	214	055	249	975	227	887	130	876	136	781	041	752	006
21	936	219	950	200	930	169	908	151	922	165	990	229	047	250	980	232	892	146	858	120	765	015	730	982
22	935	206	968	201	936	179	900	156	929	164	979	222	033	247	977	239	866	132	867	123	754	027	708	960
23	898	190	969	225	939	184	922	165	937	176	010	234	036	258	960	228	868	120	853	117	747	011	667	948
24	910	181	953	207	930	198	910	166	911	165	039	242	049	243	956	222	915	152	851	107	748	004	650	914
25	949	194	964	218	924	180	890	131	930	171	049	278	082	272	948	214	927	149	828	086	772	994	670	911
26	913	188	007	244	946	183	908	149	915	162	023	270	057	269	944	217	951	175	838	081	748	993	651	886
27	897	172	009	254	920	195	894	144	911	171	024	274	040	271	951	209	932	175	841	084	726	980	685	894
28	905	176	973	216	940	179	887	145	921	162	056	276	014	253	949	213	905	157	836	092	724	984	666	909
29	913	171			916	182	926	163	930	175	075	289	014	245	954	212	899	157	838	081	709	965	670	911
30	933	187			909	165	924	176	920	157	080	298	032	244	956	214	913	175	839	091	710	955	...	...
31	938	188			916	163			964	197			051	254	947	220			847	086			...	...

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.

1897.

Day of Month.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
d 1	66°·6	67°·5	67°·1	67°·0	66°·8	68°·6	68°·8	68°·7	65°·6	66°·5	66°·9	66°·7
2	67·0	67·3	66·6	66·9	66·9	66·2	68·6	69·1	66·4	67·3	66·5	67·1
3	67·7	66·8	67·1	66·4	67·6	66·9	67·6	69·6	66·0	67·2	68·1	67·8
4	67·3	67·5	67·7	68·0	67·1	67·4	66·3	70·4	65·8	68·0	67·3	67·1
5	66·8	67·0	66·5	67·4	68·4	68·7	66·4	71·4	67·5	66·8	67·4	67·1
6	66·3	66·4	66·9	67·1	67·1	68·7	66·8	71·3	68·0	66·9	67·0	67·2
7	67·7	67·5	67·9	67·3	68·1	67·8	66·7	70·1	67·1	67·4	67·5	67·1
8	67·2	66·4	67·9	67·1	68·4	67·7	67·1	69·9	66·5	66·5	68·3	67·2
9	66·6	67·8	67·9	68·1	67·7	67·3	67·7	69·1	66·5	66·8	67·2	66·0
10	67·2	67·2	67·1	67·9	67·7	67·2	68·5	69·1	66·6	67·5	67·1	67·8
11	67·0	68·5	66·6	67·8	67·0	67·8	68·5	69·7	67·4	67·5	67·1	68·0
12	66·9	68·0	65·9	67·0	67·4	67·8	67·8	68·6	67·2	66·7	67·7	67·2
13	67·1	68·1	67·5	67·8	66·9	68·5	68·0	67·8	67·4	67·4	67·1	66·8
14	66·4	67·0	67·7	66·9	66·9	68·5	68·7	68·0	68·1	66·9	67·6	67·7
15	65·8	67·2	67·5	67·0	66·8	67·4	68·7	68·3	67·3	66·8	66·7	67·7
16	65·9	66·6	67·2	67·9	67·0	66·5	69·6	67·8	67·6	67·9	67·7	67·9
17	66·0	67·4	68·0	68·0	67·8	66·1	70·0	68·0	67·2	67·2	67·4	67·2
18	65·2	67·4	66·3	67·0	67·9	67·8	69·6	68·0	66·5	67·2	68·0	66·5
19	67·1	67·6	67·8	67·8	67·4	67·0	69·9	67·5	66·7	68·1	67·1	66·8
20	66·2	67·4	68·1	68·0	66·0	67·9	70·0	67·3	67·7	66·9	66·9	67·2
21	65·8	67·4	67·9	67·7	67·7	67·9	69·6	67·3	67·2	66·8	67·4	67·3
22	66·4	68·2	67·7	67·1	68·1	67·7	69·1	66·8	66·6	67·1	66·3	67·3
23	65·4	67·1	67·6	67·7	67·9	68·6	68·7	66·5	67·3	66·7	66·7	65·9
24	66·4	67·2	66·5	67·1	67·2	69·7	70·0	66·6	68·0	67·1	67·1	66·7
25	67·6	67·2	67·1	67·8	67·8	68·4	70·2	66·6	68·7	67·0	68·7	67·8
26	66·2	68·0	68·0	67·8	67·5	67·5	69·2	66·3	68·6	67·7	67·6	68·1
27	66·2	67·6	66·2	67·4	66·9	67·4	68·3	67·0	67·6	67·7	67·2	69·3
28	66·4	67·7	67·9	66·9	67·8	68·8	67·9	66·7	67·3	67·1	66·9	67·6
29	67·0		66·6	68·0	67·6	69·1	68·3	67·0	67·0	67·7	67·1	67·8
30	67·2		67·1	67·3	68·0	68·9	69·2	67·0	66·9	67·3	67·6	...
31	67·3		67·5		68·2		69·6	66·3		67·9		...
Means	66°·64	67°·39	67°·27	67°·44	67°·46	67°·86	68°·56	68°·19	67°·14	67°·21	67°·31	67°·31

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.)*

1897.

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
Midnight.	34	6	22	12	42	21	38	23	55	44	42	28	44	26	42	26	35	16	22	11	25	6	25	8
1h	28	3	18	8	39	18	30	15	47	36	34	22	39	23	37	23	30	13	18	7	19	2	19	4
2	20	1	13	5	32	15	23	10	43	34	26	16	34	22	33	22	25	13	15	7	13	0	12	1
3	15	2	7	1	23	10	18	9	45	38	26	18	31	21	30	21	23	13	12	6	10	2	7	0
4	9	0	4	2	22	14	18	11	47	42	31	25	32	24	32	27	20	12	13	9	10	4	4	2
5	6	2	0	0	21	15	14	12	47	42	31	27	33	28	35	32	21	17	12	10	9	7	1	3
6	3	3	1	1	21	17	20	18	47	45	31	27	32	31	35	34	23	21	12	12	9	9	0	4
7	2	4	3	3	25	23	28	26	45	43	30	28	31	32	37	38	26	24	17	17	9	9	2	8
8	0	4	7	7	25	23	30	28	40	38	24	24	28	31	30	33	22	22	17	17	10	12	3	9
9	0	4	7	7	19	17	22	20	27	25	16	19	18	23	16	21	15	17	14	16	7	11	4	10
10	1	5	5	5	11	9	10	10	12	12	6	6	11	14	7	10	5	7	5	5	3	7	2	8
11	1	3	2	5	3	1	1	1	0	0	0	0	0	1	0	1	0	0	0	0	0	2	2	6
Noon.	3	3	1	6	0	0	0	0	4	2	3	1	1	0	1	0	2	0	6	2	6	8	6	10
13h	13	11	5	10	6	4	12	12	19	17	14	10	8	3	9	6	10	4	14	8	13	11	14	16
14	24	20	14	21	22	20	31	31	38	33	23	17	21	13	25	20	22	14	23	17	23	19	25	25
15	26	22	22	31	40	40	51	51	54	49	34	26	34	24	41	34	32	22	33	27	29	25	35	35
16	25	18	27	38	47	47	63	63	67	65	45	37	45	33	49	40	37	27	36	30	29	23	34	34
17	29	20	29	42	52	52	67	69	76	74	57	47	52	38	55	46	41	29	33	29	30	22	39	35
18	37	24	29	44	48	50	68	72	80	80	62	52	55	41	55	44	42	30	34	30	33	22	40	33
19	42	25	32	45	49	49	62	66	78	78	61	51	54	38	50	39	42	28	34	30	32	19	38	29
20	42	23	29	40	49	45	53	57	72	74	58	46	51	33	49	35	45	28	32	28	31	18	33	24
21	39	18	23	34	44	38	49	49	68	70	56	44	51	33	50	34	46	27	29	25	28	13	31	22
22	35	14	21	28	41	33	47	42	64	62	54	40	51	33	49	33	45	26	26	20	26	11	30	21
23	36	8	25	19	42	25	46	35	63	54	54	40	50	32	46	30	41	20	24	13	24	7	28	13
Means corrected for Temperature.	10·1		17·2		24·4		30·4		44·0		27·1		24·9		27·0		17·9		15·7		11·2		15·0	

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

1897.

Hour, Greenwich Civil Time.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	For the Year.
	°	°	°	°	°	°	°	°	°	°	°	°	°
Midnight.	67·5	68·0	68·0	68·0	67·8	68·2	69·0	68·6	67·6	67·5	67·9	68·0	68·01
1h	67·4	68·0	68·0	68·0	67·8	68·1	68·9	68·5	67·5	67·5	67·8	67·9	67·95
2	67·1	67·9	67·8	67·9	67·7	68·0	68·7	68·4	67·3	67·4	67·6	67·7	67·79
3	66·8	67·8	67·6	67·7	67·6	67·9	68·6	68·3	67·2	67·3	67·4	67·5	67·64
4	66·6	67·6	67·4	67·6	67·5	67·8	68·5	68·1	67·1	67·2	67·3	67·3	67·50
5	66·4	67·5	67·3	67·4	67·4	67·7	68·3	68·0	66·9	67·1	67·1	67·1	67·35
6	66·2	67·5	67·2	67·4	67·4	67·7	68·2	67·9	66·8	67·0	67·0	67·0	67·27
7	66·1	67·5	67·1	67·4	67·4	67·6	68·2	67·8	66·8	67·0	67·0	67·0	67·24
8	66·0	67·5	67·1	67·4	67·4	67·5	68·0	67·7	66·7	67·0	66·9	66·9	67·18
9	66·0	67·5	67·1	67·4	67·4	67·4	67·9	67·6	66·6	66·9	66·8	66·9	67·12
10	66·0	67·5	67·1	67·3	67·3	67·5	68·0	67·7	66·6	67·0	66·8	66·8	67·13
11	66·1	67·4	67·1	67·3	67·3	67·5	68·1	67·8	66·7	67·0	66·9	67·0	67·18
Noon.	66·2	67·3	67·0	67·3	67·4	67·6	68·2	67·9	66·8	67·2	66·9	67·0	67·23
13h	66·3	67·3	67·1	67·3	67·5	67·7	68·4	68·0	67·0	67·3	67·1	67·1	67·34
14	66·4	67·2	67·0	67·3	67·5	67·8	68·5	68·2	67·1	67·3	67·2	67·2	67·39
15	66·4	67·1	67·1	67·3	67·5	67·9	68·6	68·2	67·2	67·3	67·2	67·2	67·42
16	66·5	67·0	67·0	67·3	67·4	67·9	68·7	68·3	67·2	67·3	67·3	67·2	67·43
17	66·6	66·9	67·0	67·2	67·4	68·0	68·8	68·3	67·3	67·2	67·4	67·4	67·46
18	66·8	66·8	66·9	67·1	67·3	68·0	68·8	68·4	67·3	67·2	67·5	67·5	67·47
19	67·0	66·9	67·0	67·1	67·3	68·0	68·9	68·5	67·4	67·2	67·6	67·6	67·54
20	67·1	67·0	67·2	67·1	67·2	68·1	69·0	68·5	67·5	67·2	67·7	67·6	67·60
21	67·2	67·0	67·3	67·3	67·2	68·1	69·0	68·6	67·6	67·2	67·7	67·6	67·65
22	67·2	67·2	67·4	67·5	67·4	68·2	69·0	68·6	67·6	67·3	67·7	67·6	67·72
23	67·5	67·8	67·8	67·8	67·7	68·2	69·0	68·6	67·7	67·5	67·8	67·9	67·94

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. 1897.	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 16° and expressed as Westerly Force (in terms of GAUSS'S METRICAL UNIT)	HORIZONTAL FORCE (diminished by a Constant) (in terms of GAUSS'S METRICAL UNIT)	VERTICAL FORCE (diminished by a Constant) (in terms of GAUSS'S METRICAL UNIT)
January	16° 53'·6	57	1255	2862	105	5485
February	16. 52·8	172	1206	2819	316	5271
March	16. 52·2	192	1175	2787	352	5135
April	16. 51·1	161	1140	2729	296	4982
May	16. 50·5	229	1143	2697	420	4995
June	16. 50·5	334	1248	2697	613	5454
July	16. 50·4	373	1253	2691	685	5476
August	16. 50·0	376	1246	2670	690	5446
September	16. 49·5	340	1175	2643	624	5135
October	16. 49·2	340	1112	2627	624	4860
November	16. 49·4	322	1027	2638	591	4489
December	16. 48·4	243	937	2584	446	4095
Means	16° 50'·6	......	......	2704	......	......
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; in columns 4, 5, and 6 the unit is ·00001 of the Millimètre-Milligramme-Second Unit, or ·000001 of the Centimètre-Gramme-Second (C.G.S.) Unit, in terms of which units the values of the whole Horizontal Force (applicable to columns 4 and 5) are 1·8357 and 0·18357 respectively for the year, and of whole Vertical Force (applicable to column 6) are 4·3705 and 0·43705 respectively for the year.

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 1897.

(*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 GAUSS'S METRICAL UNIT.		
Midnight.	′ 0·66	116·0	17·2	35·2	212·9	75·2
1ʰ	0·81	111·4	12·8	43·3	204·5	55·9
2	0·93	106·2	10·5	49·7	195·0	45·9
3	0·96	103·6	10·0	51·3	190·2	43·7
4	0·86	102·4	12·6	45·9	188·0	55·1
5	0·68	101·7	14·6	36·3	186·7	63·8
6	0·37	94·6	16·8	19·8	173·7	73·4
7	0·08	79·5	19·6	4·3	145·9	85·7
8	0·00	52·0	19·0	0·0	95·5	83·0
9	0·50	21·0	14·1	26·7	38·5	61·6
10	1·96	0·0	6·5	104·7	0·0	28·4
11	4·05	0·5	0·0	216·3	0·9	0·0
Noon.	5·88	24·9	1·0	314·0	45·7	4·4
13ʰ	6·76	51·0	7·6	361·0	93·6	33·2
14	6·48	74·0	19·1	346·0	135·8	83·5
15	5·48	91·5	30·5	292·6	168·0	133·3
16	4·32	102·0	36·2	230·7	187·2	158·2
17	3·31	117·9	40·2	176·7	216·4	175·7
18	2·46	132·4	41·8	131·4	243·0	182·7
19	1·86	137·4	39·7	99·3	252·2	173·5
20	1·31	132·4	35·9	70·0	243·0	156·9
21	0·82	124·5	32·2	43·8	228·5	140·7
22	0·60	119·0	28·6	32·0	218·4	125·0
23	0·55	119·0	23·0	29·4	218·4	100·5
Means . . .	′ 2·15	88·1	20·4	115·0	161·7	89·1
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; in columns 4, 5, and 6 the unit is ·00001 of the Millimètre-Milligramme-Second Unit, or ·000001 of the Centimètre-Gramme-Second (C.G.S.) Unit, in terms of which units the values of whole Horizontal Force (applicable to columns 4 and 5) are 1·8357 and 0·18357 respectively, and of whole Vertical Force (applicable to column 6) are 4·3705 and 0·43705 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.)

1897.

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	10·3	289	3·9	150	11·3	66	13·0	315	12·9	322	10·1	280	8·0	232	15·0	337	11·6	195	14·0	310	9·3	148	5·3	153
2	22·0	317	3·8	55	7·1	207	19·0	508	17·5	287	9·1	328	8·9	242	12·1	337	10·1	222	7·9	314	6·5	99	3·8	165
3	13·5	359	14·0	199	13·0	164	12·0	231	12·9	288	14·8	341	9·7	239	10·8	245	13·0	264	9·0	306	7·3	112	5·8	93
4	3·3	135	11·6	150	15·1	174	14·4	316	7·2	289	13·3	308	9·2	203	9·8	178	12·0	261	7·2	243	5·5	165	5·0	92
5	2·3	112	7·0	146	11·0	134	11·3	350	8·4	296	10·9	327	7·0	246	9·3	251	13·6	414	7·7	159	4·0	153	7·0	159
6	3·8	81	5·5	90	12·2	194	15·6	292	8·8	201	9·2	310	11·0	230	8·9	190	9·3	198	8·0	227	10·0	138	5·5	137
7	3·4	135	7·2	113	8·6	280	11·0	353	5·5	161	8·3	205	9·4	243	9·3	185	9·9	245	7·3	209	6·1	70	5·4	157
8	7·6	130	8·7	109	16·9	263	10·9	361	7·3	241	9·4	194	7·1	187	9·1	197	9·1	187	7·0	136	5·2	148	3·4	115
9	3·7	101	5·3	159	17·8	256	11·1	395	7·8	180	7·0	145	7·0	290	12·3	149	8·8	249	6·9	105	7·0	118	4·1	141
10	5·2	133	12·1	182	17·0	351	9·5	422	7·9	201	7·9	255	9·5	232	10·6	242	10·8	298	13·7	219	6·4	58	9·7	75
11	7·1	125	7·9	186	9·7	257	8·9	248	9·5	271	9·2	177	7·3	146	8·3	218	14·7	272	9·2	180	4·0	76	16·7	477
12	8·5	130	6·3	137	6·6	190	10·4	201	9·3	198	7·6	272	8·2	297	9·6	192	13·6	298	9·9	150	4·4	138	4·1	270
13	7·1	103	9·4	204	11·7	242	9·0	276	10·4	313	12·4	281	8·6	228	10·0	240	7·2	345	6·1	187	5·9	119	2·5	141
14	6·9	163	9·6	193	10·8	150	13·4	282	13·5	262	7·9	247	12·7	342	12·3	172	11·6	330	7·1	273	7·5	236	2·3	82
15	4·7	221	4·6	119	8·3	94	10·6	237	8·2	238	10·1	237	12·1	271	11·5	319	9·0	170	10·9	173	6·4	154	8·9	163
16	6·2	95	4·0	76	7·8	177	15·6	186	9·3	265	14·9	387	10·6	247	10·7	252	11·2	180	12·0	203	3·7	95	4·3	145
17	5·4	247	3·6	82	13·4	194	13·3	338	13·9	315	13·5	384	10·0	208	10·6	347	8·0	272	8·6	260	17·2	259	8·7	170
18	5·2	68	3·1	81	8·5	147	9·6	267	9·0	341	11·7	313	12·0	255	11·1	219	8·2	150	11·9	280	7·5	140	8·6	78
19	4·8	137	4·9	151	11·3	188	13·3	323	10·9	316	9·0	309	10·2	265	13·2	235	5·4	169	7·5	248	7·2	96	3·8	64
20	2·4	72	7·4	57	11·0	185	21·3	477	15·0	369	9·8	216	8·4	250	9·0	265	6·5	105	5·3	170	11·9	186	21·4	635
21	2·6	45	7·0	187	9·4	143	10·3	258	14·4	406	10·0	286	6·1	223	11·2	222	8·2	153	5·0	127	4·2	64	6·4	220
22	3·2	62	7·9	148	9·0	138	8·8	242	6·1	361	11·7	297	18·0	367	10·1	235	7·1	170	6·8	53	5·5	102	5·9	179
23	5·7	28	9·3	188	12·4	209	20·1	416	7·9	384	8·5	199	9·3	229	9·4	219	10·9	199	7·5	185	3·7	66	5·6	84
24	5·7	62	10·7	171	11·8	250	15·5	441	8·3	373	6·5	265	8·9	242	9·1	182	...	...	...	164	14·8	209	5·9	115
25	7·3	189	8·3	233	8·4	198	8·3	360	10·2	355	9·4	243	9·5	248	8·1	225	7·7	167	...	133	8·5	143	4·5	78
26	3·8	165	8·0	229	8·4	148	9·0	239	9·2	206	11·7	137	8·6	257	11·6	229	8·0	180	8·0	136	6·5	140	3·4	71
27	5·3	90	13·0	200	9·3	190	7·4	180	11·0	246	10·9	317	9·6	204	9·6	189	7·3	204	11·3	190	6·4	130	1·5	106
28	4·2	160	6·2	142	12·1	221	12·0	239	12·1	262	8·7	228	11·2	229	10·9	251	5·5	170	11·4	173	5·3	91	2·6	129
29	11·1	210			17·9	312	12·6	216	11·8	300	10·5	194	10·2	195	9·9	282	5·2	174	8·2	290	5·7	157	12·1	279
30	4·9	208			11·6	279	12·1	194	15·5	481	9·7	207	15·7	269	11·9	215	7·0	191	9·0	212	3·5	157	9·5	185
31	6·0	215			11·2	204			9·8	292			16·4	578	11·6	207			6·3	134			10·7	329
Means	6·2	148	7·5	148	11·3	200	12·3	305	10·4	291	10·1	263	10·0	255	10·6	233	9·4	222	8·6	198	6·9	132	6·6	171

The mean of the twelve monthly values is, for Declination 9′·16, and for Horizontal Force 213·8.

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, 1897.	Difference between the Greatest and Least of the 24 Hourly Values.			Sums of the 24 Hourly Deviations from the Mean Value.		
	Declination.	Horizontal Force.	Vertical Force.	Declination.	Horizontal Force.	Vertical Force.
	′			′		
January	4·9	84	25	29·0	368	187
February	5·4	80	45	33·1	420	338
March	8·6	141	52	54·0	836	316
April	10·1	243	72	57·4	1408	460
May	9·1	240	80	52·0	1516	421
June	9·0	213	52	55·5	1353	283
July	8·5	209	41	50·5	1347	211
August	9·6	196	46	55·0	1150	241
September	8·1	160	30	48·6	953	178
October	6·0	129	30	37·4	716	196
November	5·3	62	25	28·9	275	143
December	4·4	69	35	23·2	338	248
Means	7′·42	152·2	44·4	43′·72	890	268·5

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, 1897.	m	a_1	b_1	a_2	b_2	a_3	b_3	a_4	b_4
					DECLINATION WEST.				
January	1′·72	− 1′·73	− 0′·50	+ 0′·24	+ 0′·67	− 0′·31	− 0′·02	+ 0′·37	+ 0′·05
February	1·96	− 1·74	− 0·76	+ 0·37	+ 1·10	− 0·43	− 0·23	+ 0·25	+ 0·21
March	2·62	− 2·61	− 1·62	+ 0·79	+ 1·88	− 0·59	− 0·69	+ 0·25	+ 0·40
April	3·62	− 2·57	− 1·68	+ 1·29	+ 2·10	− 0·75	− 0·82	+ 0·29	+ 0·12
May	3·73	− 2·03	− 2·25	+ 1·52	+ 1·38	− 0·70	− 0·32	+ 0·26	+ 0·01
June	4·01	− 1·94	− 2·79	+ 1·31	+ 1·30	− 0·60	− 0·29	− 0·05	+ 0·01
July	3·49	− 1·73	− 2·50	+ 1·26	+ 1·38	− 0·39	− 0·47	+ 0·07	+ 0·13
August	3·46	− 2·53	− 2·10	+ 1·53	+ 1·38	− 0·81	− 0·40	+ 0·02	+ 0·23
September	2·63	− 2·41	− 1·61	+ 1·28	+ 1·13	− 0·78	− 0·38	+ 0·20	+ 0·18
October	1·84	− 1·96	− 0·67	+ 0·79	+ 1·27	− 0·51	− 0·31	+ 0·40	− 0·02
November	2·30	− 1·87	− 0·23	+ 0·22	+ 0·85	− 0·21	+ 0·01	+ 0·15	+ 0·23
December	1·93	− 1·48	+ 0·09	+ 0·24	+ 0·72	− 0·10	− 0·22	+ 0·20	+ 0·06
For the Year	2·15	− 2·05	− 1·39	+ 0·90	+ 1·26	− 0·51	− 0·34	+ 0·20	+ 0·14
					HORIZONTAL FORCE.				
January	47·0	+ 12·0	+ 11·0	− 17·2	+ 5·3	+ 6·4	− 7·4	+ 4·8	+ 6·8
February	53·2	+ 21·8	− 1·2	− 17·1	− 0·5	+ 4·7	− 10·7	− 0·9	+ 9·2
March	97·9	+ 46·0	− 16·6	− 27·8	+ 11·4	+ 8·7	− 14·1	+ 0·7	+ 8·8
April	160·5	+ 75·5	− 39·3	− 45·6	+ 19·2	+ 10·7	− 11·1	+ 3·3	+ 8·4
May	126·2	+ 66·8	− 70·3	− 29·8	+ 21·8	+ 0·3	+ 2·6	+ 8·9	− 2·7
June	117·0	+ 65·6	− 59·8	− 20·9	+ 12·7	− 4·4	− 1·4	+ 2·9	+ 2·8
July	122·6	+ 68·8	− 52·1	− 29·9	+ 14·6	+ 0·4	− 7·5	− 1·4	+ 2·0
August	115·7	+ 57·9	− 51·2	− 14·2	+ 17·5	− 9·8	− 9·2	+ 5·5	+ 7·3
September	114·0	+ 52·9	− 32·0	− 12·9	+ 22·5	− 2·1	− 16·5	+ 6·6	+ 8·5
October	93·7	+ 42·1	− 8·6	− 18·8	+ 14·2	+ 5·1	− 18·0	+ 6·0	+ 10·0
November	38·6	+ 8·4	+ 2·8	− 15·6	+ 4·2	+ 3·3	− 5·6	+ 4·9	+ 4·8
December	34·7	+ 9·8	+ 15·6	− 14·9	− 0·2	+ 2·3	− 3·3	+ 1·6	+ 4·6
For the Year	88·1	+ 44·0	− 25·1	− 22·1	+ 11·9	+ 2·1	− 8·5	+ 3·5	+ 5·9
					VERTICAL FORCE.				
January	10·1	− 1·0	− 11·0	− 3·6	− 0·5	+ 0·2	− 1·1	− 1·2	+ 1·5
February	17·2	+ 1·7	− 20·6	− 6·9	− 2·3	+ 1·6	+ 1·0	− 1·4	0·0
March	24·4	+ 5·0	− 16·2	− 12·6	− 1·8	+ 6·1	+ 0·5	− 2·2	+ 0·1
April	30·4	+ 3·6	− 25·2	− 16·3	− 3·2	+ 7·8	− 0·2	− 2·0	+ 0·1
May	44·0	+ 15·7	− 18·7	− 19·2	− 1·8	+ 4·5	− 2·6	− 1·6	+ 0·1
June	27·1	+ 10·3	− 12·0	− 12·2	− 3·6	+ 3·3	− 1·9	+ 0·7	− 0·6
July	24·9	+ 8·3	− 4·3	− 11·0	− 2·8	+ 5·6	− 0·5	− 0·6	− 0·6
August	27·0	+ 6·9	− 5·8	− 13·3	− 0·2	+ 6·6	− 2·3	− 0·7	− 0·2
September	17·9	+ 4·5	− 5·7	− 8·5	− 2·3	+ 4·2	− 1·7	− 1·6	+ 0·6
October	15·7	+ 0·8	− 9·5	− 8·1	− 1·4	+ 3·3	− 1·3	− 2·4	+ 1·1
November	11·2	− 3·5	− 7·6	− 4·8	+ 0·3	+ 2·2	− 1·7	− 1·1	+ 0·5
December	15·0	− 3·7	− 14·8	− 4·8	+ 0·3	+ 3·0	− 1·4	− 1·4	− 0·4
For the Year	20·4	+ 4·0	− 12·6	− 10·1	− 1·6	+ 4·0	− 1·1	− 1·3	+ 0·2

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, 1897.	m	c_1	α	α'	c_2	β	β'	c_3	γ	γ'	c_4	δ	δ'
					DECLINATION WEST.								
	′	′	° ′	° ′	′	° ′	° ′	′	° ′	° ′	′	° ′	° ′
January	1·72	1·80	253.56	256.21	0·71	19.40	24. 30	0·31	266.48	274. 3	0·37	82. 12	91. 52
February	1·96	1·90	246.15	249.44	1·16	18.45	25.43	0·49	241.44	252. 11	0·33	50. 33	64. 29
March	2·62	3·07	238.11	240.19	2·04	22.50	27. 6	0·91	220.22	226.46	0·47	31. 44	40. 16
April	3·62	3·07	236.46	236.46	2·47	31.29	31.29	1·11	222. 10	222. 10	0·31	66. 55	66. 55
May	3·73	3·03	222. 0	221. 8	2·05	47.55	46. 11	0·77	245.31	242.55	0·26	86. 52	83. 24
June	4·01	3·39	214.47	214.53	1·85	45. 4	45. 16	0·66	244.24	244.42	0·05	279. 18	279. 42
July	3·49	3·04	214.35	215.57	1·87	42.29	45. 13	0·61	220. 5	224. 11	0·15	29. 59	35. 27
August	3·46	3·29	230.12	231. 7	2·06	47.54	49.44	0·91	243.46	246. 31	0·23	4. 8	7. 48
September	2·63	2·90	236.16	234.58	1·70	48.34	45.58	0·86	243.54	240. 0	0·27	48. 36	43. 24
October	1·84	2·08	251.13	247.42	1·50	32. 0	24.58	0·59	238.37	228. 4	0·41	93. 4	79. 0
November	2·30	1·88	262.49	259.10	0·88	14.45	7.27	0·21	273. 7	262. 10	0·27	33. 1	18. 25
December	1·93	1·49	273.24	272.27	0·76	18.12	16. 18	0·24	203. 4	200. 13	0·21	71. 38	67. 50
For the Year	2·15	2·47	235.56	235.56	1·55	35.34	35. 34	0·62	236. 13	236. 13	0·24	55. 54	55. 54
					HORIZONTAL FORCE.								
			° ′	° ′		° ′	° ′		° ′	° ′		° ′	° ′
January	47·0	16·3	47.31	49.56	18·0	287.14	292. 4	9·8	139. 2	146. 17	8·3	35. 0	44. 40
February	53·2	21·8	93. 8	96.37	17·2	268.21	275. 19	11·7	156. 20	166. 47	9·3	354. 20	8. 16
March	97·9	48·9	109.53	112. 1	30·0	292.20	296. 36	16·6	148. 17	154. 41	8·8	4. 20	12. 52
April	160·5	85·1	117.28	117.28	49·5	292.50	292. 50	15·4	136. 14	136. 14	9·1	21. 18	21. 18
May	126·2	97·0	136.27	135.35	36·9	306.10	304. 26	2·6	7. 5	4. 29	9·3	106. 43	103. 15
June	117·0	88·7	132.21	132.27	24·5	301.18	301. 30	4·6	252. 7	252.25	4·0	45. 35	45. 59
July	122·6	86·3	127. 9	128.31	33·3	296. 7	298. 51	7·5	177. 13	181. 19	2·5	324. 55	330. 23
August	115·7	77·3	131.30	132.25	22·5	320.53	322. 43	13·5	226. 54	229. 39	9·2	37. 14	40. 54
September	114·0	61·8	121. 9	119.51	25·9	330.13	327. 37	16·7	187. 6	183. 12	10·8	37. 42	32. 30
October	93·7	43·0	101.35	98. 4	23·5	307. 1	299. 59	18·7	164. 6	153. 33	11·6	31. 4	17. 0
November	38·6	8·9	71.21	67.42	16·2	284.58	277. 40	6·5	149. 18	138. 21	6·9	45. 15	30. 39
December	34·7	18·4	32. 2	31. 5	14·9	269.23	267. 29	4·1	145. 6	142. 15	4·8	19. 39	15. 51
For the Year	88·1	50·7	119.45	119.45	25·1	298.19	298. 19	8·8	165. 58	165. 58	6·9	31. 5	31. 5
					VERTICAL FORCE.								
			° ′	° ′		° ′	° ′		° ′	° ′		° ′	° ′
January	10·1	11·0	184.59	187.24	3·6	261.56	266. 46	1·1	171. 3	178. 18	1·9	321. 27	331. 7
February	17·2	20·7	175.22	178.51	7·2	251.50	258. 48	1·9	58. 57	69. 24	1·4	270. 0	283. 56
March	24·4	17·0	163. 0	165. 8	12·7	261.51	266. 7	6·1	85.46	92. 10	2·2	271. 57	280. 29
April	30·4	25·5	171.53	171.53	16·6	258.58	258. 58	7·8	91. 32	91. 32	2·0	274. 3	274. 3
May	44·0	24·4	140. 0	139. 8	19·3	264.42	262. 58	5·2	119. 38	117. 2	1·6	275. 7	271. 39
June	27·1	15·8	139.22	139.28	12·8	253.24	253. 36	3·8	119.49	120. 7	0·9	130. 47	131. 11
July	24·9	9·4	117.30	118.52	11·4	255.59	258. 43	5·6	94. 52	98. 58	0·8	225. 25	230. 53
August	27·0	9·0	129.54	130.49	13·3	269.13	271. 3	6·9	109. 8	111. 53	0·7	253. 0	256. 40
September	17·9	7·3	142. 4	140.46	8·8	254.35	251.59	4·5	112. 29	108. 35	1·7	289. 58	284. 46
October	15·7	9·5	175. 5	171.34	8·2	259.58	252. 56	3·6	111. 5	100. 32	2·6	294. 31	280. 27
November	11·2	8·4	204.24	200.45	4·8	273.48	266. 30	2·8	126. 48	115. 51	1·2	294. 19	279. 43
December	15·0	15·2	193.53	192.56	4·8	274. 0	272. 6	3·3	115. 51	113. 0	1·5	253. 0	249. 12
For the Year	20·4	13·3	162.11	162.11	10·2	260.54	260·54	4·2	105.19	105.19	1·3	277·58	277·58

TABLE XVII.—SEPARATE RESULTS of OBSERVATIONS of MAGNETIC DIP made in the YEAR 1897.

Greenwich Civil Time, 1897.		Needle.	Magnetic Dip.	Observer.
	d h		° ′ ″	
Jan.	1. 15	C_1	67. 7. 0	E
	5. 15	D_1	67. 7. 58	E
	6. 15	D_2	67. 8. 59	E
	8. 15	C_2	67. 9. 51	E
	12. 12	B_1	67. 6. 54	E
	13. 12	B_2	67. 6. 12	N
	18. 15	B_2	67. 8. 7	N
	20. 15	B_1	67. 7. 54	N
	21. 13	C_2	67. 8. 52	N
	25. 14	D_2	67. 8. 58	E
	27. 12	D_1	67. 9. 18	N
	29. 13	C_1	67. 7. 36	N
Feb.	3. 14	C_2	67. 10. 11	E
	4. 11	B_2	67. 8. 2	E
	10. 12	B_1	67. 9. 15	E
	10. 13	C_1	67. 8. 43	E
	12. 14	D_2	67. 9. 3	E
	12. 15	D_1	67. 7. 23	E
	15. 16	D_1	67. 9. 39	N
	16. 13	D_2	67. 6. 38	N
	18. 12	C_1	67. 5. 42	N
	18. 16	B_1	67. 6. 9	N
	24. 15	B_2	67. 5. 32	N
	25. 12	C_2	67. 8. 1	N
Mar.	2. 15	B_1	67. 7. 58	E
	3. 14	B_2	67. 5. 27	E
	5. 15	C_2	67. 10. 26	E
	9. 15	D_1	67. 8. 6	N
	12. 15	D_2	67. 7. 20	E
	13. 12	C_1	67. 7. 45	N
	17. 12	C_1	67. 6. 57	E
	19. 15	D_2	67. 7. 43	N
	22. 16	D_1	67. 8. 1	N
	25. 16	C_2	67. 7. 50	N
	27. 12	B_2	67. 5. 14	N
	30. 13	B_1	67. 7. 58	N
Apr.	3. 13	C_1	67. 6. 54	N
	6. 15	D_1	67. 9. 40	N
	8. 15	D_2	67. 6. 29	N
	9. 13	D_2	67. 8. 47	N
	9. 15	C_2	67. 9. 13	N
	12. 12	B_2	67. 6. 54	N
	12. 15	B_1	67. 5. 47	N
	17. 12	B_1	67. 7. 13	N
	20. 15	B_2	67. 7. 22	E
	21. 12	B_2	67. 7. 6	E
	22. 15	C_2	67. 8. 44	E
	23. 15	D_1	67. 7. 53	E
	26. 12	D_2	67. 8. 9	E
	28. 16	C_1	67. 5. 49	E
	29. 15	C_1	67. 6. 16	E
May	3. 15	C_2	67. 7. 59	N
	4. 12	B_2	67. 7. 9	N
	6. 15	B_1	67. 6. 16	N
	10. 16	C_1	67. 4. 0	N
	12. 11	C_1	67. 4. 26	N
	13. 11	D_2	67. 6. 19	N
	13. 13	D_1	67. 6. 5	N
	17. 15	D_1	67. 6. 36	E
	19. 15	D_2	67. 7. 12	E
	20. 13	C_1	67. 6. 51	E
	25. 15	B_1	67. 4. 49	E
	27. 15	B_2	67. 6. 1	E
	28. 11	C_2	67. 8. 53	E
June	2. 16	B_1	67. 5. 6	N
	3. 15	B_2	67. 2. 50	N
	4. 12	B_2	67. 4. 19	N
	8. 15	C_2	67. 4. 49	N
	10. 15	D_1	67. 4. 15	N
	11. 13	D_2	67. 6. 42	N
	11. 15	D_1	67. 5. 31	N
	14. 16	C_1	67. 4. 35	N
	16. 15	C_1	67. 5. 49	E
	18. 15	D_2	67. 7. 37	E
	23. 15	D_1	67. 6. 25	E
	24. 15	C_2	67. 6. 54	E
	28. 15	B_2	67. 2. 32	E
	28. 16	B_1	67. 7. 16	E
	29. 11	B_2	67. 4. 25	E
July	3. 11	C_1	67. 6. 56	N
	6. 12	D_1	67. 5. 30	N
	6. 15	D_2	67. 4. 40	N
	8. 16	C_2	67. 3. 15	N
	13. 16	B_1	67. 3. 38	E
	14. 13	B_2	67. 0. 33	N
	19. 15	B_2	67. 0. 39	E
	19. 16	B_1	67. 5. 25	E
	23. 11	C_2	67. 4. 8	E
	24. 12	D_1	67. 6. 14	E
	26. 15	D_2	67. 5. 10	E
	27. 16	C_1	67. 4. 45	E
Aug.	4. 13	C_2	67. 7. 25	N
	6. 15	B_2	67. 5. 57	N
	6. 16	B_1	67. 5. 58	N
	10. 15	C_1	67. 6. 26	N
	13. 12	D_2	67. 5. 54	E
	13. 15	D_1	67. 6. 34	E
	16. 15	D_2	67. 6. 19	N
	16. 16	D_1	67. 6. 38	N
	21. 12	C_1	67. 6. 46	E
	25. 14	B_1	67. 5. 52	E
	26. 15	B_2	67. 4. 17	E
	27. 12	C_2	67. 7. 47	E
Sept.	2. 15	B_1	67. 3. 48	N
	3. 15	B_2	67. 4. 16	N
	6. 15	C_2	67. 6. 35	E
	9. 15	D_1	67. 5. 13	E
	10. 15	D_2	67. 4. 16	E
	13. 15	C_1	67. 6. 24	E
	17. 15	C_1	67. 5. 53	N
	18. 12	D_2	67. 8. 9	N
	21. 15	D_1	67. 5. 51	N
	23. 15	C_2	67. 7. 26	N
	27. 16	B_2	67. 5. 44	N
	28. 16	B_1	67. 4. 9	N
Oct.	1. 13	C_1	67. 4. 56	N
	4. 15	D_1	67. 5. 50	N
	6. 15	D_2	67. 7. 54	N
	8. 16	C_2	67. 6. 35	N
	12. 15	B_1	67. 5. 6	E
	14. 15	B_2	67. 5. 43	E
	18. 15	B_2	67. 7. 9	N
	19. 15	B_1	67. 4. 40	N
	22. 12	C_2	67. 7. 13	E
	25. 15	D_2	67. 7. 29	E
	28. 15	D_1	67. 5. 10	E
	28. 16	C_1	67. 4. 17	E
Nov.	4. 15	C_2	67. 7. 58	N
	5. 16	B_2	67. 3. 14	N
	6. 12	B_1	67. 5. 19	N
	9. 15	C_1	67. 5. 41	E
	13. 12	D_2	67. 7. 40	N
	16. 13	D_1	67. 7. 2	N
	16. 14	C_2	67. 7. 0	N
	17. 14	D_1	67. 6. 21	E
	19. 12	D_2	67. 7. 4	E
	23. 13	C_1	67. 5. 40	N
	26. 12	B_1	67. 4. 35	E
	26. 15	B_2	67. 6. 12	E
	29. 15	C_2	67. 8. 11	E
Dec.	3. 14	B_1	67. 7. 10	N
	4. 11	B_2	67. 5. 38	N
	7. 11	C_2	67. 5. 33	N
	8. 13	D_1	67. 7. 15	N
	10. 12	D_2	67. 8. 18	N
	10. 15	C_1	67. 7. 42	N
	14. 14	B_1	67. 3. 14	N
	14. 15	C_1	67. 6. 0	N
	17. 11	C_1	67. 6. 15	E
	21. 11	D_2	67. 8. 20	E
	22. 11	D_1	67. 8. 34	E
	23. 15	C_2	67. 5. 19	E
	28. 15	B_2	67. 4. 57	E
	30. 15	B_1	67. 3. 10	E

The needles B_1 and B_2 are 9 inches in length; C_1 and C_2, 6 inches; and D_1 and D_2, 3 inches.
The initials N and E are those of Mr Nash and Mr Edney.

TABLE XVIII.—MONTHLY and YEARLY MEANS of MAGNETIC DIP in the YEAR 1897.

Monthly Means of Magnetic Dip.

Month, 1897.	B_1, 9-inch Needle.	Number of Observations.	B_2, 9-inch Needle.	Number of Observations.	C_1, 6-inch Needle.	Number of Observations.
	° ′ ″		° ′ ″		° ′ ″	
January	67. 7.24	2	67. 7. 9	2	67. 7.18	2
February	67. 7.42	2	67. 6.47	2	67. 7.12	2
March	67. 7.58	2	67. 5.20	2	67. 7.21	2
April	67. 6.30	2	67. 7. 7	3	67. 6.20	3
May	67. 5.32	2	67. 6.35	2	67. 5. 6	3
June	67. 6.11	2	67. 3.31	4	67. 5.12	2
July	67. 4.32	2	67. 0.36	2	67. 5.51	2
August	67. 5.55	2	67. 5. 7	2	67. 6.36	2
September	67. 3.58	2	67. 5. 0	2	67. 6. 9	2
October	67. 4.53	2	67. 6.26	2	67. 4.36	2
November	67. 4.57	2	67. 4.43	2	67. 5.41	2
December	67. 4.31	3	67. 5.17	2	67. 6.39	3
Means	67. 5.47	Sum 25	67. 5.14	Sum 27	67. 6. 9	Sum 27

Month, 1897.	C_2, 6-inch Needle.	Number of Observations.	D_1, 3-inch Needle.	Number of Observations.	D_2, 3-inch Needle.	Number of Observations.
	° ′ ″		° ′ ″		° ′ ″	
January	67. 9.22	2	67. 8.38	2	67. 8.58	2
February	67. 9. 6	2	67. 8.31	2	67. 7.50	2
March	67. 9. 8	2	67. 8. 3	2	67. 7.32	2
April	67. 8.59	2	67. 8.46	2	67. 7.48	3
May	67. 8.26	2	67. 6.21	2	67. 6.45	2
June	67. 5.52	2	67. 5.24	3	67. 7. 9	2
July	67. 3.42	2	67. 5.52	2	67. 4.55	2
August	67. 7.36	2	67. 6.36	2	67. 6. 6	2
September	67. 7. 0	2	67. 5.32	2	67. 6.12	2
October	67. 6.54	2	67. 5.30	2	67. 7.42	2
November	67. 7.43	3	67. 6.42	2	67. 7.22	2
December	67. 5.26	2	67. 7.54	2	67. 8.19	2
Means	67. 7.27	Sum 25	67. 6.55	Sum 25	67. 7.15	Sum 25

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.

COLLECTED YEARLY MEANS of MAGNETIC DIP for each of the NEEDLES, and GENERAL MEAN for the YEAR 1897.

Lengths of the several Sets of Needles.	Needles.	Number of Observations with each Needle.	Mean Yearly Dip from Observations with each Needle.	Mean Yearly Dip from each Set of Needles.	Mean Yearly Dip from all the Sets of Needles.
			° ′ ″	° ′ ″	° ′ ″
9-inch Needles	B_1	25	67. 5.47	67. 5.30	67. 6.28
	B_2	27	67. 5.14		
6-inch Needles	C_1	27	67. 6. 9	67. 6.48	
	C_2	25	67. 7.27		
3-inch Needles	D_1	25	67. 6.55	67. 7. 5	
	D_2	25	67. 7.15		

TABLE XIX.—DETERMINATIONS of the ABSOLUTE VALUE of HORIZONTAL MAGNETIC FORCE in the YEAR 1897.

Abstract of the Observations of Deflexion of a Magnet for Absolute Measure of Horizontal Force made with the Gibson Instrument.

Greenwich Civil Time, 1897.	Place of Observation.	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 14. 14	Library	1·0 1·3	44·8	9. 53. 27 4. 29. 28	5·767 5·770	100 100	44·1 44·1	N
February 16. 15	Library	1·0 1·3	50·9	9. 51. 38 4. 29. 0	5·775 5·774	100 100	49·4 49·6	N
March 16. 15	Library	1·0 1·3	51·0	9. 51. 36 4. 28. 47	5·771 5·776	100 100	50·4 51·4	N
April 15. 12	Library	1·0 1·3	54·0	9. 52. 31 4. 28. 55	5·779 5·780	100 100	53·2 54·3	N
May 18. 16	Library	1·0 1·3	62·7	9. 50. 24 4. 27. 56	5·788 5·785	100 100	63·1 64·2	N
May 20. 14	Greenwich Park	1·0 1·3	67·1	9. 50. 47 4. 28. 13	5·786 5·793	100 100	69·2 73·8	N
June 15. 16	Library	1·0 1·3	69·3	9. 48. 21 4. 27. 7	5·779 5·781	100 100	69·2 70·5	N
June 28. 15	Greenwich Park	1·0 1·3	76·0	9. 48. 55 4. 27. 24	5·799 5·799	100 100	78·3 78·4	N
July 13. 15	Greenwich Park	1·0 1·3	73·2	9. 48. 0 4. 26. 50	5·808 5·803	100 100	80·7 77·9	N
July 21. 16	Library	1·0 1·3	69·5	9. 48. 0 4. 26. 54	5·789 5·788	100 100	69·4 70·3	N
August 14. 13	Library	1·0 1·3	67·0	9. 49. 14 4. 27. 31	5·796 5·792	100 100	66·9 67·6	N
August 27. 15	Greenwich Park	1·0 1·3	67·9	9. 48. 2 4. 27. 1	5·800 5·798	100 100	71·0 70·0	N
September 7. 14	Greenwich Park	1·0 1·3	59·9	9. 48. 47 4. 27. 44	5·797 5·793	100 100	61·7 58·4	N
September 8. 15	Library	1·0 1·3	58·1	9. 50. 1 4. 27. 39	5·786 5·786	100 100	58·1 58·4	N
October 11. 16	Library	1·0 1·3	56·4	9. 50. 11 4. 28. 0	5·782 5·784	100 100	55·5 55·9	N
October 22. 14	Greenwich Park	1·0 1·3	53·7	9. 50. 40 4. 28. 0	5·793 5·787	100 100	54·8 54·0	N
November 18. 14	Greenwich Park	1·0 1·3	55·9	9. 50. 46 4. 28. 9	5·793 5·787	100 100	58·5 53·3	N
November 19. 15	Library	1·0 1·3	54·0	9. 49. 52 4. 27. 58	5·785 5·783	100 100	52·9 53·5	N
December 13. 15	Library	1·0 1·3	48·0	9. 51. 40 4. 28. 26	5·784 5·786	100 100	47·0 47·5	N
December 17. 13	Greenwich Park	1·0 1·3	55·2	9. 51. 17 4. 28. 11	5·793 5·792	100 100	59·9 55·7	N

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 deflexion given in the table above is the mean of the four deflexions observed in these positions of the magnets.
The initial N is that of Mr Nash.
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 Library at the Observatory.

Greenwich Civil Time, 1897.	In English Measure.									In Metric Measure.	
	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. mX.	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. 14. 14	0·08601	0·08614	− 0·00361		8·93601	5·7782	0·13722	0·3440	3·9867	1·8382	1·8381
Feb. 16. 15	0·08584	0·08608	− 0·00682		8·93543	5·7818	0·13673	0·3436	3·9870	1·8384	1·8380
Mar. 16. 15	0·08584	0·08608	− 0·00491		8·93525	5·7788	0·13716	0·3437	3·9898	1·8396	1·8382
Apr. 15. 12	0·08601	0·08610	− 0·00231		8·93590	5·7840	0·13641	0·3437	3·9834	1·8367	1·8376
May 18. 16	0·08584	0·08591	− 0·00209		8·93500	5·7866	0·13609	0·3432	3·9861	1·8379	1·8359
June 15. 16	0·08564	0·08575	− 0·00310		8·93409	5·7814	0·13691	0·3432	3·9940	1·8416	1·8403
July 21. 16	0·08559	0·08568	− 0·00254	−0·00326	8·93380	5·7852	0·13633	0·3428	3·9927	1·8410	1·8390
Aug. 14. 13	0·08574	0·08584	− 0·00310		8·93456	5·7924	0·13522	0·3427	3·9841	1·8370	1·8372
Sept. 8. 15	0·08572	0·08575	− 0·00107		8·93428	5·7879	0·13585	0·3428	3·9882	1·8389	1·8380
Oct. 11. 16	0·08571	0·08584	− 0·00361		8·93450	5·7860	0·13613	0·3430	3·9886	1·8391	1·8410
Nov. 19. 15	0·08563	0·08579	− 0·00451		8·93417	5·7879	0·13582	0·3428	3·9887	1·8391	1·8388
Dec. 13. 15	0·08580	0·08586	− 0·00147		8·93476	5·7911	0·13532	0·3428	3·9836	1·8368	1·8370
Means ...	...	...	...	...	...	...	...	...	3·9877	1·8387	1·8383

From Observations made with the Gibson Instrument at a Site in Greenwich Park.

Greenwich Civil Time, 1897.	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. mX.	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					
May 20. 14	0·08596	0·08607	− 0·00310		8·93560	5·7906	0·13552	0·3432	3·9807	1·8354	1·8352
June 28. 15	0·08583	0·08595	− 0·00338		8·93496	5·7928	0·13525	0·3428	3·9824	1·8362	1·8365
July 13. 15	0·08565	0·08572	− 0·00197		8·93394	5·7976	0·13452	0·3422	3·9837	1·8368	1·8366
Aug. 27. 15	0·08558	0·08570	− 0·00350	−0·00297	8·93368	5·7966	0·13464	0·3421	3·9855	1·8376	1·8373
Sept. 7. 14	0·08557	0·08581	− 0·00688		8·93394	5·7958	0·13469	0·3422	3·9845	1·8372	1·8363
Oct. 22. 14	0·08575	0·08580	− 0·00158		8·93437	5·7928	0·13509	0·3426	3·9844	1·8371	1·8351
Nov. 18. 14	0·08579	0·08588	− 0·00259		8·93468	5·7918	0·13525	0·3427	3·9837	1·8368	1·8354
Dec. 17. 13	0·08585	0·08580	− 0·00079		8·93486	5·7940	0·13495	0·3427	3·9814	1·8358	1·8334
Means ...	...	...	...	...	...	...	...	...	3·9833	1·8366	1·8357

The value of X in English Measure is referred to the Foot-Grain-Second Unit, and in Metric Measure to the Millimètre-Milligramme-Second Unit. To obtain X in the Centimètre-Gramme-Second (C.G.S.) Unit, the values in Metric Measure must be divided by 10.

TABLE XIX.—*continued*—DETERMINATIONS of the ABSOLUTE VALUE of HORIZONTAL MAGNETIC FORCE in the YEAR 1897.

Abstract of the Observations of Deflexion of a Magnet for Absolute Measure of Horizontal Force made with the Elliott Instrument.

Greenwich Civil Time, 1897.	Place of Observation.	Distances of Centres of Magnets.	Temperature Centigrade.	Observed Deflexion.	Mean of the Times of Vibration of Deflecting Magnet.	Number of Vibrations.	Temperature Centigrade.	Observer.
d h		cms.	°	° ′ ″	s		°	
January 15. 14	Library	30 40	6·0	19. 44. 31 8. 10. 40	4·203 4·203	100 100	5·7 6·4	N
February 17. 15	Library	30 40	8·4	19. 41. 45 8. 8. 34	4·209 4·205	100 100	8·0 8·4	N
March 18. 16	Library	30 40	10·9	19. 38. 22 8. 8. 4	4·207 4·208	100 100	10·6 11·1	N
April 13. 15	Library	30 40	12·6	19. 38. 0 8. 7. 47	4·206 4·205	100 100	12·1 13·0	N
May 21. 15	Library	30 40	18·2	19. 34. 28 8. 6. 34	4·216 4·214	100 100	18·0 18·6	N
May 25. 14	Greenwich Park	30 40	19·1	19. 38. 33 8. 8. 33	4·230 4·229	100 100	19·1 22·5	N
June 17. 15	Library	30 40	17·4	19. 33. 55 8. 6. 20	4·216 4·216	100 100	16·8 17·3	N
June 21. 13	Greenwich Park	30 40	23·1	19. 31. 11 8. 4. 21	4·238 4·239	100 100	22·6 26·5	N
July 2. 16	Greenwich Park	30 40	17·9	19. 34. 18 8. 6. 40	4·238 4·240	100 100	19·4 19·1	N
July 22. 16	Library	30 40	20·6	19. 27. 1 8. 3. 21	4·226 4·228	100 100	20·6 21·0	N
August 3. 15	Greenwich Park	30 40	28·1	19. 26. 30 8. 3. 10	4·241 4·250	100 100	28·7 28·5	N
August 4. 15	Library	30 40	23·9	19. 24. 4 8. 2. 32	4·231 4·232	100 100	24·6 24·1	N
September 15. 15	Greenwich Park	30 40	16·3	19. 35. 55 8. 7. 2	4·238 4·237	100 100	18·5 16·5	N
September 16. 15	Library	30 40	15·7	19. 28. 51 8. 4. 57	4·226 4·230	100 100	15·6 15·8	N
October 5. 13	Greenwich Park	30 40	14·3	19. 33. 6 8. 6. 15	4·234 4·237	100 100	12·4 15·3	N
October 7. 15	Library	30 40	11·9	19. 32. 1 8. 5. 58	4·218 4·220	100 100	11·8 11·9	N
November 22. 16	Greenwich Park	30 40	8·3	19. 39. 51 8. 8. 47	4·230 ...	100 ...	8·8 ...	N
November 25. 14	Library	30 40	10·1	19. 31. 48 8. 5. 33	4·216 4·216	100 100	10·1 10·0	N
December 7. 14	Library	30 40	8·3	19. 33. 24 8. 6. 24	4·210 4·216	100 100	7·2 8·1	N
December 20. 13	Greenwich Park	30 40	5·7	19. 40. 1 8. 9. 11	4·221 4·222	100 100	5·8 5·9	N

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 deflexion given in the table above is the mean of the four deflexions observed in these positions of the magnets.

The initial N is that of Mr Nash.

In the subsequent calculations every observation is reduced to the temperature 0° Centigrade.

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

From Observations made with the Elliott Instrument in the Library at the Observatory.

Greenwich Civil Time, 1897.	In C.G.S. Measure.									In Metric Measure.	
										Value of Horizontal Force.	
	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 mX.	Value of m.	Value of Horizontal Force X.	As observed.	Reduced to Mean of Month.
d h						s					
Jan. 15. 14	4571·2	4562·9	+ 3·69	+ 3·99	3·65812	4·2033	2·18875	838·4	0·18421	1·8421	1·8433
Feb. 17. 15	4566·5	4549·0	+ 7·86		3·65724	4·2051	2·18841	837·2	0·18433	1·8433	1·8433
Mar. 18. 16	4559·7	4550·3	+ 4·26		3·65698	4·2036	2·18876	837·3	0·18445	1·8445	1·8441
Apr. 13. 15	4562·5	4551·6	+ 4·93		3·65717	4·1998	2·18955	838·2	0·18458	1·8458	1·8445
May 21. 15	4562·8	4553·9	+ 4·03		3·65730	4·2037	2·18880	837·6	0·18440	1·8440	1·8439
June 17. 15	4558·9	4549·8	+ 4·12		3·65692	4·2064	2·18823	836·7	0·18436	1·8436	1·8472
July 22. 16	4540·8	4529·7	+ 5·02		3·65509	4·2128	2·18695	833·7	0·18447	1·8447	1·8426
Aug. 4. 15	4538·0	4530·3	+ 3·46		3·65499	4·2145	2·18663	833·3	0·18443	1·8443	1·8437
Sept. 16. 15	4535·7	4532·6	+ 1·37		3·65499	4·2194	2·18554	832·3	0·18420	1·8420	1·8419
Oct. 7. 15	4538·5	4533·1	+ 2·42		3·65515	4·2148	2·18645	833·3	0·18435	1·8435	1·8448
Nov. 25. 14	4533·5	4546·0	+ 3·79		3·65452	4·2127	2·18686	833·1	0·18457	1·8457	1·8479
Dec. 7. 14	4535·2	4528·8	+ 2·94		3·65478	4·2129	2·18678	833·3	0·18450	1·8450	1·8447
Means ...	...	...	...	...	...	...	...	...	0·18440	1·8440	1·8443

From Observations made with the Elliott Instrument at a Site in Greenwich Park.

Greenwich Civil Time, 1897.	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 mX.	Value of m.	Value of Horizontal Force X.	As observed.	Reduced to Mean of Month.
d h						s					
May 25. 14	4580·2	4574·5	+ 2·56	+ 4·03	3·65908	4·2154	2·18642	837·0	0·18351	1·8351	1·8340
June 21. 13	4562·6	4545·3	+ 7·82		3·65686	4·2206	2·18541	833·9	0·18377	1·8377	1·8391
July 2. 16	4561·4	4554·0	+ 3·36		3·65722	4·2258	2·18425	833·2	0·18345	1·8345	1·8331
Aug. 3. 15	4557·5	4546·8	+ 4·83		3·65670	4·2224	2·18507	833·5	0·18373	1·8373	1·8379
Sept. 15. 15	4563·5	4553·3	+ 4·55		3·65729	4·2275	2·18391	832·9	0·18336	1·8336	1·8337
Oct. 5. 13	4548·1	4541·4	+ 3·03		3·65598	4·2294	2·18346	831·2	0·18354	1·8354	1·8358
Nov. 22. 16	4559·1	4550·9	+ 3·74		3·65696	4·2278	2·18375	832·5	0·18340	1·8340	1·8344
Dec. 20. 13	4553·8	4548·5	+ 2·37		3·65660	4·2225	2·18479	833·1	0·18369	1·8369	1·8340
Means ...	...	...	...	...	...	...	...	...	0·18356	1·8356	1·8352

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 6, 9, 22, 23, 26, February 2, 9, 17, 18, 20, March 14, 15, 16, 18, 20, April 3, 11, 12, 15, 22, May 8, 9, 12, 16, 28, June 8, 9, 10, 12, 30, July 1, 9, 13, 18, 26, August 4, 5, 6, 24, 31, September 13, 18, 19, 26, 28, October 5, 9, 13, 20, 21, November 7, 8, 12, 23, 30, December 8, 13, 26, 27, 28.

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 Millimètre-Milligramme-Second (Metric) Unit. The letter *f* indicates values in terms of the whole Horizontal or Vertical Force, and the letter *m* values in terms of the Metric Unit, the unit for the former values being ·00001 of the whole Horizontal or Vertical Force, and for the latter ·00001 of the Metric Unit, or ·000001 of the Centimètre Gramme-Second (C.G.S.) Unit. The values of the whole Horizontal and Vertical Forces expressed in terms of the Metric Unit are 1·8357 and 4·3705 respectively for the year.

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

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

Hour, Greenwich Civil Time.	1897. January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	For the Year.
Midnight.	0′·1	0′·6	2′·1	4′·0	4′·0	3′·3	3′·5	2′·4	0′·6	1′·5	0′·3	0′·4	1′·58
1^h	0·2	0·7	2·3	3·7	3·7	3·2	3·3	2·5	0·8	1·6	0·7	0·5	1·61
2	0·5	0·8	2·7	3·8	3·6	3·0	3·1	2·6	0·8	1·7	1·3	0·9	1·75
3	0·6	1·2	2·7	3·7	3·4	2·8	2·7	2·7	0·5	1·9	1·5	1·1	1·75
4	0·7	1·1	2·6	3·3	3·2	2·3	2·0	2·1	0·3	1·6	1·7	1·0	1·51
5	0·7	1·0	2·5	3·4	2·3	0·7	0·8	1·2	0·9	1·6	1·2	1·0	1·12
6	0·6	0·7	2·3	2·5	1·4	0·1	0·0	0·5	0·7	1·2	1·1	1·1	0·70
7	0·4	0·5	1·7	1·2	0·2	0·2	0·2	0·0	0·2	0·6	1·1	1·0	0·29
8	0·3	0·4	0·3	0·0	0·0	0·0	0·6	0·4	0·0	0·0	0·9	0·9	0·00
9	0·6	0·3	0·0	0·2	0·9	1·3	1·2	1·3	0·4	0·1	0·9	0·8	0·35
10	1·5	0·9	1·5	1·7	3·1	3·6	3·1	3·2	1·9	1·5	1·5	1·0	1·72
11	2·5	2·2	4·3	4·3	6·3	5·4	5·7	5·8	3·9	3·9	2·9	1·4	3·73
Noon.	3·4	3·4	6·9	7·5	8·5	7·1	7·4	8·4	5·7	5·5	3·9	2·2	5·50
13^h	3·5	4·0	8·7	9·9	9·1	7·8	8·5	9·4	6·3	5·7	4·2	2·3	6·30
14	2·6	3·9	9·1	9·6	8·6	7·7	8·2	9·1	6·0	5·2	3·6	1·7	5·96
15	1·8	3·1	7·7	8·2	6·8	7·0	7·3	7·6	5·2	4·1	2·7	1·2	4·90
16	1·9	2·3	5·6	6·8	5·4	5·9	5·8	5·8	4·1	2·8	2·5	1·2	3·86
17	1·9	2·0	4·1	5·6	4·8	5·1	4·5	4·5	3·6	2·8	2·3	0·9	3·19
18	1·4	1·8	3·6	4·7	4·5	4·8	3·7	3·4	3·4	2·5	2·0	0·8	2·73
19	0·9	1·6	3·1	4·2	4·5	4·6	3·9	3·1	3·1	2·1	1·6	0·7	2·46
20	0·5	1·1	3·1	4·5	4·3	4·3	3·8	3·3	2·3	1·9	1·3	0·6	2·26
21	0·3	0·7	3·1	4·7	4·2	4·2	3·8	3·2	2·0	1·3	0·5	0·1	2·02
22	0·0	0·3	2·9	4·6	4·2	4·0	3·8	3·1	1·8	1·4	0·0	0·0	1·85
23	0·2	0·0	2·3	4·4	4·0	3·1	3·4	3·0	1·6	1·6	0·0	0·0	1·65
24	0·4	0·3	2·2	4·0	3·8	2·8	3·2	2·8	1·2	1·9	0·2	0·2	1·60
Means 0^h–23^h	1′·13	1′·44	3′·55	4′·44	4′·21	3′·81	3′·76	3′·69	2′·34	2′·25	1′·65	0′·95	2′·45
Means 1^h–24^h	1′·14	1′·43	3′·55	4′·44	4′·20	3′·79	3′·75	3′·71	2′·36	2′·27	1′·65	0′·94	2′·45

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.)

1897.

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.	49	90	51	94	112	206	169	310	144	264	138	253	167	307	131	240	127	233	144	264	37	68	2	4	100·6	184·6
1h	51	94	55	101	106	195	162	297	136	250	123	226	160	294	123	226	116	213	119	218	27	50	1	2	93·0	170·7
2	52	95	45	83	101	185	160	294	131	240	109	200	156	286	114	209	116	213	109	200	22	40	0	0	87·6	160·6
3	61	112	42	77	98	180	151	277	123	226	108	198	150	275	106	195	114	209	114	209	38	70	13	24	87·9	161·2
4	64	117	45	83	101	185	154	283	117	215	104	191	143	263	101	185	116	213	115	211	49	90	29	53	89·5	164·3
5	71	130	47	86	105	193	164	301	112	206	87	160	135	248	85	156	115	211	108	198	57	105	41	75	88·6	162·6
6	79	145	49	90	108	198	178	327	90	165	57	105	110	202	70	128	101	185	109	200	55	101	42	77	82·0	150·5
7	75	138	53	97	104	191	160	294	52	95	39	72	84	154	48	88	72	132	93	171	53	97	45	83	67·9	124·5
8	55	101	41	75	74	136	124	228	20	37	22	40	54	99	16	29	38	70	68	125	48	88	51	94	45·6	83·7
9	34	62	19	35	30	55	68	125	4	7	0	0	28	51	0	0	0	0	28	51	24	44	36	66	17·3	31·5
10	12	22	0	0	8	15	22	40	0	0	6	11	0	0	2	4	2	4	0	0	0	0	12	22	0·0	0·0
11	0	0	4	7	0	0	0	0	28	51	25	46	2	4	22	40	28	51	16	29	2	4	1	2	5·4	9·7
Noon.	18	33	27	50	14	26	24	44	50	92	61	112	46	84	54	99	64	117	59	108	15	28	19	35	32·3	59·2
13h	53	97	45	83	46	84	54	99	98	180	79	145	86	158	67	123	90	165	78	143	36	66	47	86	59·6	109·3
14	75	138	61	112	62	114	95	174	137	251	82	151	131	240	72	132	112	206	90	165	40	73	58	106	79·3	145·4
15	73	134	57	105	75	138	139	255	147	270	105	193	169	310	104	191	120	220	87	160	38	70	42	77	91·0	167·1
16	69	127	52	95	93	171	175	321	165	303	123	226	186	341	140	257	128	235	89	163	56	103	48	88	105·0	192·7
17	83	152	62	114	105	193	190	349	187	343	145	266	206	378	160	294	134	246	103	189	76	140	60	110	120·6	221·4
18	93	171	61	112	117	215	198	363	209	384	167	307	222	408	176	323	148	272	115	211	87	160	65	119	132·9	243·9
19	95	174	59	108	137	251	218	400	209	384	197	362	234	430	189	347	158	290	125	229	91	167	69	127	143·1	262·6
20	94	173	66	121	144	264	214	393	201	369	199	365	240	441	179	329	166	305	123	226	83	152	69	127	142·9	262·3
21	85	156	64	117	144	264	208	382	181	332	188	345	232	426	167	307	164	301	127	233	83	152	63	116	136·9	251·1
22	71	130	55	101	139	255	201	369	172	316	181	332	221	406	157	288	169	310	125	229	89	163	48	88	130·4	239·1
23	67	123	75	138	145	266	213	391	183	336	171	314	209	384	145	266	167	307	114	209	95	174	51	94	130·9	240·4
24	71	130	77	141	136	250	208	382	192	352	159	292	203	373	145	266	165	303	120	220	83	152	52	95	128·9	236·5
Means 0^h–23^h	61·6	113·1	47·3	86·8	90·3	165·8	143·4	263·2	120·7	221·5	104·8	192·5	140·5	257·9	101·2	185·7	106·9	196·2	94·1	172·5	50·0	91·9	38·0	69·8	86·3	158·3
1^h–24^h	62·5	114·8	48·4	88·8	91·3	167·7	145·0	266·2	122·7	225·2	105·7	194·1	142·0	260·6	101·7	186·7	108·5	199·1	93·1	170·7	52·0	95·4	40·1	73·6	87·4	160·4

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.)

1897.

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.	26	114	10	44	23	101	48	210	44	192	30	131	34	149	27	118	23	101	11	48	2	9	8	35	20·1	88·3
1^h	22	96	4	17	23	101	44	192	44	192	26	114	34	149	27	118	19	83	9	39	4	17	4	17	18·0	78·6
2	20	87	4	17	27	118	38	166	42	184	26	114	30	131	29	127	22	96	11	48	0	0	6	26	17·6	76·8
3	22	96	2	9	23	101	38	166	42	184	28	122	30	131	28	122	20	87	13	57	0	0	10	44	17·6	77·3
4	27	118	4	17	24	105	40	175	44	192	34	149	36	157	30	131	18	79	19	83	4	17	15	66	20·9	91·4
5	29	127	4	17	22	96	40	175	46	201	38	166	41	179	40	175	20	87	20	87	4	17	13	57	22·7	99·3
6	27	118	2	9	20	87	48	210	51	223	41	179	45	197	40	175	24	105	26	114	2	9	7	31	24·0	105·4
7	27	118	2	9	28	122	54	236	49	214	43	188	45	197	46	201	28	122	32	140	4	17	7	31	26·7	116·9
8	25	109	2	9	34	149	52	227	41	179	37	162	41	179	40	175	20	87	34	149	6	26	5	22	24·4	106·7
9	26	114	4	17	24	105	40	175	23	101	25	109	27	118	26	114	16	70	26	114	6	26	5	22	17·0	74·4
10	20	87	0	0	16	70	24	105	11	48	15	66	19	83	16	70	6	26	16	70	6	26	5	22	9·1	40·1
11	12	52	0	0	2	9	8	35	0	0	3	13	1	4	6	26	0	0	6	26	9	39	0	0	0·2	1·0
Noon.	7	31	3	13	0	0	0	0	3	13	0	0	3	13	0	0	2	9	9	39	13	57	4	17	0·0	0·0
13^h	11	48	7	31	0	0	2	9	16	70	8	35	0	0	4	17	8	35	5	22	19	83	6	26	3·5	15·3
14	23	101	17	74	16	70	18	79	26	114	12	52	8	35	13	57	14	61	5	22	22	96	14	61	12·0	52·5
15	23	101	29	127	30	131	34	149	34	149	14	61	20	87	29	127	18	79	13	57	31	135	12	52	20·2	88·6
16	17	74	31	135	38	166	36	157	44	192	26	114	32	140	33	144	18	79	13	57	29	127	10	44	23·6	103·1
17	23	101	33	144	42	184	42	184	46	201	32	140	34	149	41	179	20	87	7	31	24	105	14	61	26·1	114·5
18	27	118	35	153	34	149	42	184	52	227	32	140	34	149	41	179	18	79	9	39	22	96	14	61	26·3	115·2
19	26	114	35	153	30	131	42	184	50	219	32	140	32	140	39	170	20	87	11	48	20	87	18	79	25·9	113·3
20	18	79	31	135	25	109	38	166	52	227	30	131	32	140	37	162	22	96	13	57	18	79	16	70	24·0	104·9
21	14	61	25	109	23	101	38	166	52	227	32	140	30	131	39	170	21	92	11	48	14	61	14	61	22·4	97·9
22	10	44	27	118	21	92	36	157	48	210	32	140	30	131	39	170	21	92	7	31	12	52	14	61	21·0	92·2
23	10	44	14	61	18	79	31	135	48	210	36	157	30	131	39	170	15	66	7	31	10	44	5	22	18·2	79·8
24	0	0	8	35	16	70	27	118	40	175	28	122	24	105	35	153	13	57	0	0	4	17	1	4	12·6	55·3
Means 0^h–23^h	20·3	89·7	13·5	59·1	22·6	99·0	34·7	151·7	37·8	165·4	26·3	115·1	27·8	121·7	29·5	129·0	17·2	75·2	13·9	60·7	11·7	51·0	9·4	41·2	18·4	80·6
1^h–24^h	19·4	84·9	13·5	58·7	22·3	97·7	33·8	147·9	37·7	164·7	26·3	114·7	27·4	119·8	29·9	130·5	16·8	73·4	13·4	58·7	11·8	51·4	9·1	39·9	18·1	79·2

ROYAL OBSERVATORY, GREENWICH.

MAGNETIC DISTURBANCES

AND

EARTH CURRENTS.

1897.

MAGNETIC DISTURBANCES in DECLINATION, HORIZONTAL FORCE, and VERTICAL FORCE, recorded at the ROYAL OBSERVATORY, GREENWICH, in the Year 1897.

The following notes give a brief description of all magnetic movements (superposed on the ordinary diurnal movement) exceeding 3′ in Declination, 0·001 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).

1897.

January

1^d $2\frac{1}{2}^h$ to $3\frac{1}{2}^h$ Small wave in Dec. (+ 2′). 9^h to 16^h Small fluctuations in Dec. and H.F. 18^h to $21\frac{1}{2}^h$ Long wave in H.F. (− ·0030), followed by fluctuations (± ·0010) till 24^h: 18^h to 23^h long shallow wave in V.F. (+ ·0008). 19^h to 21^h Sharp wave in Dec. (− 17′). 22^h to 23^h Wave in Dec. (+ 5′).

2^d 0^h to 1^h Wave in Dec. (− 4′). 0^h to 5^h Fluctuations in H.F. (± ·0010). 5^h to $6\frac{1}{2}^h$ Wave in Dec. (+ 7′). $5\frac{1}{2}^h$ to 7^h Wave in H.F. (+ ·0020).

2^d 12^h to 3^d 12^h. See Plate I.

3^d 12^h to $13\frac{1}{2}^h$ Wave in Dec. (+ 5′): in H.F. (+ ·0010). $14\frac{1}{2}^h$ to 16^h Wave in Dec. (− 10′): double wave in H.F. (− ·0016 to + ·0010). 15^h to 16^h Wave in V.F. (+ ·0004). $17\frac{1}{2}^h$ to $18\frac{1}{2}^h$ Wave in Dec. (− 4′). 21^h to 23^h Small fluctuations in Dec.: two successive waves in H.F. (+ ·0012) and (+ ·0014).

7^d 0^h to 1^h Small waves in Dec. and H.F. 22^h to $22\frac{1}{2}^h$ Decrease of Dec. (− 3′). 22^h to 23^h Wave in H.F. (+ ·0010).

8^d 20^h to $21\frac{1}{2}^h$ Double wave in Dec. (− 3′ to + 3′). 20^h to 22^h Double wave in H.F. (+ ·0010 to − ·0010).

10^d $16\frac{1}{2}^h$ to 18^h Wave in H.F. (+ ·0010).

11^d 13^h to 15^h Shallow double wave in H.F. (− ·0010 to + ·0010). $13\frac{1}{2}^h$ to 15^h Wave in Dec. (− 5′). 22^h to $23\frac{1}{2}^h$ Double wave in Dec. (+ 3′ to − 3′): wave in H.F. (+ ·0017): in V.F. small.

12^d 0^h to 5^h Small fluctuations in Dec. and H.F. 16^h to 18^h Increase of V.F. (+ ·0005). 17^h to 18^h Wave in Dec. (− 8′). 17^h to $17\frac{1}{2}^h$ Wave in H.F. (+ ·0010). 20^h to $21\frac{1}{2}^h$ Double wave in Dec. (− 7′ to + 3′): in H.F. (− ·0010 to + ·0010). 22^h to 23^h Small double waves in Dec. and H.F.

13^d $1\frac{1}{2}^h$ to $2\frac{1}{2}^h$ Wave in Dec. (+ 4′): in H.F. small: decrease of V.F. (− ·0003). 16^h to 22^h Small fluctuations in Dec. and H.F. $22\frac{1}{2}^h$ to $23\frac{1}{2}^h$ Wave in Dec. (− 4′): in H.F. small.

15^d 0^h to 10^h Fluctuations in Dec. (± 2′), with double wave 4^h to 6^h (− 3′ to + 3′): small fluctuations in H.F., with wave 5^h to $6\frac{1}{2}^h$ (+ ·0018).

16^d 18^h to 23^h Fluctuations in H.F. (± ·0006). $19\frac{1}{2}^h$ to $20\frac{1}{2}^h$ Wave in Dec. (− 4′). 21^h to 22^h Wave in Dec. (− 3′): in H.F. small.

17^d $0\frac{1}{2}^h$ to 2^h Wave in Dec. (+ 4′): in H.F. (+ ·0010): shallow wave in V.F. 4^h to 5^h Increase of Dec. (+ 3′): of H.F. (+ ·0010), followed in Dec. by small wave (− 3′) till $5\frac{1}{2}^h$. 10^h to 11^h Wave in H.F. (− ·0016). 19^h to 21^h Shallow wave in V.F. (− ·0003).

18^d $1\frac{1}{2}^h$ to $2\frac{1}{2}^h$ Wave in Dec. (+ 3′). $20\frac{1}{2}^h$ to $21\frac{1}{2}^h$ Wave in Dec. (− 4′).

19^d 20^h to 21^h Small fluctuations in Dec. and H.F.

20^d 2^h to 5^h Small fluctuations in Dec.

25^d $3\frac{1}{2}^h$ to 4^h Wave in Dec. (+ 3′). $14\frac{1}{2}^h$ to $16\frac{1}{2}^h$ Shallow wave in Dec. (− 3′). 19^h to 21^h Wave in H.F. (− ·0010).

1897.

January 27d 17h to 18h Wave in Dec. (+ 3′): small wave in H.F. (− ·0008).

28d 17h to 19h Serrated wave in H.F. (+ ·0010), followed by fluctuations till 23h. 19h to 20½h Wave in Dec. (− 4′).

29d 0h to 2h Double wave in H.F. (− ·0010 to + ·0010). 0½h to 1½h Wave in Dec. (+ 6′). 2h to 7h Small fluctuations in Dec. 2½h to 3h Sharp wave in H.F. (+ ·0010): in Dec. small. 12h to 17h Small fluctuations in H.F. 13½h to 15h Wave in Dec. (− 4′).

30d 17h to 21h Long shallow wave in H.F. (− ·0020), with small superposed fluctuations. 18h to 21h Small fluctuations in Dec.

31d 15h to 16h Wave in H.F. (− ·0010). 15½h to 16½h Wave in Dec. (− 3′).

February 1d 3½h to 6h Shallow wave in Dec. (− 3′). 12½h to 13h Wave in Dec. (− 3′): in H.F. (− ·0012).

3d 15½h to 18h Shallow wave in V.F. (− ·0003). 18½h to 22½h Four successive waves in Dec. (− 4′), (− 3′), (− 2′), and (− 3′), followed till 24h by double-crested wave (− 12′). 18h to 19h Double wave in H.F. (− ·0010 to + ·0010). 19½h to 20½h Wave in H.F. (− ·0010). 21½h to 23h Double wave in H.F. (− ·0022 to + ·0012). 3d 23½h to 4d 0½h Wave in H.F. (− ·0014).

4d 0h to 9h Fluctuations in Dec. (± 2′), with double-crested wave in Dec. 2½h to 5h (− 8′): fluctuations in H.F. (± ·0006): in V.F. small. 12½h to 13h Wave in Dec. (+ 4′). 12h to 17h Small fluctuations in V.F. 13½h to 14h Wave in Dec. (+ 5′). 18h to 20h Sharp wave in Dec. (− 14′): double wave in H.F. (− ·0012 to + ·0018). 20½h to 24h Two successive waves in Dec. (− 7′) and (− 5′): small fluctuations in H.F.

5d 12h to 12½h Small wave in Dec. (+ 3′). 20h to 22h Wave in Dec. (− 6′): in H.F. (+ ·0024).

6d 20h to 24h Small fluctuations in H.F. 20h to 21½h Wave in Dec. (− 3′). 22h to 23h Wave in Dec. (+ 3′): in H.F. small.

7d 15h to 23h Small fluctuations in Dec. and H.F., with wave in H.F. 18½h to 20h (− ·0010). 7d 23½h to 8d 3h Long wave in Dec. (− 7′).

10d 2h to 4h Two successive waves in Dec. (+ 2′) and (+ 5′). 2h to 6h Small fluctuations in H.F. 11h to 16h Small fluctuations in Dec. and H.F. 19h to 21h Double wave in H.F. (− ·0015 to + ·0015). 19½h to 21h Wave in Dec. (− 10′), followed till 23½h by two smaller waves (− 3′) and (− 4′).

11d 0½h to 2½h Two successive waves in Dec. (+ 3′) and (+ 3′). 3h to 5h Double-crested wave in Dec. (+ 4′): small fluctuations in H.F. 12h to 13h Wave in H.F. (− ·0012). 17h to 18½h Wave in Dec. (− 3′): in H.F. (− ·0012). 23½h to 24h Wave in H.F. (+ ·0012).

12d 16h to 18½h Two successive waves in H.F. (− ·0016) and (− ·0010). 16h to 17½h Wave in Dec. (− 5′), followed by a smaller wave. 22h to 24h Shallow wave in Dec. (− 3′).

13d 20½h to 22h Wave in Dec. (− 6′). 21h to 22h Wave in H.F. (+ ·0012).

14d 0½h to 3h Two successive waves in Dec. (+ 4′) and (+ 8′). 0½h to 1½h Wave in H.F. (+ ·0010). 3½h to 7h Two successive waves in Dec. (+ 6′) and (+ 5′). 4h to 6h Wave in H.F. (+ ·0020): shallow wave in V.F. 8½h to 10h Wave in H.F. (− ·0016). 9h to 10h Increase of Dec. (+ 3′). 14½h to 16h Wave in Dec. (− 7′): in H.F. (− ·0014). 17½h to 21h Two successive waves in Dec. (− 8′) and (− 8′): three successive waves in H.F. (− ·0018), (− ·0014), and (− ·0014). 19h to 20½h Wave in V.F. (− ·0004). 22h to 23h Wave in Dec. (− 5′). 22h to 23½h Wave in H.F. (+ ·0018).

19d 4h to 6h Shallow double wave in Dec. 4h to 5h Slight increase of H.F.

20d 22½h to 24h Wave in Dec. (− 5′).

21d 4h to 5½h Wave in Dec. (+ 6′): in V.F. small. 4½h to 6h Wave in H.F. (+ ·0018). 12h to 15h Small fluctuations in Dec.

22d 19h to 22h Fluctuations in Dec. and H.F. 22h to 24h Wave in Dec. (− 5′). 22h to 23h Decrease of H.F. (− ·0012).

23d 3h to 4h Wave in Dec. (+ 4′): in H.F. small. 12h to 15h Loss of Dec. and H.F. registers. 15½h to 16h Wave in H.F. (− ·0012). 20h to 20½h Slight decrease of H.F. 21h to 22h Wave in Dec. (− 5′).

24d 1½h to 2½h Wave in Dec. (− 6′): small positive wave in H.F. 11h to 24h Occasional fluctuations in Dec. and H.F., with waves in H.F. 11½h to 12½h (− ·0014), 14½h to 15½h (− ·0010), and 23h to 24h (+·0010). 23½h to 24h Wave in Dec. (+ 3′).

25d 5h to 5½h Small double waves in Dec. and H.F.

1897.

February 25^{d} 12^{h} to 28^{d} 12^{h}. See Plates I. and II.

28^{d} $17\frac{1}{2}^{h}$ to $19\frac{1}{2}^{h}$ Two successive waves in H.F. (− ·0010) and (− ·0010), followed by fluctuations till 23^{h}. 19^{h} to 21^{h} Small fluctuations in Dec.

March 1^{d} 0^{h} to 1^{h} Wave in H.F. (+ ·0012) : in Dec. small. $1\frac{1}{2}^{h}$ to $2\frac{1}{2}^{h}$ Wave in Dec. (+ 3′), followed by small rapid fluctuations in Dec., H.F., and V.F. till 12^{h}. 18^{h} to 21^{h} Fluctuations in Dec. (± 2′) : in H.F. (± ·0005), followed till 23^{h} by wave in Dec. (− 9′) : in H.F. (+ ·0020). 1^{d} $23\frac{1}{2}^{h}$ to 2^{d} 1^{h} Wave in Dec. (+ 3′) : in H.F. (+ ·0020).

2^{d} 0^{h} to 1^{h} Decrease of V.F. (− ·0003). $1\frac{1}{2}^{h}$ to $2\frac{1}{2}^{h}$ Wave in Dec. (+ 3′). 13^{h} to 23^{h} Occasional small fluctuations in H.F. 15^{h} to 16^{h} Wave in V.F. (+ ·0003). $19\frac{1}{2}^{h}$ to 21^{h} Double wave in Dec. (− 3′ to + 2′).

3^{d} 17^{h} to 24^{h} Fluctuations in Dec. and H.F., with waves in Dec., $18\frac{1}{2}^{h}$ to $19\frac{1}{2}^{h}$ (+ 3′), and $21\frac{1}{2}^{h}$ to 23^{h} (− 9′) : in H.F. $21\frac{1}{2}^{h}$ to $22\frac{1}{2}^{h}$ (− ·0015). 3^{d} $23\frac{1}{2}^{h}$ to 4^{d} 2^{h} Two successive waves in Dec. (− 3′) and (− 4′).

4^{d} 0^{h} to 1^{h} Wave in H.F. (− ·0010). 3^{h} to 5^{h} Wave in Dec. (+ 3′). 5^{h} to 8^{h} Double wave in H.F. (− ·0014 to + ·0010). $5\frac{1}{2}^{h}$ to 7^{h} Wave in Dec. (+ 5′). 13^{h} to 20^{h} Small rapid fluctuations in Dec. and H.F. $20\frac{1}{2}^{h}$ to $21\frac{1}{2}^{h}$ Double wave in Dec. (+ 3′ to − 6′) : two successive waves in H.F. (+ ·0025) and (+ ·0020) : decrease of V.F. (− ·0007). $22\frac{1}{2}^{h}$ to $23\frac{1}{2}^{h}$ Wave in Dec. (− 5′).

5^{d} 0^{h} to 1^{h} Increase of H.F. (+ ·0014), followed till 2^{h} by wave (− ·0010). $2\frac{1}{2}^{h}$ to $3\frac{1}{2}^{h}$ Sharp wave in Dec. (+ 8′) : wave in H.F. (− ·0012). 4^{h} to 11^{h} Fluctuations in H.F. (± ·0005). $19\frac{1}{2}^{h}$ to $20\frac{1}{2}^{h}$ Small wave in Dec. 22^{h} to 23^{h} Wave in H.F. (+ ·0010).

6^{d} 2^{h} to 3^{h} Wave in Dec. (+ 4′) : decrease of V.F. (− ·0003). 21^{h} to 22^{h} Decrease of H.F. (− ·0010).

7^{d} 0^{h} to 2^{h} Double wave in Dec. (+ 2′ to − 4′). $1\frac{1}{2}^{h}$ to $2\frac{1}{2}^{h}$ Two successive waves in H.F. (+ ·0012) and (+ ·0010). 2^{h} to 3^{h} Wave in Dec. (− 3′). $11\frac{1}{2}^{h}$ to 13^{h} Wave in H.F. (− ·0012).

8^{d} $0\frac{1}{2}^{h}$ to 3^{h} Two successive waves in H.F. (+ ·0020) and (+ ·0020). $1\frac{1}{2}^{h}$ to $3\frac{1}{2}^{h}$ Wave in Dec. (− 8′) : in V.F. (− ·0003). 8^{h} to 10^{h} Wave in Dec. (+ 4′) : shallow wave in H.F. $11\frac{1}{2}^{h}$ to $13\frac{1}{2}^{h}$ Wave in H.F. (− ·0015). 17^{h} to 19^{h} Wave in Dec. (− 8′) : in H.F. (− ·0018) : in V.F. (+ ·0003). $20\frac{1}{2}^{h}$ to 21^{h} Wave in H.F. (+ ·0012). 8^{d} $21\frac{1}{2}^{h}$ to 9^{d} $0\frac{1}{2}^{h}$ Two successive waves in Dec. (− 5′) and (− 4′). 8^{d} 22^{h} to $22\frac{1}{2}^{h}$ Decrease of H.F. (− ·0016).

9^{d} 2^{h} to 3^{h} Wave in Dec. (+ 5′). 12^{h} to 16^{h} Small fluctuations in Dec. and H.F., with sharp wave $15\frac{1}{2}^{h}$ to 16^{h} in Dec. (+ 3′) : in H.F. (+ ·0010). 16^{h} to 20^{h} Three successive waves in H.F. (− ·0018), (− ·0016), and (− ·0018). $17\frac{1}{2}^{h}$ to 19^{h} Wave in Dec. (− 12′).

10^{d} $3\frac{1}{2}^{h}$ to 5^{h} Small waves in Dec. and H.F. 5^{h} to 12^{h} Small rapid fluctuations in Dec. and H.F., with wave in H.F. 11^{h} to 12^{h} (− ·0014).

10^{d} 12^{h} to 11^{d} 12^{h}. See Plate II.

11^{d} $16\frac{1}{2}^{h}$ to $18\frac{1}{2}^{h}$ Shallow wave in Dec. (− 4′) : in H.F. (− ·0010).

11^{d} 18^{h} to 12^{d} 12^{h} Loss of V.F. register.

12^{d} 8^{h} to $8\frac{1}{2}^{h}$ Decrease of H.F. (− ·0010). $9\frac{1}{2}^{h}$ to $10\frac{1}{2}^{h}$ Small wave in Dec. 15^{h} to $15\frac{1}{2}^{h}$ Decrease of Dec. (− 4′). 15^{h} to 16^{h} Wave in H.F. (− ·0022), sharp at commencement. 12^{d} 23^{h} to 13^{d} 1^{h} Double wave in H.F. (+ ·0012 to − ·0008), followed till 2^{h} by a wave (− ·0010). 12^{d} $23\frac{1}{2}^{h}$ to 13^{d} $3\frac{1}{2}^{h}$ Two successive waves in Dec. (− 8′) and (− 11′) : in V.F. (− ·0003) and (− ·0006).

13^{d} $2\frac{1}{2}^{h}$ to $3\frac{1}{2}^{h}$ Wave in H.F. (− ·0010). 4^{h} to 5^{h} Decrease of Dec. (− 3′), followed by fluctuations in Dec. and H.F. till 11^{h}. 19^{h} to 20^{h} Wave in Dec. (− 3′).

14^{d} $13\frac{1}{2}^{h}$ to 14^{h} Decrease of H.F. (− ·0010). $16\frac{1}{2}^{h}$ to 18^{h} Wave in Dec. (− 3′) : in H.F. (− ·0010). 14^{d} 23^{h} to 15^{d} $0\frac{1}{2}^{h}$ Wave in H.F. (+ ·0012).

17^{d} 15^{h} to 22^{h} Occasional small fluctuations in H.F. $21\frac{1}{2}^{h}$ to 23^{h} Wave in Dec. (− 10′) : in H.F. small.

19^{d} $1\frac{1}{2}^{h}$ to 3^{h} Small waves in Dec. and H.F. 22^{h} to 23^{h} Wave in Dec. (− 3′) : in H.F. (+ ·0018).

22^{d} 3^{h} to 11^{h} Occasional small fluctuations in Dec. and H.F. 12^{h} to 13^{h} Wave in Dec. (+ 4′) : in H.F. (+ ·0012). $19\frac{1}{2}^{h}$ to $20\frac{1}{2}^{h}$ Decrease of H.F. (− ·0014). 20^{h} to 21^{h} Decrease of Dec. (− 3′).

23^{d} 0^{h} to $2\frac{1}{2}^{h}$ Two successive waves in H.F. (+ ·0013) and (+ ·0010). $0\frac{1}{2}^{d}$ to 2^{h} Decrease of V.F. (− ·0005). $1\frac{1}{2}^{h}$ to $4\frac{1}{2}^{h}$ Prolonged wave in Dec. (− 7′). $7\frac{1}{2}^{h}$ to 9^{h} Wave in H.F. (− ·0014). $21\frac{1}{2}^{h}$ to 24^{h} Double wave in Dec. (+ 3′ to − 3′) : in H.F. (+ ·0015 to − ·0010). $21\frac{1}{2}^{h}$ to $22\frac{1}{2}^{h}$ Decrease of V.F. (− ·0003).

24^{d} $14\frac{1}{2}^{h}$ to 19^{h} Small fluctuations in Dec. and H.F., with serrated wave in H.F. $14\frac{1}{2}^{h}$ to 17^{h} (+ ·0017), followed by small double wave $17\frac{1}{2}^{h}$ to 19^{h} (+ ·0006 to − ·0010). 21^{h} to $22\frac{1}{2}^{h}$ Wave in Dec. (− 4′). 22^{h} to $23\frac{1}{2}^{h}$ Wave in H.F. (+ ·0010).

27^{d} 16^{h} to $17\frac{1}{2}^{h}$ Wave in H.F. (− ·0010). $20\frac{1}{2}^{h}$ to 22^{h} Wave in Dec. (− 3′).

1897.

March. 28^d 1½^h to 2½^h Wave in Dec. (+ 2′). 2^h to 3^h Decrease of H.F. (− ·0010). 3½^h to 4½^h Wave in Dec. (− 3′). 17^h to 18^h Small wave in H.F. 18½^h to 20^h Wave in Dec. (− 4′): small double wave in H.F. 22^h to 23½^h Small double wave in H.F. (+ ·0005 to − ·0010). 23½^h to 24^h Wave in Dec. (+ 3′): decrease of V.F. (− ·0003).

29^d 1½^h to 3^h Wave in Dec. (+ 6′): in H.F. (+ ·0010). 2^h to 3^h Decrease of V.F. (− ·0004). 12½^h to 15^h Wave in Dec. (+ 6′): double wave in H.F. (+ ·0015 to − ·0020). 16^h to 17^h Wave in H.F. (− ·0010). 17½^h to 19^h Double wave in H.F. (+ ·0012 to − ·0012), followed till 21^h by a double-crested wave (+ ·0034). 18^h to 19^h Wave in Dec. (− 4′). 19½^h to 20½^h Double wave in Dec. (+ 3′ to − 5′), followed by two successive small waves till 21½^h.

30^d 1^h to 2^h Small wave in H.F. 1½^h to 3^h Shallow wave in Dec. (+ 3′). 3½^h to 5^h Wave in Dec. (+ 5′): in H.F. (+ ·0012). 6^h to 7^h Small wave in H.F. (− ·0008). 12^h to 23^h Occasional small fluctuations in Dec. and H.F. 23^h to 23½^h Wave in H.F. (+ ·0010). 30^d 23^h to 31^d 0½^h Double wave in Dec. (− 2′ to + 2′).

31^d 3^h to 4^h Wave in Dec. (+ 4′). 19½^h to 21½^h Two successive waves in Dec. (− 5′) and (− 5′). 19½^h to 21^h Sharp wave in H.F. (+ ·0030). 20^h to 21^h Wave in V.F. (− ·0003). 22^h to 23½^h Wave in Dec. (− 5′): in H.F. small.

April 1^d 0½^h to 2^h Wave in Dec. (+ 4′): in H.F. (+ ·0016). 1^h to 1½^h Decrease of V.F. (− ·0003).

1^d 12^h to 2^d 12^h. See Plate II.

2^d 12½^h to 14^h Wave in Dec. (+ 3′). 13½^h to 14½^h Wave in H.F. (− ·0014).

3^d 15^h to 17^h and 23^h to 24^h Small fluctuations in H.F.

4^d 21½^h to 24^h Double wave in Dec. (− 4′ to + 3′). 22^h to 23½^h Small double wave in H.F. 22^h to 23^h Wave in V.F. (+ ·0003).

5^d 1½^h to 2½^h Wave in Dec. (+ 4′): in H.F. (+ ·0010). 15^h to 16½^h Wave in H.F. (− ·0018), followed till 19^h by a double wave (+ ·0028 to − ·0018), with superposed fluctuations, and by a smaller double wave (+ ·0010 to − ·0008) till 20^h. 17½^h to 20^h Wave in Dec. (− 12′), with superposed fluctuations. 17^h to 18½^h Wave in V.F. (+ ·0003). 21^h to 23^h Decrease of Dec. (− 7′), followed till 6^d 4^h by a double wave (+ 10′ to − 5′). 5^d 22^h to 6^d 0^h Decrease of H.F. (− ·0018), followed till 6^d 2^h by a sharp double wave (+ ·0050 to − ·0020).

6^d 0^h to 2^h Wave in V.F. (− ·0011), steep at commencement. 14^h to 15½^h Two successive waves in H.F. (+ ·0020) and (+ ·0030), followed from 16^h to 18^h by two smaller waves (− ·0014) and (− ·0010). 14½^h to 15^h Wave in Dec. (− 3′). 15½^h to 16^h Wave in Dec. (+ 4′). 15^h to 17^h Wave in V.F. (+ ·0005). 17^h to 24^h Small fluctuations in H F., with wave 21½^h to 22½^h (− ·0010). 20^h to 21½^h Wave in Dec. (− 4′). 22^h to 23^h Wave in Dec. (+ 6′). 22½^h to 23^h Decrease of V.F. (− ·0004).

7^d 0^h to 2^h Double wave in Dec. (+ 3′ to − 3′), followed till 3^h by a wave (+ 8′), and by small rapid fluctuations till 15^h. 0^h to 17^h Small rapid fluctuations in H.F. 17^h to 18^h Double wave in H.F. (+ ·0010 to − ·0010). 17½^h to 19^h Wave in Dec. (− 5′). 20½^h to 21½^h Wave in Dec. (− 5′): in H.F. (+ ·0010).

8^d 0^h to 12^h Frequent small fluctuations in Dec. and H.F., with wave in Dec. 3½^h to 5^h (+ 5′). 4^h to 6½^h Shallow wave in H.F. (+ ·0016). 16^h to 22^h Small fluctuations in H.F. 22^h to 24^h Double wave in Dec. (+ 4′ to − 4′): two successive waves in H.F. (+ ·0012) and (+ ·0010). 22½^h to 23½^h Small wave in V.F.

9^d 2^h to 3^h Wave in Dec. (+ 3′). 20^h to 23^h Fluctuations in H.F. 9^d 21½^h to 10^d 0½^h Two successive waves in Dec. (− 5′) and (− 3′).

10^d 0^h to 12^h Loss of V.F. register. 2½^h to 5^h Shallow double wave in H.F. 4^h to 5½^h Wave in Dec. (+ 3′). 7^h to 8½^h Wave in Dec. (+ 3′). 7^h to 8^h Wave in H.F. (− ·0010). 12^h to 14^h Fluctuations in H.F. 21^h to 24^h Small fluctuations in Dec. and H.F.

11^d 1^h to 3^h Small fluctuations in Dec.

13^d 5^h to 7^h Wave in Dec. (+ 6′): in H.F. (+ ·0013). 16^h to 23^h Small fluctuations in H.F. 19½^h to 20½^h Wave in Dec. (− 3′). 21½^h to 23½^h Wave in Dec. (+ 4′). 13^d 23½^h to 14^d 1^h Wave in Dec. (+ 9′): in V.F. (− ·0004). 13^d 23½^h to 14^d 0½^h Wave in H.F. (+ ·0024).

14^d 1^h to 3^h Double wave in H.F. (− ·0010 to + ·0012). 2^h to 3½^h Wave in Dec. (− 7′): in V.F. small. 4^h to 5½^h Wave in Dec. (+ 5′). 5½^h to 7^h Wave in H.F. (− ·0014). 17½^h to 18^h Wave in H.F. (+ ·0010). 17^h to 19^h Wave in Dec. (− 6′).

16^d 12^h to 14^h, 14½^h to 16^h, 17^h to 18½^h, and 19½^h to 20½^h Waves in H.F. (+ ·0012), (+ ·0014), (+ ·0015), and (+ ·0010). 19½^h to 21^h Wave in Dec. (− 5′). 22½^h to 23½^h Wave in Dec. (− 4′).

1897.

April 17^d 0^h to 1^h Wave in Dec. (+ 9′), in H.F. (− ·0013). 0^h to 5^h Fluctuations in V.F. 3^h to 5^h Wave in Dec. (+ 7′) : in H.F. (+ ·0024). $17\frac{1}{2}^h$ to 19^h Wave in Dec. (− 6′) : fluctuations in H.F.

18^d 11^h to 17^h Small fluctuations in H.F. $17\frac{1}{2}^h$ to 19^h Wave in Dec. (− 7′) : double wave in H.F. (− ·0012 to + ·0010). 21^h to $22\frac{1}{2}^h$ Wave in H.F. (+ ·0012).

19^d 13^h to 17^h Fluctuations in H.F. 18^h to 19^h Serrated wave in H.F. (+ ·0025), followed by two successive waves till $20\frac{1}{2}^h$ (+ ·0014) and (+ ·0014), and by fluctuations till 24^h. $19\frac{1}{2}^h$ to $20\frac{1}{2}^h$ Wave in Dec. (− 9′). 19^d 23^h to 20^d $0\frac{1}{2}^h$ Two successive waves in Dec. (− 5′) and (− 8′) : decrease of V.F. (− ·0009).

20^d 0^h to $1\frac{1}{2}^h$ Double wave in H.F. (+ ·0010 to − ·0014). $5\frac{1}{2}^h$ to 7^h Wave in H.F. (− ·0016). $5\frac{1}{2}^h$ to $6\frac{1}{2}^h$ Small double wave in Dec. 7^h to 9^h Wave in Dec. (− 7′). $7\frac{1}{2}^h$ to 9^h Wave in H.F. (− ·0015). 9^h to 11^h Wave in Dec. (− 5′). 10^h to 11^h Wave in H.F. (− ·0010).

20^d 12^h to 21^d 12^h. See Plate III.

23^d $1\frac{1}{2}^h$ to $2\frac{1}{2}^h$ Wave in Dec. (+ 3′). $6\frac{1}{2}^h$ to 7^h Sharp double wave in Dec. (− 3′ to + 3′) : in H.F. small.

23^d 12^h to 25^d 12^h. See Plate III.

25^d 12^h to 13^h Wave in H.F. (− ·0014). 17^h to $18\frac{1}{2}^h$ sharp wave in Dec. (− 12′) : double wave in H.F. (− ·0014 to + ·0024) : in V.F. small.

26^d 3^h to 5^h Wave in H.F. (− ·0012). 13^h to 14^h Wave in H.F. (− ·0012). $15\frac{1}{2}^h$ to 17^h Wave in Dec. (− 4′). $18\frac{1}{2}^h$ to $19\frac{1}{2}^h$ Wave in Dec. (− 6′) : double wave in H.F. (− ·0010 to + ·0010). 23^h to 24^h Wave in Dec. (+ 4′).

27^d $4\frac{1}{2}^h$ to 6^h Wave in H.F. (− ·0010). $3\frac{1}{2}^h$ to 7^h Two successive shallow waves in Dec. (+ 3′) and (+ 3′). 12^h to 24^h Occasional small fluctuations in Dec. and H.F., with wave in Dec. 22^h to $23\frac{1}{2}^h$ (+ 5′).

28^d $17\frac{1}{2}^h$ to 19^h Wave in Dec. (− 3′) : in H.F. small.

29^d 1^h to $2\frac{1}{2}^h$ Wave in Dec. (+ 3′). 18^h to 19^h Wave in H.F. (− ·0010).

30^d 12^h to 16^h Loss of Dec. register. 18^h to $19\frac{1}{2}^h$ Wave in Dec. (− 4′). 18^h to 19^h Wave in H.F. (− ·0010).

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

2^d 10^h to 24^h Small rapid fluctuations in Dec., H.F., and V.F., with waves in H.F. $13\frac{1}{2}^h$ to 15^h (− ·0024), $15\frac{1}{2}^h$ to 16^h (+ ·0026), $17\frac{1}{2}^h$ to 18^h (+ ·0016), 19^h to $20\frac{1}{2}^h$ (− ·0020) : in Dec. $19\frac{1}{2}^h$ to $21\frac{1}{2}^h$ (− 12′).

3^d 0^h to 2^h Two successive waves in Dec. (− 7′) and (− 5′) : wave in V.F. (− ·0006). 0^h to 1^h Wave in H.F. (+ ·0030). 2^h to 8^h Small rapid fluctuations in Dec. and H.F. 12^h to 16^h and 18^h to 24^h Small fluctuations in H.F.

4^d 22^h to 24^h Irregular wave in Dec. (− 3′) : in H.F. (+ ·0016).

5^d $15\frac{1}{2}^h$ to 16^h Wave in H.F. (+ ·0013). 17^h to 24^h Occasional small fluctuations in Dec., H.F., and V.F.

6^d $2\frac{1}{2}^h$ to $6\frac{1}{2}^h$ Two successive waves in Dec. (+ 4′) and (+ 3′). 7^h to $7\frac{1}{2}^h$ Sharp wave in Dec. (− 3′). 7^h to $8\frac{1}{2}^h$ Wave in H.F. (− ·0010). 12^h to 19^h Small fluctuations in H.F., with three successive waves $12\frac{1}{2}^h$ to $16\frac{1}{2}^h$ (− ·0016), (− ·0014), and (− ·0020). 17^h to 19^h Double-crested wave in Dec. (− 4′) : two successive waves in H.F. (+ ·0012) and (+ ·0014).

7^d 1^h to 2^h Wave in Dec. (+ 4′) : decrease of V.F. (− ·0003).

9^d 18^h to 22^h Small fluctuations in H.F.

10^d 14^h to 23^h Small fluctuations in H.F. 21^h to 23^h Very small fluctuations in Dec.

11^d 0^h to 7^h Small rapid fluctuations in Dec. and H.F. 12^h to 21^h Small fluctuations in H.F.

12^d 13^h to $14\frac{1}{2}^h$ Wave in H.F. (+ ·0016).

13^d 11^h to $12\frac{1}{2}^h$ Wave in H.F. (+ ·0014). 15^h to 18^h Three successive waves in H.F. (+ ·0014), (+ ·0010), and (+ ·0034). 18^h to $18\frac{1}{2}^h$ Decrease of Dec. (− 4′).

14^d 6^h to 8^h Two successive waves in Dec. (− 4′) and (− 5′). 12^h to $14\frac{1}{2}^h$ Double-crested wave in H.F. (− ·0025), followed till 16^h by a wave (− ·0022). $12\frac{1}{2}^h$ to $13\frac{1}{2}^h$ Wave in Dec. (+ 3′). $14\frac{1}{2}^h$ to 15^h Wave in Dec. (+ 4′). 18^h to 24^h Fluctuations in H.F. (± ·0006). $19\frac{1}{2}^h$ to $20\frac{1}{2}^h$ Wave in Dec. (− 3′). $22\frac{1}{2}^h$ to 24^h Double wave in Dec. (− 4′ to + 4′). 23^h to 24^h Decrease of V.F. (− ·0003).

15^d 0^h to 1^h Small double wave in Dec. (− 2′ to + 2′) : fluctuations in H.F. 1^h to $2\frac{1}{2}^h$ Shallow wave in V.F. (− ·0003). $1\frac{1}{2}^h$ to 2^h Decrease of Dec. (− 4′) : of H.F. (− ·0012). $14\frac{1}{2}^h$ to $15\frac{1}{2}^h$ Wave in H.F. (− ·0018).

16^d 23^h to 17^d $1\frac{1}{2}^h$ Shallow wave in Dec. (+ 3′) : in H.F. (+ ·0012).

1897.

May 17d 12h to 17h Small fluctuations in Dec. 12h to 21h Frequent rapid fluctuations in H.F., with two successive sharp waves 13½h to 14h (+ ·0012) and (+ ·0016). 15½h to 16½h Wave in H.F. (− ·0020). 17h to 17½h Double wave in H.F. (− ·0008 to + ·0014), followed till 18h by a wave (− ·0016). 17½h to 18½h Double wave in Dec. (+ 4′ to − 7′), both parts double-crested, followed by a double-crested wave (− 9′) till 20h, then by a wave (− 5′) till 21h. 18h to 18½h Wave in H.F. (− ·0016), followed till 19½h by a double-crested wave (− ·0014). 20h to 20½h Double wave in H.F. (+ ·0012 to − ·0014). 20h to 20½h Small wave in V.F. (− ·0003). 23h to 24h Wave in Dec. (+ 5′) : in H.F. (+ ·0014) : decrease of V.F. (− ·0005).

19d 19h to 22h Small fluctuations in H.F., with sharp wave 20½h to 21h (− ·0016). 22h to 23h Wave in H.F. (− ·0016), followed till 24h by two successive waves (− ·0012) and (− ·0012). 19d 22h to 20d 3h Long wave in Dec. (− 14′), with superposed fluctuations. 19d 23h to 20d 3h Long wave in V.F. (− ·0010).

20d 1h to 6h Small fluctuations in H.F.

20d 20h to 21d 20h. See Plate IV.

21d 22h to 24h Two successive waves in H.F. (+ ·0012) and (+ ·0014). 23h to 24h Wave in Dec. (+ 4′).

22d 3½h to 5h Wave in Dec. (+ 5′) : in H.F. (− ·0020). 13h to 22h Small fluctuations in H.F., with wave 17½h to 19h (+ ·0018). 18h to 20h Shallow wave in Dec. (− 4′) : in V.F. (+ ·0003).

23d 0h to 3h Small fluctuations in Dec. 20½h to 22h Wave in Dec. (− 4′) : small double wave in H.F. 23d 23½h to 24d 0½h Wave in Dec. (+ 3′).

24d 15h to 21h Occasional small fluctuations in Dec. and H.F.

25d 3h to 6h Wave in Dec. (+ 4′). 22h to 23h Small wave in H.F.

27d 17h to 21d Small fluctuations in H.F.

29d 15h to 17h Wave in H.F. (− ·0018). 20h to 24h Fluctuations in Dec. and H.F. 29d 23½h to 30d 1½h Shallow wave in Dec. (+ 4′).

30d 0h to 5h Small fluctuations in Dec. and H.F. 2½h to 4½h Double wave in H.F. (+ ·0010 to − ·0010). 5h to 7½h Wave in Dec. (+ 12′). 5h to 6h Wave in H.F. (− ·0014). 6h to 8h Wave in V.F. (− ·0005). 6½h to 7½h Wave in H.F. (− ·0012). 8h to 11h Small rapid fluctuations in Dec. and H.F. 12h to 13½h Wave in H.F. (− ·0024), sharp at commencement.

June 1d 0½h to 2½h Wave in Dec. (+ 3′). 12h to 18h Small fluctuations in H.F.

2d 2h to 2½h Sudden increase of H.F. (+ ·0008). 11h to 17h Fluctuations in H.F. (± ·0010), with double wave 15h to 16½h (+ ·0014 to − ·0012). 20h to 24h Small fluctuations in Dec. and H.F., with wave in H.F. 20½h to 21h (+ ·0010).

3d 0h to 0½h Wave in Dec. (+ 3′) : in H.F. (+ ·0010) : in V.F. small. 3½h to 5h and 7h to 7½h Small waves in Dec. 13h to 14h Wave in H.F. (− ·0012). 15½h to 16½h Wave in Dec. (− 3′). 15½h to 17h Two successive waves in H.F. (− ·0010) and (− ·0010).

4d 0h to 5h Small fluctuations in Dec. and H.F. 13h to 14½h Double wave in H.F. (+ ·0012 to − ·0012).

5d 10h to 18h Loss of Dec., H.F., and V.F. registers. 21h to 22h Wave in Dec. (− 3′).

7d 14h to 19h Small fluctuations in H.F.

11d 14h to 15½h Three successive waves in H.F. (− ·0020), (− ·0012), and (− ·0014), followed by double wave (+ ·0010 to − ·0012) : small fluctuations in Dec. and V.F.

13d 13h to 24h Frequent small fluctuations in H.F.

14d 0h to 2h Shallow wave in Dec. (− 4′) : small fluctuations in H.F. 18h to 23h Occasional small fluctuations in H.F.

15d 2½h to 4h Shallow wave in Dec. (+ 3′). 13h to 15h and 18h to 24h Small fluctuations in H.F. 23h to 24h Wave in Dec. (− 3′).

16d 1½h to 3h Irregular wave in Dec. (− 6′) : double wave in H.F. (+ ·0020 to − ·0020) : wave in V.F. (− ·0003). 3½h to 4h Double-crested wave in Dec. (+ 5′), followed by small fluctuations in Dec. and H.F. till 8h. 12h to 15h Small fluctuations in H.F., followed by a wave 15h to 16h (− ·0012). 17½h to 18½h Wave in H.F. (− ·0014). 19½h to 20½h Serrated wave in H.F. (+ ·0020). 20½h to 21½h Wave in Dec. (− 3′). 16d 22½h to 17d 0½h Double wave in Dec. (+ 7′ to − 5′).

1897.

June 17d 0½h to 1h Small wave in H.F. (+ ·0010), followed by an irregular double wave (+ ·0020 to − ·0020). 0½h to 2h Two successive waves in Dec. (− 3′) and (− 6′), followed by a double wave till 4h (− 4′ to + 5′). 1h to 3h Wave in V.F. (− ·0004). 4h to 6h Shallow wave in Dec. (− 5′), followed till 9h by a double wave (− 6′ to + 7′), with superposed fluctuations. 5h to 6h Wave in H.F. (− ·0012). 7h to 8h Double wave in H.F. (− ·0010 to + ·0010). 11h to 14h Two successive waves in H.F. (− ·0020) and (− ·0015). 12h to 13½h Wave in Dec. (+ 3′). 14h to 22h Fluctuations in H.F. (± ·0006). 20h to 23h Small fluctuations in Dec.

18d 2½h to 3½h Wave in Dec. (− 5′): in H.F. (+ ·0012): in V.F. (− ·0003). 13½h to 16h Two successive waves in H.F. (− ·0012) and (− ·0012). 20½h to 22½h Wave in Dec. (+ 5′): two successive waves in H.F. (+ ·0010) and (+ ·0014): shallow wave in V.F. (− ·0003).

19d 0h to 1½h Wave in Dec. (+ 4′). 14h to 20h Fluctuations in H.F. (± ·0007). 22h to 23½h Wave in Dec. (− 4′).

21d 1½h to 5½h Prolonged wave in Dec. (+ 4′). 16h to 17½h Wave in H.F. (+ ·0016). 18h to 19h Decrease of Dec. (− 3′): small wave in H.F.

22d 0h to 2h Wave in H.F. (+ ·0020): in Dec. small. 0h to 1½h Decrease of V.F. (− ·0005). 21½h to 23h Wave in H.F. (+ ·0010). 22h to 24h Shallow wave in Dec. (− 4′).

23d 1½h to 2½h Wave in Dec. (+ 3′): in H.F. small.

24d 1½h to 2½h Wave in Dec. (+ 3′).

25d 16h to 17h Increase of H.F. (+ ·0014).

27d 2½h to 4h Shallow wave in Dec. (+ 3′). 12h to 24h Occasional small fluctuations in H.F.

28d 13h to 23h Small fluctuations in H.F.

29d 2h to 4h Small double wave in Dec. (− 2′ to + 2′).

July 2d 16h to 17h Small double wave in H.F. (− ·0007 to + ·0007).

3d 1h to 6h Small fluctuations in Dec. and H.F. 15h to 19h Small fluctuations in H.F.

5d 3½h to 5h Wave in Dec. (+ 3′).

6d 21h to 21½h Decrease of Dec. (− 3′).

7d 20½h to 22½h Wave in Dec. (− 5′). 20½h to 21h Decrease of H.F. (− ·0012).

8d 21h to 22½h Wave in Dec. (− 3′).

10d 13½h to 14½h Wave in H.F. (+ ·0012).

14d 0h to 1½h Wave in H.F. (+ ·0010). 14h to 15h Double wave in H.F. (+ ·0016 to − ·0010): small wave in V.F. 16½h to 18h Wave in Dec. (− 7′). 17h to 18h Decrease of H.F. (− ·0016). 20h to 21h Wave in H.F. (+ ·0012). 20½h to 22½h Wave in Dec. (− 7′). 21½h to 22h Decrease of H.F. (− ·0010).

15d 2½h to 4h Wave in Dec. (+ 5′): in H.F. (+ ·0010): in V.F. small. 11h to 19h Small fluctuations in H.F., with wave 14½h to 15½h (+ ·0012). 20½h to 21½h Wave in Dec. (− 4′): in H.F. small.

17d 14½h to 15h Sharp wave in H.F. (+ ·0010): in Dec. and V.F. small.

19d 13h to 22h Occasional small fluctuations in H.F.

20d 0½h to 2h Wave in Dec. (+ 4′).

21d 5½h to 8h Shallow wave in Dec. (+ 3′). 21½h to 22h Wave in H.F. (− ·0012). 22½h to 23h Wave in H.F. (+ ·0012).

22d 0h to 0½h Decrease of Dec. (− 7′): of H.F. (− ·0020). 0h to 6h Occasional fluctuations in V.F. 1½h to 1¾h Sharp wave in H.F. (+ ·0014): in Dec. small. 3½h to 5h Wave in Dec. (+ 9′). 3½h to 6h Double wave in H.F. (− ·0016 to + ·0010). 15h to 16h Wave in H.F. (+ ·0010).

23d 6h to 11h Small rapid fluctuations in Dec. and H.F.

24d 4½h to 6h Wave in Dec. (− 3′). 14h to 14½h Small wave in H.F. 23½h to 24h Wave in H.F. (+ ·0010).

27d 0½h to 1½h Shallow wave in Dec. (+ 3′). 16½h to 18h Wave in H.F. (− ·0010). 19½h to 21h Shallow wave in Dec. (− 3′).

30d 13h to 14½h Double wave in H.F. (+ ·0012 to − ·0012). 16h to 18½h Rapid fluctuations in H.F. (± ·0010): small fluctuations in Dec.

31d 2h to 4½h Double wave in Dec. (+ 7′ to − 5′). 2½h to 6h Two successive double waves in H.F. (+ ·0020 to − ·0010) and (− ·0012 to + ·0014). 2½h to 3½h Decrease of V.F. (− ·0006). 6h to 9h Fluctuations in Dec. (± 2′). 6½h to 8h Wave in H.F. (− ·0020). 8½h to 10½h Wave in Dec. (− 7′). 12h to 18h Small fluctuations in H.F. 19h to 20h Sharp wave in Dec. (− 9′): in H.F. (− ·0018): shallow wave in V.F. (+ ·0003). 22½h to 23h Wave in Dec. (− 3′): in H.F. (+ ·0010).

1897.

August 1d 1h to 3h Double wave in Dec. (+7′ to −5′). 1h to 2h Wave in H.F. (+·0014). 1h to 3h Sharp wave in V.F. (−·0007). 12h to 21h Occasional fluctuations in H.F., with wave 15½h to 16½h (−·0030). 15h to 16h Wave in Dec. (+3′). 23h to 24h Wave in H.F. (+·0025): decrease of V.F. (−·0003).

2d 17h to 22h Fluctuations in Dec. and H.F.

3d 0h to 3h Small fluctuations in H.F. 1h to 3h Wave in Dec. (+4′). 22½h to 24h Wave in H.F. (+·0010).

7d 15h to 18h Small fluctuations in H.F.

8d 20h to 21½h Wave in Dec. (−4′), in H.F. (−·0010).

9d 1h to 14h Small rapid fluctuations in Dec. and H.F., with waves in Dec. 3h to 4h (−3′), 5½h to 6½h (−4′), and 8h to 9½h (−4′). 14h to 17h Three successive waves in H.F. (−·0010), (−·0014), and (−·0018), followed till 19½h by a double wave (−·0012 to +·0014): small fluctuations in Dec. 21½h to 22h Wave in Dec. (−3′): in H.F. (+·0010). 9d 23h to 10d 0½h Wave in H.F. (+·0015).

10d 13h to 20h Occasional small fluctuations in H.F. 19½h to 20½h Wave in Dec. (−3′). 22½h to 24h Wave in Dec. (+5′): in H.F. (+·0010). 23h to 24h Decrease of V.F. (−·0004).

11d 14h to 15h Wave in H.F. (+·0010): in Dec. small.

12d 1½h to 3h Shallow wave in Dec. (+3′). 13h to 24h Small fluctuations in H.F. 20½h to 22½h Wave in Dec. (−3′).

13d 19h to 24h Small fluctuations in Dec.: in H.F. (±·0005), with wave 23h to 24h, in Dec. (+3′): in H.F. (+·0010).

14d 1h to 2½h Wave in Dec. (−3′): in H.F. small. 15h to 16h Wave in H.F. (+·0012). 20½h to 21½h Wave in Dec. (−3′): in H.F. small.

15d 17h to 23h Small fluctuations in H.F. 20h to 23h Wave in Dec. (−7′). 15d 23h to 16d 0½h Wave in Dec. (−8′): in H.F. (+·0014).

16d 2h to 3½h Two successive waves in Dec. (+3′) and (+3′). 3h to 4h Wave in H.F. (+·0014). 3h to 5h Shallow wave in V.F. (−·0003). 14½h to 15½h Small double wave in H.F.

17d 15½h to 16½h Small wave in H.F. 17h to 18h Wave in H.F. (+·0010). 21½h to 22½h Wave in Dec. (−3′): in H.F. (+·0007).

18d 0h to 4h Two successive waves in Dec. (+3′) and (+7′). 0½h to 3h Shallow double wave in H.F. (+·0010 to −·0010).

19d 12h to 20h Occasional small fluctuations in H.F. 19d 23½h to 20d 1h Wave in Dec. (−5′): in H.F. (+·0010).

20d 3h to 5h Double-crested wave in Dec. (+7′). 3h to 4h Increase of H.F. (+·0014). 4h to 5h Decrease of V.F. (−·0003). 7h to 9h Double wave in H.F. (−·0040 to +·0016): wave in Dec. (+9′): small wave in V.F. (+·0003). 12h to 23h Small fluctuations in H.F. 20d 23½h to 21d 1½h Wave in H.F. (+·0016).

21d 0h to 2h Wave in Dec. (−4′).

22d 18h to 24h Small fluctuations in H.F. 22½h to 24h Wave in Dec. (−5′).

23d 13½h to 15h Wave in H.F. (−·0012). 21½h to 23h Wave in H.F. (+·0010).

25d 13h to 16h Small fluctuations in Dec. and H.F., with wave 15½h to 16h in H.F. (+·0010). 21½h to 22½h Shallow wave in Dec. (−3′).

26d 0h to 1h Wave in Dec. (+2′), followed till 2½h by a double wave (+3′ to −3′). 0h to 2h Double-crested wave in H.F. (+·0012). 4½h to 5½h Wave in Dec. (+3′).

27d 17h to 17½h Increase of H.F. (+·0010). 19½h to 21h Wave in Dec. (−5′). 22h to 23h Small wave in Dec.: in H.F. (+·0010).

28d 1h to 2h Wave in Dec. (+3′): in H.F. (+·0010).

29d 0½h to 2½h Irregular wave in Dec. (+5′). 1½h to 3h Wave in H.F. (+·0016). 2h to 3h Wave in V.F. (−·0003). 13h to 22h Small fluctuations in H.F.

30d 14h to 16h Two successive waves in H.F. (−·0014) and (−·0012). 17½h to 18½h Small wave in H.F. (+·0008). 19½h to 21h Double wave in H.F. (+·0010 to −·0010).

31d 2h to 4½h Shallow wave in Dec. (+3′). 16h to 21h Small fluctuations in H.F.

September 1d 12h to 24h Occasional small fluctuations in H.F.

2d 2h to 4h Wave in Dec. (+3′): in H.F. (+·0010).

3d 15h to 15½h and 16h to 17h Small waves in H.F. (−·0010) and (−·0010). 16h to 18h Wave in Dec. (−3′).

1897.

September 4^{d} $0\frac{1}{2}^{h}$ to $1\frac{1}{2}^{h}$ Wave in Dec. (+ 3′). 6^{h} to 8^{h} Small rapid fluctuations in Dec. and H.F. 10^{h} to $11\frac{1}{2}^{h}$ Two successive waves in H.F. (− ·0020) and (− ·0014) : in Dec. small.

4^{d} 12^{h} to 5^{d} 12^{h}. See Plate IV.

5^{d} 12^{h} to 20^{h} Fluctuations in H.F., with wave $14\frac{1}{2}^{h}$ to 15^{h} (+ ·0014) : occasional small fluctuations in Dec. 22^{h} to $22\frac{1}{2}^{h}$ Increase of Dec. (+ 4′) : wave in H.F. (+ ·0013).

6^{d} $0\frac{1}{2}^{h}$ to $2\frac{1}{2}^{h}$ Two successive shallow waves in Dec. (+ 3′) and (+ 3′). $6\frac{1}{2}^{h}$ to 7^{h} Wave in Dec. (− 3′). 15^{h} to $16\frac{1}{2}^{h}$ Wave in H.F. (+ ·0010). 20^{h} to 21^{h} Wave in Dec. (− 3′).

7^{d} 16^{h} to 23^{h} Small fluctuations in H.F. $18\frac{1}{2}^{h}$ to 20^{h} Wave in Dec. (− 3′).

8^{d} 4^{h} to 6^{h} Shallow wave in H.F. (− ·0010).

9^{d} $2\frac{1}{2}^{h}$ to 4^{h} Wave in Dec. (+ 3′). $7\frac{1}{2}^{h}$ to 9^{h} Wave in Dec. (− 3′). 9^{d} 18^{h} to 10^{d} 11^{h} Loss of V.F. register.

10^{d} 15^{h} to 24^{h} Small fluctuations in H.F. 10^{d} $23\frac{1}{2}^{h}$ to 11^{d} $0\frac{1}{2}^{h}$ Wave in Dec. (+ 5′).

11^{d} $1\frac{1}{2}^{h}$ to 3^{h} Wave in Dec. (+ 4′). 3^{h} to 5^{h} Double wave in H.F. (− ·0010 to + ·0010). $3\frac{1}{2}^{h}$ to 5^{h} Sharp wave in Dec. (+ 12′). $3\frac{1}{2}^{h}$ to 6^{h} Wave in V.F. (− ·0007). $16\frac{1}{2}^{h}$ to 18^{h} Two successive waves in H.F. (+ ·0010) and (+ ·0010). 19^{h} to 21^{h} Irregular wave in Dec. (− 6′). 19^{h} to 20^{h} Wave in H.F. (+ ·0024). $22\frac{1}{2}^{h}$ to $23\frac{3}{4}^{h}$ Double wave in Dec. (+ 3′ to − 5′), followed by a wave till 12^{d} $0\frac{1}{2}^{h}$ (− 4′). 11^{d} $22\frac{1}{2}^{h}$ to 23^{h} Wave in H.F. (+ ·0016) : decrease of V.F. (− ·0006). 11^{d} $23\frac{1}{2}^{h}$ to 12^{d} $0\frac{1}{2}^{h}$ Wave in H.F. (− ·0020).

12^{d} 2^{h} to $5\frac{1}{2}^{h}$ Small fluctuations in Dec. 14^{h} to 21^{h} Small fluctuations in H.F. and V.F.

13^{d} 22^{h} Sudden increase of H.F. (+ ·0014), followed by small fluctuations till 23^{h}.

14^{d} 13^{h} to 17^{h} Four successive waves in H.F. (− ·0014), (− ·0014), (− ·0010), and (− ·0010). $13\frac{1}{2}^{h}$ to $14\frac{1}{2}^{h}$ Wave in Dec. (− 4′). 19^{h} to $19\frac{1}{2}^{h}$ Wave in Dec. (− 3′) : small wave in H.F. (+ ·0008).

15^{d} 20^{h} to 21^{h} Double-crested wave in H.F. (+ ·0010). $21\frac{1}{2}^{h}$ to $22\frac{1}{2}^{h}$ Wave in Dec. (− 4′) : in H.F. (+ ·0012).

16^{d} 1^{h} to $2\frac{1}{2}^{h}$ Wave in Dec. (+ 5′) : fluctuations in H.F. 5^{h} to 9^{h} Small fluctuations in Dec. and H.F. 23^{h} to 24^{h} Wave in H.F. (+ ·0010).

17^{d} $21\frac{1}{2}^{h}$ to $22\frac{1}{2}^{h}$ Wave in Dec. (− 6′). $21\frac{1}{2}^{h}$ to $23\frac{1}{2}^{h}$ Wave in H.F. (+ ·0014). 17^{d} 23^{h} to 18^{d} 1^{h} Shallow double wave in Dec. (− 2′ to + 2′).

20^{d} $21\frac{1}{2}^{h}$ to $23\frac{1}{2}^{h}$ Wave in Dec. (− 4′).

21^{d} $17\frac{1}{2}^{h}$ to $19\frac{1}{2}^{h}$ Shallow wave in Dec. (− 3′). 20^{h} to $20\frac{1}{2}^{h}$ Sharp wave in H.F. (− ·0017). 22^{h} to 23^{h} Wave in Dec. (− $2\frac{1}{2}$′).

22^{d} $0\frac{1}{2}^{h}$ to $1\frac{1}{2}^{h}$ Wave in Dec. (+ 4′) : in H.F. (+ ·0012). $15\frac{1}{2}^{h}$ to $16\frac{1}{2}^{h}$ Wave in H.F. (− ·0010). 19^{h} to 21^{h} Small fluctuations in H.F. 22^{d} $23\frac{1}{2}^{h}$ to 23^{d} $0\frac{1}{2}^{h}$ Wave in H.F. (+ ·0016) : decrease of V.F. (− ·0005). 22^{d} $23\frac{1}{2}^{h}$ to 23^{d} 3^{h} Long double-crested wave in Dec. (− 6′).

23^{d} 3^{h} to 6^{h} Small fluctuations in Dec. 5^{h} to $7\frac{1}{2}^{h}$ Shallow wave in H.F. (+ ·0010), followed by small fluctuations in Dec. and H.F. till 12^{h}. 12^{h} to 13^{h} Wave in H.F. (− ·0016), followed by fluctuations till 20^{h}. 12^{h} to 15^{h} Small fluctuations in Dec. $17\frac{1}{2}^{h}$ to $18\frac{1}{2}^{h}$ Wave in Dec. (− 5′). 20^{h} to $20\frac{1}{2}^{h}$ Wave in Dec. (− 10′) : in H.F. (− ·0012) (terminations of waves lost by stoppage of record). 20^{h} to 21^{h} Small double wave in V.F. 23^{d} $20\frac{1}{2}^{h}$ to 24^{d} $11\frac{1}{2}^{h}$ Loss of Dec. and H.F. register.

24^{d} 16^{h} to 17^{h} Increase of H.F. (+ ·0014).

25^{d} 0^{h} to 2^{h} Small fluctuations in Dec. 1^{h} to 2^{h} Wave in H.F. (+ ·0010). 21^{h} to 23^{h} Double wave in Dec. (− 3′ to + 3′). 22^{h} to $22\frac{1}{2}^{h}$ Wave in H.F. (+ ·0010).

27^{d} 15^{h} to 17^{h} Small rapid fluctuations in H.F.

29^{d} 2^{h} to 3^{h} Wave in Dec. (+ 3′).

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

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

1^{d} 12^{h} to 3^{d} 12^{h}. See Plate V.

3^{d} 18^{h} to 19^{h} Wave in Dec. (− 4′), followed by a small wave till $19\frac{1}{2}^{h}$ (− 2′) : small fluctuations in H.F.

4^{d} 18^{h} to 19^{h} Wave in Dec. (− 3′). $19\frac{1}{2}^{h}$ to 21^{h} Wave in Dec. (− 4′) : in H.F. (+ ·0010). $22\frac{1}{2}^{h}$ to 24^{h} Wave in H.F. (+ ·0012).

5^{d} 20^{h} to 23^{h} Small fluctuations in H.F. 21^{h} to 23^{h} Double wave in Dec. (− 3′ to + 3′).

6^{d} 19^{h} to 21^{h} Shallow wave in Dec. (− 3′) : in H.F. small. $22\frac{1}{2}^{h}$ to 24^{h} Shallow wave in H.F. (+ ·0010).

1897.

October 7^d 12^h to 13^h Wave in Dec. (+ 3′).

9^d 23^h to 24^h Double wave in H.F. (+ ·0010 to − ·0010).

10^d $0\frac{1}{2}^h$ to $2\frac{1}{2}^h$ Shallow wave in Dec. (− 3′). 18^h to 20^h Wave in Dec. (− 13′). 18^h to $18\frac{1}{2}^h$ Sharp wave in H.F. (− ·0020), followed by a longer wave till $20\frac{1}{2}^h$ (− ·0016), then by a double wave till 22^h (− ·0010 to + ·0006). 20^h to $21\frac{1}{2}^h$ Wave in Dec. (− 4′), followed till 24^h by a long double-crested wave (− 9′). Small fluctuations in V.F.

11^d $0\frac{1}{2}^h$ to 2^h Wave in Dec. (+ 4′). $1\frac{1}{2}^h$ to $2\frac{1}{2}^h$ Wave in H.F. (+ ·0010). $18\frac{1}{2}^h$ to 20^h Serrated wave in H.F. (+ ·0020) : small fluctuations in Dec.

12^d 16^h to 22^h Fluctuations in H.F. $18\frac{1}{2}^h$ to $19\frac{1}{2}^h$ Wave in Dec. (− 5′).

13^d $20\frac{1}{2}^h$ to 22^h Wave in Dec. (− 3′) : in H.F. small.

14^d 0^h to 1^h Wave in H.F. (+ ·0012). $0\frac{1}{2}^h$ to 2^h Wave in Dec. (+ 3′).

15^d 17^h to 24^h Small fluctuations in H.F.

16^d $17\frac{1}{2}^h$ to 19^h Wave in Dec. (− 5′).

17^d 5^h to 7^h Shallow wave in Dec. (+ 3′). 6^h to 8^h Wave in H.F. (+ ·0012). 16^h to $17\frac{1}{2}^h$ Wave in H.F. (− ·0012). $17\frac{1}{2}^h$ to 20^h Double wave in Dec. (+ 4′ to − 3′). $22\frac{1}{2}^h$ to $23\frac{1}{2}^h$ Wave in H.F. (+ ·0024). 23^h to 24^h Wave in Dec. (− 6′) : in V.F. (− ·0004).

18^d $2\frac{1}{2}^h$ to 5^h Double wave in Dec. (+ 7′ to − 3′). $2\frac{1}{2}^h$ to $3\frac{1}{2}^h$ Wave in H.F. (− ·0010). 3^h to 4^h Decrease of V.F. (− ·0003). 13^h to 21^h Fluctuations in Dec. and H.F., with wave in Dec. $19\frac{1}{2}^h$ to 21^h (+ 4′). 22^h to $23\frac{1}{2}^h$ Double wave in Dec. (− 6′ to + 4′) : in H.F. (+ ·0030 to − ·0012).

19^d 0^h to 2^h Fluctuations in Dec. (± 2′). $2\frac{1}{2}^h$ to 5^h Two successive waves in Dec. (+ 3′) and (+ 7′). $3\frac{1}{2}^h$ to $4\frac{1}{2}^h$ Wave in H.F. (− ·0010). $10\frac{1}{2}^h$ to 12^h Wave in H.F. (− ·0013). 22^h to 24^h Small fluctuations in Dec. and H.F.

26^d 18^h to 23^h Small fluctuations in Dec. and H.F.

27^d 19^h to 24^h Fluctuations in H.F. (± ·0010). 20^h to 22^h Wave in Dec. (− 9′).

28^d 0^h to 7^h Small fluctuations in Dec. and H.F. 17^h to $20\frac{1}{2}^h$ Long wave in Dec. (− 13′), steep at commencement, with superposed fluctuations. 17^h to $18\frac{1}{2}^h$ Double wave in H.F. (− ·0020 to + ·0016). $18\frac{1}{2}^h$ to 20^h Serrated wave in H.F. (− ·0025), followed till 21^h by a small wave (− ·0012). $20\frac{1}{2}^h$ to $21\frac{1}{2}^h$ Wave in Dec. (− 5′). 17^h to 21^h Small fluctuations in V.F.

29^d 5^h to 15^h Small fluctuations in Dec. and H.F. 15^h to 16^h Wave in Dec. (− 3′). 17^h to $20\frac{1}{2}^h$ Three successive waves in Dec. (− 4′), (− 4′), and (− 7′). 18^h to $20\frac{1}{2}^h$ Double wave in H.F. (− ·0010 to + ·0012). 29^d $22\frac{1}{2}^h$ to 30^d 1^h Three successive waves in Dec. (− 3′), (− 5′), and (− 5′), followed by a double wave till $3\frac{1}{2}^h$ (+ 4′ to − 4′). 29^d $22\frac{1}{2}^h$ to 24^h Two successive waves in H.F. (+ ·0030) and (+ ·0022). 29^d 23^h to 30^d 1^h Wave in V.F. (− ·0003).

30^d $0\frac{1}{2}^h$ to $1\frac{1}{2}^h$ Wave in H.F. (− ·0015). 15^h to 18^h Small fluctuations in Dec. 16^h to 17^h Small wave in H.F. (− ·0010). $19\frac{1}{2}^h$ to $21\frac{1}{2}^h$ Two successive waves in Dec. (− 4′) and (− 4′). $20\frac{1}{2}^h$ to $21\frac{1}{2}^h$ Wave in H.F. (+ ·0014).

31^d 21^h to 23^h Wave in Dec. (− 3′) : in H.F. (+ ·0012) : small fluctuations in V.F.

November 1^d $6\frac{1}{2}^h$ to 10^h Two successive waves in H.F. (− ·0012) and (− ·0020). $10\frac{1}{2}^h$ to 11^h Wave in Dec. (+ 4′). 18^h to 19^h Fluctuations in H.F. 19^h to 20^h Wave in Dec. (− 4′). 20^h to 21^h Double wave in H.F. (+ ·0016 to − ·0010). 21^h to 22^h Wave in H.F. (+ ·0015) : small wave in Dec. (− 3′), followed till 23^h by a longer wave (− 5′).

2^d 3^h to 8^h Small fluctuations in Dec. and H.F. $18\frac{1}{2}^h$ to 20^h Wave in Dec. (− 5′) : in H.F. (− ·0010), followed in both elements, by small fluctuations till 3^d 2^h.

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

4^d 12^h to 15^h Small fluctuations in Dec. and H.F. 21^h to 23^h Two successive waves in H.F. (+ ·0010) and (+ ·0014). 22^h to $23\frac{1}{2}^h$ Small double wave in Dec. (+ 2′ to − 2′).

5^d 13^h to $16\frac{1}{2}^h$ Loss of H.F. and Dec. registers. $18\frac{1}{2}^h$ to $19\frac{1}{2}^h$ Wave in Dec. (− 3′) : in H.F. (− ·0010).

6^d $6\frac{1}{2}^h$ to 8^h Wave in H.F. (− ·0014). $19\frac{1}{2}^h$ to 22^h Irregular wave in Dec. (− 4′) : in H.F. small.

7^d $21\frac{1}{2}^h$ to 23^h Wave in Dec. (− 3′).

9^d $18\frac{1}{2}^h$ to 20^h Wave in Dec. (− 4′), followed by small fluctuations in Dec. and H.F. till 10^d 6^h.

10^d 19^h to 20^h Wave in Dec. (− 3′).

11^d $14\frac{1}{2}^h$ to $16\frac{1}{2}^h$ Shallow wave in H.F. (− ·0010). 15^h to 16^h Decrease of Dec. (− 3′).

1897.

November 12^d $14\frac{1}{2}^h$ to 16^h Wave in V.F. (+ ·0003).

13^d 21^h to 22^h Wave in Dec. (− 6′). $21\frac{1}{2}^h$ to 23^h Wave in H.F. (+ ·0025). 22^h to 23^h Decrease of V.F. (− ·0003). $22\frac{1}{2}^h$ to $23\frac{1}{2}^h$ Wave in Dec. (− 3′).

14^d 3^h to $4\frac{1}{2}^h$ Wave in Dec. (+ 5′). 14^h to $15\frac{1}{2}^h$ Wave in H.F. (− ·0014). $14\frac{1}{2}^h$ to 15^h Decrease of Dec. (− 3′). 16^h to 18^h Wave in Dec. (− 4′) : small fluctuations in H.F. till 20^h. $20\frac{1}{2}^h$ to $22\frac{1}{2}^h$ Two successive waves in H.F. (− ·0010) and (− ·0012).

15^d 1^h to $2\frac{1}{2}^h$ Wave in Dec. (+ 4′). 4^h to $5\frac{1}{2}^h$ Wave in Dec. (− 3′). 4^h to $6\frac{1}{2}^h$ Shallow double wave in H.F. (+ ·0010 to − ·0010). $15\frac{1}{2}^h$ to 17^h Double-crested wave in H.F. (− ·0010). 16^h to 17^h Wave in Dec. (− 3′).

17^d 5^h to 7^h Wave in H.F. (− ·0010). $5\frac{1}{2}^h$ to 6^h Increase of Dec. (+ 3′). 6^h to $7\frac{1}{2}^h$ Shallow wave in Dec. (+ 3′). 13^h to 16^h Fluctuations in Dec., H.F., and V.F., with double wave in Dec. 16^h to $17\frac{3}{4}^h$ (− 3′ to + 3′). 16^h to $16\frac{1}{2}^h$ Wave in H.F. (+ ·0010). $19\frac{1}{2}^h$ to $20\frac{1}{2}^h$ Wave in H.F. (− ·0016), followed by a double wave till 22^h (+ ·0012 to − ·0014). $20\frac{1}{2}^h$ to $22\frac{1}{2}^h$ Two successive waves in Dec. (− 5′) and (− 10′). 21^h to 22^h Wave in V.F. (− ·0003).

18^d $0\frac{1}{2}^h$ to $1\frac{1}{2}^h$ Wave in Dec. (+ 7′). $0\frac{1}{2}^h$ to 3^h Double wave in H.F. (− ·0012 to + ·0012). $5\frac{1}{2}^h$ to 7^h Small shallow wave in Dec. (+ 3′) : in H.F. (− ·0010). 17^h to 19^h Wave in Dec. (− 8′) : in H.F. (− ·0017). $20\frac{1}{2}^h$ to $21\frac{1}{2}^h$ Wave in Dec. (− 6′) : in H.F. small. 18^d 23^h to 19^d 2^h Two successive waves in Dec. (− 5′) and (− 3′).

19^d 0^h to 1^h Wave in H.F. (+ ·0015).

20^d 16^h to 17^h Wave in Dec. (+ 3′). 19^h to $20\frac{1}{2}^h$ Serrated wave in Dec. (− 9′) : fluctuations in H.F. 22^h to 24^h Two successive waves in Dec. (− 3′) and (− 5′). 22^h to $23\frac{1}{2}^h$ Wave in H.F. (+ ·0020).

21^d 17^h to $18\frac{1}{2}^h$ Wave in Dec. (− 4′). 21^d $23\frac{1}{2}^h$ to 22^d 1^h Wave in Dec. (− 4′) : in H.F. (+ ·0020).

23^d 19^h to 23^h Fluctuations in H.F.

24^d 1^h to 2^h Wave in Dec. (+ 3′). 13^h to 14^h Wave in H.F. (− ·0010). $13\frac{1}{2}^h$ to 15^h Wave in Dec. (+ 4′). $16\frac{1}{2}^h$ to $18\frac{1}{2}^h$ Double wave in H.F. (− ·0016 to + ·0020), followed by fluctuations till 21^h. 17^h to $19\frac{1}{2}^h$ Two successive waves in Dec. (− 6′) and (− 5′). 21^h to 22^h Wave in Dec. (− 9′), followed till $23\frac{1}{2}^h$ by an irregular wave (− 5′). $21\frac{1}{2}^h$ to $22\frac{1}{2}^h$ Wave in H.F. (+ ·0030).

25^d 0^h to 6^h Fluctuations in Dec. (± 2′) : in H.F. (± ·0006). $13\frac{1}{2}^h$ to 15^h Double wave in Dec. (+ 2 to − 3′). 14^h to 15^h Wave in H.F. (− ·0020). 18^h to 19^h Wave in H.F. (− ·0010). $18\frac{1}{2}^h$ to $20\frac{1}{2}^h$ Double-crested wave in Dec. (− 6′). $19\frac{1}{2}^h$ to $20\frac{1}{2}^h$ Decrease of H.F. (− ·0016).

26^d 0^h to 1^h Wave in Dec. (+ 3′) : in H.F. (+ ·0010) : slight decrease of V.F. $18\frac{1}{2}^h$ to 21^h Two successive waves in Dec. (− 4′) and (− 5′). $19\frac{1}{2}^h$ to $20\frac{1}{2}^h$ Double wave in H.F. (+ ·0010 to − ·0008). 22^h to 24^h Shallow wave in Dec. (− 6′).

27^d 0^h to 3^h Two successive shallow waves in Dec. (− 4′) and (− 3′). 1^h to 2^h Wave in H.F. (+ ·0010). 15^h to $16\frac{1}{2}^h$ Wave in H.F. (− ·0010). 16^h to 17^h Wave in Dec. (− 6′).

28^d $21\frac{1}{2}^h$ to 23^h Wave in Dec. (− 3′). 28^d 23^h to 29^d 1^h Wave in H.F. (+ ·0022).

29^d 0^h to $1\frac{1}{2}^h$ Wave in Dec. (− 4′). 19^h to 21^h Wave in Dec. (− 7′), steep at commencement. 19^h to $19\frac{1}{2}^h$ Decrease of H.F. (− ·0014) : slight fluctuations in Dec. and H.F. till 23^h.

December 1^d 7^h to 9^h Wave in Dec. (+ 3′).

3^d 22^h to 24^h Wave in Dec. (− 3′).

4^d $0\frac{1}{2}^h$ to 2^h Wave in H.F. (+ ·0010) in Dec. small. 8^h to 9^h Decrease of H.F. (− ·0014). 12^h to $13\frac{1}{2}^h$ Shallow wave in H.F. (− ·0010).

5^d 1^h to 3^h Shallow wave in H.F. (+ ·0010). $1\frac{1}{2}^h$ to 4^h Long wave in Dec. (− 6′).

6^d $1\frac{1}{2}^h$ to 5^h Shallow wave in Dec. (+ 3′). 18^h to $22\frac{1}{2}^h$ Loss of V.F. register.

7^d 21^h to 22^h Wave in Dec. (− 4′) : in H.F. small.

9^d $23\frac{1}{2}^h$ to 10^d 2^h Wave in Dec. (− 4′).

10^d 21^h to $21\frac{1}{2}^h$ Decrease of Dec. (− 3′). Wave in H.F. (+ ·0010).

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

12^d 3^h to 7^h Small fluctuations in Dec. and H.F. $7\frac{1}{2}^h$ to 10^h Wave in H.F. (− ·0024). 9^h to 10^h Wave in Dec. (+ 3′).

1897.

December 15d 5h to 8h Two successive waves in Dec. (+ 6′) and (+ 5′). $5\frac{1}{2}$h to $8\frac{1}{2}$h Two successive waves in H.F. (+ ·0016) and (+ ·0014). Fluctuations in V.F. $10\frac{1}{2}$h to 11h Wave in Dec. (+ 3′). 17h to 21h Small fluctuations in H.F., with wave $19\frac{1}{2}$h to 21h (+ ·0022). 19h to 20h Sharp wave in Dec. (− 12′), followed by two smaller waves till $21\frac{1}{2}$h (− 4′) and (− 5′). $19\frac{1}{2}$h to $20\frac{1}{2}$h Wave in V.F. (+ ·0004).

16d 0h to 7h Small fluctuations in Dec. and H.F., with wave in H.F. 1h to 2h (− ·0014). $3\frac{1}{2}$h to 6h Shallow wave in Dec. (− 4′).

17d 0h to $1\frac{1}{2}$h Wave in Dec. (+ 4′). $19\frac{1}{2}$h to $20\frac{1}{2}$h Wave in H.F. (− ·0016). 20h to $21\frac{1}{2}$h Wave in Dec. (− 12′). $21\frac{1}{2}$h to $22\frac{1}{2}$h Double wave in H.F. (+ ·0010 to − ·0010), followed till 23h by a wave (− ·0010). $22\frac{1}{2}$h to 24h Wave in Dec. (− 4′).

18d $20\frac{1}{2}$h to $22\frac{1}{2}$h Two successive waves in Dec. (− 4′) and (− 2′). 21h to 22h Double-crested wave in H.F. (+ ·0010).

19d 18h to 20h Wave in Dec. (− 4′).

20d 12h to 22d 12h. See Plate VI.

22d $16\frac{1}{2}$h to 19h Irregular double wave in Dec. (− 5′ to + 5′), followed till $19\frac{1}{2}$h by a sharp wave (− 5′). 19h to $19\frac{1}{2}$h Sharp wave in H.F. (+ ·0024). $22\frac{1}{2}$h to $23\frac{1}{2}$h Serrated wave in Dec. (+ 4′) : in H.F. (+ ·0020), followed till 23d $0\frac{1}{2}$h by a small wave (+ ·0010). $22\frac{1}{2}$h to 24h wave in V.F. (− ·0003).

23d 17h to $18\frac{1}{2}$h Wave in Dec. (− 5′) : in H.F. small. $20\frac{1}{2}$h to $21\frac{1}{2}$h Two successive waves in Dec. (− 4′) and (− 3′). $20\frac{1}{2}$h to 22h Double-crested wave in H.F. (+ ·0012).

24d 9h to $10\frac{1}{2}$h Wave in H.F. (− ·0012). 19h to $20\frac{1}{2}$h Wave in Dec. (− 4′). $22\frac{1}{2}$h to $23\frac{1}{2}$h Wave in Dec. (+ 3′) : in H.F. (+ ·0013).

25d $20\frac{1}{2}$h to 22h Wave in Dec. (− 3′). Two successive small waves in H.F.

29d $0\frac{1}{2}$h to $1\frac{1}{2}$h Wave in Dec. (+ 3′) : in H.F. (+ ·0012). $7\frac{1}{2}$h to 9h Wave in Dec. (+ 3′) : in H.F. (+ ·0010). 12h to 18h Frequent small fluctuations in Dec. and H.F. $21\frac{1}{2}$h to 23h Wave in Dec. (− 8′). 29d $23\frac{1}{2}$h to 30d 1h Double wave in Dec. (+ 7′ to − 5′). Double wave in H.F. (+ ·0026 to − ·0010). 29d $23\frac{1}{2}$h to 24h Decrease of V.F. (− ·0005).

30d 17h to $19\frac{1}{2}$h Two successive waves in H.F. (− ·0010) and (− ·0012). $17\frac{1}{2}$h to 20h Two successive waves in Dec. (− 3′) and (− 11′), the latter steep at commencement. 30d 12h to 31d 13h No register of V.F.

31d 1h to 2h Wave in Dec. (− 3′). $12\frac{1}{2}$h to 16h Two successive double waves in Dec. (+ 3′ to − 6′) and (+ 7′ to − 7′). $13\frac{1}{2}$h to 16h Loss of H.F. register. 15h to $16\frac{1}{2}$h Wave in V.F. (+ ·0005). 17h to 24h Fluctuations in Dec. (± 3′) : in H.F. (± ·0010) : in V.F. small : with waves in Dec. $18\frac{1}{2}$h to $19\frac{1}{2}$h (− 5′) and 20h to 21h (− 6′). 21h to 22h Wave in H.F. (+ ·0015). $21\frac{1}{2}$h to 22h Decrease of V.F. (− ·0005).

EXPLANATION OF THE PLATES.

The magnetic motions figured on the Plates are—

(1.) Those for days of great disturbance—None in 1897.

(2.) Those for days of lesser disturbance—January 2–3, February 25–26, 26–27, 27–28, March 10–11, April 1–2, 20–21, 23–24, 24–25, May 20–21, September 4–5, October 1–2, 2–3, December 11, 20–21, 21–22.

(3.) Those for four quiet days, January 21, May 9, August 5, December 8, 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 $0^{\text{in.}}80 = \overset{\text{mm.}}{20\cdot4}$ in the declination curve, by $0^{\text{in.}}75 = \overset{\text{mm.}}{19\cdot1}$ in the horizontal force curve, and by $0^{\text{in.}}78 = \overset{\text{mm.}}{19\cdot9}$ in the vertical force curve.

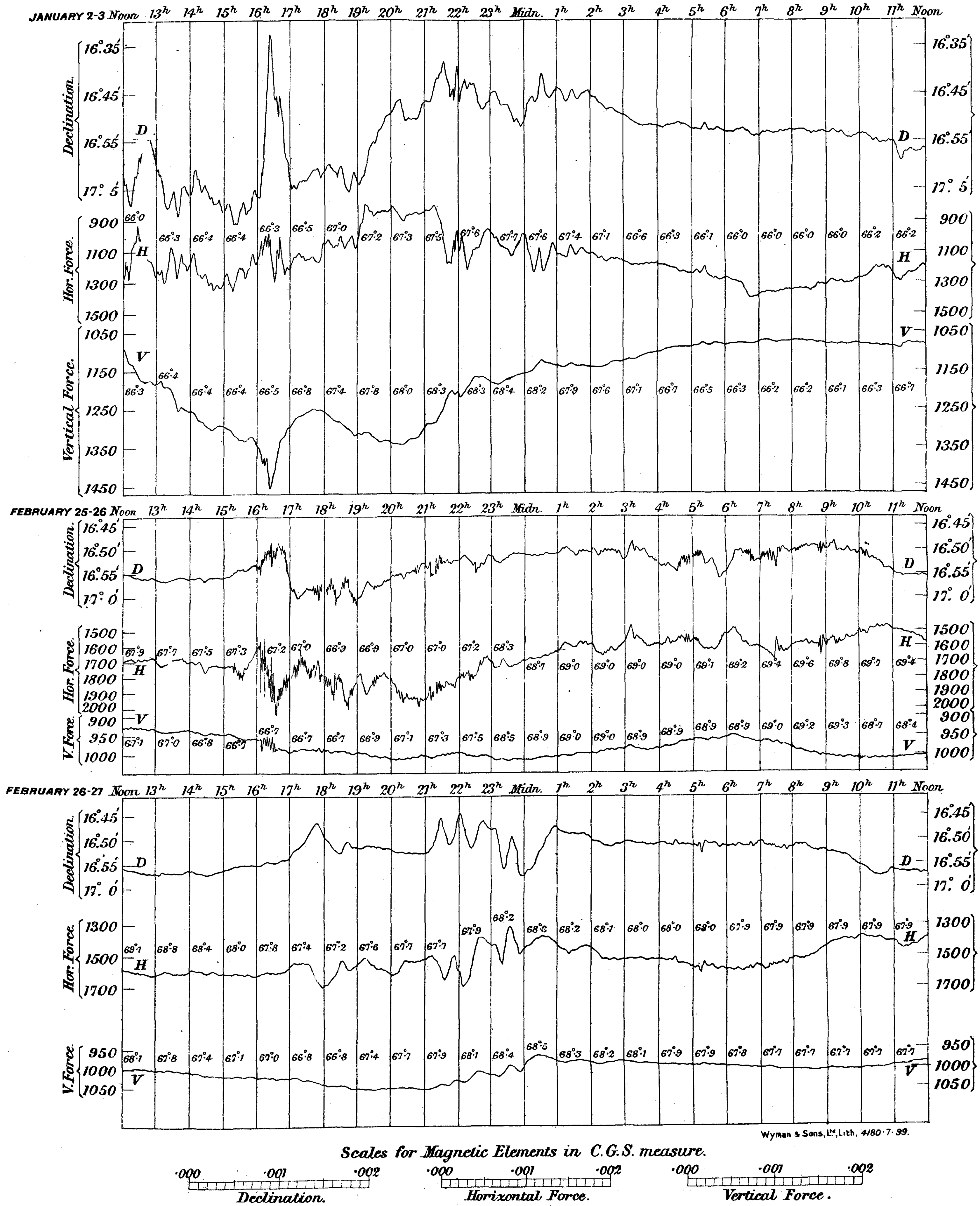
Downward motion indicates increase of declination and of horizontal and vertical force.

The earth current registers are not given on the plates in consequence of interference with the records caused by the running of trains on the City and South London Electric Railway.

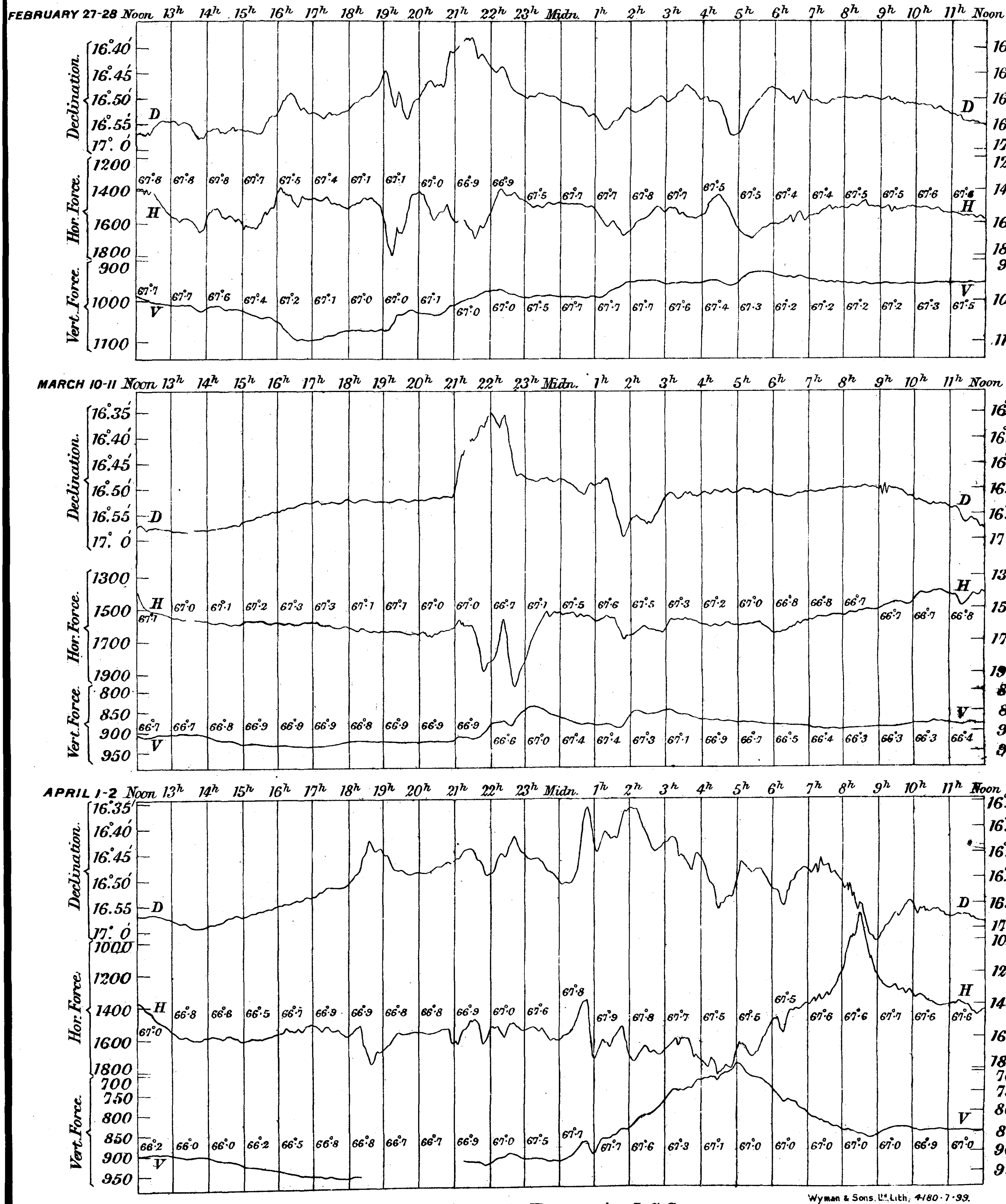
An arrow (↑) indicates that the register was out of range of registration in the direction of the arrow head.

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, 1897.



Magnetic Disturbances recorded at the Royal Observatory, Greenwich, 1897.



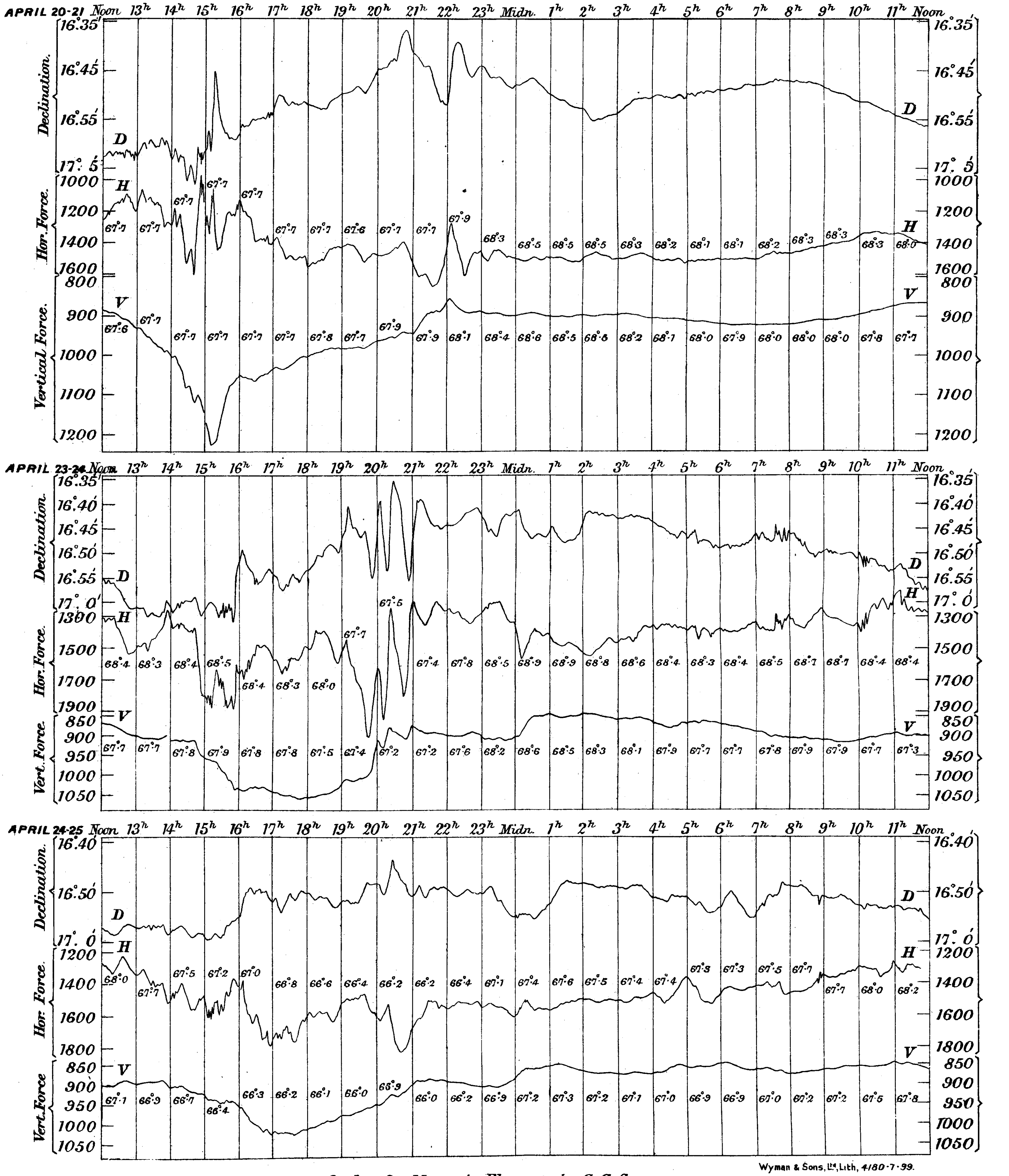
Scales for Magnetic Elements in C. G. S. measure.

·000 ·001 ·002 Declination.

·000 ·001 ·002 Horizontal Force.

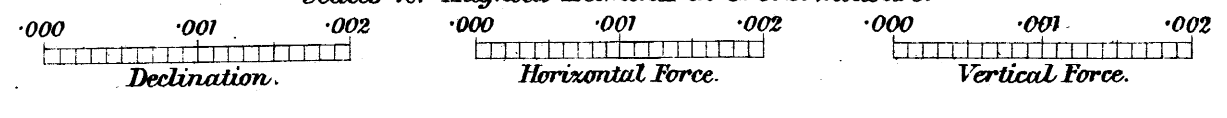
·000 ·001 ·002 Vertical Force.

Magnetic Disturbances recorded at the Royal Observatory, Greenwich, 1897.

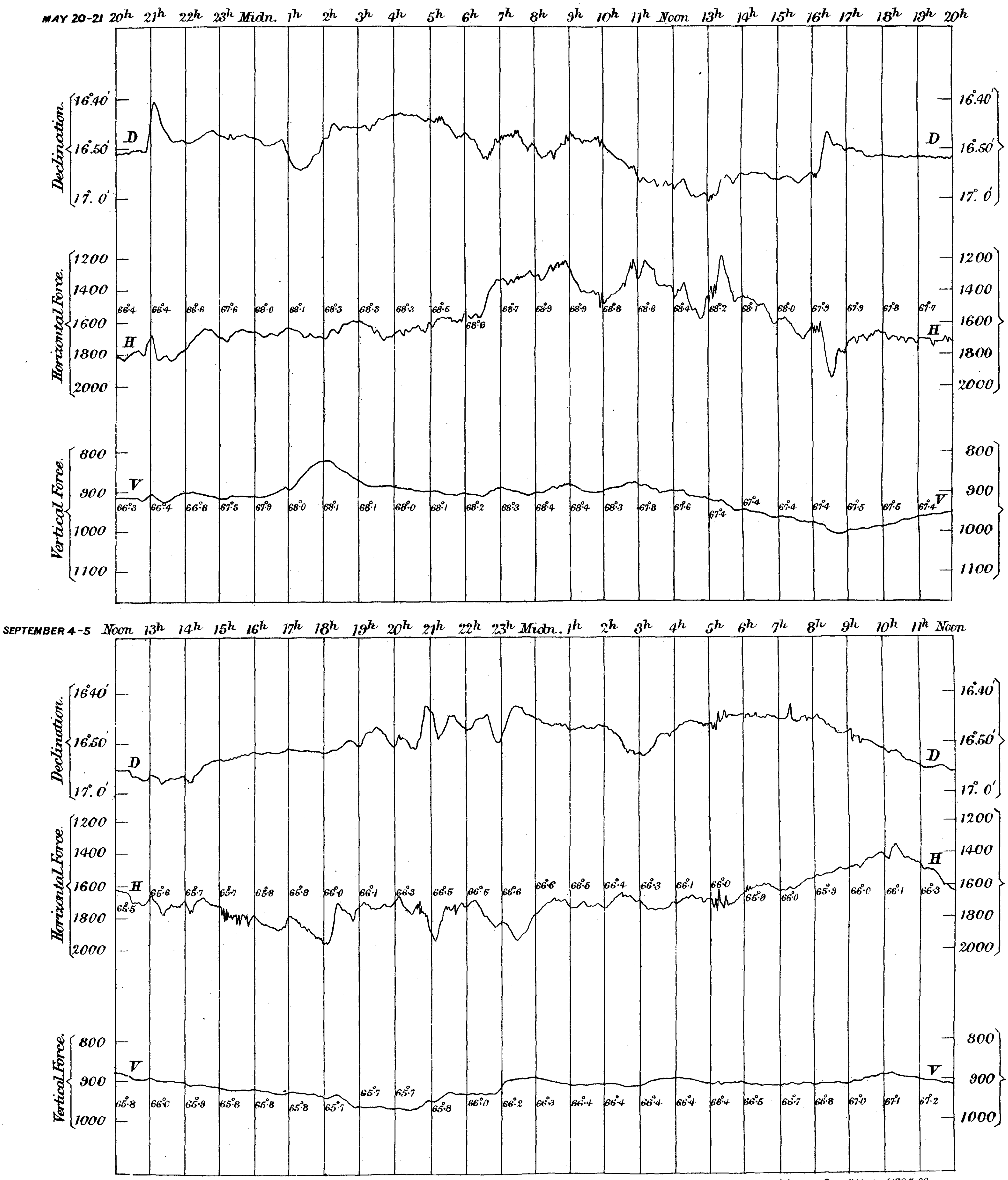


Wyman & Sons, Ltd, Lith, 4180·7·99.

Scales for Magnetic Elements in C. G. S. measure.



Magnetic Disturbances recorded at the Royal Observatory, Greenwich, 1897.



Wyman & Sons, Ltd, Lith, 4180.7.39

Scales for Magnetic Elements in C.G.S. measure.

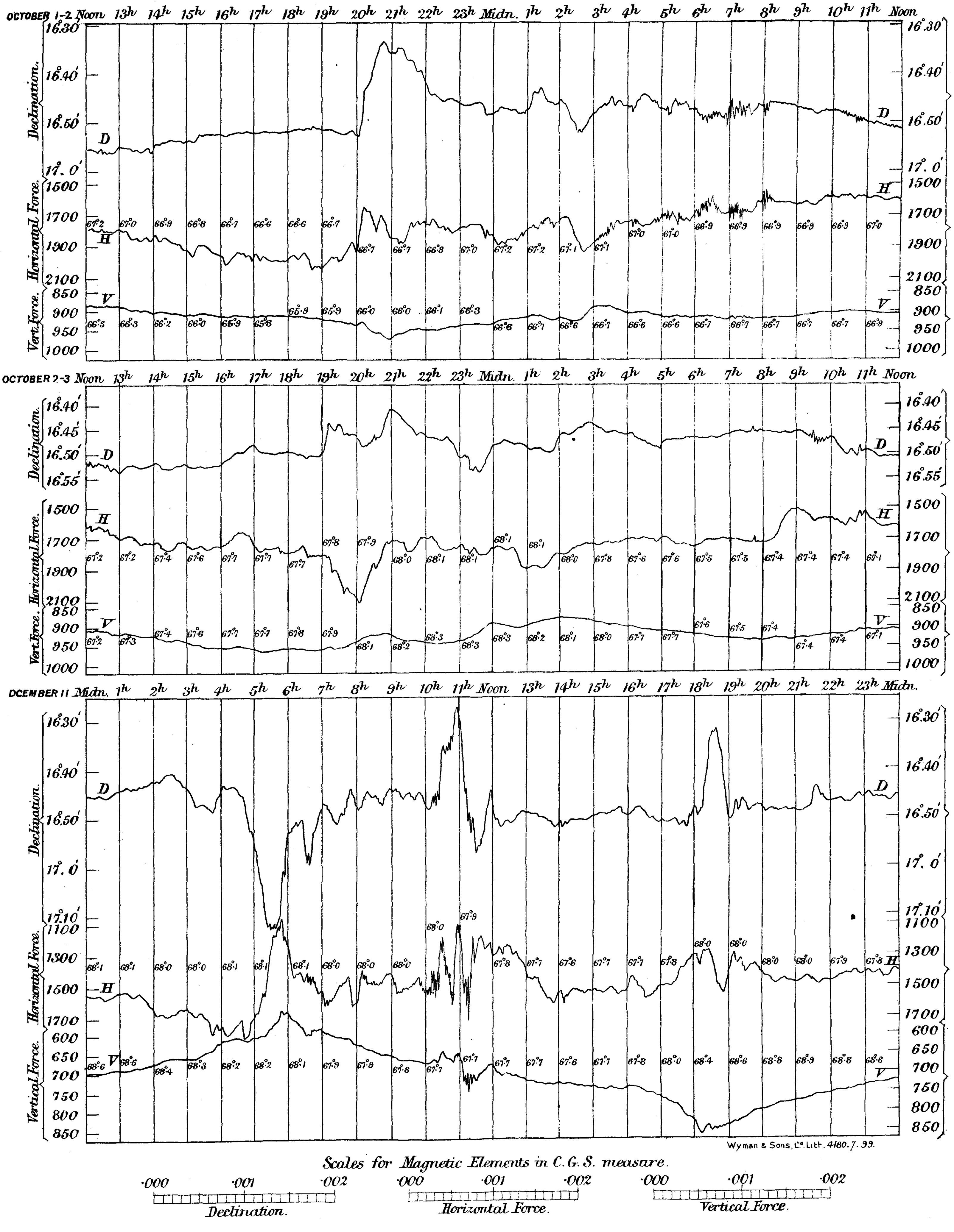
·000 ·001 ·002 Declination.

·000 ·001 ·002 Horizontal Force.

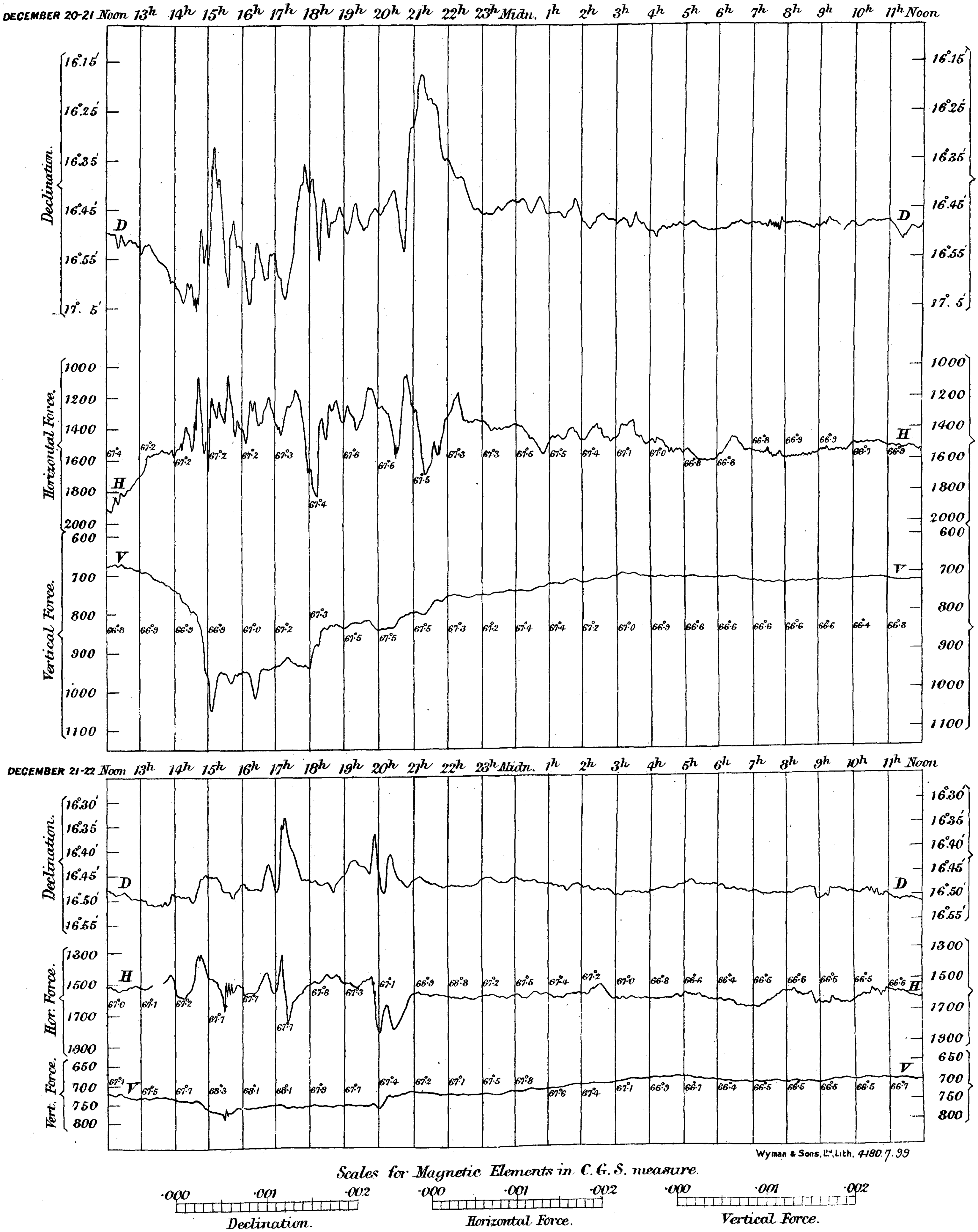
·000 ·001 ·002 Vertical Force.

Plate V.

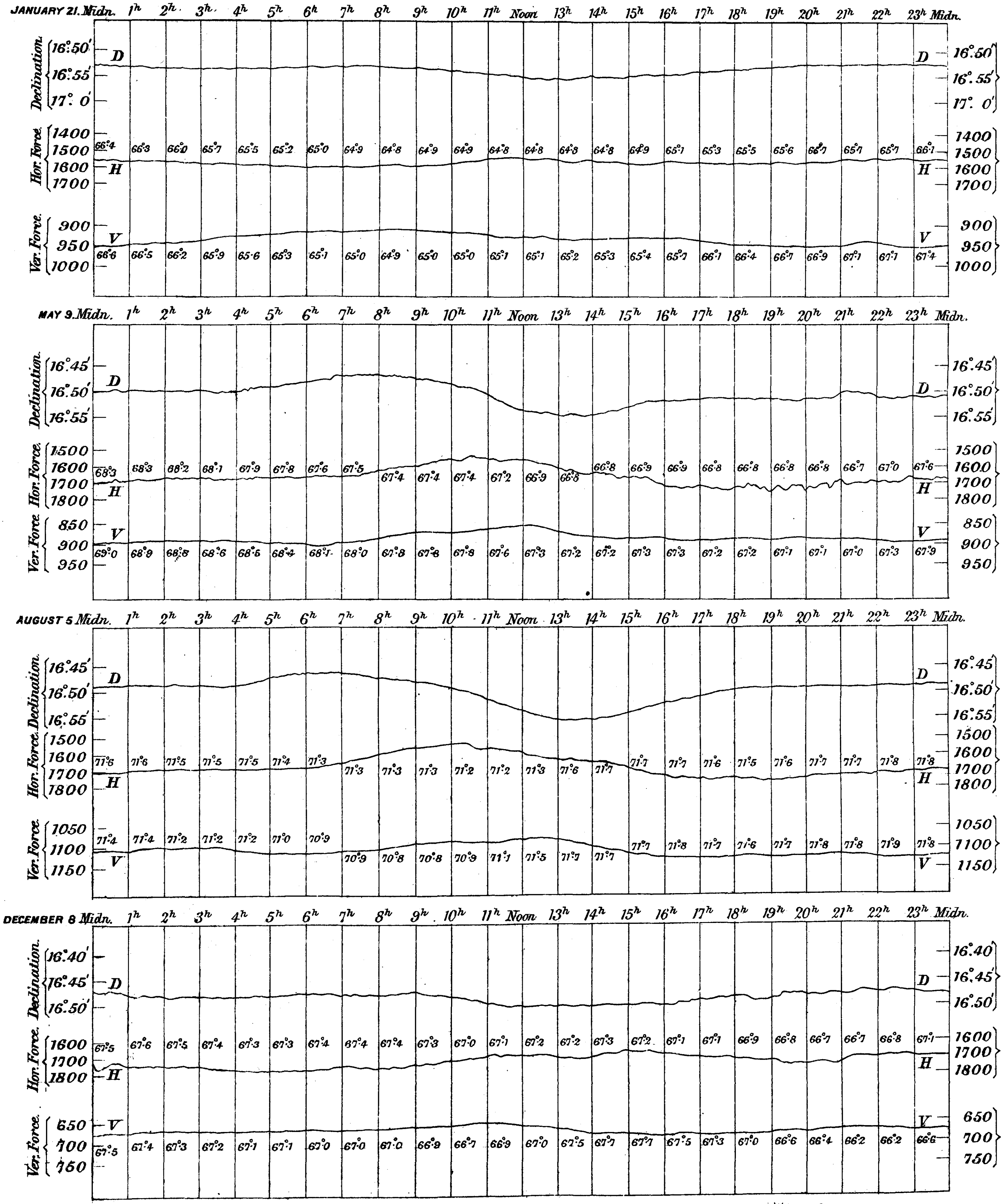
Magnetic Disturbances recorded at the Royal Observatory, Greenwich, 1897.



Magnetic Disturbances recorded at the Royal Observatory, Greenwich, 1897.

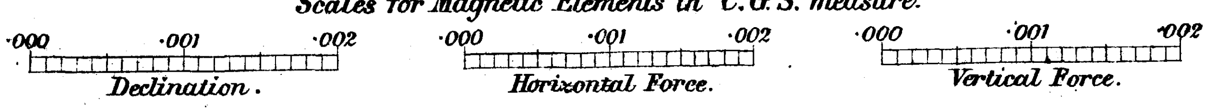


Types of Magnetic Diurnal Variations at four seasons of the year recorded at the Royal Observatory, Greenwich, 1897.



Wyman & Sons, Ld, Lith, 4180·7·99.

Scales for Magnetic Elements in C.G.S. measure.



ROYAL OBSERVATORY, GREENWICH.

RESULTS

OF

METEOROLOGICAL OBSERVATIONS.

1897.

MONTH and DAY, 1897.	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 50 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.	Rain collected in Gauge No. 6, whose receiving surface is 5 inches above the Ground.	Daily Amount of Ozone.	Electricity.
		in.	°	°	°	°	°	°	°	°	°	°		°	°	in.		
Jan. 1	Greatest Declination S.	30·193	48·3	31·4	16·9	43·0	+ 4·5	40·9	38·4	4·6	8·8	1·2	83	62·6	27·5	0·054	0·8	wP, wN : mP : sP
2	...	30·357	36·5	27·2	9·3	31·4	− 7·1	31·4	31·4	0·0	1·9	0·0	100	43·1	26·9	0·004	0·0	sP : ssP : sP
3	New	30·146	44·4	33·6	10·8	39·4	+ 0·9	38·1	36·4	3·0	9·7	0·0	90	48·3	30·8	0·000	0·5	mP
4	...	29·957	38·7	32·6	6·1	35·6	− 2·8	34·3	32·3	3·3	6·2	1·7	88	48·0	28·9	0·000	1·5	wP : mP : vP
5	...	29·779	42·8	34·9	7·9	39·6	+ 1·3	38·6	37·3	2·3	3·7	0·5	92	52·0	33·4	0·159	1·5	wP, sN : vP, ssN : mP
6	...	29·549	46·0	33·6	12·4	39·8	+ 1·6	37·8	35·2	4·6	9·0	1·3	84	71·1	30·7	0·000	4·7	mP
7	...	29·558	45·7	40·6	5·1	42·7	+ 4·6	41·7	40·5	2·2	5·3	0·7	92	62·1	37·6	0·192	0·8	wP, vN : mP : wP, vN
8	In Equator	29·509	42·1	39·3	2·8	40·6	+ 2·6	39·9	39·0	1·6	3·2	0·2	94	44·5	37·3	0·548	0·0	wP, vN
9	...	29·437	41·4	35·4	6·0	38·2	+ 0·3	38·0	37·7	0·5	0·9	0·0	98	42·5	35·4	0·182	0·5	ssN, wP : mP
10	First Quarter	29·436	46·1	38·8	7·3	43·1	+ 5·2	42·9	42·7	0·4	2·3	0·0	98	51·0	37·3	0·046	1·5	mP : mP, vN
11	Apogee	29·550	41·5	37·5	4·0	39·0	+ 1·1	38·8	38·5	0·5	0·9	0·0	98	41·6	37·5	0·000	0·0	mP
12	...	29·559	40·9	38·2	2·7	39·6	+ 1·7	38·9	38·0	1·6	3·2	0·5	94	40·9	38·2	0·000	0·0	mP
13	...	29·681	39·8	36·3	3·5	38·2	+ 0·2	37·2	35·8	2·4	4·4	0·9	91	42·5	35·5	0·000	0·0	wP : mP : sP, wN
14	...	29·954	40·3	33·9	6·4	37·4	− 0·8	36·0	34·1	3·3	7·6	1·4	88	53·0	32·0	0·023	1·0	mP : sP, ssN
15	...	29·918	38·6	31·3	7·3	34·6	− 3·7	33·3	31·1	3·5	6·2	1·2	87	58·0	29·4	0·000	0·0	sP
16	Greatest Declination N.	29·793	34·1	30·5	3·6	32·4	− 6·1	31·2	28·6	3·8	6·2	0·4	85	41·0	29·4	0·154	2·0	mP : mP : vP
17	...	29·827	34·1	27·8	6·3	32·1	− 6·4	31·0	28·5	3·6	5·4	1·7	86	39·0	27·0	0·000	0·0	mP : sP
18	Full	29·910	33·8	23·8	10·0	29·0	− 9·5	28·1	24·8	4·2	5·5	0·0	84	37·8	23·5	0·000	0·0	sP
19	...	29·888	36·0	32·2	3·8	34·3	− 4·2	33·6	32·5	1·8	3·2	0·7	93	41·2	31·0	0·018	0·5	sP : sP : vP
20	...	29·926	35·9	29·7	6·2	32·3	− 6·1	31·2	28·8	3·5	9·2	0·7	86	36·2	29·7	0·010	2·2	wP : mP
21	...	29·723	34·1	29·3	4·8	31·6	− 6·7	30·0	26·2	5·4	8·4	2·2	80	39·0	28·1	0·005	2·5	wP : sP : sP
22	In Equator	29·261	35·4	25·6	9·8	31·5	− 6·8	30·4	27·7	3·8	8·4	0·0	84	71·0	25·6	0·055	0·8	vP : ssN
23	...	29·553	31·2	25·6	5·6	27·9	−10·5	26·6	21·3	6·6	11·6	1·7	75	45·5	25·5	0·065	0·8	vP, vN : wP, vN : mP
24	...	29·688	32·4	24·3	8·1	28·8	− 9·7	27·0	20·3	8·5	13·0	3·5	70	68·0	23·3	0·003	2·2	mP : vP
25	Perigee : Last Quarter	29·432	40·3	29·5	10·8	34·8	− 4·0	32·8	29·6	5·2	10·1	0·3	81	72·3	26·5	0·036	0·0	mP, mN : sP : vP, ssN
26	...	29·573	34·9	27·6	7·3	30·9	− 8·1	29·0	23·8	7·1	10·4	0·5	73	60·0	25·2	0·000	0·8	mP : sP
27	...	29·759	39·1	26·3	12·8	32·6	− 6·7	30·8	27·0	5·6	8·3	0·0	79	52·8	23·4	0·000	2·2	sP
28	...	29·914	37·1	30·0	7·1	33·3	− 6·2	31·8	29·0	4·3	12·5	0·0	83	49·0	26·8	0·002	0·0	sP
29	Greatest Declination S.	29·730	37·3	30·7	6·6	34·0	− 5·7	31·9	28·2	5·8	12·0	0·3	78	51·7	27·6	0·022	1·0	sP : sP : vP, vN
30	...	29·172	36·9	33·8	3·1	35·1	− 4·7	34·8	34·3	0·8	1·6	0·3	97	42·0	31·5	0·025	3·0	... : wP, vN : vN, wP
31	...	29·261	34·8	33·7	1·1	34·3	− 5·5	33·5	32·1	2·2	4·4	0·5	92	39·3	32·0	0·012	1·2	wP : mP : sP
Means	...	29·709	3·87	31·8	7·0	35·4	− 3·1	34·2	32·0	3·4	6·6	0·7	87·2	49·9	30·1	Sum 1·615	1·0	...
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 50 years' observations, 1841–1890. 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 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·709, being 0in·069 *lower* than the average for the 50 years, 1841–1890.

TEMPERATURE OF THE AIR.

The highest in the month was 48°·3 on January 1; the lowest in the month was 23°·8 on January 18; and the range was 24°·5.
The mean of all the highest daily readings in the month was 38°·7, being 4°·4 *lower* than the average for the 50 years, 1841–1890.
The mean of all the lowest daily readings in the month was 31°·8, being 1°·8 *lower* than the average for the 50 years, 1841–1890.
The mean of the daily ranges was 7°·0, being 2°·5 *less* than the average for the 50 years, 1841–1890.
The mean for the month was 35°·4, being 3°·1 *lower* than the average for the 50 years, 1841–1890.

MONTH and DAY, 1897.	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.	Least.	Mean of 24 Hourly Measures.	Robinson's. Horizontal Movement of the Air.	CLOUDS AND WEATHER. A.M.	P.M.
	hours.	hours.			lbs.	lbs.	lbs.	miles.		
Jan. 1	2·7	7·9	WSW : N : NNE	NNE : Calm	5·0	0·0	0·26	239	p.-cl : 9, sh.-r : 5, th.-cl	1, th.-cl : 1, li.-cl, f
2	0·0	7·9	Calm : Variable	Calm : SE	0·0	0·0	0·00	69	tk.-f, ho.-fr : 10, tk.-f	10, tk.-f : 10, tk.-f : v
3	0·0	7·9	SE : SSW	S : SSW : SSE	0·8	0·0	0·00	180	p.-cl : p.-cl : 10, f, glm	10 : v
4	0·1	7·9	SSE : S : SSW	SSW : SSE : S	0·9	0·0	0·01	190	p.-cl, ho.-fr : 8, th.-cl	10 : 10
5	0·0	7·9	S : SSW	S : SSE : SE	2·0	0·0	0·05	224	10, sh.-r : 10 : 10, hy.-r	10 : 10
6	1·9	8·0	SE : ESE	SE : ESE	3·2	0·0	0·24	281	10 : p.-cl	9 : p.-cl ... : p.-cl
7	0·4	8·0	ESE : SE : SSE	SSE : ESE : E	3·7	0·0	0·24	296	10, shs.-r : 10, shs.-r : 10	9 : 10, r
8	0·0	8·0	E : ENE	E : ENE	5·4	0·0	0·51	392	10 : 10, r	10, c.-r : 10, c.-r
9	0·0	8·1	ENE	ENE : E	3·1	0·0	0·22	312	10, c.-r : 10, oc.-slt.-r : 10, slt.-r	10, oc.-m.-r : 10, f
10	0·0	8·1	E : SSE : ESE	ESE : E : ENE	0·2	0·0	0·00	128	10, m.-r, f : 10 : 10	10, r : 10
11	0·0	8·1	NE : NNE	N : NNE	0·3	0·0	0·00	119	10, f : 10, f : 10, slt.-f, glm	10, glm : 10, oc.-m.-r, slt.-f : 10
12	0·0	8·2	NNE : NE : ENE	E : ENE : NE	0·3	0·0	0·00	112	10 : 10, glm : 10	10 : 10
13	0·0	8·2	NE	NE : NNE	3·2	0·0	0·25	390	10 : 10 : 10, oc.-th.-r	10 : 10 : 10, slt.-r
14	0·2	8·2	NNE	NE : NNE	2·9	0·0	0·27	384	10, li.-shs : 10 : 9	10, r : 8, lu.-co ... : 9
15	1·1	8·3	NNE	NE	3·0	0·0	0·14	323	10 : 9 : p.-cl, sc	10, slt.-r : th.-cl : ci.-cu, li.-cl
16	0·0	8·3	NE : ENE	NE : NNE	2·9	0·0	0·22	347	10, fr : 10, sc	10 : 10, sn
17	0·3	8·3	N : NNW	NNW : NW : WNW	2·5	0·0	0·25	300	10 : 10	10 : p.-cl, h ... : 0
18	0·0	8·4	WSW : SW	WSW : N	0·0	0·0	0·00	145	0 : 0, fr : 2, th.-cl, f	f, glm : 10 : 10
19	0·0	8·4	N	N : NNE : ENE	2·7	0·0	0·03	183	10, fr : 10	10 : 10, fq.-th.-r : 10, th.-r
20	0·0	8·5	ENE	ENE : NE	6·6	0·0	0·95	513	10, oc.-r : 10, w	10, w, oc.-slt.-sn : 10, w
21	0·0	8·5	ENE : NE	NE : N : W	10·2	0·0	0·50	378	10, slt.-sn, w : 10, slt.-sn	10, slt.-f : 10
22	3·9	8·6	NW : N : NNE	NNE	7·6	0·0	0·69	463	p.-cl, slt.-sn : li.-cl, w	v, oc.-sn, sqs : v, oc.-sn
23	0·4	8·6	NNE	NNE	11·0	0·0	1·45	617	10, sn, st.-w : 8, sn, li.-sc, w	10, sn : 5 ... : p.-cl, l
24	1·3	8·7	NNE : N	N : NW : WSW	2·2	0·0	0·18	301	10, slt.-sn : 10 : 9, ci.-cu	p.-cl : 10 : 10
25	2·7	8·7	WSW : W	W : NW	14·0	0·0	0·87	515	10, slt.-sn : 10 : li.-cl, slt.-sn	3, li.-cl : v, hy.-sq, slt.-sn, l, t : v, fr
26	3·3	8·8	W	WNW : W	6·5	0·0	0·80	527	0 : 0 : li.-cl	9, cu.-s : 0
27	1·2	8·8	WSW : NW	NNW	2·3	0·0	0·16	328	0, ho.-fr : 1, li.-cl : 1, li.-cl, slt.-f	p.-cl : li.-cl, h . : 0, d
28	0·0	8·9	NW : WNW	NW : WNW : NNW	2·8	0·0	0·20	341	v, l, t : 10 : 7, ci.-cu, li.-cl	9, slt.-r : 10 : 0
29	0·3	8·9	NW : WNW	NW : WSW : SSW	1·5	0·0	0·08	280	0 : 8, f, glm	8, s : 10, m.-r
30	0·0	9·0	S : SSE : SE	E : NE	2·1	0·0	0·07	255	10, th.-r, sl : 10, oc.-slt.-r	10, fq.-m.-r : 10, fq.-slt.-r : 10
31	0·0	9·0	NNE : NE	NE : SSW : SW	0·9	0·0	0·00	193	10, oc.-th.-r : 10	10, glm : 10
Means	0·6	8·4	...	...	...	...	0·28	301		
Number of Column for Reference.	19	20	21	22	23	24	25	26	27	28

The mean *Temperature of Evaporation* for the month was 34°·2, being 3°·0 *lower* than
The mean *Temperature of the Dew Point* for the month was 32°·0, being 3°·4 *lower* than
The mean *Degree of Humidity* for the month was 87·2, being 1·6 *less* than
The mean *Elastic Force of Vapour* for the month was $0^{\rm in}\cdot181$, being $0^{\rm in}\cdot026$ *less* than
The mean *Weight of Vapour in a Cubic Foot of Air* for the month was $2^{\rm grs}\cdot1$, being $0^{\rm gr}\cdot3$ *less* than
The mean *Weight of a Cubic Foot of Air* for the month was 556 grains, being 2 grains *greater* than
} the average for the 50 years, 1841–1890.

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 0·076. The maximum daily amount of *Sunshine* was 3·9 hours on January 22.

The highest reading of the *Solar Radiation Thermometer* was 71°·3 on January 25; and the lowest reading of the *Terrestrial Radiation Thermometer* was 23°·3 on January 24.

The mean daily distribution of *Ozone* for the 12 hours ending $9^{\rm h}$ was 0·9; for the 6 hours ending $15^{\rm h}$ was 0·0; and for the 6 hours ending $21^{\rm h}$ was 0·1.

The *Proportions of Wind* referred to the cardinal points were N. 11, E. 10, S. 4, and W. 5. One day was calm.

The *Greatest Pressure of the Wind* in the month was 14·0 lbs. on the square foot on January 25. The mean daily *Horizontal Movement of the Air* for the month was 301 miles; the greatest daily value was 617 miles on January 23; and the least daily value was 69 miles on January 2.

Rain fell on 17 days in the month, amounting to $1^{\rm in}\cdot615$, as measured by gauge No. 6 partly sunk below the ground; being $0^{\rm in}\cdot374$ *less* than the average fall for the 50 years, 1841–1890.

MONTH and DAY, 1897.	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 50 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.	Rain collected in Gauge No. 6, whose receiving surface is 5 inches above the Ground.	Daily Amount of Ozone.	Electricity.
		in.	°	°	°	°	°	°	°	°	°	°		°	°	in.		
Feb. 1	New	29·202	37·5	33·2	4·3	35·2	− 4·5	34·9	34·4	0·8	2·9	0·0	97	41·1	31·7	0·391	3·8	vP, vN : sP
2	...	29·125	37·0	32·6	4·4	35·5	− 4·2	35·5	35·5	0·0	0·8	0·0	100	39·0	31·0	0·616	0·0	vP, wN : vP, wN : vP, vN
3	...	29·580	40·9	32·4	8·5	35·5	− 4·2	35·4	35·2	0·3	2·9	0·0	99	50·1	30·7	0·091	0·5	vN, vP : vP : vP, ssN
4	In Equator	29·658	48·2	40·9	7·3	44·3	+ 4·5	43·5	42·6	1·7	3·6	0·0	94	59·4	37·0	0·124	3·0	mP, ssN : mP : sP, vN
5	...	29·291	46·3	36·6	9·7	42·1	+ 2·3	41·9	41·7	0·4	2·2	0·0	98	46·3	36·2	0·598	5·5	vN, vP
6	...	29·311	39·3	35·7	3·6	37·5	− 2·2	35·9	33·7	3·8	5·8	2·6	87	43·0	35·5	0·000	0·0	mP : sP
7	...	29·754	40·8	32·6	8·2	37·4	− 2·0	34·9	31·5	5·9	9·2	3·0	80	63·9	28·5	0·000	0·0	mP
8	Apogee	30·085	43·7	30·0	13·7	37·3	− 1·8	35·7	33·5	3·8	7·8	1·1	86	53·0	28·1	0·059	2·0	sP : mP : vP, wN
9	First Quarter	29·838	51·3	43·7	7·6	48·4	+ 9·7	47·1	45·7	2·7	4·4	0·0	91	55·9	40·4	0·000	6·0	wP
10	...	29·959	46·9	43·8	3·1	45·9	+ 7·5	44·3	42·5	3·4	8·2	0·0	88	51·2	42·4	0·055	0·3	wP : sP : mP
11	...	29·920	43·8	39·1	4·7	41·5	+ 3·2	41·0	40·4	1·1	4·8	0·0	96	47·3	39·0	0·178	1·2	mP
12	Greatest Declination N.	30·007	41·5	36·4	5·1	38·7	+ 0·2	37·2	35·1	3·6	6·2	1·6	88	47·7	36·4	0·004	1·5	wP : mP : mP
13	...	29·866	48·0	37·1	10·9	42·8	+ 4·0	42·0	41·0	1·8	3·2	0·7	94	50·2	36·5	0·064	1·0	wP : vP, ssN : wP
14	...	29·843	51·1	44·7	6·4	47·9	+ 8·7	45·8	43·5	4·4	9·7	0·8	86	62·0	44·0	0·004	0·0	wP : mP
15	...	30·177	46·7	38·2	8·5	43·1	+ 3·5	42·1	40·9	2·2	5·3	0·7	92	48·4	37·5	0·008	0·0	wP : mP
16	...	30·432	44·3	36·3	8·0	40·1	+ 0·3	37·8	34·8	5·3	10·3	2·6	82	53·0	34·7	0·000	0·5	mP : sP : sP
17	Full	30·331	49·0	31·7	17·3	39·6	− 0·2	37·6	35·0	4·6	9·9	1·1	84	75·6	29·8	0·000	1·5	mP : sP : sP
18	...	30·144	53·0	30·7	22·3	41·6	+ 1·9	39·8	37·5	4·1	10·8	0·0	87	91·5	29·3	0·002	3·0	mP
19	In Equator	30·108	48·7	42·3	6·4	46·2	+ 6·6	45·5	44·7	1·5	2·6	0·6	95	53·0	37·6	0·017	1·2	wP : mP : mP
20	Perigee	30·053	53·1	43·7	9·4	48·1	+ 8·6	46·4	44·5	3·6	8·4	0·2	88	62·2	40·2	0·120	3·8	wP, wN : mP
21	...	30·166	50·7	43·9	6·8	47·2	+ 7·7	42·5	37·2	10·0	15·8	1·7	69	84·0	40·5	0·024	0·0	wP, wwN : mP : mP
22	...	30·392	54·4	44·9	9·5	50·3	+10·7	47·5	44·5	5·8	9·8	2·5	81	69·7	42·4	0·000	0·0	wP : mP : mP
23	...	30·426	53·1	44·3	8·8	47·8	+ 8·0	45·9	43·8	4·0	10·2	0·0	87	81·0	41·2	0·000	1·8	mP
24	Last Quarter	30·359	49·1	45·0	4·1	46·6	+ 6·7	43·4	39·8	6·8	9·7	2·9	78	57·4	42·1	0·000	9·7	mP
25	Greatest Declination S.	30·052	50·7	46·0	4·7	48·7	+ 8·7	46·5	44·1	4·6	6·3	1·9	85	61·0	44·7	0·000	6·8	wP
26	...	30·016	58·6	46·5	12·1	50·7	+10·6	47·9	45·0	5·7	11·4	1·5	81	104·0	43·9	0·000	11·7	wP
27	...	30·114	51·7	38·3	13·4	46·8	+ 6·7	43·6	40·0	6·8	13·0	1·9	78	84·0	34·5	0·000	1·0	wP : mP : vP
28	...	29·786	50·9	32·0	18·9	41·9	+ 1·7	40·8	39·5	2·4	8·2	0·0	92	77·9	32·0	0·030	6·5	wP : wP : wP, vN
Means	...	29·928	47·5	38·7	8·8	43·2	+ 3·7	41·5	39·6	3·6	7·3	1·0	88·0	61·2	36·7	Sum 2·385	2·6	...
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 50 years' observations, 1841–1890. 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 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·928, being 0in·129 *higher* than the average for the 50 years, 1841–1890.

TEMPERATURE OF THE AIR.

The highest in the month was 58°·6 on February 26; the lowest in the month was 30°·0 on February 8; and the range was 28°·6.
The mean of all the highest daily readings in the month was 47°·5, being 2°·2 *higher* than the average for the 50 years, 1841–1890.
The mean of all the lowest daily readings in the month was 38°·7, being 4°·4 *higher* than the average for the 50 years, 1841–1890.
The mean of the daily ranges was 8°·8, being 2°·2 *less* than the average for the 50 years, 1841–1890.
The mean for the month was 43°·2, being 3°·7 *higher* than the average for the 50 years, 1841–1890.

MONTH and DAY, 1897.	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.	Least.	Mean of 24 Hourly Measures.	Robinson's. Horizontal Movement of the Air.	Clouds and Weather. A.M.	P.M.
	hours.	hours.			lbs.	lbs.	lbs.	miles.		
Feb. 1	0·0	9·1	SW : SE : ESE	SE	0·7	0·0	0·00	154	10, r : 10, c.-r : 10	10 : 10, r
2	0·0	9·2	SE : NE : E	NE : NNE : SE	0·1	0·0	0·00	108	10, r, f : 10, sh.-r, tk.-f : 10, r	10, c.-r, sl : 10, r, sn, sl
3	0·1	9·2	NE : SSE	SE : SSE	0·3	0·0	0·00	127	10, sn, sl : 10	10, fq.-r : 10, oc.-th.-r
4	0·3	9·3	SSW : SW : WSW	SSW : SSE	1·1	0·0	0·00	225	10, sh.-r : 10, th.-cl, so.-ha	10, oc.-th.-r : 10, r : 10, c.-r
5	0·0	9·3	SE : ESE	ESE : S : W	8·5	0·0	0·40	344	10, c.-r : 10, c.-r	10, c.-r : 10, c.-r : 10, r, w
6	0·0	9·4	WNW : NW	NNE : N : NNW	8·7	0·0	0·61	397	10 : 10	10 : 10
7	2·0	9·4	NW : NNW : N	N	2·6	0·0	0·28	312	10 : 9 : 8, cu.-s	p.-cl : 0, h, lu.-co
8	0·0	9·5	W : SW : S	SW : S : SSW	5·5	0·0	0·14	252	0, fr : 10 : 10	10 : 10 : 10, r
9	0·0	9·6	SW : WSW	WSW : SW : W	4·8	0·0	0·43	414	10, li.-shs : 10	10, sc : 10 : v
10	0·0	9·6	W : NNE	SSW : SE	0·7	0·0	0·00	115	10, slt.-r : 10 : 9	10 : 10 : 10, slt.-r
11	0·0	9·7	SE : ESE : E	ESE : E	1·5	0·0	0·04	197	10, r : 10, m.-r	10, fq.-m.-r : 10, oc.-th.-r : 10
12	0·0	9·8	E : ESE	ESE : SE	1·6	0·0	0·04	199	10 : 10	10 : 10 : 10, slt.-sh
13	0·0	9·8	SE : S : SW	SW : WSW : W	1·2	0·0	0·08	253	10 : 10	10, r : 10 : 10
14	0·2	9·9	W : WNW : NNW	NW : NNW	1·7	0·0	0·09	268	10, li.-shs : 10 : 10, th.-cl, glm	10, slt.-sh : 9
15	0·0	9·9	NW : N : E	E : ESE	0·5	0·0	0·00	174	10 : 10 : 10, m.-r, slt.-f, glm	10, m.-r : 10 : 9
16	0·0	10·0	Calm : SE	Calm : WSW : SW	0·0	0·0	0·00	94	p.-cl : 10 : 10	10, glm : th.-cl, lu.-ha : li.-cl, lu.-ha
17	7·0	10·1	WSW : SW	SW : SSW	0·1	0·0	0·00	171	li.-cl, ho.-fr : p.-cl, ho.-fr, slt.-f : 2, li.-cl	1, li.-cl : 0 : 0, ho.-fr
18	8·1	10·1	SSW : SW	SW	2·6	0·0	0·18	317	0 : 10 : 1, li.-cl	1, li.-cl : 0 : p.-cl
19	0·0	10·2	SW	SW	3·7	0·0	0·35	403	p.-cl : 10, fq.-r	10, fq.-r : 10, oc.-shs : 10
20	0·1	10·3	SW	WSW : SW	5·3	0·0	0·29	369	10, oc.-th.-r : 10, r : 10, fq.-shs	10 : 0 : v, w
21	4·4	10·3	WSW : WNW : NW	NW : W	13·0	0·0	1·09	526	10, r, st.-w : p.-cl, w, so.-ha	1, li.-cl, w : 10
22	0·6	10·4	WSW : W : WNW	WNW : W	2·3	0·0	0·06	272	10 : p.-cl : 8	10 : p.-cl : 10
23	2·8	10·5	W : WSW	WSW	3·6	0·0	0·13	312	10 : 10 : 8, cu.-s	p.-cl, cu.-s : li.-cl : 10
24	0·4	10·5	W : WSW	WSW : SW	6·5	0·0	0·52	423	10 : 10	10 : p.-cl : 10, w
25	0·0	10·6	SW : WSW	SW : WSW	10·5	0·0	1·31	646	10, w, s : 10, w, sc	10, w, sc : 10, w
26	4·2	10·7	WSW : W	WSW : SW	6·7	0·0	0·84	542	10 : 10 : 8, cu.-s, ci.-cu	2, li.-cl : 1, li.-cl : 8
27	3·4	10·7	WSW : N : NNE	NNE : NE	1·0	0·0	0·02	170	10 : p.-cl : 2, li.-cl	p.-cl : 0, slt.-f
28	0·5	10·8	Variable : SSE : S	SSW	3·2	0·0	0·21	266	p.-cl, f : 10, f : 10, slt.-sh	9 : 10, oc.-slt.-r : 10, slt.-r
Means	1·2	9·9	...	...	...	...	0·25	287		
Number of Column for Reference.	19	20	21	22	23	24	25	26	27	28

The mean *Temperature of Evaporation* for the month was 41°·5, being 3°·7 *higher* than
The mean *Temperature of the Dew Point* for the month was 39°·6, being 4°·0 *higher* than
The mean *Degree of Humidity* for the month was 88·0, being 2·0 *greater* than
The mean *Elastic Force of Vapour* for the month was $0^{in}\cdot243$, being $0^{in}\cdot035$ *greater* than
The mean *Weight of Vapour in a Cubic Foot of Air* was $2^{grs}\cdot8$, being $0^{gr}\cdot4$ *greater* than
The mean *Weight of a Cubic Foot of Air* for the month was 551 grains, being 2 grains *less* than
} the average for the 50 years, 1841–1890.

The mean amount of *Cloud* for the month (a clear sky being represented by 0 and an overcast sky by 10) was 8·5.

The mean *Proportion of Sunshine* for the month (constant sunshine being represented by 1) was 0·123. The maximum daily amount of *Sunshine* was 8·1 hours on February 18.

The highest reading of the *Solar Radiation Thermometer* was 104°·0 on February 26; and the lowest reading of the *Terrestrial Radiation Thermometer* was 28°·1 on February 8.

The mean daily distribution of *Ozone* for the 12 hours ending $9^{h.}$ was 1·9; for the 6 hours ending $15^{h.}$ was 0·2; and for the 6 hours ending $21^{h.}$ was 0·5.

The *Proportions of Wind* referred to the cardinal points were N. 4, E. 5, S. 8, and W. 11.

The *Greatest Pressure of the Wind* in the month was 13·0 lbs. on the square foot on February 21. The mean daily *Horizontal Movement of the Air* for the month was 287 miles; the greatest daily value was 646 miles on February 25; and the least daily value was 94 miles on February 16.

Rain fell on 14 days in the month, amounting to $2^{in}\cdot385$, as measured by gauge No. 6 partly sunk below the ground; being $0^{in}\cdot901$ *greater* than the average fall for the 50 years, 1841–1890.

MONTH and DAY, 1897.	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 50 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.	Rain collected in Gauge No. 6, whose receiving surface is 5 inches above the Ground.	Daily Amount of Ozone.	Electricity.
		in.	°	°	°	°	°	°	°	°	°	°		°	°	in.		
Mar. 1	...	29·371	49·7	36·3	13·4	43·2	+ 3·0	41·0	38·4	4·8	12·6	1·0	83	94·9	36·0	0·354	5·2	wP, vN : mP, ssN : wwP, ssN
2	...	29·424	48·1	34·0	14·1	40·8	+ 0·4	38·6	35·8	5·0	13·7	0·7	83	96·0	32·1	0·485	6·8	ssN, mP : mP : mP, ssN
3	New	28·859	47·8	35·1	12·7	41·9	+ 1·4	38·8	35·0	6·9	10·8	1·8	78	60·3	31·2	0·140	6·5	wP, ssN : vP, ssN
4	In Equator	29·202	50·0	35·1	14·9	41·2	+ 0·5	38·2	34·4	6·8	14·9	3·5	77	90·4	31·4	0·048	11·0	mP : mP, ssN : ssN, mP
5	...	29·152	49·0	33·3	15·7	39·8	− 1·1	36·9	33·2	6·6	14·9	0·8	78	101·7	30·4	0·000	6·0	mP : mP : sP
6	...	29·505	43·9	34·0	9·9	38·9	− 2·2	37·9	36·6	2·3	5·5	0·5	93	57·2	31·0	0·080	0·0	mP, mN : sP : vP, ssN
7	...	29·866	43·6	32·4	11·2	38·1	− 2·9	36·2	33·6	4·5	11·0	0·0	84	80·0	30·6	0·000	0·0	mN, mP : mP : mP
8	Apogee	29·949	47·5	32·5	15·0	38·8	− 2·1	36·1	32·5	6·3	12·8	2·1	79	86·0	28·2	0·000	1·0	vP : mP
9	...	29·893	49·0	30·8	18·2	40·8	0·0	39·2	37·2	3·6	8·2	0·2	87	88·2	29·0	0·200	9·0	mP : mP : wP, vN
10	...	29·804	51·1	38·7	12·4	43·8	+ 3·1	40·6	36·8	7·0	14·3	0·8	76	98·2	36·0	0·012	3·5	mP, wN : sP, ssN : sP, wN
11	First Quarter : Greatest Dec. N.	29·803	50·2	34·2	16·0	42·1	+ 1·5	39·8	36·9	5·2	13·2	1·6	83	85·6	29·0	0·198	4·0	sP : mP, ssN
12	...	29·427	49·9	34·8	15·1	43·5	+ 2·8	40·5	36·9	6·6	14·1	0·9	77	102·1	33·0	0·063	1·5	vN, vP : mP : sP
13	...	29·409	49·0	34·8	14·2	41·0	+ 0·1	39·4	37·4	3·6	8·4	1·0	87	85·0	33·0	0·000	0·8	sP : mP : vP, mN
14	...	29·269	44·2	36·6	7·6	41·1	− 0·1	40·1	38·8	2·3	4·2	0·7	92	68·0	33·1	0·210	2·7	mP : wP, sN : mP, ssN
15	...	29·177	48·6	40·0	8·6	43·2	+ 1·8	41·6	39·7	3·5	7·4	2·1	87	78·8	37·2	0·169	5·5	wP : mP, ssN : vP, ssN
16	...	29·301	53·9	38·8	15·1	45·6	+ 4·1	43·8	41·7	3·9	8·4	1·4	87	91·0	35·9	0·078	8·2	wP : vN, mP : wP, vN
17	...	29·306	53·5	42·3	11·2	48·2	+ 6·6	46·4	44·4	3·8	6·4	2·2	87	77·0	38·6	0·164	4·3	wP : mP, vN : vP, ssN
18	In Equator : Full	29·453	52·9	42·6	10·3	48·2	+ 6·6	44·2	39·8	8·4	16·0	1·5	73	103·0	41·9	0·353	1·5	wP, ssN : vP, ssN : mP
19	...	29·674	57·7	45·4	12·3	51·3	+ 9·8	46·6	41·7	9·6	15·2	3·1	70	106·0	42·2	0·000	0·0	wP : vP, wwN : mP
20	Perigee	29·932	56·9	43·2	13·7	49·7	+ 8·3	45·5	41·0	8·7	15·4	1·5	72	89·7	39·5	0·000	0·0	mP : vP : mP
21	...	29·937	60·7	47·7	13·0	52·8	+11·4	50·7	48·6	4·2	9·3	1·5	86	94·5	44·8	0·000	0·0	wP : mP
22	...	29·821	58·0	49·0	9·0	52·7	+11·2	50·7	48·7	4·0	6·8	0·4	87	81·2	39·5	0·056	0·0	wP : mP
23	...	29·773	62·2	44·1	18·1	51·0	+ 9·2	46·6	42·0	9·0	18·8	3·1	72	104·6	40·5	0·000	0·2	wP : mP : sP
24	Greatest Declination S.	29·667	61·0	46·6	14·4	52·5	+10·4	47·5	42·4	10·1	17·1	2·3	69	107·8	43·0	0·000	0·8	mP : wwP, vN : mP
25	Last Quarter	29·863	59·0	45·5	13·5	51·6	+ 9·2	47·0	42·3	9·3	16·0	3·4	71	105·1	40·7	0·000	0·0	mP
26	...	29·634	56·2	48·3	7·9	51·5	+ 8·6	49·0	46·4	5·1	9·4	1·9	83	98·0	46·0	0·000	0·5	wP : wwP : wP, mN
27	...	29·493	57·1	46·7	10·4	51·0	+ 7·7	45·4	39·6	11·4	16·5	7·8	65	95·0	43·8	0·000	3·0	wwP : vP : mP, wN
28	...	29·180	57·9	42·2	15·7	49·4	+ 5·7	47·5	45·4	4·0	7·9	1·3	87	90·3	39·0	0·185	4·5	wP, wwN : mP, sN
29	...	29·284	49·5	37·6	11·9	42·7	− 1·4	37·6	31·4	11·3	16·2	5·3	65	83·2	33·0	0·000	0·0	mP : sP
30	...	29·436	53·3	29·9	23·4	41·3	− 3·3	37·1	31·9	9·4	19·3	1·4	69	93·2	26·8	0·000	0·0	mP
31	In Equator	29·186	53·8	38·4	15·4	44·5	− 0·5	42·8	40·8	3·7	7·8	0·4	87	94·8	38·4	0·552	0·0	mP, vN : vP, vN
Means	...	29·518	52·4	39·1	13·4	45·2	+ 3·5	42·4	39·1	6·2	12·0	1·8	79·8	89·9	36·0	Sum 3·347	2·8	...
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 50 years' observations, 1841–1890. 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 mean reading of the Barometer for March 12 is deduced from eye-observations, on account of partial loss of the photographic register.

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·518, being 0in·235 *lower* than the average for the 50 years, 1841–1890.

TEMPERATURE OF THE AIR.

The highest in the month was 62°·2 on March 23; the lowest in the month was 29°·9 on March 30; and the range was 32°·3.
The mean of all the highest daily readings in the month was 52°·4, being 2°·7 *higher* than the average for the 50 years, 1841–1890.
The mean of all the lowest daily readings in the month was 39°·1, being 4°·1 *higher* than the average for the 50 years, 1841–1890.
The mean of the daily ranges was 13°·4, being 1°·3 *less* than the average for the 50 years, 1841–1890.
The mean for the month was 45°·2, being 3°·5 *higher* than the average for the 50 years, 1841–1890.

MONTH and DAY, 1897.	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.	Least.	Mean of 24 Hourly Measures.	Robinson's. Horizontal Movement of the Air.	Clouds and Weather. A.M.	P.M.
	hours.	hours.			lbs.	lbs.	lbs.	miles.		
Mar. 1	5·5	10·8	SSW : WSW	WSW : SW : SSW	4·4	0·0	0·44	392	10, r : 0 : 3, ci.-cu, li.-cl	p.-cl, slt.-r : 10, hy.-r, sc : 10, r
2	6·9	10·9	WSW	WSW : SW : SSW	17·0	0·0	0·85	474	10, slt.-r : 0 : 2, li.-cl	th.-cl, so.-ha : 10, r, w : 10, hy.-r, st.-w
3	0·4	11·0	SW : WSW : W	W : WNW	26·0	0·0	2·82	882	v, r, g : p.-cl, st.-w : 10, r, sn, sc, st.-w	10, r, sc, st.-w : v, w : v, slt.-r
4	3·1	11·1	W : WSW : SW	SW	20·0	0·0	1·39	629	v : p.-cl : 10, r, st.-w	5, cu, st.-w : v, shs.-r, w : 1, th.-c
5	8·1	11·1	SW	SW : SSW	3·5	0·0	0·35	347	2 : 2, li.-cl	2, li.-cl : 0
6	0·7	11·2	SSW : WSW : N	N : NE : E	0·3	0·0	0·00	157	10, slt.-sh : p.-cl : 10, r, gt.-glm	10 : v : 10, hy.-r
7	1·7	11·2	Variable : N : NE	NNE : N	1·0	0·0	0·00	135	v : 10	9, cu : 10 : 10
8	3·9	11·3	N : Variable	NE : SE : S	0·1	0·0	0·00	121	v : p.-cl	p.-cl : 0 : 0
9	2·7	11·4	S : SE : SSE	S : SSW : SW	1·1	0·0	0·05	207	0, ho.-fr : p.-cl	10 : 10, r
10	7·0	11·4	SW : WSW : W	WSW : SW	4·5	0·0	0·36	371	10 : 2, li.-cl	v, sh.-r, sn, sl : 0
11	6·3	11·5	WSW : SW : SSW	SSW : SE : SSE	10·5	0·0	0·39	308	0, ho.-fr : 1, li.-cl, so.-ha	th.-cl, so.-ha : 10, r : 10, r, w
12	4·2	11·6	SW	SW : WSW : SSW	4·4	0·0	0·48	375	v, hy.-sh, lunar rainbow : v	p.-cl, cu : v, hy.-sh, sn : 1, li.-cl
13	1·6	11·6	NE : NNE	ENE : SE : SW	0·5	0·0	0·00	147	p.-cl : 10 : 10	p.-cl, cu : p.-cl
14	0·0	11·7	SSE : SE : S	SSE : SE : ESE	3·7	0·0	0·17	254	10 : 10 : 10, r	10, oc.-slt.-r : 10, oc.-slt.-r : v, hy.-r
15	2·4	11·8	SSW : S	SSW : SW	4·9	0·0	0·23	312	p.-cl : v : 10, fq.-r	8, cu.-s, oc.-r : 0
16	3·9	11·8	SSW : S	SSW	6·7	0·0	0·68	433	p.-cl : 10, fq.-r, w, sc	6, cu.-s, ci.-cu : 10, fq.-r, lu.-ha : li.-cl, lu.-ha
17	1·3	11·9	SSW	SSW : SW	12·0	0·0	0·90	504	p.-cl : p.-cl : v, oc.-slt.-r	10, fq.-r, w, sc : v, oc.-r, lu.-ha : v, hy.-sh, st.-w, sc
18	3·9	12·0	SW : WSW	WSW : W : SW	25·0	0·0	1·67	690	v, st.-w : v, hy.-r, st.-w, hl	v, g : 2, w : th.-cl, lu.-ha
19	8·3	12·0	SW : W	W : WSW	13·5	0·0	1·50	699	p.-cl, w : p.-cl, w : 2, li.-cl, st.-w	li.-cl, st.-w : li.-cl, w : th.-cl
20	0·9	12·1	W : WSW : NW	WSW : SW	1·7	0·0	0·12	259	p.-cl : p.-cl, glm	th.-cl, so.-ha : 10, slt.-r : 10, th.-r
21	1·9	12·2	WSW : W	WSW : SW	1·0	0·0	0·04	248	10, lu.-ha : 10	10 : 10, m
22	0·1	12·2	SW	SW : WSW	6·4	0·0	0·51	397	10, r : 10 : 10, th.-cl, so.-ha	10, so.-ha : v, sh.-r : p.-cl
23	6·8	12·3	WSW	WSW : SW	4·1	0·0	0·31	342	2, li.-cl : 3, ci.-cu	ci.-s, ci.-cu, so.-ha : p.-cl : p.-cl
24	10·2	12·4	SW : WSW	WSW : W	16·5	0·0	1·51	683	8, w : p.-cl, st.-w	2, li.-cl, st.-w : 1, li.-cl
25	5·9	12·4	WSW	W : SW	5·4	0·0	0·53	443	li.-cl, d : 3, li.-cl, so.-ha	th.-cl, so.-ha : 9
26	1·7	12·5	SW	SW : WSW	14·6	0·0	1·07	564	10 : 10, slt.-sh	10, slt.-sh : v, slt.-sh, w : li.-cl, st.-w
27	4·0	12·6	WSW : W	W : WSW	22·5	0·0	1·97	767	10, st.-w : 10, st.-w	li.-cl, so.-ha, w : li.-cl : 10, slt.-sh
28	1·5	12·6	SW : SSW	SW : WNW	12·0	0·0	1·15	559	10, r : 10, r, w, sc	10, sc : v, r : v
29	8·4	12·7	WNW : NW	NW : N	6·7	0·0	0·63	450	v, w : li.-cl : p.-cl	p.-cl : p.-cl, h
30	9·1	12·8	N : SW : WSW	E : SW	1·1	0·0	0·03	154	1, ho.-fr : 0, slt.-f : 0, h	0, h : ci.-s, s, prh : 0, h
31	1·0	12·8	SW	SW : NE : ENE	2·6	0·0	0·11	291	p.-cl : 10, slt.-sh : 10, oc.-slt.-r	10, hy.-r, hl : 10, hy.-r : 10, sh.-r
Means	4·0	11·8	...	...	...	...	0·65	406		
Number of Column for Reference.	19	20	21	22	23	24	25	26	27	28

The mean *Temperature of Evaporation* for the month was 42°·4, being 3°·1 *higher* than
The mean *Temperature of the Dew Point* for the month was 39°·1, being 2°·8 *higher* than
The mean *Degree of Humidity* for the month was 79·8, being 1·3 *less* than
The mean *Elastic Force of Vapour* for the month was 0in·238, being 0in·024 *greater* than
The mean *Weight of Vapour in a Cubic Foot of Air* for the month was 2grs·8, being 0gr·3 *greater* than
The mean *Weight of a Cubic Foot of Air* for the month was 541 grains, being 9 grains *less* than
} the average for the 50 years, 1841–1890.

The mean amount of *Cloud* for the month (a clear sky being represented by 0 and an overcast sky by 10) was 6·7.

The mean proportion of *Sunshine* for the month (constant sunshine being represented by 1) was 0·336. The maximum daily amount of *Sunshine* was 10·2 hours on March 24.

The highest reading of the *Solar Radiation Thermometer* was 107°·8 on March 24; and the lowest reading of the *Terrestrial Radiation Thermometer* was 26°·8 on March 30.

The mean daily distribution of *Ozone* for the 12 hours ending 9h. was 1·8; for the 6 hours ending 15h. was 0·5; and for the 6 hours ending 21h. was 0·5.

The *Proportions of Wind* referred to the cardinal point were N. 3, E. 2, S. 11, and W. 15.

The *Greatest Pressure of the Wind* in the month was 26·0 lbs. on the square foot on March 3. The mean daily *Horizontal Movement of the Air* for the month was 406 miles; the greatest daily value was 882 miles on March 3; and the least daily value was 121 miles on March 8.

Rain fell on 17 days in the month, amounting to 3in·347, as measured by gauge No. 6 partly sunk below the ground; being 1in·886 *greater* than the average fall for the 50 years, 1841–1890.

MONTH and DAY, 1897.	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 50 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.	Rain collected in Gauge No. 6, whose receiving surface is 5 inches above the Ground.	Daily Amount of Ozone.	Electricity.
		in.	°	°	°	°	°	°	°	°	°	°		°	°	in.		
Apr. 1	...	29·956	43·2	34·5	8·7	38·5	− 6·9	36·5	33·8	4·7	11·2	0·7	84	67·4	34·5	0·106	0·0	wP, wN : vP : sP
2	New	29·469	47·0	36·2	10·8	40·5	− 5·2	37·2	33·0	7·5	13·9	3·0	75	91·9	32·5	0·000	0·0	mP, wN : sP : vP
3	...	29·329	45·3	35·0	10·3	40·0	− 6·0	38·3	36·1	3·9	8·1	1·8	86	72·0	31·4	0·003	0·0	wP : wP, vN : wwN, wP
4	...	29·377	47·6	34·5	13·1	41·8	− 4·4	37·6	32·4	9·4	14·1	4·8	70	106·5	31·0	0·000	0·0	vP
5	Apogee	29·818	48·9	30·4	18·5	39·2	− 7·0	35·1	29·7	9·5	16·8	2·8	69	104·4	26·2	0·000	0·5	sP : vP
6	...	29·603	49·9	35·8	14·1	41·2	− 5·0	37·1	32·0	9·2	18·5	5·2	70	116·0	32·7	0·000	1·5	wP : wP : mP
7	...	29·514	53·2	35·1	18·1	40·6	− 5·5	38·8	36·5	4·1	11·1	0·9	86	95·2	31·9	0·417	0·0	vP, ssN
8	Greatest Declination N.	29·809	49·7	38·7	11·0	44·0	− 1·9	41·5	38·5	5·5	11·1	0·9	80	80·8	34·0	0·023	0·0	vP, mN : sP : vP
9	...	29·873	56·1	36·7	19·4	45·6	0·0	43·6	41·3	4·3	14·6	0·2	86	106·0	32·5	0·036	0·0	mP
10	First Quarter	29·942	53·4	36·7	16·7	46·4	+ 0·9	43·2	39·6	6·8	13·2	0·6	78	105·7	31·5	0·046	0·0	vP, vN : vP
11	...	29·953	53·9	29·9	24·0	42·1	− 3·4	38·3	33·6	8·5	17·4	0·0	73	115·1	26·7	0·000	0·0	sP : wP : wP
12	...	29·616	51·8	42·5	9·3	47·5	+ 1·8	43·4	38·8	8·7	13·4	5·1	73	81·2	39·8	0·000	0·0	wP, wwN : wP
13	...	29·554	60·3	44·0	16·3	51·5	+ 5·5	48·0	44·4	7·1	15·0	2·0	77	102·2	41·8	0·007	0·5	mP, vN : vP : mP
14	In Equator	29·561	56·9	40·4	16·5	49·6	+ 3·2	44·7	39·5	10·1	20·4	1·9	68	115·7	36·2	0·045	1·5	wP : vP : vP, vN
15	...	29·999	56·5	36·3	20·2	45·9	− 1·0	40·8	35·1	10·8	19·8	3·6	66	111·7	32·5	0·006	0·7	mP : vP, ssN : vP
16	...	29·967	54·5	41·4	13·1	47·5	+ 0·2	44·8	41·9	5·6	11·2	3·1	82	95·6	36·1	0·068	3·0	mP : wP, vN : ssN, vP
17	Full : Perigee	29·733	55·1	44·9	10·2	50·5	+ 2·8	48·9	47·2	3·3	6·8	0·6	89	72·0	40·4	0·176	2·3	wP, mN : wP : wP, ssN
18	...	29·787	58·2	42·8	15·4	49·4	+ 1·3	44·1	38·4	11·0	18·8	2·0	66	108·2	37·5	0·026	2·0	ssN, mP : mP : mP
19	...	29·663	56·0	40·4	15·6	46·6	− 1·7	43·4	39·8	6·8	17·0	1·1	78	106·0	36·5	0·045	0·0	mP : wP : vP, ssN
20	Greatest Declination S.	29·455	56·3	42·1	14·2	47·3	− 1·2	43·3	38·8	8·5	17·8	0·9	73	97·5	39·2	0·139	0·0	ssN, vP : mP : mP
21	...	29·634	54·3	44·2	10·1	49·2	+ 0·7	48·1	46·9	2·3	5·3	0·4	92	70·8	41·0	0·114	0·0	wP : vP, wwN
22	...	29·894	52·0	39·7	12·3	45·4	− 3·1	42·3	38·7	6·7	12·2	0·2	78	111·0	36·0	0·000	2·0	vP, wwN : vP : mP
23	Last Quarter	29·865	50·9	36·5	14·4	44·1	− 4·3	40·9	37·2	6·9	13·4	0·7	76	105·0	33·3	0·000	0·0	mP : vP : mP
24	...	29·720	52·2	38·6	13·6	44·3	− 4·1	41·3	37·8	6·5	14·9	0·5	77	111·0	34·8	0·000	0·0	vP
25	...	29·673	54·1	37·9	16·2	46·0	− 2·4	42·8	39·2	6·8	13·8	0·9	78	108·2	35·0	0·000	0·0	wP : wP : mP
26	...	29·671	63·0	38·2	24·8	49·9	+ 1·5	46·9	43·7	6·2	17·5	0·2	80	115·7	33·2	0·000	0·0	vP : mP
27	In Equator	29·746	67·8	41·8	26·0	54·9	+ 6·4	52·3	49·8	5·1	11·9	0·2	83	112·0	38·2	0·000	0·0	mP : vP : vP, ssN
28	...	29·846	67·5	45·1	22·4	55·2	+ 6·6	53·0	50·9	4·3	13·0	0·4	86	117·4	40·8	0·218	0·0	vP, ssN
29	...	29·875	66·2	46·6	19·6	53·7	+ 4·9	50·7	47·8	5·9	14·3	0·0	80	119·7	41·6	0·000	0·5	wP : wP : mP
30	...	29·622	59·1	44·4	14·7	49·9	+ 0·9	47·4	44·7	5·2	13·5	1·9	83	98·3	41·2	0·142	1·5	wP : wP, vN : vN, mP
Means	...	29·684	54·7	39·0	15·7	46·3	− 0·9	43·1	39·6	6·7	14·0	1·6	78·1	100·7	35·3	Sum 1·617	0·5	...
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 50 years' observations, 1841–1890. 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 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·684, being 0in·057 *lower* than the average for the 50 years, 1841–1890.

Temperature of the Air.

The highest in the month was 67°·8 on April 27; the lowest in the month was 29°·9 on April 11; and the range was 37°·9.
The mean of all the highest daily readings in the month was 54°·7, being 2°·5 *lower* than the average for the 50 years, 1841–1890.
The mean of all the lowest daily readings in the month was 39°·0, being 0°·1 *higher* than the average for the 50 years, 1841–1890.
The mean of the daily ranges was 15°·7, being 2°·6 *less* than the average for the 50 years, 1841–1890.
The mean for the month was 46°·3, being 0°·9 *lower* than the average for the 50 years, 1841–1890.

MONTH and DAY, 1897.	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.	Least.	Mean of 24 Hourly Measures.	Robinson's. Horizontal Movement of the Air.	Clouds and Weather. A.M.	P.M.
	hours.	hours.			lbs.	lbs.	lbs.	miles.		
Apr. 1	0·5	12·9	NE : ENE	NE : N	7·0	0·0	0·69	432	10, oc.-r : 10, r, sn : 10, sn, w	10 : cu, li.-cl : 10
2	3·8	13·0	N	NNW : N : Variable	2·9	0·0	0·17	254	10 : p.-cl	9, oc.-slt.-r : 10 : v
3	0·1	13·0	SE : ESE	SE : ESE	4·4	0·0	0·30	310	10 : 10	10, oc.-slt.-r : 10 : 10
4	4·7	13·1	E : ENE : NE	NE : ENE	4·5	0·0	0·44	413	10 : 10 : p.-cl, cu	p.-cl : p.-cl
5	7·5	13·2	NE : ENE : E	ENE : SE	1·6	0·0	0·03	181	v, ho.-fr : p.-cl : 3, cu, li.-cl	2, cu, cu.-s, li.-cl : 0, h
6	3·3	13·2	SE : ESE	SE : ESE	2·7	0·0	0·13	232	10 : 10 : th.-cl, so.-ha	10 : 10
7	1·2	13·3	SE : E : W	W : N	2·0	0·0	0·03	190	10 : 10, hy.-r : 10, li.-shs, glm	v, t.-sm, hl, glm : 10, r : 10
8	1·2	13·4	N	N : SE : SSW	2·8	0·0	0·12	219	10, sh.-r : 10 : p.-cl	10 : 4, li.-cl, m
9	2·8	13·4	SSW : S	SW	2·8	0·0	0·15	298	p.-cl, d : p.-cl	li.-cl : 10 : 10, r
10	5·3	13·5	SW : W : N	N : NNE : NE	7·7	0·0	0·49	350	10, shs.-r : 10, li.-shs, w : 9	8 : 0 : 0
11	10·3	13·6	NE : SE : SSW	SW : SSW : S	2·7	0·0	0·22	212	0, ho.-fr : 0 : 1, so.-ha	0 : th.-cl : 10
12	0·0	13·6	S : SSW	S : SE : ESE	4·0	0·0	0·23	276	10 : 10, oc.-th.-r	10, oc.-slt.-r : 10 : 10
13	1·2	13·7	ESE : S	S : SSW	2·1	0·0	0·08	201	10 : 10, r, f : 10	v : p.-cl : v
14	6·4	13·7	SW : W	W : WSW	11·0	0·0	1·23	623	10, shs.-r, w : 10, w	3, cu, cu.-s, st.-w : 0
15	11·4	13·8	WSW	WSW : W : SW	5·4	0·0	0·36	390	0, d : 0 : v, sh.-r	1, cu, li.-cl : 0
16	2·2	13·9	SW	SW : WSW	12·5	0·0	0·93	497	10 : th.-cl, w : 10, fq.-r, st.-w, sc	10, fq.-shs, w : 10, fq.-shs, hl : th.-cl, lu.-ha
17	0·0	13·9	SW : WSW	SW : WSW	11·5	0·0	1·01	513	10, hy.-r : 10, oc.-slt.-r	10 : 10, li.-sc, w : 10, th.-r, w
18	10·5	14·0	WNW : W : NW	NW : NNW : SW	5·0	0·0	0·50	392	v, r : 0 : 7, cu, ci.-cu	v : 0
19	5·1	14·1	SW : WSW	WSW : SW	2·0	0·0	0·06	232	p.-cl : cu, th.-cl, so.-ha	10 : 10, slt.-shs : 10, r
20	2·8	14·1	W : NW : NNW	NW : SW	4·2	0·0	0·23	302	10, hy.-r : 10, fq.-r : 10	7, ci.-cu, li.-cl : th.-cl : 10
21	0·0	14·2	SW : S : SSE	SSE : SSW : ENE	2·4	0·0	0·04	178	10 : 10, fq.-r	10, oc.-th.-r : 10, fq.-slt.-r : 10, oc.-slt.-r
22	5·9	14·2	ENE : NE	NE	5·8	0·0	0·45	407	10, slt.-r : 10 : p.-cl	8, cu.-s, li.-cl : v
23	9·3	14·3	NE : ENE	ENE : NE	9·0	0·0	0·81	487	10 : 10 : 9, w	p.-cl, w : 0
24	7·4	14·4	NE : ENE	ENE : NE	6·0	0·0	0·69	459	0 : 0 : 8, cu.-s, w	8, cu.-s, w : p.-cl : li.-cl
25	8·7	14·4	NE : ENE	ENE : ESE	1·5	0·0	0·07	262	p.-cl : p.-cl	p.-cl : p.-cl : 0
26	9·4	14·5	ENE : NE	E : ENE : NE	3·0	0·0	0·18	258	0, d : li.-cl : 2, ci.-s, so.-ha	th.-cl, so.-ha : p.-cl : 1, m
27	6·2	14·5	NNE	N : NE : Variable	0·1	0·0	0·00	87	p.-cl, m, d : 10, f : 5, h	1, li.-cl, h : v, l, t, slt.-r : v, m
28	3·2	14·6	Calm : Variable	WSW : SW : SSW	0·7	0·0	0·00	138	0, m : v, hy.-sh, f : 10, oc.-shs, slt.-f, glm, t	p.-cl, shs.-r, glm : 3, li.-cl, sh.-r : v, shs.-r, l
29	9·4	14·7	SW	SW	3·7	0·0	0·23	307	0, d : p.-cl	2, ci.-s, li.-cl : 0
30	4·9	14·7	SW	SW : WSW : W	6·8	0·0	0·52	400	p.-cl : p.-cl, w	10, r, w : 10
Means	4·8	13·8	...	...	...	...	0·35	317		
Number of Column for Reference.	19	20	21	22	23	24	25	26	27	28

The mean *Temperature of Evaporation* for the month was 43°·1, being 0°·8 *lower* than
The mean *Temperature of the Dew Point* for the month was 39°·6, being 0°·6 *lower* than
The mean *Degree of Humidity* for the month was 78·1, being 1·5 *greater* than
The mean *Elastic Force of Vapour* for the month was 0in·243, being 0in·006 *less* than
The mean *Weight of Vapour in a Cubic Foot of Air* for the month was 2grs·8, being 0gr·1 *less* than
The mean *Weight of a Cubic Foot of Air* for the month was 543 grains being *the same as*
} the average for the 50 years, 1841–1890.

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 0·349. The maximum daily amount of *Sunshine* was 11·4 hours on April 15.

The highest reading of the *Solar Radiation Thermometer* was 119°·7 on April 29; and the lowest reading of the *Terrestrial Radiation Thermometer* was 26°·2 on April 5.

The mean daily distribution of *Ozone* for the 12 hours ending 9h. was 0·4; for the 6 hours ending 15h. was 0·1; and for the 6 hours ending 21h. was 0·0.

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

The *Greatest Pressure of the Wind* in the month was 12·5 lbs. on the square foot on April 16. The mean daily *Horizontal Movement of the Air* for the month was 317 miles; the greatest daily value was 623 miles on April 14; and the least daily value was 87 miles on April 27.

Rain fell on 16 days in the month amounting to 1in·617; as measured by gauge No. 6 partly sunk below the ground; being 0in·044 *less* than the average fall for the 50 years, 1841–1890.

MONTH and DAY, 1897.	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 50 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.	Rain collected in Gauge No. 6, whose receiving surface is 5 inches above the Ground.	Daily Amount of Ozone.	Electricity.
		in.	°	°	°	°	°	°	°	°	°	°		°	°	in.		
May 1	New	29·704	57·6	39·0	18·6	49·0	− 0·2	43·9	38·4	10·6	19·4	3·0	66	106·2	35·2	0·000	0·0	mP : vP : vP
2	Apogee	29·706	62·9	40·0	22·9	50·1	+ 0·7	45·3	40·2	9·9	19·0	3·7	69	125·7	35·0	0·000	4·0	mP : wP : mP
3	...	29·737	59·3	44·2	15·1	51·8	+ 2·1	46·2	40·5	11·3	20·3	2·1	65	117·0	39·0	0·015	0·0	wP : vP : vP
4	...	29·971	61·2	39·3	21·9	49·2	− 0·8	43·1	36·5	12·7	22·6	5·3	62	115·2	33·3	0·000	1·0	sP : vP : vP
5	Greatest Declination N.	29·794	58·9	43·2	15·7	49·2	− 1·1	45·4	41·3	7·9	18·4	1·9	74	117·5	37·0	0·149	3·0	wP : vP, vN : vP
6	...	29·907	54·2	37·0	17·2	46·1	− 4·5	40·4	33·9	12·2	18·6	4·1	63	105·9	31·6	0·000	0·0	sP : vP, ssN : vP
7	...	29·941	55·8	39·0	16·8	48·2	− 2·6	44·1	39·6	8·6	15·8	2·3	72	89·0	33·1	0·000	0·0	vP
8	...	29·916	65·3	45·8	19·5	55·0	+ 4·0	52·1	49·3	5·7	11·6	1·7	82	116·4	43·4	0·003	0·0	wP : wP : vP
9	First Quarter	29·989	59·3	45·4	13·9	52·1	+ 0·9	45·2	38·2	13·9	20·5	3·8	60	114·7	40·4	0·000	0·5	wP
10	...	29·852	56·6	40·8	15·8	49·8	− 1·7	43·9	37·7	12·1	16·6	6·4	63	99·6	35·4	0·003	1·5	mP : vP : vP, mN
11	...	29·721	54·0	35·8	18·2	43·9	− 7·8	38·9	33·0	10·9	19·0	3·5	65	103·6	33·6	0·042	0·0	vP : vP : vP, ssN
12	In Equator	29·919	51·5	35·8	15·7	43·2	− 8·8	38·0	31·8	11·4	19·1	5·3	64	111·7	31·8	0·000	0·0	mP : vP : vP
13	...	30·073	51·7	33·6	18·1	42·9	− 9·4	38·7	33·6	9·3	17·0	3·1	71	89·0	28·8	0·000	1·0	mP : vP : wP
14	...	30·128	58·5	35·7	22·8	48·1	− 4·5	43·3	38·0	10·1	17·5	3·1	68	95·1	30·9	0·000	0·0	vP : mP
15	...	30·233	64·7	44·6	20·1	54·9	+ 2·1	48·8	43·0	11·9	20·7	3·4	64	117·3	39·0	0·000	0·0	vP
16	Perigee: Full	30·155	67·1	40·5	26·6	53·7	+ 0·6	46·9	40·2	13·5	27·4	1·3	61	128·5	35·2	0·019	0·0	mP : wP, vN : vP, ssN
17	...	29·935	73·5	47·5	26·0	58·9	+ 5·6	52·9	47·6	11·3	20·6	3·6	67	132·7	43·8	0·000	0·0	vP
18	Greatest Declination S.	29·921	77·6	45·4	32·2	60·7	+ 7·1	54·6	49·3	11·4	25·2	1·2	66	139·0	38·0	0·000	0·0	wwP : vP, vN : mP, wN
19	...	29·952	67·8	42·3	25·5	54·7	+ 0·8	48·6	42·7	12·0	21·8	3·8	64	135·7	37·3	0·000	0·2	mP
20	...	29·859	72·3	41·2	31·1	56·3	+ 2·1	50·0	44·2	12·1	23·0	4·6	64	138·1	41·2	0·000	0·8	mP
21	...	29·778	69·1	48·3	20·8	58·4	+ 3·8	51·3	44·9	13·5	23·9	3·8	61	143·0	41·5	0·000	0·0	vP : vP, vN : vP
22	...	29·677	65·3	42·2	23·1	52·8	− 2·2	47·7	42·6	10·2	16·5	3·5	68	130·0	36·4	0·000	0·0	mP : vP
23	Last Quarter	29·647	67·5	41·0	26·5	52·6	− 2·7	46·8	41·0	11·6	23·6	3·3	66	137·8	37·4	0·000	0·0	mP : vP, wwN
24	In Equator	29·724	61·9	44·4	17·5	50·9	− 4·7	48·2	45·4	5·5	12·0	1·3	82	129·1	40·5	0·000	0·0	vP : vP : sP
25	...	29·622	72·3	42·9	29·4	55·8	+ 0·1	50·3	45·2	10·6	23·4	1·1	67	128·3	39·1	0·010	0·5	vP : vP, sN
26	...	29·368	58·3	47·5	10·8	52·8	− 3·1	49·8	46·9	5·9	12·8	1·7	81	83·0	42·5	0·090	4·5	wP : vP, ssN : sN, mP
27	...	29·222	65·7	47·5	18·2	54·9	− 1·1	50·3	45·9	9·0	22·0	1·3	71	128·9	45·1	0·154	1·8	wP, ssN : wP : vP, ssN
28	...	29·226	61·2	45·6	15·6	52·3	− 3·7	49·1	45·8	6·5	14·4	1·5	79	115·3	42·6	0·092	2·7	wP, ssN : vP, ssN : mP, ssN
29	Apogee	29·491	61·1	48·5	12·6	54·9	− 1·3	51·8	48·8	6·1	12·9	1·4	79	96·7	44·7	0·132	5·5	wP : vP, ssN : mP
30	...	29·658	73·6	52·7	20·9	62·2	+ 5·7	57·6	53·7	8·5	17·1	1·1	74	127·8	52·0	0·533	0·0	wwP : wP : vP, ssN
31	New	29·804	71·8	49·4	22·4	59·7	+ 2·9	54·5	49·9	9·8	21·1	0·8	70	128·1	47·7	0·009	0·0	mP
Means	...	29·795	63·1	42·8	20·4	52·4	− 0·7	47·3	42·2	10·2	19·2	2·8	68·6	117·6	38·5	Sum 1·251	0·9	...
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 50 years' observations, 1841–1890. 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 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·795, being 0in·009 *higher* than the average for the 50 years, 1841–1890.

TEMPERATURE OF THE AIR.

The highest in the month was 77°·6 on May 18; the lowest in the month was 33°·6 on May 13; and the range was 44°·0.
The mean of all the highest daily readings in the month was 63°·1, being 1°·0 *lower* than the average for the 50 years, 1841–1890.
The mean of all the lowest daily readings in the month was 42°·8, being 0°·9 *lower* than the average for the 50 years, 1841–1890.
The mean of the daily ranges was 20°·4, being *the same as* the average for the 50 years, 1841–1890.
The mean for the month was 52°·4, being 0°·7 *lower* than the average for the 50 years, 1841–1890.

MONTH and DAY, 1897.	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.	Least.	Mean of 24 Hourly Measures.	Robinson's. Horizontal Movement of the Air.	Clouds and Weather. A.M.	P.M.
	hours.	hours.			lbs.	lbs.	lbs.	miles.		
May 1	8·9	14·8	WNW : NW : N	N : SW	1·4	0·0	0·03	223	p.-cl : p.-cl, h	p.-cl : 2 : 0
2	10·6	14·8	WSW	WSW : SW	4·7	0·0	0·35	348	0 : 1, li.-cl	2, ci.-cu : p.-cl : v
3	4·8	14·9	SW : W	W : WSW : WNW	3·9	0·0	0·27	347	10 : 10, shs.-r : 7, cu.-s	p.-cl : p.-cl : 1, li.-cl
4	13·6	14·9	WNW : NNW	WSW : SW	3·7	0·0	0·20	314	p.-cl, d : li.-cl : v, li.-cl, h	1, li.-cl : 0 : 1, th.-cl
5	3·4	15·0	SW : WSW	WNW : W : WSW	16·4	0·0	0·52	422	10, r : 10, c.-r : 10, r	v, hy.-sq : p.-cl : 0
6	8·9	15·1	WSW : NW	WNW : NNW : WSW	6·3	0·0	0·30	337	1, li.-cl, d : 0 : 7, cu	p.-cl, cu.-s : 1, li.-cl : 1, li.-cl
7	2·6	15·1	SW : WSW : WNW	W : WSW : SW	1·7	0·0	0·03	211	p.-cl : p.-cl	10 : 10
8	1·9	15·2	SW	SW : WSW : WNW	3·5	0·0	0·18	300	10 : 10	10 : 10, oc.-slt.-r
9	11·2	15·2	N : NNW	NNW : WNW	4·3	0·0	0·41	371	10 : p.-cl, cu.-s	2, cu.-s : 1, li.-cl
10	5·9	15·3	W : WNW : NW	NW : NNW	9·6	0·0	0·38	361	p.-cl : p.-cl	10 : 10, slt.-sh : v, w
11	10·1	15·3	N	N : NNW	11·8	0·0	0·69	419	10, sq, slt.-r : v, cu, cu.-s	p.-cl : 10, hy.-sqs, r : p.-cl
12	10·4	15·4	NNW	N	3·8	0·0	0·31	332	p.-cl, d : p.-cl	p.-cl : 1
13	1·1	15·4	N : NNW : WSW	NNW : N : Variable	2·6	0·0	0·03	168	p.-cl, d : 10 : v, gt.-glm	9, ci.-cu, li.-cl : 8 : p.-cl
14	0·2	15·5	SW : WSW : W	WNW : Variable	1·0	0·0	0·01	146	10 : 10 : 10, th.-cl, f	10 : 10
15	9·1	15·5	S : E : ENE	ENE : ESE	1·0	0·0	0·03	160	10 : p.-cl	p.-cl, cu.-s : 1, li.-cl : 0
16	8·9	15·6	NE : NNE	NE : NNE	6·2	0·0	0·63	429	p.-cl : 1, ci.-s	1, ci.-s : v, sh.-r : v
17	8·5	15·6	NNE	NE : ENE : NNE	4·7	0·0	0·52	431	10 : 8, cu.-s, li.-cl	3, cu.-s : 0 : 0
18	12·1	15·7	NNE : NE	ENE : NE	11·3	0·0	0·80	498	9 : 9 : 1, li.-cl, w	1, li.-cl, w : 1, li.-cl
19	10·9	15·7	NE : NNE	NE	5·0	0·0	0·55	459	p.-cl : 2, ci.-cu, th.-cl	0, w : 0
20	13·0	15·8	NE : NNE	NE : ESE	2·3	0·0	0·17	302	10 : 1, li.-cl	1, li.-cl : 0
21	13·9	15·8	NE : NNE : ENE	E : ENE	7·0	0·0	0·53	387	p.-cl : 2, cu, ci.-cu	0 : 0
22	14·3	15·9	ENE : NE	NNE : N	3·5	0·0	0·30	349	0 : 0 : p.-cl	p.-cl : 1 : 0
23	11·6	15·9	NNE : N	N : NNE	5·4	0·0	0·45	387	9 : 10 : 0	0 : 0 : 10
24	5·1	16·0	N	N : NNE	4·8	0·0	0·48	380	10 : 10	4, cu.-s, ci.-cu : 1, li.-cl : 0, m
25	4·1	16·0	N : SSW : WSW	WSW : SW	4·0	0·0	0·16	232	10 : 10 : 3, th.-cl, so.-ha	p.-cl, sh.-r : 9 : v
26	0·0	16·0	SW	SW : S	2·4	0·0	0·10	250	10 : 10 : 10, r	10, shs.-r : v, oc.-shs
27	8·4	16·1	S : SSE : SE	SSW : S : SSE	2·5	0·0	0·10	188	10, hy.-r : 10, shs.-r : p.-cl	1, cu, li.-cl : 10, r
28	9·3	16·1	SSW : SSE : SE	SW : SSW	6·2	0·0	0·39	313	10 : 10, shs.-r : v, shs.-r	v, shs.-r : v
29	7·7	16·1	SW : SSW	SW : SSW : S	8·0	0·0	0·58	402	10, shs.-r : p.-cl : 10	10, r : p.-cl : 10
30	8·8	16·2	S : SSW : SW	SW : S : Variable	7·3	0·0	0·44	314	10, li.-shs : p.-cl : 9	p.-cl : v, t.-sm, hy.-r, w : v, oc.-shs, l, t
31	12·3	16·2	SW	SW : NE : E	1·2	0·0	0·03	181	10 : li.-cl : 3, li.-cl	2, ci, th.-cl, so.-ha : p.-cl : v, r, l
Means	8·1	15·6	...	...	...	...	0·32	321		
Number of Column for Reference.	19	20	21	22	23	24	25	26	27	28

The mean *Temperature of Evaporation* for the month was 47°·3, being 1°·9 *lower* than
The mean *Temperature of the Dew Point* for the month was 42°·2, being 3°·1 *lower* than
The mean *Degree of Humidity* for the month was 68·6, being 6·4 *less* than
The mean *Elastic Force of Vapour* for the month was 0in·269, being 0in·034 *less* than
The mean *Weight of Vapour in a Cubic Foot of Air* for the month was 3grs·1, being 0gr·3 *less* than
The mean *Weight of a Cubic Foot of Air* for the month was 539 grains, being 1 grain *greater* than
} the average for the 50 years, 1841–1890.

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 0·522. The maximum daily amount of *Sunshine* was 14·3 hours on May 22.

The highest reading of the *Solar Radiation Thermometer* was 143°·0 on May 21; and the lowest reading of the *Terrestrial Radiation Thermometer* was 28°·8 on May 13.

The mean daily distribution of *Ozone* for the 12 hours ending 9h. was 0·5; for the 6 hours ending 15h. was 0·3; and for the 6 hours ending 21h. was 0·1.

The *Proportions of Wind* referred to the cardinal points were N. 11, E. 5, S. 6, and W. 9.

The *Greatest Pressure of the Wind* in the month was 16·4 lbs. on the square foot on May 5. The mean daily *Horizontal Movement of the Air* for the month was 321 miles; the greatest daily value was 498 miles on May 18; and the least daily value was 146 miles on May 14.

Rain fell on 11 days in the month, amounting to 1in·251, as measured by gauge No. 6 partly sunk below the ground; being 0in·752 *less* than the average fall for the 50 years, 1841–1890.

MONTH and DAY, 1897.	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 50 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.	Rain collected in Gauge No. 6, whose receiving surface is 5 inches above the Ground.	Daily Amount of Ozone.	Electricity.
		in.	°	°	°	°	°	°	°	°	°	°		°	°	in.		
June 1	Greatest Declination N.	29·732	70·2	51·8	18·4	58·9	+ 1·7	56·7	54·7	4·2	10·3	1·6	86	113·7	50·1	0·210	0·0	vP, ssN : wP
2	...	29·892	64·4	49·1	15·3	58·2	+ 0·5	54·9	51·9	6·3	13·7	0·2	79	91·1	46·6	0·000	0·0	mP
3	...	29·944	67·0	52·7	14·3	60·0	+ 2·0	57·5	55·3	4·7	8·5	1·1	85	99·0	49·4	0·000	0·0	wP : mP
4	...	29·916	67·6	50·2	17·4	57·9	− 0·3	55·8	53·9	4·0	9·2	1·2	86	108·0	50·2	0·000	0·0	wP : mP : mP
5	...	29·933	73·0	54·6	18·4	62·1	+ 3·8	59·0	56·3	5·8	14·4	1·2	81	117·1	54·6	0·000	0·0	wP : ... : wP
6	...	29·912	74·9	55·1	19·8	64·5	+ 6·2	62·3	60·5	4·0	9·5	0·7	87	106·7	53·0	0·126	0·0	wP : vP, ssN : wwP
7	...	29·932	63·2	52·3	10·9	59·4	+ 1·2	57·5	55·8	3·6	6·5	1·1	89	97·9	52·3	0·000	1·0	wwP
8	First Quarter: In Equator	29·822	55·3	50·4	4·9	52·7	− 5·5	50·5	48·3	4·4	7·0	1·8	85	80·3	50·4	0·046	4·2	wwP : wwN, wP : wP, wN
9	...	29·594	52·8	48·2	4·6	51·1	− 7·1	50·3	49·5	1·6	2·6	0·8	94	62·5	47·2	0·568	3·8	vN, vP : mP
10	...	29·955	66·5	44·7	21·8	54·5	− 3·7	52·2	49·9	4·6	11·5	0·8	84	115·5	41·6	0·000	0·0	mP
11	...	30·140	76·7	47·8	28·9	62·5	+ 4·1	57·0	52·3	10·2	18·4	0·2	70	132·8	46·5	0·000	0·0	vP : wP : mP
12	...	30·131	83·2	52·1	31·1	68·2	+ 9·6	60·9	55·2	13·0	21·8	4·8	63	134·5	48·5	0·000	0·0	mP : wP
13	Perigee	29·966	83·1	55·9	27·2	70·4	+11·6	61·8	55·2	15·2	28·6	0·9	59	136·5	52·9	0·000	0·0	mP : wP : mP
14	Greatest Declination S.: Full	29·866	74·7	58·2	16·5	66·0	+ 7·1	58·8	52·9	13·1	23·0	4·6	63	125·0	52·7	0·000	0·0	mP : vP : mP
15	...	29·992	75·3	50·8	24·5	62·2	+ 3·2	55·3	49·4	12·8	24·5	3·4	63	136·0	46·0	0·000	0·0	vP
16	...	29·673	65·8	49·9	15·9	57·6	− 1·4	51·2	45·4	12·2	22·4	3·6	64	123·8	44·5	0·016	0·0	wP : vP, wwN : vP, wwN
17	...	29·736	63·2	44·4	18·8	53·5	− 5·6	46·6	39·8	13·7	20·7	4·8	60	122·6	39·2	0·000	0·7	mP : vP : vP, wN
18	...	29·417	67·0	47·7	19·3	55·3	− 3·9	51·4	47·7	7·6	13·2	1·5	76	115·3	45·0	0·240	2·3	vP, ssN : vP, wwN : vP, wN
19	...	29·760	63·0	45·8	17·2	53·1	− 6·4	47·1	41·1	12·0	19·4	0·8	64	111·8	42·0	0·181	0·5	mP : vP : vP, vN
20	...	29·643	59·7	48·3	11·4	56·1	− 3·8	52·8	49·7	6·4	11·0	0·8	79	91·7	47·4	0·000	1·5	wP
21	In Equator Last Quarter:	29·958	75·8	48·5	27·3	62·3	+ 2·0	57·7	53·8	8·5	15·1	2·5	74	132·7	45·0	0·000	0·0	wP : mP
22	...	30·039	79·2	59·4	19·8	67·6	+ 6·9	62·4	58·3	9·3	16·5	3·6	72	135·7	53·8	0·000	0·0	wP
23	...	29·890	83·7	58·0	25·7	71·3	+10·3	64·3	59·0	12·3	25·5	1·1	65	142·6	54·2	0·000	0·0	wP
24	...	29·751	90·2	56·3	33·9	70·4	+ 9·2	64·8	60·5	9·9	22·9	1·7	71	144·2	55·2	0·251	0·0	mP : vP, ssN
25	Apogee	29·878	62·7	55·2	7·5	59·0	− 2·3	57·7	56·5	2·5	5·1	0·9	92	93·3	55·2	0·000	0·0	vP : wP : wwP
26	...	29·869	70·9	54·5	16·4	61·8	+ 0·4	58·1	54·9	6·9	17·5	0·6	79	125·0	54·5	0·018	0·5	wwP : wP
27	...	29·747	69·2	56·3	12·9	62·3	+ 0·9	60·1	58·2	4·1	7·9	1·7	87	120·7	54·3	0·220	1·5	wwP : vP, wwN : wwP
28	Greatest Declination N.	29·769	78·3	58·8	19·5	67·7	+ 6·4	63·4	60·0	7·7	17·0	0·9	76	135·3	55·8	0·050	0·0	wP : wP : vP, ssN
29	...	29·775	76·3	59·1	17·2	66·4	+ 5·2	61·4	57·4	9·0	19·4	1·3	73	136·9	58·4	0·009	0·0	wwP : wP : ...
30	New	29·835	77·7	53·1	24·6	66·5	+ 5·3	60·2	55·1	11·4	19·7	2·4	67	122·2	51·1	0·000	0·0	... : vP
Means	...	29·849	71·0	52·3	18·7	61·3	+ 1·9	57·0	53·3	8·0	15·4	1·8	75·8	117·0	49·9	Sum 1·935	0·5	...
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 50 years' observations, 1841–1890. 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 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 $29^{\text{in}}\cdot849$, being $0^{\text{in}}\cdot038$ *higher* than the average for the 50 years, 1841–1890.

TEMPERATURE OF THE AIR.

The highest in the month was $90^\circ\cdot2$ on June 24; the lowest in the month was $44^\circ\cdot4$ on June 17, and the range was $45^\circ\cdot8$.
The mean of all the highest daily readings in the month was $71^\circ\cdot0$, being $0^\circ\cdot1$ *higher* than the average for the 50 years, 1841–1890.
The mean of all the lowest daily readings in the month was $52^\circ\cdot3$, being $2^\circ\cdot4$ *higher* than the average for the 50 years, 1841–1890.
The mean of the daily ranges was $18^\circ\cdot7$, being $2^\circ\cdot3$ *less* than the average for the 50 years, 1841–1890.
The mean for the month was $61^\circ\cdot3$, being $1^\circ\cdot9$ *higher* than the average for the 50 years, 1841–1890.

MONTH and DAY, 1897.	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.	Least.	Mean of 24 Hourly Measures.	Robinson's. Horizontal Movement of the Air.	Clouds and Weather. A.M.	P.M.
	hours.	hours.			lbs.	lbs.	lbs.	miles.		
June 1	3·8	16·2	NE : ENE : E	SE : SW : WSW	1·9	0·0	0·06	229	10 : 10, t.-sm, hy.-r : 10, fq.-shs	10 : 1, li.-cl : 0
2	0·5	16·3	WSW	N : NNW	0·5	0·0	0·00	138	p.-cl, d : 10, m, f : 10	10 : 10
3	0·0	16·3	WSW : NNW : N	NNE	0·7	0·0	0·00	181	10 : 10, m : 10	10, th.-cl : 10
4	2·3	16·3	NNE	NNE : NE	1·2	0·0	0·05	249	10, slt.-r : 10 : 10	9, cu.-s : p.-cl : 10
5	5·9	16·4	NE : NNE	NE : NNE : SW	0·8	0·0	0·00	176	10 : 10	1, li.-cl : 0 : v
6	1·7	16·4	WSW : NE	NE : S : NNW	1·7	0·0	0·01	99	10 : 9, th.-cl	10, t.-sm, hy.-r : 10 : 10, m
7	0·2	16·4	N : NNE	NE : SE	1·0	0·0	0·01	176	10 : 10	10 : 10
8	0·0	16·4	ESE	E : ESE	4·8	0·0	0·36	297	10 : 10 : 10, oc.-r	10 : 10, slt.-sh : 10, r
9	0·0	16·4	E : ENE : NE	NNE : N	3·8	0·0	0·18	251	10, c.-r : 10, c.-r : 10, c.-r, glm	10, oc.-m.-r : 10, sc
10	2·6	16·5	N : NNE	NE : SW : SE	0·1	0·0	0·00	120	10 : 10	p.-cl : 10, glm : 2
11	13·6	16·5	SSE : SW : WSW	SW : SSW	1·1	0·0	0·04	190	p.-cl : 2, ci.-cu, li.-cl	2, ci.-cu, li.-cl : 0 : 0
12	15·3	16·5	SSW : Calm : SW	SW : SSW : ESE	0·6	0·0	0·00	136	0 : 1, li.-cl : 0	0 : 0
13	15·7	16·5	ESE : NE : SSE	SSE : S : SSW	1·3	0·0	0·04	150	p.-cl, d : 0	0 : 0
14	8·6	16·5	S : WSW : WNW	WNW : NW : NNW	3·2	0·0	0·27	305	p.-cl : v : 8, cu.-s	p.-cl : 2, li.-cl : p.-cl
15	10·1	16·5	WSW : SE	WSW : SW	1·5	0·0	0·05	185	p.-cl : p.-cl	3, cu.-s : 5, cu, cu.-s : 10
16	7·7	16·5	SW	W : WNW	9·4	0·0	0·92	501	10 : 10 : 10, oc.-shs, w	3, cu, st.-w : 0 : 0
17	8·2	16·6	WSW : WNW	WNW : W : WSW	4·6	0·0	0·51	398	0 : 6, cu, cu.-s	p.-cl, cu : 10
18	4·4	16·6	SW	WSW : NW	18·0	0·0	1·68	616	10, hy.-shs : v, w : 10, r, w	9, fq.-slt.-r, st.-w : p.-cl, w
19	8·1	16·6	WNW : NW	WNW : W : SW	6·3	0·0	0·95	477	p.-cl, w : p.-cl, w	p.-cl : 10, hy.-r
20	0·8	16·6	SW : W : WNW	NW : NNW	4·7	0·0	0·67	413	10 : 10, w	10 : 10
21	5·8	16·6	WSW : SSW	W	3·5	0·0	0·30	311	p.-cl : 5, ci.-cu, cu.-s	p.-cl : p.-cl
22	8·0	16·6	W : SW	SW : SSW : S	3·1	0·0	0·05	184	10 : 9	5, ci.-s, so.-ha : li.-cl
23	11·1	16·6	SE : SSE	SE : SSE	1·8	0·0	0·08	144	p.-cl : 4, li.-cl	1, li.-cl : 0 : 0, slt.-f
24	10·0	16·6	SSE : Calm : WSW	SSW : NE : NNE	6·7	0·0	0·09	164	0, slt.-f, d : 3, li.-cl, h	th.-cl, h : 10, t.-sm, hy.-r, hl : 10
25	0·0	16·6	NNE : N : NE	ENE : E	0·6	0·0	0·01	173	10, m : 10 : 10, oc.-m.-r	10 : 10, oc.-m.-r
26	7·0	16·5	NE : ENE	E : ENE	4·5	0·0	0·38	335	10 : 9	3, ci.-s : 8
27	3·8	16·5	ENE	E : SE	2·8	0·0	0·14	242	10 : 10 : 10, hy.-r	9 : v, ci.-cu
28	6·4	16·5	SE : SW : WSW	SSW : SE : E	1·1	0·0	0·01	134	p.-cl : p.-cl	p.-cl, so.-ha : v : 10, r, l
29	6·0	16·5	E : S : SW	SW : WSW	1·1	0·0	0·03	173	10, shs.-r : 10 : p.-cl	4, cu, cu.-s : v, slt.-r
30	10·7	16·5	WSW : SW	Variable	0·5	0·0	0·00	113	p.-cl : 0 ; 3, cu.-s, li.-cl	5 : 1, li.-cl : 1, li.-cl, h, m
Means	5·9	16·5	...	...	...	...	0·23	242		
Number of Column for Reference.	19	20	21	22	23	24	25	26	27	28

The mean *Temperature of Evaporation* for the month was 57°·0, being 2°·0 *higher* than the average for the 50 years, 1841–1890.
The mean *Temperature of the Dew Point* for the month was 53°·3, being 2°·2 *higher* than the average for the 50 years, 1841–1890.
The mean *Degree of Humidity* for the month was 75·8, being 1·8 *greater* than the average for the 50 years, 1841–1890.
The mean *Elastic Force of Vapour* for the month was 0^{in}·407, being 0^{in}·032 *greater* than the average for the 50 years, 1841–1890.
The mean *Weight of Vapour in a Cubic Foot of Air* for the month was 4^{grs}·5, being 0^{gr}·3 *greater* than the average for the 50 years, 1841–1890.
The mean *Weight of a Cubic Foot of Air* for the month was 530 grains, being 1 grain *less* than the average for the 50 years, 1841–1890.

The mean amount of *Cloud* for the month (a clear sky being represented by 0 and an overcast sky by 10) was 6·8.

The mean proportion of *Sunshine* for the month (constant sunshine being represented by 1) was 0·361. The maximum daily amount of *Sunshine* was 15·7 hours on June 13.

The highest reading of the *Solar Radiation Thermometer* was 144°·2 on June 24; and the lowest reading of the *Terrestrial Radiation Thermometer* was 39°·2 on June 17.

The mean daily distribution of *Ozone* for the 12 hours ending 9^h was 0·5; for the 6 hours ending 15^h was 0·0; and for the 6 hours ending 21^h was 0·0.

The *Proportions of Wind* referred to the cardinal points were N. 8, E. 7, S. 6, and W. 8. One day was calm.

The *Greatest Pressure of the Wind* in the month was 18·0 lbs. on the square foot on June 18. The mean daily *Horizontal Movement of the Air* for the month was 242 miles; the greatest daily value was 616 miles on June 18; and the least daily value was 99 miles on June 6.

Rain fell on 12 days in the month, amounting to 1^{in}·935, as measured by gauge No. 6 partly sunk below the ground; being 0^{in}·087 *less* than the average fall for the 50 years, 1841–1890.

MONTH and DAY, 1897.	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 50 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.	Rain collected in Gauge No. 6, whose receiving surface is 5 inches above the Ground.	Daily Amount of Ozone.	Electricity.
		in.	°	°	°	°	°	°	°	°	°	°		°	°	in.		
July 1	...	29·852	78·2	55·0	23·2	66·6	+ 5·3	62·0	58·3	8·3	16·3	1·9	75	125·0	51·7	0·000	0·0	mP
2	...	29·951	64·0	57·9	6·1	61·3	− 0·1	59·2	57·4	3·9	7·0	1·1	87	75·1	55·0	0·000	0·0	wP : vP : wP
3	...	29·845	72·8	55·4	17·4	63·6	+ 1·9	57·6	52·6	11·0	20·7	0·2	68	110·2	52·0	0·000	0·0	wP : vP : vP
4	...	29·884	67·8	52·1	15·7	59·6	− 2·3	52·9	47·0	12·6	20·0	2·6	63	116·7	48·7	0·000	0·0	mP : wP : mP
5	In Equator	29·797	77·5	49·7	27·8	62·3	+ 0·2	57·2	52·8	9·5	18·5	2·0	71	139·9	44·5	0·000	0·0	mP : vP : wP
6	...	29·562	70·4	55·3	15·1	62·1	− 0·1	55·6	50·0	12·1	23·8	4·0	65	121·4	53·0	0·008	0·0	wP : vP : vP
7	First Quarter	29·624	68·5	51·3	17·2	58·9	− 3·2	50·9	43·8	15·1	22·5	4·6	57	131·0	47·8	0·008	0·0	mP, wN : vP
8	...	29·785	74·1	44·0	30·1	59·3	− 2·7	51·3	44·2	15·1	25·9	3·1	57	141·5	37·0	0·000	0·0	vP
9	...	29·839	74·8	55·2	19·6	63·3	+ 1·3	55·9	49·7	13·6	20·2	7·6	61	130·5	54·2	0·002	0·0	wP : vP
10	...	30·037	78·4	54·3	24·1	66·9	+ 4·8	58·8	52·3	14·6	25·0	5·5	60	139·5	49·0	0·000	0·0	mP : wP
11	Perigee	30·171	73·3	51·2	22·1	61·9	− 0·4	55·9	50·8	11·1	19·9	2·6	68	144·5	44·1	0·000	0·0	wP
12	Greatest Declination S.	30·095	66·7	52·1	14·6	60·1	− 2·5	55·7	51·8	8·3	14·4	1·8	74	124·2	49·0	0·000	0·0	wP
13	...	29·942	77·5	53·3	24·2	65·8	+ 2·9	57·8	51·4	14·4	27·5	2·0	59	143·8	48·3	0·000	0·0	wP : wP, vN : vP, wwN
14	Full	29·803	80·3	52·9	27·4	67·0	+ 3·9	58·7	52·1	14·9	26·7	2·8	59	147·9	47·0	0·000	0·0	mP : wP, wN : vP
15	...	29·786	82·1	50·8	31·3	67·7	+ 4·5	57·3	49·0	18·7	31·3	6·0	50	150·6	43·2	0·000	0·0	mP
16	...	29·927	79·7	53·6	26·1	66·9	+ 3·7	60·5	55·4	11·5	19·7	3·4	67	137·0	50·0	0·000	0·0	vP : mP : vP
17	...	29·944	80·7	57·7	23·0	67·4	+ 4·3	61·4	56·6	10·8	24·8	1·5	68	118·0	51·5	0·000	0·0	wP : vP : mP
18	In Equator	29·856	83·1	56·0	27·1	67·9	+ 4·9	59·3	52·5	15·4	35·0	1·3	58	145·0	49·8	0·000	0·0	vP
19	...	29·582	80·7	56·7	24·0	67·0	+ 4·0	59·9	54·2	12·8	23·6	3·2	64	137·5	50·9	0·086	0·0	wP : vP, ssN
20	...	29·430	80·0	58·2	21·8	65·4	+ 2·4	61·0	57·4	8·0	23·0	0·9	76	148·1	55·2	0·161	0·0	vP, wwN : vP, ssN
21	Last Quarter	29·537	76·1	56·9	19·2	63·3	+ 0·3	59·8	56·9	6·4	13·0	1·1	80	126·5	53·8	0·000	0·0	vP, wwN : vP, ssN
22	...	29·758	73·7	57·9	15·8	64·7	+ 1·8	60·3	56·7	8·0	16·8	0·9	75	116·5	55·0	0·002	0·0	wP : mP : vP, wwN
23	Apogee	29·944	79·0	52·1	26·9	66·1	+ 3·3	59·7	54·5	11·6	20·1	2·7	66	136·0	48·0	0·000	0·0	mP
24	...	29·905	84·7	58·7	26·0	71·5	+ 8·9	64·9	59·9	11·6	24·8	0·8	67	150·9	53·9	0·000	0·0	wP
25	...	29·725	79·1	58·9	20·2	67·0	+ 4·6	60·2	54·8	12·2	26·0	5·1	65	141·3	56·0	0·106	0·0	wP : vP, vN
26	Greatest Declination N.	29·719	72·6	56·1	16·5	62·1	− 0·2	57·9	54·3	7·8	17·5	2·3	76	141·6	52·5	0·070	0·0	wP : vP, ssN
27	...	29·728	72·2	53·6	18·6	62·1	− 0·2	56·9	52·4	9·7	18·9	2·0	71	125·6	49·8	0·289	0·0	wP, wN : vP, ssN : mP
28	...	29·878	70·4	55·1	15·3	62·9	+ 0·6	57·5	52·9	10·0	17·6	4·0	70	100·5	52·2	0·000	0·0	wP : vP
29	New	30·079	71·9	56·0	15·9	64·9	+ 2·6	62·1	59·8	5·1	9·5	0·9	84	92·9	52·9	0·000	0·0	wwP : vP : vP
30	...	30·118	82·3	59·0	23·3	69·2	+ 6·9	63·5	59·1	10·1	20·9	1·1	70	134·2	53·2	0·000	0·0	wP : vP : wP
31	...	29·988	78·0	55·6	22·4	65·8	+ 3·5	60·2	55·6	10·2	23·0	1·7	70	138·1	52·0	0·000	0·0	wP
Means	...	29·842	75·8	54·6	21·2	64·5	+ 2·1	58·4	53·4	11·1	21·1	2·6	67·8	130·0	50·4	Sum 0·732	0·0	...
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 50 years' observations, 1841–1890. 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 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·842, being 0in·049 *higher* than the average for the 50 years, 1841–1890.

TEMPERATURE OF THE AIR.

The highest in the month was 84°·7 on July 24; the lowest in the month was 44°·0 on July 8; and the range was 40°·7.
The mean of all the highest daily readings in the month was 75°·8, being 1°·8 *higher* than the average for the 50 years, 1841–1890.
The mean of all the lowest daily readings in the month was 54°·6, being 1°·5 *higher* than the average for the 50 years, 1841–1890.
The mean of the daily ranges was 21°·2, being 0°·3 *greater* than the average for the 50 years, 1841–1890.
The mean for the month was 64°·5, being 2°·1 *higher* than the average for the 50 years, 1841–1890.

MONTH and DAY, 1897.	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.	Least.	Mean of 24 Hourly Measures.	ROBINSON'S. Horizontal Movement of the Air.	CLOUDS AND WEATHER. A.M.	P.M.
	hours.	hours.			lbs.	lbs.	lbs.	miles.		
July 1	12·2	16·5	Variable : N	N : NNE : NE	2·7	0·0	0·08	189	p.-cl : 0, h	1, li.-cl, h : 0 : 10
2	0·0	16·5	NNE : NE	SE : SSE	0·3	0·0	0·00	142	10 : 10	10 : 10
3	1·4	16·4	WSW : W	WNW : NNW : W	3·3	0·0	0·29	308	10 : p.-cl : 10, th.-cl	p.-cl : p.-cl : 0
4	6·8	16·4	WSW : NW	NW : N : WSW	5·6	0·0	0·54	338	0 : 1, li.-cl : p.-cl	p.-cl : p.-cl : 9
5	7·0	16·4	SW : WSW	WSW	7·2	0·0	0·72	408	p.-cl : li.-cl : 10	9, cu, ci.-cu, w : 10, w
6	3·6	16·4	WSW	W : WSW	4·9	0·0	0·65	453	10 : 10, shs.-r : 9	9, cu, n : 10
7	12·3	16·3	WSW : W : WNW	W : NW : NNW	4·0	0·0	0·39	367	10, sh.-r : p.-cl : p.-cl	7, cu, cu.-s : 2 : 0
8	9·9	16·3	WSW : SW	SW : WSW	1·8	0·0	0·07	207	0, d : 0 : 1, cu, ci.-cu	3, cu.-s : p.-cl : 10
9	2·7	16·3	WSW	WSW : WNW	2·3	0·0	0·17	299	10 : 10, sh.-r : 10	p.-cl : p.-cl
10	10·2	16·3	WSW : N	NE : ESE	1·0	0·0	0·03	173	10 : p.-cl : 1, li.-cl	1, li.-cl : 0 : 0
11	12·2	16·2	ESE : E : ENE	E : ENE	2·6	0·0	0·16	220	0 : 0 : 2, ci.-s	3, ci.-s, th.-cl, so.-ha : li.-cl
12	6·4	16·2	ENE : E	ENE : E : NE	3·7	0·0	0·43	355	7 : 10 : 10	3, ci.-s : 1, li.-cl
13	14·4	16·2	NNE : NE : E	E : ENE	7·7	0·0	0·61	386	1, li.-cl : 1, ci.-cu	0, w : 0
14	14·6	16·1	NE : ENE : E	E : ENE	5·2	0·0	0·45	333	0 : 0	0 : 0
15	14·4	16·1	NE : NNE	NNE : NE	1·2	0·0	0·02	177	0 : 0	0 : 0
16	12·9	16·1	NE : NNE	NNE : NE : SSW	1·0	0·0	0·02	142	0 : 0	1, th.-cl : 1, li.-cl : li.-cl, h
17	3·1	16·0	WSW : W : NNE	NNE : NE	1·0	0·0	0·02	141	p.-cl : p.-cl, h	10 : p.-cl
18	10·6	16·0	NNE : NE	NE	0·7	0·0	0·00	127	10 : 0	0 : 2, li.-cl : 9
19	7·3	16·0	NE : E	NE : E : WSW	1·0	0·0	0·00	166	10 : 3, li.-cl, h	9 : 10, hy.-r, l, t : 10, hy.-sh
20	6·8	15·9	W : WSW	WSW : W	0·8	0·0	0·02	172	10 : 10 : p.-cl	8, t.-sm, hy.-r : p.-cl : v
21	2·5	15·9	ENE : WSW	WSW : NNW	1·2	0·0	0·01	131	10 : 9	10, n, slt.-sh, t : p.-cl : 2
22	2·3	15·8	WSW : NW : NNW	NW : WSW : WNW	3·7	0·0	0·11	252	p.-cl : 10 : 10	10 : 10, slt.-sh : 3
23	8·4	15·8	WNW : W	W : SW	2·2	0·0	0·11	253	0 : p.-cl	p.-cl : 0
24	11·8	15·7	SW : SSW	SSW : SSE	2·0	0·0	0·07	187	0 : p.-cl	0 : 1, li.-cl
25	13·6	15·7	SSE : WSW	WSW : SW	7·7	0·0	0·68	425	p.-cl : p.-cl : 1, li.-cl	v, shs.-r, t : 1, li.-cl : 0
26	8·5	15·7	SW : WSW	WSW : SW	5·0	0·0	0·52	420	p.-cl : p.-cl	v, shs.-r, t : 0, l
27	6·9	15·6	WSW : NW	NNW : NW : W	5·7	0·0	0·15	267	v : 10, hy.-sh : v, n, t.-sm, hy.-r	p.-cl : p.-cl, m
28	3·8	15·6	W : WSW : SW	W : NNW	1·7	0·0	0·06	243	10 : p.-cl : 10, so.-ha	10 : p.-cl : 2, ci.-cu
29	0·0	15·5	SW : SSW : NNW	N : S : SSE	0·1	0·0	0·00	109	th.-cl : 10 : 10, glm	10 : 10 : th.-cl, h, m
30	12·1	15·5	WNW : N	NNE : ESE : SE	0·8	0·0	0·00	156	10 : 1, li.-cl, h	1, li.-cl : 0 : 0
31	14·0	15·4	E : N : NNE	NE : ESE	3·3	0·0	0·14	240	p.-cl : 0 : 4, ci.-cu, li.-cl	1, ci.-cu : 0 : 1
Means	8·2	16·0	...	...	...	...	0·21	251		
Number of Column for Reference.	19	20	21	22	23	24	25	26	27	28

The mean *Temperature of Evaporation* for the month was 58°·4, being 0°·6 *higher* than
The mean *Temperature of the Dew Point* for the month was 53°·4, being 0°·5 *lower* than
The mean *Degree of Humidity* for the month was 67·8, being 6·0 *less* than
The mean *Elastic Force of Vapour* for the month was $0^{\text{in}}\cdot409$, being $0^{\text{in}}\cdot007$ *less* than
The mean *Weight of Vapour in a Cubic Foot of Air* for the month was $4^{\text{grs}}\cdot5$, being $0^{\text{gr}}\cdot1$ *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 50 years, 1841–1890.

The mean amount of *Cloud* for the month (a clear sky being represented by 0 and an overcast sky by 10) was 4·8.

The mean proportion of *Sunshine* for the month (constant sunshine being represented by 1) was 0·509. The maximum daily amount of *Sunshine* was 14·6 hours on July 14.

The highest reading of the *Solar Radiation Thermometer* was 150°·9 on July 24; and the lowest reading of the *Terrestrial Radiation Thermometer* was 37°·0 on July 8.

The mean daily distribution of *Ozone* for the 12 hours ending 9^{h} was 0·0; for the 6 hours ending 15^{h} was 0·0; and for the 6 hours ending 21^{h} was 0·0.

The *Proportions of Wind* referred to the cardinal points were N. 8, E. 6, S. 5, and W. 12.

The *Greatest Pressure of the Wind* in the month was 7·7 lbs. on July 13 and 25. The mean daily *Horizontal Movement of the Air* for the month was 251 miles; the greatest daily value was 453 miles on July 6; and the least daily value was 109 miles on July 29.

Rain fell on 7 days in the month, amounting to $0^{\text{in}}\cdot732$, as measured by gauge No. 6 partly sunk below the ground; being $1^{\text{in}}\cdot738$ *less* than the average fall for the 50 years, 1841–1890.

MONTH and DAY, 1897.	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 50 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.	Rain collected in Gauge No. 6, whose receiving surface is 5 inches above the Ground.	Daily Amount of Ozone.	Electricity.
		in.	°	°	°	°	°	°	°	°	°	°		°	°	in.		
Aug. 1	...	29·875	77·3	51·7	25·6	62·8	+ 0·6	57·4	52·8	10·0	21·6	2·8	70	133·1	48·8	0·000	0·0	wP
2	In Equator	29·922	85·6	53·9	31·7	67·2	+ 5·1	60·1	54·4	12·8	29·9	1·8	64	145·8	51·2	0·000	0·0	wP : vP, wN
3	...	30·029	81·1	53·7	27·4	66·5	+ 4·4	61·8	58·0	8·5	20·7	1·5	75	142·7	50·3	0·000	0·0	vP : wP : mP
4	...	29·915	88·7	58·5	30·2	72·4	+10·2	64·9	59·2	13·2	28·1	0·9	63	143·2	53·8	0·000	0·0	wP
5	First Quarter	29·655	89·5	59·2	30·3	73·5	+11·2	65·3	59·3	14·2	27·9	2·3	62	148·2	54·8	0·046	0·0	mP : wP : vP, ssN
6	...	29·627	77·2	59·9	17·3	66·7	+ 4·3	61·4	57·2	9·5	17·9	1·9	72	134·0	56·5	0·005	0·0	wP
7	Perigee	29·707	78·3	58·1	20·2	65·9	+ 3·4	59·2	53·7	12·2	23·3	3·2	65	139·0	54·0	0·016	0·0	wP : vP : vP
8	Greatest Declination S.	29·443	72·7	58·7	14·0	62·9	+ 0·4	59·8	57·2	5·7	19·3	2·3	82	124·1	56·1	0·574	0·0	wP : vP, ssN : vP, vN
9	...	29·619	75·1	58·1	17·0	65·2	+ 2·7	59·9	55·6	9·6	18·7	1·3	72	118·7	56·5	0·087	0·0	wP : vP : vP
10	...	29·764	79·5	54·0	25·5	65·5	+ 3·0	59·9	55·3	10·2	20·4	1·8	70	137·7	51·9	0·000	0·0	mP : wP : mP
11	...	29·751	74·0	59·4	14·6	65·9	+ 3·4	62·0	58·8	7·1	14·6	1·3	79	123·2	54·5	0·015	0·0	wP, ssN : vP, mN : wP
12	Full	29·860	74·3	52·0	22·3	62·2	− 0·3	54·9	48·6	13·6	26·1	3·0	61	129·9	48·2	0·000	0·0	wP : vP
13	...	29·870	72·7	50·2	22·5	60·8	− 1·6	55·6	51·1	9·7	18·0	4·4	70	129·0	46·9	0·037	0·0	wP : wP : vP, ssN
14	In Equator	29·790	76·2	53·8	22·4	63·2	+ 0·9	57·4	52·5	10·7	21·8	1·3	68	133·7	51·0	0·020	0·0	ssN, vP : wP : mP
15	...	29·657	70·3	54·2	16·1	61·4	− 0·7	57·4	53·9	7·5	19·6	2·1	77	98·9	52·7	0·038	0·0	wP : vP, wN
16	...	29·719	76·0	52·0	24·0	62·5	+ 0·5	56·5	51·3	11·2	25·2	1·5	67	136·0	49·2	0·000	0·5	wP : vP : vP
17	...	29·653	70·0	56·0	14·0	62·6	+ 0·8	58·7	55·4	7·2	12·1	3·6	77	113·7	52·4	0·000	2·5	wP : wP : mP, ssN
18	...	29·552	75·8	56·1	19·7	63·2	+ 1·6	58·4	54·4	8·8	19·6	2·1	73	132·0	52·2	0·070	3·0	wP : vP, ssN
19	...	29·620	72·0	54·0	18·0	60·2	− 1·2	55·0	50·4	9·8	21·1	1·3	70	124·2	51·5	0·250	1·5	vP, ssN : vP, ssN : vP
20	Last Quarter : Apogee	29·531	70·2	52·5	17·7	60·7	− 0·6	58·3	56·2	4·5	9·4	2·6	86	101·3	50·2	0·047	8·0	wP : wP, wwN : wP
21	...	29·392	72·3	56·6	15·7	62·3	+ 1·2	56·9	52·3	10·0	20·5	3·0	70	127·0	53·5	0·060	5·5	wP : vP : wP, ssN
22	Greatest Declination N.	29·459	70·0	54·8	15·2	60·5	− 0·5	54·6	49·4	11·1	23·6	4·2	67	128·9	51·9	0·015	3·0	wP : vP, vN
23	...	29·589	67·0	53·8	13·2	58·7	− 2·2	53·6	49·1	9·6	20·5	2·8	70	109·0	50·0	0·000	0·0	wP : vP
24	...	29·490	66·5	53·5	13·0	59·2	− 1·6	56·3	53·7	5·5	11·2	1·1	83	110·1	49·5	0·303	1·0	wwP : vP, vN : mP
25	...	29·516	65·1	52·4	12·7	58·1	− 2·7	56·1	54·3	3·8	9·2	0·8	87	88·0	49·6	0·054	0·0	vP : vP, ssN : vP
26	...	29·567	69·2	51·0	18·2	60·4	− 0·4	57·6	55·2	5·2	15·7	0·0	84	110·0	48·0	0·296	0·0	wP : wP : vP, vN
27	...	29·638	70·6	54·0	16·6	61·2	+ 0·5	56·5	52·4	8·8	18·4	0·4	73	121·5	51·5	0·007	0·0	wwP : wP : mP
28	New	29·766	71·1	52·1	19·0	60·2	− 0·4	58·1	56·2	4·0	9·0	0·8	87	126·5	51·2	0·004	0·5	wP : mP, wwN : mP, ssN
29	In Equator	29·703	67·0	52·4	14·6	59·5	− 0·8	56·8	54·4	5·1	13·1	0·6	84	104·8	50·0	0·003	2·0	wP
30	...	29·540	72·0	55·7	16·3	61·9	+ 1·8	57·2	53·2	8·7	19·3	1·7	73	125·8	54·0	0·035	2·5	wP : wP : mP
31	...	29·548	66·0	50·0	16·0	56·4	− 3·5	53·5	50·8	5·6	14·6	1·6	82	114·0	47·8	0·877	3·8	vP, ssN
Means	...	29·670	74·0	54·6	19·4	62·9	+ 1·3	58·1	54·1	8·8	19·0	1·9	73·6	124·3	51·6	Sum 2·859	1·1	...
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 50 years' observations, 1841–1890. 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 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·670, being 0in·112 *lower* than the average for the 50 years, 1841–1890.

Temperature of the Air.

The highest in the month was 89°·5 on August 5; the lowest in the month was 50°·0 on August 31; and the range was 39°·5.
The mean of all the highest daily readings in the month was 74°·0, being 1°·2 *higher* than the average for the 50 years, 1841–1890.
The mean of all the lowest daily readings in the month was 54°·6, being 1°·6 *higher* than the average for the 50 years, 1841–1890.
The mean of the daily ranges was 19°·4, being 0°·4 *less* than the average for the 50 years, 1841–1890.
The mean for the month was 62°·9, being 1°·3 *higher* than the average for the 50 years, 1841–1890.

MONTH and DAY, 1897.	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.	Least.	Mean of 24 Hourly Measures.	Robinson's. Horizontal Movement of the Air.	Clouds and Weather. A.M.	P.M.
	hours.	hours.			lbs.	lbs.	lbs.	miles.		
Aug. 1	8.0	15.3	NE : NNE	NNE : ENE : ESE	1.1	0.0	0.07	226	p.-cl : p.-cl	p.-cl : 0 : 10
2	11.1	15.3	NE : NNE : N	NNE : ESE	1.2	0.0	0.03	167	v : 10 : 0	0 : 0
3	9.3	15.2	E : ENE : NE	E : ESE	2.0	0.0	0.09	195	0, d : 10, m : 4, cu, li.-cl	1, cu : 0 : 0, slt.-f
4	13.2	15.2	E	E : ESE	2.3	0.0	0.08	193	0, d : 0	1, li.-cl : 0
5	11.8	15.1	E : SE	S : SW : WSW	3.1	0.0	0.11	209	0, f, d : 0 : 4, cu, cu.-s	4, cu : 9, sh.-r, l, t : 10, shs.-r, l
6	9.9	15.1	SW : WSW	SSW : SW	5.0	0.0	0.35	325	10, li.-shs : p.-cl	p.-cl : p.-cl : 0
7	8.9	15.0	SW	SW : SSW : SE	3.3	0.0	0.16	270	p.-cl : p.-cl, slt.-sh	8, cu, cu.-s : p.-cl : 10, shs.-r
8	2.9	15.0	SE : S : SSE	WSW : WNW	6.1	0.0	0.41	325	10 : 10 : 10, hy.-r	v, sh.-r, l, t : 10, fq.-r : 10, slt.-r
9	2.0	14.9	W	W : WNW : WSW	2.5	0.0	0.14	311	10, hy.-sh : 10 : 9, ci.-cu	10 : p.-cl : li.-cl
10	12.7	14.9	WSW	WSW : SW	1.6	0.0	0.05	207	p.-cl : 1, li.-cl	2, cu, ci.-cu : p.-cl
11	3.2	14.8	SW : SSW	SW : W : NW	2.3	0.0	0.08	234	10 : 10, oc.-slt.-r	10, fq.-slt.-r : p.-cl
12	11.3	14.7	W : WSW	W : WNW : SW	3.8	0.0	0.18	290	0 : 0 : p.-cl	p.-cl : 1, li.-cl : 0
13	2.5	14.7	SW : SSW	SW : S	3.4	0.0	0.17	263	0 : 9 : 10	9 : 9, sh.-r : 10, r
14	11.4	14.6	SW : WSW	SW	3.3	0.0	0.17	286	10, r : p.-cl : 4, cu, li.-cl, so.-ha	p.-cl : p.-cl
15	2.8	14.6	SSW : S	SSE : ESE : N	0.6	0.0	0.00	131	p.-cl : p.-cl	10, slt.-r : 10, oc.-slt.-r : 10
16	8.7	14.5	W : WSW	W : WSW : SW	2.8	0.0	0.20	288	p.-cl : 2, li.-cl : 1 cu.-s, ci.-cu	7, cu, cu.-s : 9 : 10, slt.-r
17	3.2	14.4	SW	SW	7.0	0.0	0.75	443	10 : 10 : 10, fq.-th.-r, w	10, oc.-th.-r, w : p.-cl : 10
18	9.3	14.4	SW : WSW	SW : WSW	4.7	0.0	0.32	296	10 : p.-cl	p.-cl, so.-ha : v, fq.-hy.-shs, l, t : p.-cl, l
19	10.1	14.3	WSW : WNW : NW	W : WSW : SW	3.9	0.0	0.12	275	10, r : 10, hy.-r : 5, cu, cu.-s	2, cu, li.-cl : 1, li.-cl
20	1.8	14.3	SW : SSW	SW : WSW	5.3	0.0	0.51	373	1, li.-cl : 10, fq.-r, sc	10, fq.-th.-r : 10, oc.-slt.-r : p.-cl
21	9.4	14.2	SW : WSW	W : WSW	6.2	0.0	0.79	472	p.-cl : p.-cl : v, sh.-r, w	7, cu, cu.-s : p.-cl, sh.-r : 0
22	9.6	14.1	WSW : W	WSW : W	5.5	0.0	0.71	446	0 : p.-cl	8, shs.-r : 1, li.-cl : 0
23	2.0	14.1	WSW	W : WSW : SW	1.6	0.0	0.09	262	p.-cl : 9, cu, ci.-cu	9 : p.-cl
24	2.3	14.0	S : SSE	S : SSW : SW	3.4	0.0	0.12	227	p.-cl : 10 : 10, r	v, r : 9 : p.-cl, l
25	2.6	13.9	SSE : NE : N	WSW : N : SW	0.5	0.0	0.00	125	10, li.-shs : 10, f, m : 9, n, t.-sm, slt.-r	10, shs.-r : 9, m : 0
26	5.8	13.9	SW : S	S : SSE	2.6	0.0	0.08	188	v : p.-cl	10 : 10, r, l
27	10.6	13.8	W : WSW	WSW : SW	2.9	0.0	0.19	296	10 : 2 : 6, ci.-cu	p.-cl, so.-ha : 2, cu, ci.-cu : th.-cl
28	5.1	13.8	SSW : SW	SW	2.7	0.0	0.09	255	p.-cl, d : p.-cl	8, slt.-sh : 0
29	0.6	13.7	SW : SSW	SSW : S	4.0	0.0	0.26	290	0 : 10	10 : 10 : 10, slt.-r
30	9.7	13.7	SSW : SW	SW : SSW : SSE	4.7	0.0	0.42	363	10, shs.-r : 10 : 5, cu	3, cu, li.-cl : li.-cl
31	8.0	13.6	S : SW : WSW	WSW : SW	6.9	0.0	0.56	420	10, hy.-r, w : li.-cl : 9, cu, t	7, t.-sm, hy.-r, hl : 10, n, t.-sm, r, hl : 0
Means	7.1	14.5	...	...	...	...	0.24	279		
Number of Column for Reference.	19	20	21	22	23	24	25	26	27	28

The mean *Temperature of Evaporation* for the month was 58°.1, being 0°.5 *higher* than the average for the 50 years, 1841–1890.
The mean *Temperature of the Dew Point* for the month was 54°.1, being 0°.1 *lower* than the average for the 50 years, 1841–1890.
The mean *Degree of Humidity* for the month was 73.6, being 3.2 *less* than the average for the 50 years, 1841–1890.
The mean *Elastic Force of Vapour* for the month was $0^{in}.419$, being $0^{in}.002$ *less* than the average for the 50 years, 1841–1890.
The mean *Weight of Vapour in a Cubic Foot of Air* for the month was $4^{grs}.6$, being $0^{gr}.1$ *less* than the average for the 50 years, 1841–1890.
The mean *Weight of a Cubic Foot of Air* for the month was 525 grains, being 3 grains *less* than the average for the 50 years, 1841–1890.

The mean amount of *Cloud* for the mouth (a clear sky being represented by 0 and an overcast sky by 10) was 5.9.

The mean proportion of *Sunshine* for the month (constant sunshine being represented by 1) was 0.489. The maximum daily amount of *Sunshine* was 13.2 hours on August 4.

The highest reading of the *Solar Radiation Thermometer* was 148°.2 on August 5; and the lowest reading of the *Terrestrial Radiation Thermometer* was 46°.9 on August 13.

The mean daily distribution of *Ozone* for the 12 hours ending 9^h was 1.0; for the 6 hours ending 15^h was 0.0; and for the 6 hours ending 21^h was 0.1.

The *Proportions of Wind* referred to the cardinal points were N. 2, E. 4, S. 12, and W. 13.

The *Greatest Pressure of the Wind* in the month was 7.0 lbs. on the square foot on August 17. The mean daily *Horizontal Movement of the Air* for the month was 279 miles; the greatest daily value was 472 miles on August 21; and the least daily value was 125 miles on August 25.

Rain fell on 20 days in the month, amounting to $2^{in}.859$, as measured by gauge No. 6 partly sunk below the ground; being $0^{in}.509$ *greater* than the average fall for the 50 years, 1841–1890.

MONTH and DAY, 1897.	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 50 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.	Rain collected in Gauge No. 6, whose receiving surface is 5 inches above the Ground.	Daily Amount of Ozone.	Electricity.
		in.	°	°	°	°	°	°	°	°	°	°		°	°	in.		
Sept. 1	Perigee	29·527	60·3	52·0	8·3	57·3	− 2·4	55·4	53·7	3·6	6·7	2·1	88	75·0	47·4	0·262	3·2	wP : vP : wP, wwN
2	...	29·376	68·0	55·3	12·7	59·9	+ 0·2	55·3	51·2	8·7	13·9	2·5	73	119·4	51·1	0·027	0·0	wwP : wwP, wN : ...
3	First Quarter	29·656	61·0	45·0	16·0	54·1	− 5·5	48·8	43·6	10·5	17·5	3·2	68	105·2	43·0	0·000	0·0	... : vP : sP
4	Greatest Declination S.	29·821	58·4	41·9	16·5	50·0	− 9·4	45·3	40·3	9·7	16·2	3·1	70	103·0	38·8	0·006	0·0	mP : vP, vN : mP
5	...	29·769	60·1	45·6	14·5	54·8	− 4·5	52·9	51·1	3·7	6·0	1·3	87	68·3	42·2	0·441	0·0	wP : wP, wN : wP,wN
6	...	29·633	65·1	52·1	13·0	58·3	− 0·8	54·2	50·5	7·8	18·6	1·9	75	106·4	47·3	0·006	0·0	wP, wN : wP : mP
7	...	29·809	61·0	48·2	12·8	53·9	− 5·0	51·6	49·4	4·5	10·3	1·9	85	82·2	45·2	0·004	0·0	wP : mP : vP, wN
8	...	29·770	62·7	49·7	13·0	55·1	− 3·6	52·1	49·2	5·9	11·8	1·0	81	98·0	46·0	0·136	0·0	wP : wP : wP, vN
9	...	29·840	58·6	45·5	13·1	52·7	− 5·8	49·9	47·2	5·5	12·7	1·2	82	87·2	42·0	0·085	0·0	wwP, wwN : vP : sP
10	...	30·119	65·2	41·0	24·2	52·0	− 6·3	48·2	44·3	7·7	17·1	2·4	75	120·8	38·9	0·000	0·0	mP
11	Full : In Equator	30·229	67·0	43·1	23·9	54·6	− 3·5	51·1	47·8	6·8	17·5	1·1	77	117·6	41·0	0·002	0·0	wP : mP : mP
12	...	30·284	64·7	40·9	23·8	53·8	− 4·2	50·5	47·3	6·5	15·7	0·4	78	111·5	39·4	0·000	0·0	wP : wP : mP
13	...	30·317	67·9	42·0	25·9	55·1	− 2·8	52·3	49·6	5·5	14·0	0·8	82	114·0	40·4	0·000	0·0	wP : mP
14	...	30·295	65·2	53·6	11·6	58·0	+ 0·2	54·3	51·0	7·0	14·6	2·4	77	122·0	51·0	0·000	0·0	wwP : mP : vP
15	...	30·139	67·0	49·1	17·9	57·6	− 0·1	54·9	52·5	5·1	15·1	1·0	83	106·9	43·8	0·000	0·0	wP : vP : vP, wN
16	...	29·910	63·0	52·9	10·1	58·0	+ 0·5	54·4	51·2	6·8	11·2	2·3	78	88·3	48·0	0·024	0·0	wP, sN : vP : mP
17	Apogee	29·580	63·1	46·3	16·8	54·2	− 3·1	50·0	45·9	8·3	16·3	2·7	73	106·7	43·3	0·094	0·0	wP : vP : vP, vN
18	Greatest Declination N.	29·437	55·6	43·6	12·0	49·3	− 7·6	46·9	44·3	5·0	10·6	1·4	83	90·7	41·5	0·286	0·0	vP, vN : vP : vP, ssN
19	Last Quarter	29·592	56·8	38·2	18·6	47·4	− 9·1	44·1	40·4	7·0	15·0	1·6	77	97·8	34·8	0·097	0·0	wP : mP : vP, ssN
20	...	29·658	62·0	47·1	14·9	53·7	− 2·4	49·7	45·8	7·9	16·2	2·3	75	103·5	46·3	0·000	0·0	wP : mP : mP
21	...	29·605	65·3	48·4	16·9	55·8	+ 0·1	51·1	46·7	9·1	16·9	2·4	72	101·2	45·0	0·012	0·0	wP : mP : mP
22	...	29·697	58·0	47·8	10·2	52·5	− 2·9	49·1	45·7	6·8	12·7	3·0	78	87·9	44·0	0·000	0·0	mP
23	...	29·638	68·8	51·6	17·2	58·3	+ 3·1	54·8	51·6	6·7	16·7	1·4	78	110·7	47·2	0·000	0·0	wP
24	...	29·742	68·0	57·8	10·2	61·2	+ 6·1	56·8	53·0	8·2	14·4	2·3	75	116·1	53·6	0·000	0·0	wwP : wwP : wP
25	In Equator	29·981	69·1	51·7	17·4	59·3	+ 4·3	56·4	53·8	5·5	15·3	2·3	83	116·8	46·9	0·006	0·0	wP
26	New	29·981	69·8	52·3	17·5	61·3	+ 6·4	58·3	55·7	5·6	11·2	2·8	82	109·7	47·5	0·000	0·0	wP
27	...	30·071	68·0	46·4	21·6	55·4	+ 0·5	53·2	51·1	4·3	12·8	0·4	86	106·0	40·2	0·000	0·0	wP : vP : wP
28	Perigee	29·937	62·3	53·2	9·1	58·1	+ 3·3	57·0	56·0	2·1	4·6	0·4	92	79·7	48·0	0·086	0·0	... : wP, wwN : mP
29	...	29·748	71·0	52·5	18·5	60·9	+ 6·3	59·1	57·6	3·3	9·2	0·2	89	102·3	49·9	1·028	0·0	wP : wP : vP, ssN
30	...	29·594	60·3	50·3	10·0	55·2	+ 0·8	53·2	51·3	3·9	8·4	0·8	87	79·2	46·4	0·095	0·0	vN, wwP : vP : wP
Means	...	29·825	63·8	48·2	15·6	55·6	− 1·6	52·4	49·3	6·3	13·3	1·8	79·6	101·1	44·7	Sum 2·697	0·1	...
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 50 years' observations, 1841–1890. 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 mean reading of the Barometer for September 10 is deduced from eye-observations, on account of partial loss of the photographic register.

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·825, being 0in·019 *higher* than the average for the 50 years, 1841–1890.

TEMPERATURE OF THE AIR.

The highest in the month was 71°·0 on September 29; the lowest in the month was 38°·2 on September 19; and the range was 32°·8.
The mean of all the highest daily readings in the month was 63°·8, being 3°·5 *lower* than the average for the 50 years, 1841–1890.
The mean of all the lowest daily readings in the month was 48°·2, being 0°·9 *lower* than the average for the 50 years, 1841–1890.
The mean of the daily ranges was 15°·6, being 2°·6 *less* than the average for the 50 years, 1841–1890.
The mean for the month was 55°·6, being 1°·6 *lower* than the average for the 50 years, 1841–1890.

MONTH and DAY, 1897.	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.	Least.	Mean of 24 Hourly Measures.	Robinson's. Horizontal Movement of the Air.	Clouds and Weather. A.M.	P.M.
	hours.	hours.			lbs.	lbs.	lbs.	miles.		
Sept. 1	0·7	13·5	SW	SSW : SSE : SW	16·2	0·0	0·55	382	0 : 0 : 10, r	10, fq.-r : 10, fq.-r : v, st.-w
2	9·4	13·4	SW	SW : WSW	13·6	0·0	1·35	579	p.-cl, st.-w : p.-cl, w	8, shs.-r, w : v, shs.-r, t : v, th.-cl
3	9·3	13·4	NW	NW : SW	2·6	0·0	0·15	274	p.-cl, d : p.-cl	7, cu : p.-cl : 0
4	7·1	13·3	SW : WSW	WSW : SW	10·0	0·0	0·77	462	p.-cl, l, d : 3 : 9, slt.-r, w	p.-cl, st.-w : 0
5	0·0	13·2	SW : SSW	SW : WSW	12·5	0·0	1·11	523	10 : 10, r, w	10, r, w : 10, r, w
6	2·4	13·2	WNW : W : WSW	WSW : WNW : W	5·6	0·0	0·37	350	10, slt.-sh : 10	p.-cl : p.-cl
7	0·5	13·1	WSW : SW : Variable	Variable : S	0·1	0·0	0·00	129	10 : 10 : 9, glm	p.-cl, slt.-sh, h : 10, glm : 10
8	1·4	13·0	WSW : N : NE	E : SE : SSE	0·6	0·0	0·00	118	10 : 10 : th.-cl, h	10 : 10, fq.-slt.-r : 10, r
9	1·0	13·0	E : ENE	ENE : NE : NNE	2·0	0·0	0·08	245	10, c.-r : 10, fq.-slt.-r : 10	8 : p.-cl : 0
10	10·8	12·9	NNE : N	NE	3·6	0·0	0·22	288	p.-cl, d : 0, hy.-d : 7, cu	v, cu : 4, ci.-cu : li.-cl, d, lu.-co
11	8·0	12·9	NNE : NE : ENE	ENE : E : ESE	1·0	0·0	0·00	195	p.-cl, hy.-d : p.-cl	2, ci.-cu : 1, ci.-cu, d
12	6·1	12·8	NNE : Calm : NE	NNE : NE	0·7	0·0	0·00	122	0, f, d : p.-cl, slt.-f : 7, ci.-cu	p.-cl : 1, li.-cl, d
13	3·9	12·7	NE : NNE : Calm	NE : NNE	0·8	0·0	0·01	118	0, f, hy.-d : 3, cu, cu.-s, slt.-f	li.-cl : 10 : 10
14	4·5	12·7	NE : NNE	NE	2·0	0·0	0·08	243	10 : 10	9, cu, li.-cl : 10 : 10
15	1·6	12·6	NNE : N	NE : W	0·2	0·0	0·00	118	10, m : 10 : 7, ci.-cu	10, gt.-glm : 10, f, glm : v
16	0·7	12·6	W : NW : N	NNW : N	0·7	0·0	0·01	165	10, sh.-r : p.-cl : v, gt.-glm	10, m.-r, glm : 10
17	3·5	12·5	W : WSW	W : NW : WSW	4·0	0·0	0·22	301	p.-cl : p.-cl	8, cu : 9, sh.-r, t : 10, shs.-r
18	3·6	12·4	W : N	N : NNW : NW	3·3	0·0	0·21	286	10, r : 10 : 10	8, cu, hl : 9, fq.-r, hl : 0, h
19	6·0	12·3	W : WSW : NNW	N : NNW	3·1	0·0	0·14	262	0, d : p.-cl, h	p.-cl : 10, slt.-sh : 10, r
20	4·1	12·3	NNW : NNE : N	NNW : WNW : WSW	3·4	0·0	0·41	347	10 : 10 : 9, ci.-cu	4, ci.-cu : 10 : 10
21	4·4	12·2	WSW	W : NNW : NW	6·3	0·0	0·61	405	10 : 10, hy.-sh : 9	6, n, cu : p.-cl, l : 1
22	0·8	12·2	WSW	WSW	3·5	0·0	0·17	304	10 : 10 : 9	10 : 10
23	6·2	12·1	WSW	SW	8·5	0·0	0·54	376	10 : p.-cl : 1, th.-cl	5, ci.-cu, s : v, w, d : 10
24	5·8	12·0	SW	SW	9·7	0·0	1·45	545	10 : p.-cl, w	p.-cl, w : p.-cl
25	3·9	11·9	WSW : WNW : SSE	SSW : SW	4·0	0·0	0·11	196	10, li.-shs : 1, li.-cl, h, m, so.-ha	9, oc.-slt.-r : 10
26	2·2	11·9	SW	WSW	1·7	0·0	0·06	233	10 : 10 : 8, cu, cu.-s	p.-cl : 0
27	5·4	11·8	WSW	ESE	0·3	0·0	0·00	126	0, hy.-d : 0, h, m : 0, slt.-f	2, h, glm : 1, li.-cl, slt.-f : v, f
28	0·0	11·7	ENE : ESE	ESE : Calm : SSE	0·8	0·0	0·01	135	10 : 10 : 10, r	10, glm : p.-cl : 0, f
29	0·5	11·7	S : SE : SSW	SSW : S : SW	13·7	0·0	0·10	175	v, f : 10	10 : 10, t.-sm, hy.-r, hl, w : 10, r
30	0·7	11·6	WNW : WSW	NE : E : NNE	0·4	0·0	0·00	148	10, c.-r : 10 : 10, th.-cl	10, slt.-f : p.-cl : 10
Means	3·8	12·6	...	...	...	...	0·29	272		
Number of Column for Reference.	19	20	21	22	23	24	25	26	27	28

The mean *Temperature of Evaporation* for the month was 52°·4, being 1°·8 *lower* than
The mean *Temperature of the Dew Point* for the month was 49°·3, being 2°·1 *lower* than
The mean *Degree of Humidity* for the month was 79·6, being 1·2 *less* than
The mean *Elastic Force of Vapour* for the month was 0in·352, being 0in·027 *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 535 grains, being 2 grains *greater* than
} the average for the 50 years, 1841–1890.

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 0·304. The maximum daily amount of *Sunshine* was 10·8 hours on September 10.

The highest reading of the *Solar Radiation Thermometer* was 122°·0 on September 14; and the lowest reading of the *Terrestrial Radiation Thermometer* was 34°·8 on September 19.

The mean daily distribution of *Ozone* for the 12 hours ending 9h. was 0·1; for the 6 hours ending 15h. was 0·0; and for the 6 hours ending 21h. was 0·0.

The *Proportions of Wind* referred to the cardinal points were N. 7, E. 4, S. 6, and W. 12. One day was calm.

The *Greatest Pressure of the Wind* in the month was 16·2 lbs. on the square foot on September 1. The mean daily *Horizontal Movement of the Air* for the month was 272 miles; the greatest daily value was 579 miles on September 2; and the least daily value was 118 miles on September 8, 13, and 15.

Rain fell on 16 days in the month, amounting to 2in·697, as measured by gauge No. 6 partly sunk below the ground; being 0in·446 *greater* than the average fall for the 50 years, 1841–1890.

MONTH and DAY, 1897.	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 50 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.	Rain collected in Gauge No. 6, whose receiving surface is 5 inches above the Ground.	Daily Amount of Ozone.	Electricity.
		in.	°	°	°	°	°	°	°	°	°	°		°	°	in.		
Oct. 1	Greatest Declination S.	29·823	60·4	49·2	11·2	54·2	+ 0·1	52·4	50·6	3·6	7·4	1·0	88	86·0	47·4	0·003	0·0	wP
2	...	30·012	60·0	47·7	12·3	54·1	+ 0·3	51·5	49·0	5·1	12·0	1·3	82	81·9	43·1	0·000	0·0	wP : mP
3	First Quarter	30·020	60·1	48·8	11·3	54·0	+ 0·5	50·1	46·3	7·7	14·3	0·8	75	94·6	44·5	0·098	0·0	vP, vN : wP : mP
4	...	30·173	54·8	45·5	9·3	49·7	− 3·5	47·8	45·8	3·9	7·8	1·5	87	79·8	41·4	0·017	0·0	wP : mP : mP
5	...	30·250	56·6	42·0	14·6	48·0	− 5·0	45·0	41·7	6·3	14·2	0·6	79	110·8	35·8	0·004*	0·0	mP : wP : vP
6	...	30·271	54·9	37·3	17·6	45·1	− 7·6	42·2	38·8	6·3	14·6	0·9	79	95·5	32·6	0·003*	0·0	vP
7	...	30·242	55·0	33·0	22·0	42·7	− 9·8	40·0	36·7	6·0	14·8	0·5	80	96·7	29·4	0·000	0·2	vP, wwN : vP : vP
8	In Equator	30·063	55·5	37·3	18·2	47·1	− 5·0	44·0	40·5	6·6	13·8	2·1	78	87·3	30·3	0·041	0·8	... : mP : vP, vN
9	...	29·998	57·9	46·3	11·6	50·9	− 0·8	47·5	43·9	7·0	13·2	1·5	78	96·0	40·9	0·000	0·0	vP : mP : vP
10	Full	29·990	55·7	46·8	8·9	50·8	− 0·5	47·6	44·3	6·5	8·6	4·4	79	82·1	41·7	0·000	0·2	mP
11	...	29·776	56·7	45·0	11·7	52·2	+ 1·2	48·1	43·9	8·3	15·4	2·4	74	87·8	39·0	0·024	0·8	wP, vN : vP : mP
12	...	29·783	52·7	39·4	13·3	46·2	− 4·4	42·6	38·5	7·7	15·2	3·0	75	80·7	34·5	0·000	0·0	mP : vP : vP
13	...	29·692	51·0	37·3	13·7	44·3	− 6·0	42·0	39·3	5·0	13·7	1·6	82	72·0	32·0	0·006	0·0	mP : mP : vP
14	Apogee	29·542	61·7	42·7	19·0	53·1	+ 3·0	50·9	48·7	4·4	9·1	1·0	85	91·1	41·3	0·020	0·0	wP
15	...	29·348	64·3	54·3	10·0	58·9	+ 9·0	55·4	52·2	6·7	12·2	2·4	79	92·3	50·1	0·007	1·5	wP
16	Greatest Declination N.	29·549	66·2	54·0	12·2	59·5	+ 9·7	55·2	51·4	8·1	13·5	4·2	75	115·0	50·0	0·006	2·2	wwP : wP : wP
17	...	29·829	67·2	55·6	11·6	59·7	+10·1	55·2	51·2	8·5	17·1	3·6	74	112·7	51·7	0·000	3·3	wwP : wP
18	Last Quarter	29·953	65·8	53·8	12·0	58·9	+ 9·4	55·3	52·1	6·8	15·7	1·0	78	96·3	48·7	0·007	3·0	wP : mP
19	...	30·080	66·2	48·6	17·6	57·3	+ 8·0	56·0	54·8	2·5	6·8	0·6	91	103·2	41·5	0·101	0·0	vP, wN : wP
20	...	30·312	58·8	43·8	15·0	50·0	+ 1·0	48·8	47·5	2·5	9·3	0·2	92	83·5	38·1	0·003*	0·0	wP
21	...	30·386	58·3	41·6	16·7	48·7	− 0·1	46·9	45·0	3·7	12·0	0·0	87	103·5	38·7	0·000	0·0	wP
22	...	30·263	53·8	44·0	9·8	49·9	+ 1·4	47·6	45·2	4·7	7·6	0·7	85	67·0	36·9	0·000	0·0	wP
23	In Equator	30·061	57·0	47·5	9·5	51·3	+ 3·1	48·7	46·0	5·3	7·4	1·7	82	93·6	42·0	0·000	0·0	wwP : wP
24	...	30·051	55·3	44·4	10·9	49·6	+ 1·7	47·8	45·9	3·7	9·0	0·6	88	97·2	37·0	0·000	0·0	wP
25	New	30·041	56·2	40·4	15·8	46·5	− 1·1	44·7	42·7	3·8	11·8	0·2	87	102·3	34·1	0·004*	1·0	wP
26	...	30·133	58·8	41·1	17·7	50·0	+ 2·6	49·1	48·1	1·9	5·4	0·0	94	77·0	35·1	0·126	0·0	wP, wN : wP
27	Perigee	30·134	55·2	42·1	13·1	48·7	+ 1·4	48·0	47·2	1·5	5·8	0·0	95	61·2	38·2	0·002*	0·0	wP
28	...	30·069	59·2	39·2	20·0	48·5	+ 1·3	47·7	46·8	1·7	6·5	0·0	94	78·3	37·7	0·000	0·0	wP
29	Greatest Declination S.	29·972	65·0	40·2	24·8	50·8	+ 3·8	48·2	45·5	5·3	15·7	0·0	83	119·0	32·9	0·006*	0·0	wP
30	...	29·989	63·2	44·2	19·0	51·9	+ 4·9	49·2	46·5	5·4	13·9	1·3	82	107·2	34·8	0·000	0·0	wP
31	...	30·099	57·7	41·1	16·6	47·9	+ 1·1	46·9	45·8	2·1	7·4	0·0	93	85·5	36·0	0·000	0·0	mP
Means	...	29·997	58·7	44·3	14·4	51·0	+ 1·0	48·5	45·9	5·1	11·3	1·3	83·2	91·5	39·3	Sum 0·478	0·4	...
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 50 years' observations, 1841–1890. 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 values given in Columns 3, 4, 5, 14, and 15 are derived from eye-readings of self-registering thermometers.

* Rainfall (Column 16). Amounts entered on October 5, 6, 20, 25, 27, and 29 are derived from dew or fog.

The mean reading of the *Barometer* for the month was 29in·997, being 0in·281 *higher* than the average for the 50 years, 1841–1890.

TEMPERATURE OF THE AIR.

The highest in the month was 67°·2 on October 17; the lowest in the month was 33°·0 on October 7; and the range was 34°·2.
The mean of all the highest daily readings in the month was 58°·7, being 1°·0 *higher* than the average for the 50 years, 1841–1890.
The mean of all the lowest daily readings in the month was 44°·3, being 1°·0 *higher* than the average for the 50 years, 1841–1890.
The mean of the daily ranges was 14°·4, being *the same as* the average for the 50 years, 1841–1890.
The mean for the month was 51°·0, being 1°·0 *higher* than the average for the 50 years, 1841–1890.

MONTH and DAY, 1897.	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.	Least.	Mean of 24 Hourly Measures.	Robinson's. Horizontal Movement of the Air.	Clouds and Weather. A.M.	P.M.
	hours.	hours.			lbs.	lbs.	lbs.	miles.		
Oct. 1	0·5	11·6	NNE : N	N : NNE	1·1	0·0	0·03	198	10 : 10	p.-cl : 10, th.-r : 10
2	1·5	11·5	N : WSW	NW : N : WSW	0·4	0·0	0·00	131	10 : 10 : 8, slt.-f, h	p.-cl, h : 8, slt.-f : 10
3	6·1	11·4	WSW : W : NNW	NNW	6·3	0·0	0·43	360	10 : 10, hy.-sh : 2, li.-cl	p.-cl : 0
4	2·7	11·4	NNW : N	NNW : N : NE	3·9	0·0	0·20	282	p.-cl, d : p.-cl : 8, m.-r	10, slt.-shs : p.-cl : 0, hy.-d
5	6·7	11·3	NE : ENE : E	ESE : E : NE	1·8	0·0	0·06	208	0, hy.-d : p.-cl	2, cu.-s : 0 : 2, li.-cl, slt.-f
6	3·7	11·2	Variable : Calm : E	E	1·3	0·0	0·02	125	p.-cl, d : 10, f : p.-cl	p.-cl : 2, li.-cl, lu.-ha : 0, f
7	6·3	11·2	SW : Variable	SW : SSW	0·1	0·0	0·00	123	p.-cl, f, ho.-fr : p.-cl, slt.-f	2, th.-cl : 2, li.-cl, f : li.-cl, d
8	2·5	11·1	SSW	SW : WSW	1·5	0·0	0·04	203	8 : 10 : 10	p.-cl : 10, slt.-r : 10, r
9	3·2	11·0	W : NW : NNW	NNW : WNW : WSW	1·6	0·0	0·07	227	10 : p.-cl : li.-cl	p.-cl : p.-cl
10	0·2	11·0	WSW : SW	WSW	3·7	0·0	0·28	325	10 : 10	10 : 10
11	2·8	10·9	WSW : WNW	WNW : W	4·7	0·0	0·61	443	10 : v, r : p.-cl	8, cu, cu.-s : p.-cl : 0
12	5·6	10·9	W : WSW : NW	NW : WNW : SW	1·4	0·0	0·07	238	0, d : 0 : 1, li.-cl	2, ci.-cu, cu.-s : 9 : 10
13	0·8	10·8	SW	N : S : SE	0·1	0·0	0·00	118	p.-cl : 10, slt.-f : 9, glm, slt.-f	v, slt.-r, glm, so.-ha : 10, fq.-th.-r, slt.-f : 10, oc.-th.-r
14	0·8	10·7	SE : ESE : SSE	S	1·2	0·0	0·04	200	10, li.-shs : 10 : p.-cl	10 : 10 : th.-cl, lu.-ha, h
15	3·3	10·7	S : SSE : SSW	SSW : S : SSE	4·6	0·0	0·33	328	th.-cl : li.-cl	10, slt.-r : 10, slt.-r
16	7·6	10·6	S : SW	SW : SSW : S	6·7	0·0	0·54	405	10, slt.-r : v, sh.-r	v : 3, li.-cl : li.-cl
17	4·5	10·5	SSW : S	SSW	6·0	0·0	0·58	405	10 : 1, th.-cl	p.-cl : 2, ci.-cu
18	2·5	10·5	SSW : SW	WSW : SW : SSW	2·3	0·0	0·06	231	10 : 9 : 4, ci.-s	th.-cl, so.-ha : p.-cl : 10, r
19	2·1	10·4	S : NE : E	NNW : N : NNE	1·4	0·0	0·01	111	10, r : 10, hy.-r, f : v, r	10, glm : v : tk.-f
20	3·1	10·3	NNE : Calm : SW	NNE : NE : Calm	0·1	0·0	0·00	95	tk.-f : tk.-f	0, f : 1, li.-cl : 0, slt.-f
21	6·3	10·3	Calm : NE	E : ENE : NE	1·8	0·0	0·05	161	tk.-f : tk.-f : 2, cu.-s, f	1, cu.-s : 1, li.-cl : 1, th.-cl, d
22	0·6	10·2	NE : ENE	ENE	5·5	0·0	0·55	400	p.-cl : 10 : 9	10 : 10
23	3·3	10·2	ENE	ENE : NE : NNE	4·0	0·0	0·45	359	10 : 10	p.-cl : p.-cl : 10
24	3·8	10·1	NE : ENE	ENE	3·2	0·0	0·24	287	10 : 9	1, li.-cl : 0 : 0
25	6·2	10·0	E : ENE : NE	E : ESE	1·1	0·0	0·03	181	0, hy.-d : 0, tk.-f : 0	0 : 0, d
26	0·3	10·0	ESE : SSE	E	0·1	0·0	0·00	117	0, d, f : 10, r, slt.-f	7, ci.-cu, h : 1, li.-cl : 0, f
27	0·0	9·9	E	ESE : ENE : SE	0·1	0·0	0·00	94	f : 10, f	10 : 10, f : v, tk.-f
28	4·2	9·8	SE : NE	NE : SE : ESE	0·0	0·0	0·00	93	tk.-f : tk.-f : th.-cl, f	0, slt.-f : 0 : 0, f
29	8·2	9·8	SE ; ESE : NE	SSE : SE : ESE	0·5	0·0	0·01	143	0 : tk.-f : 0	1, ci.-s : 0 : 0
30	7·9	9·7	SSE : SE	SSE : SE : ENE	1·0	0·0	0·01	171	0, d : 1, li.-cl : 0	1, li.-cl : 0 : 0
31	4·4	9·7	ENE : NE	E : ESE	0·2	0·0	0·00	129	tk.-f : 10, tk.-f : p.-cl, f	0 : 2, th.-cl : 0
Means	3·6	10·6	...	...	...	...	0·15	222		
Number of Column for Reference.	19	20	21	22	23	24	25	26	27	28

The mean *Temperature of Evaporation* for the month was 48°·5, being 0°·5 *higher* than
The mean *Temperature of the Dew Point* for the month was 45°·9, being *the same as*
The mean *Degree of Humidity* for the month was 83·2, being 2·4 *less* than
The mean *Elastic Force of Vapour* for the month was 0in·309, being *the same as*
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 544 grains, being 5 grains *greater* than
} the average for the 50 years, 1841–1890.

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 0·340. The maximum daily amount of *Sunshine* was 8·2 hours on October 29.

The highest reading of the *Solar Radiation Thermometer* was 119°·0 on October 29; and the lowest reading of the *Terrestrial Radiation Thermometer* was 29°·4 on October 7.

The mean daily distribution of *Ozone* for the 12 hours ending 9h. was 0·4; for the 6 hours ending 15 was 0·0; and for the 6 hours ending 21h. was 0·0.

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

The *Greatest Pressure of the Wind* in the month was 6·7 lbs. on the square foot on October 16. The mean daily *Horizontal Movement of the Air* for the month was 222 miles; the greatest daily value was 443 miles on October 11; and the least daily value was 93 miles on October 28.

Rain fell on 11 days in the month, amounting to 0in·478, as measured by gauge No. 6 partly sunk below the ground; being 2in·333 *less* than the average fall for the 50 years, 1841–1890.

MONTH and DAY, 1897.	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 50 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.	Rain collected in Gauge No. 6, whose receiving surface is 5 inches above the Ground.	Daily Amount of Ozone.	Electricity.
		in.	°	°	°	°	°	°	°	°	°	°		°	°	in.		
Nov. 1	First Quarter	30·173	56·1	42·0	14·1	47·4	+ 0·7	46·3	45·1	2·3	8·7	0·0	92	92·1	36·0	0·004*	0·0	wP
2	...	30·120	49·9	43·2	6·7	46·1	− 0·4	44·0	41·6	4·5	7·6	2·7	85	92·0	41·3	0·000	0·0	wP : mP
3	...	30·066	52·0	43·4	8·6	46·4	+ 0·1	44·1	41·5	4·9	8·6	2·5	84	89·4	40·0	0·000	0·0	wP
4	In Equator	30·035	45·5	42·0	3·5	43·8	− 2·3	41·4	38·6	5·2	6·4	4·2	82	60·2	40·5	0·000	0·0	wwP : wP
5	...	30·135	44·0	39·8	4·2	41·9	− 4·0	39·5	36·5	5·4	7·0	4·2	83	47·8	39·0	0·000	0·0	wP : vP : vP
6	...	30·147	49·9	41·0	8·9	45·5	0·0	43·5	41·2	4·3	6·7	2·2	85	63·1	37·5	0·000	0·0	vP
7	...	29·994	49·0	41·1	7·9	44·3	− 0·8	43·1	41·7	2·6	6·3	0·9	91	69·1	34·8	0·000	0·0	wP
8	...	30·003	54·6	46·5	8·1	50·9	+ 6·3	50·5	50·1	0·8	1·7	0·0	97	58·1	43·0	0·152	0·0	wP
9	Full	30·120	53·9	49·1	4·8	52·2	+ 8·2	51·9	51·6	0·6	1·4	0·0	98	56·8	47·5	0·026	0·0	wP : wwP : wwP
10	...	30·057	51·3	37·4	13·9	46·1	+ 2·5	44·5	42·7	3·4	9·0	0·6	89	90·8	32·0	0·000	0·0	wwP, wwN : vP, wN : mP
11	Apogee	30·023	40·6	32·1	8·5	36·9	− 6·3	36·8	36·7	0·2	1·0	0·0	99	51·1	29·8	0·002*	0·0	vP : vP : wwP
12	Greatest Declination N.	29·807	56·1	40·6	15·5	51·8	+ 8·9	50·3	48·8	3·0	4·9	0·0	89	58·7	38·8	0·003*	0·2	...
13	...	29·543	58·8	52·3	6·5	55·4	+12·6	52·9	50·5	4·9	6·7	3·6	84	66·3	46·1	0·003	0·8	...
14	...	29·453	59·0	50·9	8·1	54·2	+11·6	52·1	50·0	4·2	7·4	2·4	85	76·0	43·0	0·000	0·0	... : wP
15	...	29·874	52·4	36·4	16·0	43·0	+ 0·5	41·3	39·3	3·7	7·3	0·8	86	64·1	30·7	0·200	0·0	wwP : mP
16	...	30·159	49·0	37·0	12·0	42·6	+ 0·2	40·0	36·8	5·8	12·8	1·3	81	70·1	31·2	0·030	0·0	vP
17	Last Quarter	29·964	55·0	49·0	6·0	52·7	+10·4	51·6	50·5	2·2	3·6	1·0	93	59·0	42·5	0·111	0·0	...
18	...	30·030	58·9	41·7	17·2	53·1	+10·9	50·9	48·7	4·4	8·6	1·1	85	78·9	34·0	0·002	0·0	wP
19	In Equator	30·292	48·5	35·8	12·7	41·8	− 0·4	40·5	38·9	2·9	7·6	0·0	90	71·2	31·2	0·003*	0·0	vP : mP
20	...	30·456	50·8	40·0	10·8	46·2	+ 4·1	45·3	44·3	1·9	4·6	0·7	94	56·3	35·0	0·000	0·0	wP : vP : wwP
21	...	30·533	50·8	40·2	10·6	46·0	+ 3·9	45·3	44·5	1·5	4·2	0·0	95	53·3	36·1	0·000	0·0	wwP : wP : vP
22	...	30·475	49·5	39·9	9·6	44·3	+ 2·1	43·7	43·0	1·3	4·0	0·0	95	65·5	32·3	0·000	0·0	wwP
23	...	30·319	44·0	39·9	4·1	41·8	− 0·3	41·5	41·2	0·6	1·8	0·0	98	45·3	39·9	0·000	0·0	wwP : wwP : wwP, wwN
24	New : Perigee	30·209	43·0	36·9	6·1	40·8	− 1·3	40·4	40·0	0·8	1·8	0·0	97	46·8	36·9	0·002*	0·0	wN, vP : wP
25	Greatest Declination S.	30·133	50·8	36·4	14·4	43·4	+ 1·4	42·5	41·4	2·0	4·4	0·4	93	77·7	30·0	0·009	0·0	wP : wP : mP
26	...	30·273	45·5	28·9	16·6	37·1	− 4·8	34·6	31·1	6·0	12·7	2·4	79	68·3	21·2	0·035	0·2	mP : mP : vP, wN
27	...	29·880	52·5	45·5	7·0	49·5	+ 7·9	47·9	46·2	3·3	5·6	1·3	89	53·3	43·0	0·337	0·8	wP : wwP : wwP, vN
28	...	29·367	49·9	39·6	10·3	44·8	+ 3·5	42·5	39·8	5·0	11·4	0·7	83	53·0	35·0	0·096	0·5	wP, wN : vP, vN
29	...	29·336	43·7	32·5	11·2	39·6	− 1·4	35·4	29·9	9·7	13·2	5·0	69	62·0	27·5	0·000	1·5	mP, wwN : sP
30	...	29·449	52·1	32·2	19·9	43·6	+ 2·9	41·3	38·6	5·0	7·6	4·2	82	78·5	27·0	0·053	0·0	mP : wP : mP, mN
Means	...	30·014	50·6	40·4	10·1	45·8	+ 2·6	44·2	42·4	3·4	6·5	1·4	88·4	65·8	36·1	Sum 1·068	0·1	...
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 50 years' observations, 1841–1890. 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 values given in Columns 3, 4, 5, 14, and 15 are derived from eye-readings of self-registering thermometers.

* Rainfall (Column 16). Small amounts entered on November 1, 11, 12, 19, and 24 are derived from fog.

The mean reading of the *Barometer* for the month was 30in·014, being 0in·270 *higher* than the average for the 50 years, 1841–1890.

TEMPERATURE OF THE AIR.

The highest in the month was 59°·0 on November 14; the lowest in the month was 28°·9 on November 26; and the range was 30°·1.
The mean of all the highest daily readings in the month was 50°·6, being 1°·8 *higher* than the average for the 50 years, 1841–1890.
The mean of all the lowest daily readings in the month was 40°·4, being 2°·8 *higher* than the average for the 50 years, 1841–1890.
The mean of the daily ranges was 10°·1, being 1°·2 *less* than the average for the 50 years, 1841–1890.
The mean for the month was 45°·8, being 2°·6 *higher* than the average for the 50 years, 1841–1890.

MONTH and DAY, 1897.	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.	Least.	Mean of 24 Hourly Measures.	Robinson's. Horizontal Movement of the Air.	Clouds and Weather. A.M.	P.M.
	hours.	hours.			lbs.	lbs.	lbs.	miles.		
Nov. 1	5·0	9·6	E : ENE : NE	ENE	3·5	0·0	0·21	252	p.-cl, f : tk.-f : f	0 : 10 : 10, oc.-th.-r
2	4·2	9·5	ENE : E	E	4·3	0·0	0·55	424	10 : 10 : p.-cl	1, li.-cl : 10, sc : 10, sc
3	5·4	9·5	E : ENE	E	3·7	0·0	0·54	434	10 : 10 : 6	1, cu.-s, li.-cl : 10 : 10
4	0·0	9·4	ENE	NE	2·5	0·0	0·10	229	10 : 10	10 : 10
5	0·0	9·4	NNE : N	NNE : NE : S	0·1	0·0	0·00	104	10 : 10	10 : 10, sc, slt.-f
6	0·1	9·3	Calm : Variable : N	N : NNE	1·0	0·0	0·01	151	10, slt.-f : 10	10 : 10 : 9
7	0·0	9·2	NNE : NE	E : ESE	1·0	0·0	0·00	137	10 : 10 : 9	p.-cl : th.-cl : 10
8	0·0	9·2	E : ESE	ESE : SE	0·4	0·0	0·00	105	10 : 10, r, f : 10, fq.-slt.-r	10, slt.-r : 10, slt.-r : 10, fq.-th.-r
9	0·0	9·1	SE : ESE : ENE	E	0·8	0·0	0·00	114	10, fq.-th.-r, f : 10, th.-r, f	10, slt.-f, m.-r : 10
10	3·7	9·1	E : ESE	ESE	0·2	0·0	0·00	140	10 : 10 : p.-cl	p.-cl : 1, li.-cl, f
11	0·0	9·0	Calm : ESE : SSW	S : SSW : SW	0·1	0·0	0·00	106	f : tk.-f : 10, f	10, slt.-f : 10, f : 10, f
12	0·0	9·0	S : SSW	SW : SSW	5·6	0·0	0·58	395	10 : 10	10 : 10, w
13	0·0	8·9	SSW	SSW : S	4·7	0·0	0·67	436	10 : 10, oc.-slt.-r	p.-cl : 0
14	1·8	8·9	SSE	S : SSE : SW	1·0	0·0	0·02	187	2 : 2, li.-cl : 7, ci.-s, th.-cl	p.-cl : 10
15	2·0	8·8	SW : N : NNE	N : NE	6·4	0·0	0·45	346	10, shs.-r, w : 10, hy.-r : 10	3, li.-cl : th.-cl : v, slt.-r
16	1·6	8·8	ENE : E : ESE	SE : SSE	2·1	0·0	0·02	169	10 : 10 : th.-cl, so.-ha	th.-cl, so.-ha : p.-cl : 10, r
17	0·0	8·7	SSW	SSW : SW	2·4	0·0	0·25	352	10, r : 10, r : 10, slt.-r	10 : 10
18	1·1	8·7	SSW : SW : WSW	W : N	2·4	0·0	0·15	247	10 : p.-cl : p.-cl	10, sh.-r : 0, slt.-f
19	4·6	8·6	Calm : SW	WSW : SW	0·3	0·0	0·00	161	0 : 0, tk.-f : 0, f	5, th.-cl : 0
20	0·0	8·6	SW	SW	0·0	0·0	0·00	139	0, d : p.-cl : p.-cl, f	p.-cl, slt.-f : 10, f : 10, f
21	0·0	8·5	SW : NE : S	SSE : ESE : NNE	0·0	0·0	0·00	78	10, f : 10, f	10, slt.-f ; 0, f
22	1·1	8·5	NNE : NE : ENE	ESE : SE	0·3	0·0	0·00	116	10, f : 10, f : 4, cu, li.-cl	9 : 10, f
23	0·0	8·4	ESE : NE	ESE : NE	0·0	0·0	0·00	58	10, f : 10, f : 10	10, glm : 10, gt.-glm : 10, tk.-f
24	0·0	8·4	NE : Calm : Variable	NNE : Calm : Variable	0·0	0·0	0·00	59	10, tk.-f : 10, f : 10, f, glm	10, slt.-f : 10, f
25	1·2	8·3	ENE : NE	ENE : NE : SE	2·7	0·0	0·06	171	10, f : 10, f : v	10, slt.-r : p.-cl : v, r
26	5·6	8·3	SE : SSE	SSW : SW	3·9	0·0	0·14	249	0, ho.-fr : 0, ho.-fr : 2, li.-cl	th.-cl, so.-ha : 10, r : 10, r
27	0·0	8·2	SW : WSW	WSW : N	7·2	0·0	0·99	517	10 : 10, sc, w	10, sc : 10, r : 10, r
28	0·0	8·2	N : W : WSW	WSW : W : WNW	25·3	0·0	1·66	578	10, oc.-r : 10, oc.-r, w	10, oc.-r, st.-w : 10, oc.-r, g : 0, st.-w
29	3·4	8·2	W : WNW : NNW	NNW : NW : WSW	26·0	0·0	2·62	744	0, g : 3, li.-cl, st.-w	2, li.-cl, w : 0 : 0
30	0·9	8·1	SW : SSW	SW : WSW	15·0	0·0	0·96	524	0 : 10, shs.-r : 10, oc.-slt.-r	9 : 10 : v, r
Means	1·4	8·8	...	...	...	...	0·33	257		
Number of Column for Reference.	19	20	21	22	23	24	25	26	27	28

The mean *Temperature of Evaporation* for the month was 44°·2, being 2°·6 *higher* than
The mean *Temperature of the Dew Point* for the month was 42°·4, being 2°·7 *higher* than
The mean *Degree of Humidity* for the month was 88·4, being 0·9 *greater* than
The mean *Elastic Force of Vapour* for the month was 0in·271, being 0in·027 *greater* than
The mean *Weight of Vapour in a Cubic Foot of Air* for the month was 3grs·1, being 0gr·3 *greater* than
The mean *Weight of a Cubic Foot of Air* for the month was 550 grains, being 2 grains *greater* than
} the average for the 50 years, 1841–1890.

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

The mean proportion of *Sunshine* for the month (constant sunshine being represented by 1) was 0·158. The maximum daily amount of *Sunshine* was 5·6 hours on November 26.

The highest reading of the *Solar Radiation Thermometer* was 92°·1 on November 1; and the lowest reading of the *Terrestrial Radiation Thermometer* was 21°·2 on November 26.

The mean daily distribution of *Ozone* for the 12 hours ending 9h. was 0·1; for the 6 hours ending 15h. was 0·0; and for the 6 hours ending 21h. was 0·0.

The *Proportions of Wind* referred to the cardinal points were N. 6, E. 10, S. 8, and W. 5. One day was calm.

The *Greatest Pressure of the Wind* in the month was 26·0 lbs. on the square foot on November 29. The mean daily *Horizontal Movement of the Air* for the month was 257 miles; the greatest daily value was 744 miles on November 29; and the least daily value was 58 miles on November 23.

Rain fell on 10 days in the month, amounting to 1in·068, as measured by gauge No. 6 partly sunk below the ground; being 1in·198 *less* than the average fall for the 50 years, 1841–1890.

MONTH and DAY, 1897.	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 50 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.	Rain collected in Gauge No. 6, whose receiving surface is 5 inches above the Ground.	Daily Amount of Ozone.	Electricity.
		in.	°	°	°	°	°	°	°	°	°	°		°	°	in.		
Dec. 1	First Quarter	29·329	45·3	36·1	9·2	40·3	− 0·3	38·4	36·0	4·3	7·5	2·8	85	69·3	30·8	0·000	0·0	mP : sP : sP, ssN
2	In Equator	29·865	40·7	34·1	6·6	37·2	− 3·4	34·6	31·0	6·2	9·9	2·0	79	65·5	27·5	0·000	0·0	mP, wwN : sP
3	...	30·073	40·6	28·9	11·7	35·5	− 5·3	32·9	28·9	6·6	12·7	1·7	76	66·3	22·2	0·000	0·0	sP
4	...	30·021	35·8	25·2	10·6	31·6	− 9·5	31·1	30·0	1·6	4·3	0·0	93	40·7	21·3	0·000	0·0	sP : sP : vP, mN
5	...	30·025	39·5	34·8	4·7	37·3	− 4·0	35·3	32·5	4·8	7·4	2·3	83	44·3	33·7	0·018	0·0	wP : vP : sP
6	...	29·861	46·3	37·4	8·9	42·4	+ 1·1	40·8	38·9	3·5	5·5	0·9	88	48·6	36·1	0·054	3·0	wP : vP : sN
7	...	29·792	52·5	37·0	15·5	44·0	+ 3·0	42·2	40·0	4·0	6·3	2·1	86	54·8	30·1	0·466	0·5	mP : vP : wwP, wN
8	Apogee	29·211	54·1	37·2	16·9	44·1	+ 3·5	42·0	39·5	4·6	7·3	1·6	83	72·8	32·5	0·145	1·5	vN, vP : vP, ssN : mP
9	Full : Greatest Dec. N.	29·243	45·1	36·6	8·5	39·7	− 0·6	36·9	33·3	6·4	10·3	4·1	78	71·8	31·5	0·000	0·0	wP : mP
10	...	29·155	48·2	34·8	13·4	41·8	+ 1·9	39·9	37·5	4·3	5·5	1·3	86	48·2	30·1	0·139	0·0	mP : vP, wN : wP
11	...	29·254	47·1	37·1	10·0	44·2	+ 4·4	41·1	37·5	6·7	11·0	2·5	76	68·8	30·0	0·033	0·0	wP, sN : mP : sP
12	...	29·529	39·2	32·4	6·8	36·7	− 3·2	35·9	34·8	1·9	2·9	0·9	94	44·0	28·9	0·415	0·2	mP : vP, ssN : mP
13	...	29·479	53·7	32·2	21·5	44·4	+ 4·3	43·4	42·2	2·2	4·4	1·1	92	53·7	28·8	0·045	0·8	wP : wwP
14	...	29·314	53·7	45·0	8·7	50·0	+ 9·8	47·6	45·1	4·9	10·5	2·5	84	84·3	40·0	0·013	0·0	... : wP : wP, wN
15	...	29·482	52·0	42·6	9·4	47·9	+ 7·6	44·8	41·5	6·4	11·3	1·9	79	83·0	37·9	0·130	0·0	vP, ssN : wP : vP
16	In Equator	29·725	55·5	49·6	5·9	52·6	+12·4	49·7	46·8	5·8	8·4	2·2	81	65·5	41·7	0·006	1·0	wwP : wP
17	Last Quarter	29·982	55·7	41·0	14·7	50·2	+10·2	48·2	46·1	4·1	7·0	0·7	86	84·5	37·4	0·000	0·0	wwP : wP : mP
18	...	30·135	45·6	38·0	7·6	42·0	+ 2·3	41·9	41·8	0·2	1·1	0·0	99	50·7	35·8	0·018	0·0	mP : vP
19	...	30·163	44·9	38·3	6·6	42·3	+ 3·0	41·6	40·8	1·5	4·2	0·0	94	45·1	38·3	0·016	0·5	wP : wwP : wP
20	...	30·195	42·4	35·5	6·9	40·7	+ 1·7	38·6	35·9	4·8	6·8	1·2	84	46·9	28·7	0·000	1·5	wwP : wP : mP
21	...	30·351	38·6	33·0	5·6	36·8	− 2·0	35·3	33·2	3·6	6·2	2·0	87	42·3	26·0	0·000	0·0	wP : wP : mP
22	...	30·451	39·0	30·3	8·7	34·2	− 4·4	32·9	30·7	3·5	6·5	0·9	86	63·1	25·0	0·000	0·0	mP : sP
23	Greatest Dec. S : Perigee : New	30·381	37·1	23·4	13·7	30·5	− 7·9	30·2	29·5	1·0	4·7	0·0	96	55·3	21·5	0·003	0·0	sP
24	...	30·244	39·0	23·3	15·7	30·9	− 7·4	30·5	29·5	1·4	4·0	0·0	94	52·0	23·0	0·000	0·0	ssP : sP
25	...	30·201	40·9	26·0	14·9	33·2	− 5·1	32·5	31·2	2·0	7·1	0·0	92	82·8	22·0	0·002	0·0	sP
26	...	30·169	45·7	24·3	21·4	35·6	− 2·8	34·7	33·3	2·3	4·6	0·0	92	61·7	21·0	0·000	0·0	... : wP
27	...	29·860	49·1	45·7	3·4	46·8	+ 8·4	44·9	42·8	4·0	6·5	1·9	87	70·7	36·1	0·067	0·0	wwP
28	...	29·719	49·9	43·0	6·9	46·8	+ 8·3	45·4	43·9	2·9	6·1	1·7	90	62·9	38·5	0·127	0·2	... : wwP, wN : wP, sN
29	In Equator	29·513	52·7	43·5	9·2	49·3	+10·7	47·4	45·3	4·0	6·0	2·4	87	55·5	38·8	0·134	1·3	...
30	First Quarter	29·140	48·9	45·6	3·3	47·8	+ 9·2	45·9	43·8	4·0	5·5	2·3	87	56·0	41·3	0·188	1·5	...
31	...	29·128	49·7	42·6	7·1	45·2	+ 6·6	43·5	41·5	3·7	5·9	2·2	87	76·6	37·6	0·123	0·0	...
Means	...	29·774	46·1	36·0	10·1	41·4	+ 1·7	39·7	37·6	3·8	6·7	1·5	86·8	60·9	31·4	Sum 2·142	0·4	...
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 50 years' observations, 1841–1890. 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 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·774, being 0in·017 *lower* than the average for the 50 years, 1841–1890.

TEMPERATURE OF THE AIR.

The highest in the month was 55°·7 on December 17; the lowest in the month was 23°·3 on December 24; and the range was 32°·4.
The mean of all the highest daily readings in the month was 46°·1, being 2°·1 *higher* than the average for the 50 years, 1841–1890.
The mean of all the lowest daily readings in the month was 36°·0, being 1°·2 *higher* than the average for the 50 years, 1841–1890.
The mean of the daily ranges was 10°·1, being 0°·9 *greater* than the average for the 50 years, 1841–1890.
The mean for the month was 41°·4, being 1°·7 *higher* than the average for the 50 years, 1841–1890.

MONTH and DAY, 1897.	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.	Least.	Mean of 24 Hourly Measures.	Robinson's. Horizontal Movement of the Air.	Clouds and Weather. A.M.	P.M.
	hours.	hours.			lbs.	lbs.	lbs.	miles.		
Dec. 1	4·5	8·1	WSW	WSW:SW:NNE	3·0	0·0	0·25	325	p.-cl, d : p.-cl : 1, th.-cl	3, cu.-s : 9 : 10
2	3·2	8·1	N	N	10·5	0·0	1·01	488	10 : p.-cl, m.-r : 0, w	p.-cl, w : p.-cl
3	2·3	8·0	N	N	2·3	0·0	0·10	203	0, ho.-fr : 2 : 9, ci.-cu	5, th.-cl, ci.-cu : 0, slt.-f : 0, f, ho.-fr
4	0·0	8·0	SW : S : Variable	S : SSE	0·2	0·0	0·00	116	f, ho.-fr : p.-cl, slt.-f	10, slt.-sn : 10, slt.-r : 10, oc.-slt.-r
5	0·0	8·0	SE : SSE	SSE	0·1	0·0	0·00	106	10 : 10, sh.-r : 10	10, slt.-r : 10
6	0·0	8·0	S : SSW	SSW : W : WSW	5·7	0·0	0·25	307	10 : 10, oc.-slt.-r	10, slt.-r : 10, r : v, lu.-co
7	0·2	7·9	SW : SSW	SSW : SW	15·0	0·0	0·90	492	p.-cl : p.-cl	10, so.-ha : 10, fq.-r, st.-w : 10, hy.-r, st.-w
8	1·3	7·9	WSW : W	WSW : SW	19·0	0·0	1·40	615	10, fq.-r, st.-w : 10, fq.-shs, w : p.-cl	v, slt.-r, w, glm : 1, th.-cl, w : 1, lu.-ha, ho.-fr
9	3·0	7·9	WSW	WSW	6·7	0·0	0·89	523	p.-cl, ho.-fr : p.-cl : 2, ci.-s, ci.-cu	p.-cl : 0 : 0
10	0·0	7·9	WSW : SW : S	S : SW	5·0	0·0	0·50	414	2, li.-cl, ho.-fr : th.-cl : 10, fq.-r	10, r, sc : p.-cl, oc.-shs : li.-cl
11	4·6	7·8	WSW : W : WNW	W : WSW	17·0	0·0	1·11	552	p.-cl, w : hy.-sqs, r : 5, ci.-cu, w	2, cu.-s, w : 1, li.-cl : 0, fr
12	0·0	7·8	SW : ENE	NNE : N : SW	2·3	0·0	0·09	242	0, ho.-fr : p.-cl : 10, r, glm	9, r : 10 : 1, li.-cl, ho.-fr
13	0·0	7·8	SSE : SE	SSW	6·5	0·0	0·68	434	1, li.-cl, ho.-fr : p.-cl : 10, fq.-r	10, fq.-th.-r : 10, oc.-slt.-r : 10, w
14	3·1	7·8	SSW : SW	SW : S : SSW	11·0	0·0	1·05	484	10, st.-w, oc.-shs : 10, w : 9, slt.-r, sc	1, li.-cl : 1, li.-cl : v, slt.-sh, l
15	5·3	7·8	SSW:SW:WSW	WSW:SW:SSW	16·0	0·0	0·90	468	10, t.-sm, hy.-r, hl, w : p.-cl : 1, li.-cl	1, li.-cl : 0 : v
16	0·4	7·8	SSW : SW	SSW	11·2	0·0	1·33	578	10, th.-r, w : 10, w : 10, st.-w	8, th.-cl : 0 : 0
17	4·7	7·7	SSW : SW	SW : WSW	3·0	0·0	0·15	232	p.-cl, d : p.-cl : 1, ci.-cu	1, ci.-cu, ci.-s : 0, f : 0, slt.-f
18	0·0	7·7	WSW : Calm	Calm : NE	0·1	0·0	0·00	86	tk.-f : 10, tk.-f	tk.-f : tk.-f : 10, f, m.-r
19	0·0	7·7	ENE : E : ESE	E : ESE	3·0	0·0	0·23	293	10, f : 10, m.-r	10, oc.-m.-r : 10
20	0·1	7·7	ESE	ESE : E	4·7	0·0	0·41	336	10 : 10	10 : p.-cl : 0, d
21	0·0	7·7	ESE : E	ESE : E	3·5	0·0	0·21	281	0 : 10 : 10	10 : 8 : 10
22	4·4	7·7	ESE	ESE	0·5	0·0	0·00	161	10 : 0, ho.-fr	0 : 0, f, ho.-fr
23	0·6	7·7	ESE : Calm	Calm : ESE	0·1	0·0	0·00	100	2, tk.-f, ho.-fr : tk.-f	5, ci.-s, slt.-f : 2, f : tk.-f, ho.-fr
24	1·4	7·7	SE : Calm : ESE	ESE : SE : SSE	0·1	0·0	0·00	114	tk.-f, ho.-fr : tk.-f : 2, li.-cl, f	3, cu.-s : 1, li.-cl, slt.-f : 0, slt.-f, ho.-fr
25	6·4	7·7	SSE : SE	SSE : SE	0·1	0·0	0·00	111	0, ho.-fr : 0, f : 0	0 : 0 : 0, slt.-f, ho.-fr
26	1·9	7·8	SSE : SW	SSW	4·3	0·0	0·20	280	0, f, ho.-fr : li.-cl, slt.-f : th.-cl	9 : 0 : 10
27	0·7	7·8	SSW	SSW : SW	9·2	0·0	1·45	618	10, w : 7, ci.-s, cu.-s, w, li.-sc	10, w : 10, oc.-th.-r, w : 10, th.-r
28	0·9	7·8	SW : SSW	SW	13·3	0·0	0·59	444	10, slt.-r : 10, th.-r, sc : 9, slt.-r, w	9, hy.-r, w : 0 : 1, hy.-sh
29	0·0	7·8	SW	SW : SSW	25·0	0·0	3·50	879	10, li.-shs, st.-w : 10, st.-w, sc : 10, fq.-r, st.-w, sc	10, fq.-r, g, sc : 10, r, g : 10, r, g
30	0·0	7·8	SSW : SW	SSW	22·0	0·0	1·99	588	10, fq.-r, g : 10, r, st.-w : 10, fq.-shs	p.-cl : ci.-s, lu.-ha, lu.-co : p.-cl
31	1·3	7·8	SSW : SW	SSW : S	5·7	0·0	0·50	387	v, slt.-r : p.-cl : v, cu.-s, slt.-r	v, shs.-r, hl : 2, li.-cl : 1, li.-cl
Means	1·6	7·8	...	...	...	...	0·64	363		
Number of Column for Reference.	19	20	21	22	23	24	25	26	27	28

The mean *Temperature of Evaporation* for the month was 39°·7, being 1°·4 *higher* than
The mean *Temperature of the Dew Point* for the month was 37°·6, being 1°·1 *higher* than
The mean *Degree of Humidity* for the month was 86·8, being 1·7 *less* than
The mean *Elastic Force of Vapour* for the month was 0in·225, being 0in·009 *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 551 grains, being 2 grains *less* than
} the average for the 50 years, 1841–1890.

The mean amount of *Cloud* for the month (a clear sky being represented by 0 and an overcast sky by 10) was 5·7.

The mean proportion of *Sunshine* for the month (constant sunshine being represented by 1) was 0·207. The maximum daily amount of *Sunshine* was 6·4 hours on December 25.

The highest reading of the *Solar Radiation Thermometer* was 84°·5 on December 17; and the lowest reading of the *Terrestrial Radiation Thermometer* was 21°·0 on December 26.

The mean daily distribution of *Ozone* for the 12 hours ending 9h. was 0·3; for the 6 hours ending 15h. was 0·1; and for the 6 hours ending 21h. was 0·0.

The *Proportions of Wind* referred to the cardinal points were N. 3, E. 6, S. 14, and W. 8.

The *Greatest Pressure of the Wind* in the month was 25·0 lbs. on the square foot on December 29. The mean daily *Horizontal Movement of the Air* for the month was 363 miles; the greatest daily value was 879 miles on December 29; and the least daily value was 86 miles on December 18.

Rain fell on 18 days in the month, amounting to 2in·142, as measured by gauge No. 6 partly sunk below the ground, being 0in·372 *greater* than the average fall for the 50 years, 1841–1890.

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

MAXIMA.			MINIMA.			MAXIMA.			MINIMA.		
Greenwich Civil Time, 1897.		Reading.	Greenwich Civil Time, 1897.		Reading.	Greenwich Civil Time, 1897.		Reading.	Greenwich Civil Time, 1897.		Reading.
	d h m	in.		d h m	in.		d h m	in.		d h m	in.
January	2. 10. 5	30·400	January	6. 18. 0	29·486	March	20. 11. 30	29·980	March	21. 4. 20	29·896
	7. 10. 55	29·618		8. 14. 40	29·466		21. 23. 50	29·963		22. 17. 45	29·645
	9. 2. 45	29·518		9. 23. 0	29·343		23. 10. 45	29·839		24. 5. 40	29·606
	11. 23. 55	29·591		12. 13. 30	29·528		25. 22. 30	29·900		27. 3. 10	29·373
	14. 18. 35	30·007		17. 4. 20	29·753		27. 18. 50	29·588		28. 18. 50	28·953
	18. 10. 25	29·937		19. 16. 25	29·859		30. 10. 0	29·473	April	1. 7. 0	28·817
	20. 9. 0	29·966		22. 6. 50	29·180	April	2. 20. 5	29·605		4. 1. 30	29·096
	23. 23. 50	29·762		25. 15. 30	29·363		5. 10. 15	29·890		6. 11. 15	29·569
	28. 2. 30	29·960		30. 14. 20	29·037		6. 20. 50	29·631		7. 9. 0	29·436
	31. 16. 50	29·361	February	1. 8. 30	29·151		9. 8. 55	29·914		10. 3. 40	29·750
February	1. 16. 50	29·211		2. 7. 55	28·999		10. 22. 35	30·107		14. 5. 40	29·421
	4. 11. 5	29·695		5. 17. 30	29·074		15. 23. 0	30·120		16. 16. 15	29·843
	6. 9. 0	29·367		6. 15. 40	29·267		16. 22. 35	29·925		17. 21. 25	29·565
	8. 8. 50	30·140		9. 14. 15	29·786		18. 21. 15	29·907		20. 4. 15	29·338
	10. 11. 15	30·017		11. 5. 10	29·882		22. 23. 0	29·969		25. 15. 55	29·646
	12. 11. 20	30·043		14. 3. 20	29·744		25. 23. 0	29·695		26. 14. 0	29·644
	16. 11. 0	30·477		18. 17. 25	30·073		29. 9. 10	29·929		30. 17. 30	29·518
	18. 23. 5	30·130		20. 6. 20	30·010	May	1. 22. 20	29·765	May	2. 16. 0	29·661
	20. 18. 55	30·102		21. 2. 35	29·936		4. 11. 20	30·036		5. 15. 5	29·718
	23. 11. 35	30·455		25. 15. 50	29·965		6. 23. 40	29·998		8. 19. 0	29·863
	27. 11. 5	30·165	March	1. 3. 25	29·350		9. 21. 50	30·065		10. 23. 15	29·615
March	1. 8. 55	29·411		1. 21. 40	29·326		13. 8. 0	30·104		13. 18. 0	30·045
	2. 11. 35	29·631		3. 9. 0	28·580		15. 23. 30	30·257		17. 17. 15	29·853
	4. 5. 0	29·405		4. 16. 15	29·019		18. 22. 25	29·990		23. 16. 30	29·620
	9. 1. 50	29·976		10. 4. 5	29·717		24. 23. 5	29·767		27. 17. 15	29·183
	11. 8. 15	29·916		13. 5. 0	29·365		30. 13. 30	29·692		30. 19. 20	29·636
	13. 21. 0	29·461		14. 21. 55	29·094		31. 9. 55	29·849	June	1. 10. 40	29·646
	16. 1. 30	29·349		16. 16. 40	29·266	June	3. 9. 30	29·963		4. 16. 45	29·875
	17. 9. 30	29·360		17. 18. 55	29·234		5. 10. 30	29·956		6. 18. 30	29·880
	18. 23. 25	29·693		19. 4. 55	29·532						

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

MAXIMA.		MINIMA.		MAXIMA.		MINIMA.	
Greenwich Civil Time, 1897.	Reading.	Greenwich Civil Time, 1897.	Reading.	Greenwich Civil Time, 1897.	Reading.	Greenwich Civil Time, 1897.	Reading.
d h m	in.	d h m	in.	d h m	in.	d h m	in.
June 7. 22. 30	29·968	June 9. 5. 5	29·507	September 13. 9. 0	30·339	September 18. 3. 40	29·366
12. 8. 20	30·165	14. 4. 35	29·795	20. 10. 30	29·717	21. 12. 40	29·535
15. 6. 50	30·060	16. 12. 0	29·576	22. 9. 0	29·779	23. 0. 5	29·583
17. 15. 45	29·768	18. 16. 20	29·260	25. 12. 0	30·045	26. 15. 45	29·953
19. 12. 0	29·858	20. 4. 30	29·486	27. 9. 0	30·120	30. 3. 20	29·556
22. 8. 45	30·080	24. 13. 55	29·707	October 2. 11. 0	30·048	October 3. 5. 15	29·945
25. 23. 0	29·916	27. 16. 50	29·687	6. 9. 20	30·290	9. 2. 15	29·928
28. 21. 10	29·801	29. 3. 40	29·725	9. 22. 30	30·068	11. 16. 40	29·721
July 2. 10. 55	29·983	July 3. 14. 15	29·815	12. 11. 5	29·817	16. 1. 30	29·290
5. 0. 5	29·960	6. 17. 20	29·505	21. 9. 0	30·426	23. 15. 50	30·002
11. 8. 0	30·205	14. 17. 0	29·746	24. 10. 20	30·078	25. 14. 30	30·011
16. 22. 50	30·015	20. 16. 25	29·406	26. 23. 35	30·180	29. 15. 25	29·924
23. 22. 30	29·987	27. 3. 20	29·665	November 1. 9. 20	30·207	November 4. 15. 0	30·010
30. 0. 40	30·158	August 1. 17. 0	29·820	6. 9. 0	30·190	8. 2. 55	29·916
August 3. 10. 0	30·068	5. 18. 0	29·569	9. 10. 15	30·144	14. 15. 40	29·418
7. 10. 0	29·742	8. 14. 25	29·326	16. 9. 0	30·228	18. 3. 20	29·917
10. 21. 10	29·789	11. 17. 45	29·717	21. 10. 20	30·560	25. 6. 15	30·030
12. 22. 0	29·957	15. 17. 20	29·550	26. 6. 20	30·356	29. 5. 30	28·960
16. 21. 10	29·798	19. 2. 0	29·520	29. 23. 40	29·751	30. 19. 20	29·150
19. 23. 20	29·711	22. 1. 0	29·369	December 3. 10. 10	30·123	December 6. 14. 25	29·788
23. 21. 0	29·616	24. 17. 30	29·441	7. 9. 0	29·965	9. 4. 20	29·160
26. 5. 25	29·618	26. 22. 25	29·476	10. 2. 15	29·428	10. 23. 10	28·853
28. 23. 30	29·795	31. 1. 45	29·410	12. 2. 55	29·615	12. 15. 5	29·369
September 1. 1. 0	29·657	September 2. 1. 25	29·240	12. 23. 50	29·636	14. 6. 35	29·241
5. 0. 0	29·940	5. 23. 0	29·550	14. 16. 15	29·371	15. 3. 40	29·241
7. 13. 10	29·850	9. 1. 20	29·727	22. 9. 0	30·482	30. 7. 15	29·070

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 1897.
[Extracted from the preceding Table.]

MONTH, 1897.	Readings of the Barometer.		Range.
	Highest.	Lowest.	
	in.	in.	in.
January	30·400	29·037	1·363
February	30·477	28·999	1·478
March	29·980	28·580	1·400
April	30·120	28·817	1·303
May	30·257	29·183	1·074
June	30·165	29·260	0·905
July	30·205	29·406	0·799
August	30·068	29·326	0·742
September	30·339	29·240	1·099
October	30·426	29·290	1·136
November	30·560	28·960	1·600
December	30·482	28·853	1·629

The highest reading in the year was 30in 560 on November 21. The lowest reading in the year was 28in·580 on March 3.
The range of reading in the year was 1in·980.

MONTHLY RESULTS of METEOROLOGICAL ELEMENTS for the YEAR 1897.

MONTH, 1897.	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 50 Years.	Mean Temperature of Evaporation.	Mean Temperature of the Dew Point.	Mean Degree of Humidity. (Saturation = 100.)
	in.	°	°	°	°	°	°	°	°	°	°	
January ...	29·709	48·3	23·8	24·5	38·7	31·8	7·0	35·4	− 3·1	34·2	32·0	87·2
February ...	29·928	58·6	30·0	28·6	47·5	38·7	8·8	43·2	+ 3·7	41·5	39·6	88·0
March	29·518	62·2	29·9	32·3	52·4	39·1	13·4	45·2	+ 3·5	42·4	39·1	79·8
April	29·684	67·8	29·9	37·9	54·7	39·0	15·7	46·3	− 0·9	43·1	39·6	78·1
May	29·795	77·6	33·6	44·0	63·1	42·8	20·4	52·4	− 0·7	47·3	42·2	68·6
June	29·849	90·2	44·4	45·8	71·0	52·3	18·7	61·3	+ 1·9	57·0	53·3	75·8
July	29·842	84·7	44·0	40·7	75·8	54·6	21·2	64·5	+ 2·1	58·4	53·4	67·8
August	29·670	89·5	50·0	39·5	74·0	54·6	19·4	62·9	+ 1·3	58·1	54·1	73·6
September...	29·825	71·0	38·2	32·8	63·8	48·2	15·6	55·6	− 1·6	52·4	49·3	79·6
October	29·997	67·2	33·0	34·2	58·7	44·3	14·4	51·0	+ 1·0	48·5	45·9	83·2
November ..	30·014	59·0	28·9	30·1	50·6	40·4	10·1	45·8	+ 2·6	44·2	42·4	88·4
December...	29·774	55·7	23·3	32·4	46·1	36·0	10·1	41·4	+ 1·7	39·7	37·6	86·8
Means	29·800	Highest. 90·2	Lowest. 23·3	Annual Range. 66·9	58·0	43·5	14·6	50·4	+ 1·0	47·2	44·0	79·7

MONTH, 1897.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a Cubic Foot of Air.	Mean Weight of a Cubic Foot of Air.	Mean Amount of Ozone.	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 ...	0·181	2·1	556	1·0	7·9	17	1·615	150	185	89	69	56	44	69	55	27	0·28	301
February ...	0·243	2·8	551	2·6	8·5	14	2·385	46	36	50	93	58	191	135	53	10	0·25	287
March	0·238	2·8	541	2·8	6·7	17	3·347	42	30	17	39	83	330	179	19	5	0·65	406
April	0·243	2·8	543	0·5	7·0	16	1·617	75	137	81	81	60	180	72	28	6	0·35	317
May	0·269	3·1	539	0·9	5·1	11	1·251	148	146	38	11	45	186	93	71	6	0·32	321
June	0·407	4·5	530	0·5	6·8	12	1·935	86	109	77	64	48	155	108	49	24	0·23	242
July	0·409	4·5	526	0·0	4·8	7	0·732	90	136	83	23	24	172	158	53	5	0·21	251
August	0·419	4·6	525	1·1	5·9	20	2·859	17	35	56	38	84	358	142	12	2	0·24	279
September...	0·352	4·0	535	0·1	7·2	16	2·697	94	100	47	31	34	211	128	60	15	0·29	272
October	0·309	3·5	544	0·4	5·1	11	0·478	88	125	131	75	88	133	57	40	7	0·15	222
November...	0·271	3·1	550	0·1	7·4	10	1·068	78	98	143	71	78	165	38	14	35	0·33	257
December...	0·225	2·6	551	0·4	5·7	18	2·142	53	16	100	91	137	258	77	3	9	0·64	363
Sums	...	...	...	...	...	169	22·126	967	1153	912	686	795	2383	1256	457	151	...	...
Means	0·297	3·4	541	0·9	6·5	...	...	...	...	...	...	...	...	...	...	...	0·33	293

The greatest recorded pressure of the wind on the square foot in the year was 26·0 lbs. on March 3 and November 29.
The greatest recorded daily horizontal movement of the air in the year was 882 miles on March 3.
The least recorded daily horizontal movement of the air in the year was 58 miles on November 23.

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

Hour, Greenwich Civil Time.	1897. 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	29·726	29·935	29·524	29·687	29·800	29·860	29·847	29·680	29·820	29·993	30·032	29·780	29·807
1h.	29·721	29·930	29·525	29·680	29·798	29·853	29·843	29·675	29·819	29·990	30·027	29·774	29·803
2	29·719	29·926	29·519	29·672	29·795	29·846	29·841	29·672	29·816	29·984	30·026	29·773	29·799
3	29·715	29·918	29·512	29·667	29·791	29·841	29·837	29·669	29·811	29·982	30·020	29·771	29·794
4	29·705	29·915	29·510	29·663	29·790	29·841	29·837	29·665	29·810	29·980	30·015	29·768	29·792
5	29·698	29·917	29·513	29·663	29·795	29·843	29·840	29·670	29·811	29·981	30·016	29·764	29·793
6	29·698	29·920	29·518	29·670	29·800	29·846	29·845	29·672	29·820	29·986	30·015	29·765	29·796
7	29·704	29·924	29·524	29·678	29·805	29·849	29·850	29·678	29·824	29·995	30·020	29·771	29·802
8	29·712	29·933	29·528	29·684	29·806	29·850	29·853	29·681	29·832	30·005	30·028	29·779	29·808
9	29·717	29·937	29·527	29·689	29·806	29·850	29·853	29·685	29·835	30·010	30·032	29·787	29·811
10	29·721	29·940	29·531	29·690	29·805	29·851	29·853	29·684	29·833	30·013	30·037	29·793	29·813
11	29·722	29·943	29·528	29·690	29·804	29·850	29·852	29·677	29·828	30·012	30·032	29·788	29·810
Noon	29·712	29·937	29·529	29·689	29·799	29·848	29·848	29·672	29·822	30·004	30·020	29·776	29·805
13h.	29·702	29·926	29·524	29·687	29·793	29·846	29·843	29·668	29·816	29·995	30·009	29·766	29·798
14	29·699	29·919	29·521	29·682	29·787	29·842	29·840	29·665	29·809	29·990	30·000	29·761	29·793
15	29·701	29·916	29·519	29·678	29·778	29·841	29·834	29·660	29·802	29·986	29·996	29·758	29·789
16	29·701	29·914	29·514	29·677	29·775	29·837	29·829	29·656	29·798	29·986	29·995	29·763	29·787
17	29·703	29·919	29·514	29·679	29·773	29·838	29·825	29·653	29·797	29·991	29·998	29·766	29·788
18	29·707	29·926	29·518	29·682	29·776	29·842	29·823	29·654	29·800	29·999	30·002	29·769	29·791
19	29·709	29·933	29·521	29·691	29·783	29·848	29·828	29·659	29·805	30·002	30·004	29·775	29·796
20	29·710	29·935	29·523	29·700	29·792	29·855	29·833	29·668	29·809	30·006	30·004	29·779	29·801
21	29·710	29·938	29·521	29·705	29·802	29·866	29·845	29·672	29·813	30·011	30·005	29·783	29·806
22	29·709	29·939	29·518	29·707	29·806	29·867	29·851	29·673	29·815	30·012	30·005	29·782	29·807
23	29·706	29·939	29·516	29·709	29·809	29·865	29·852	29·673	29·814	30·010	30·003	29·783	29·807
24	29·703	29·938	29·514	29·707	29·807	29·861	29·850	29·671	29·813	30·009	30·000	29·779	29·804
Means 0h.–23h.	29·709	29·928	29·521	29·684	29·795	29·849	29·842	29·670	29·815	29·997	30·014	29·774	29·800
Means 1h.–24h.	29·709	29·928	29·520	29·685	29·795	29·849	29·842	29·670	29·815	29·997	30·013	29·774	29·800
Number of Days employed.	31	28	30	30	31	30	31	31	29	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.	1897. January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Yearly Means.
	°	°	°	°	°	°	°	°	°	°	°	°	°
Midnight	34·8	41·8	42·9	43·1	46·9	56·6	59·0	58·6	53·1	48·7	44·6	40·4	47·5
1h.	34·7	41·6	42·8	42·7	46·5	55·7	58·2	57·8	52·5	48·1	44·3	40·1	47·1
2	34·6	41·8	42·7	42·5	46·0	55·2	57·9	57·4	52·1	47·8	44·0	40·1	46·8
3	34·5	41·7	42·4	42·1	45·5	54·8	57·4	56·9	51·7	47·2	43·8	39·7	46·5
4	34·6	41·5	42·3	41·6	45·3	54·6	57·0	56·7	51·5	47·0	43·8	39·7	46·3
5	34·6	41·5	42·1	41·5	45·5	55·2	57·3	56·5	51·0	46·9	43·9	39·5	46·3
6	34·5	41·4	42·0	41·9	46·5	56·3	58·6	57·3	50·9	47·1	44·0	39·6	46·7
7	34·7	41·3	42·2	43·1	48·6	58·0	60·7	59·3	51·8	47·5	44·3	39·8	47·6
8	34·8	41·6	43·4	45·0	51·0	60·3	63·2	61·9	53·1	48·6	44·7	40·0	49·0
9	35·2	42·3	44·9	46·8	53·7	62·2	66·0	64·2	55·3	50·1	45·2	40·3	50·5
10	35·7	43·3	46·2	48·4	55·8	63·6	68·1	66·1	57·0	51·9	46·3	41·4	52·0
11	36·2	44·2	47·6	50·1	57·4	65·3	70·4	68·2	58·8	54·1	47·5	42·5	53·5
Noon	37·1	45·4	48·6	51·4	59·0	66·8	71·7	69·6	60·5	55·9	48·7	43·7	54·9
13h.	37·2	46·0	49·6	52·0	59·7	67·8	72·7	69·8	61·0	56·6	49·1	44·2	55·5
14	37·1	46·4	49·8	52·1	60·7	68·5	72·8	70·3	61·4	57·2	48·9	44·2	55·8
15	36·8	46·2	50·2	51·6	60·8	68·6	72·5	70·1	61·4	56·6	48·4	43·7	55·6
16	36·5	45·8	49·8	51·0	60·1	68·0	71·6	69·8	60·3	55·3	47·6	43·0	54·9
17	36·0	45·0	48·5	49·8	59·0	67·0	70·6	68·3	58·9	53·8	46·9	42·4	53·8
18	35·7	44·0	47·1	48·5	57·0	65·9	69·0	66·1	57·6	52·5	46·4	42·0	52·7
19	35·3	43·4	45·8	47·1	54·6	63·8	66·8	63·8	56·4	51·7	45·9	41·7	51·4
20	35·1	42·9	44·8	45·9	51·9	61·6	64·3	61·8	55·6	50·7	45·5	41·4	50·1
21	34·9	42·5	43·8	44·8	50·1	59·7	62·2	60·4	54·6	49·9	45·2	41·3	49·1
22	34·7	42·3	43·2	44·1	48·9	58·4	61·0	59·6	54·1	49·5	44·9	41·0	48·5
23	34·5	42·2	43·0	43·7	47·8	57·6	59·6	59·0	53·6	49·1	44·8	40·8	48·0
24	34·4	42·1	42·7	43·4	47·2	56·8	58·9	58·5	53·0	48·5	44·5	40·4	47·5
Means 0h.–23h.	35·4	43·2	45·2	46·3	52·4	61·3	64·5	62·9	55·6	51·0	45·8	41·4	50·4
Means 1h.–24h.	35·4	43·2	45·2	46·3	52·4	61·3	64·5	62·9	55·6	51·0	45·8	41·4	50·4
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.	1897. January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Yearly Means.
	°	°	°	°	°	°	°	°	°	°	°	°	°
Midnight	33·8	40·6	41·1	41·6	44·4	54·3	56·1	56·7	51·2	47·2	43·6	39·1	45·8
1h.	33·9	40·7	41·1	41·2	44·1	53·9	55·8	56·3	51·0	46·8	43·3	38·8	45·6
2	33·8	40·8	41·0	41·1	43·9	53·6	55·7	55·9	50·5	46·6	43·2	38·8	45·4
3	33·9	40·9	40·7	40·9	43·6	53·5	55·4	55·5	50·3	46·2	42·8	38·4	45·2
4	34·0	40·7	40·7	40·5	43·4	53·3	55·2	55·2	50·1	46·0	42·8	38·4	45·0
5	34·0	40·5	40·5	40·5	43·5	53·7	55·3	55·0	49·5	46·0	42·9	38·2	45·0
6	34·0	40·3	40·4	40·9	44·3	54·5	56·1	55·6	49·5	46·0	43·0	38·3	45·2
7	34·1	40·4	40·4	41·6	45·6	55·7	57·1	56·9	50·1	46·3	43·1	38·4	45·8
8	34·1	40·5	41·2	42·7	46·9	56·8	58·2	58·2	51·1	46·9	43·4	38·5	46·5
9	34·3	40·9	42·1	43·7	48·1	57·7	59·3	59·1	52·3	48·0	43·8	38·8	47·3
10	34·6	41·5	42·9	44·2	49·3	58·5	60·0	59·6	53·3	49·1	44·5	39·7	48·1
11	34·8	42·2	43·7	45·1	50·2	59·4	60·8	60·0	54·2	50·3	45·3	40·4	48·9
Noon	35·3	42·9	44·2	45·6	50·8	60·1	61·1	60·5	54·8	51·2	46·0	41·2	49·5
13h.	35·3	43·3	44·8	45·9	51·2	60·5	61·5	60·5	55·1	51·5	46·2	41·6	49·8
14	35·1	43·4	44·9	46·1	51·4	60·8	61·7	61·0	55·2	51·8	46·3	41·6	49·9
15	34·9	43·5	45·2	45·9	51·4	60·6	61·4	61·0	55·2	51·5	45·9	41·4	49·8
16	34·8	43·2	45·0	45·5	51·2	60·2	61·4	60·8	54·6	50·9	45·5	40·9	49·5
17	34·4	42·7	44·4	44·8	50·5	59·7	61·0	60·1	54·2	50·2	45·0	40·6	49·0
18	34·2	42·1	43·7	44·2	49·6	58·9	60·3	59·3	53·6	49·7	44·5	40·4	48·4
19	34·1	41·6	42·9	43·6	48·6	57·9	59·5	58·7	53·0	49·1	44·2	40·2	47·8
20	33·8	41·3	42·4	42·9	47·3	57·0	58·6	57·8	52·6	48·6	43·9	39·9	47·2
21	33·6	41·0	41·6	42·5	46·4	56·2	57·8	57·3	52·1	48·1	43·8	39·8	46·7
22	33·5	41·0	41·1	42·2	45·7	55·7	57·1	57·0	51·7	47·8	43·7	39·6	46·3
23	33·4	40·8	41·1	42·0	45·0	55·1	56·4	56·7	51·5	47·4	43·6	39·5	46·0
24	33·4	41·0	41·0	41·8	44·7	54·5	55·9	56·7	51·2	47·0	43·4	39·2	45·8
Means { 0h.–23h.	34·2	41·5	42·4	43·1	47·3	57·0	58·4	58·1	52·4	48·5	44·2	39·7	47·2
Means { 1h.–24h.	34·2	41·5	42·4	43·1	47·4	57·0	58·4	58·1	52·4	48·5	44·2	39·7	47·2
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.	1897. January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Yearly Means.
	°	°	°	°	°	°	°	°	°	°	°	°	°
Midnight	32·2	39·1	38·9	39·8	41·6	52·2	53·5	55·0	49·3	45·5	42·5	37·4	43·9
1h.	32·6	39·6	39·1	39·4	41·4	52·2	53·6	54·9	49·5	45·4	42·1	37·1	43·9
2	32·5	39·6	39·0	39·4	41·5	52·1	53·7	54·6	48·9	45·3	42·2	37·1	43·8
3	32·9	39·9	38·7	39·5	41·4	52·2	53·6	54·2	48·9	45·1	41·6	36·7	43·7
4	33·0	39·7	38·8	39·1	41·2	52·0	53·6	53·8	48·7	44·9	41·6	36·7	43·6
5	33·0	39·2	38·5	39·2	41·2	52·2	53·5	53·7	47·9	45·0	41·7	36·5	43·5
6	33·2	38·9	38·4	39·7	41·8	52·8	53·8	54·1	48·0	44·8	41·8	36·6	43·7
7	33·1	39·3	38·2	39·8	42·4	53·6	54·0	54·8	48·4	45·0	41·7	36·6	43·9
8	32·9	39·1	38·6	40·0	42·6	53·8	54·0	55·1	49·1	45·1	41·9	36·5	44·1
9	32·9	39·2	38·8	40·2	42·6	53·9	53·8	54·8	49·4	45·8	42·2	36·9	44·2
10	33·0	39·4	39·2	39·6	43·2	54·2	53·6	54·3	49·9	46·3	42·5	37·6	44·4
11	32·7	39·8	39·4	39·8	43·7	54·6	53·4	53·6	50·1	46·6	42·9	37·9	44·5
Noon	32·8	40·0	39·4	39·6	43·5	54·7	53·1	53·5	49·8	46·8	43·1	38·3	44·6
13h.	32·7	40·2	39·7	39·7	43·7	54·7	53·2	53·3	50·0	46·8	43·1	38·5	44·6
14	32·3	40·0	39·7	40·0	43·3	54·8	53·5	53·8	49·9	46·9	43·5	38·5	44·7
15	32·2	40·4	39·9	40·1	43·2	54·4	53·1	53·9	49·9	46·8	43·2	38·7	44·6
16	32·3	40·2	39·9	39·8	43·4	54·1	53·7	53·9	49·6	46·8	43·2	38·4	44·6
17	32·0	40·0	39·9	39·5	42·9	53·9	53·6	53·7	50·0	46·7	42·9	38·4	44·5
18	31·9	39·8	39·9	39·5	42·8	53·2	53·5	53·8	50·0	46·9	42·4	38·4	44·3
19	32·2	39·5	39·6	39·7	42·8	53·0	53·6	54·4	49·8	46·5	42·2	38·3	44·3
20	31·8	39·4	39·6	39·5	42·6	53·0	53·8	54·4	49·8	46·4	42·0	38·0	44·2
21	31·5	39·2	39·0	39·8	42·5	53·1	54·1	54·6	49·7	46·2	42·2	37·9	44·1
22	31·6	39·4	38·6	39·9	42·3	53·3	53·7	54·7	49·3	46·0	42·3	37·8	44·1
23	31·5	39·1	38·8	40·0	41·9	52·8	53·6	54·6	49·5	45·5	42·2	37·9	44·0
24	31·7	39·7	39·0	39·9	41·9	52·4	53·2	55·1	49·4	45·3	42·1	37·7	44·0
Means { 0h.–23h.	32·4	39·6	39·2	39·7	42·5	53·4	53·6	54·2	49·4	46·0	42·4	37·6	44·2
Means { 1h.–24h.	32·4	39·6	39·2	39·7	42·5	53·4	53·6	54·2	49·4	46·0	42·4	37·6	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.	1897. January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Yearly Means.
Midnight	90	91	86	88	82	85	83	88	87	89	93	90	88
1h.	92	93	86	88	83	89	85	90	90	91	92	90	89
2	92	93	86	89	85	90	86	90	89	92	94	90	90
3	94	94	87	91	86	91	87	91	90	93	92	90	90
4	94	94	88	92	86	91	88	90	90	93	92	90	91
5	94	93	88	93	85	90	87	90	89	94	92	90	90
6	95	92	88	93	85	88	84	89	90	92	92	90	90
7	94	93	86	88	80	85	79	86	88	92	91	89	88
8	93	92	83	83	73	79	72	79	86	88	90	88	84
9	91	89	79	79	66	74	65	72	81	85	89	88	80
10	90	86	77	72	63	72	60	66	77	81	87	87	76
11	88	84	74	68	60	69	55	59	73	75	85	84	73
Noon	85	82	71	64	56	65	51	56	68	72	81	81	69
13h.	84	81	69	64	55	63	50	56	67	69	80	80	68
14	83	79	68	64	53	61	51	56	66	68	82	80	68
15	84	81	68	65	53	60	51	57	66	69	83	82	68
16	86	82	69	66	54	61	53	57	68	73	86	83	70
17	86	83	72	68	55	63	55	59	72	76	87	86	72
18	86	85	77	71	59	64	57	65	76	82	87	88	75
19	89	86	80	76	65	68	63	72	79	82	87	89	78
20	87	87	82	79	71	74	69	77	82	86	88	89	81
21	87	88	83	83	76	80	75	82	83	87	89	89	83
22	88	90	83	85	78	83	77	84	84	89	91	89	85
23	88	89	85	86	81	84	80	86	86	88	91	90	86
24	89	91	86	88	83	85	82	88	87	89	92	90	87
Means 0h.–23h.	89	88	80	79	70	76	69	75	80	84	88	87	80
Means 1h.–24h.	89	88	80	79	70	76	69	75	80	84	88	87	80

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 1897.

Month, 1897.	Registered Duration of Sunshine in the Hour ending 5h.	6h.	7h.	8h.	9h.	10h.	11h.	Noon.	13h.	14h.	15h.	16h.	17h.	18h.	19h.	20h.	Total registered Duration of Sunshine in each Month.	Corresponding aggregate Period during which the Sun was above 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	...	...	...	...	0·5	1·8	3·0	6·7	4·2	2·8	0·8	...	...	...	...	...	19·8	259·1	0·076	18
February	...	...	...	0·1	1·0	3·4	4·7	5·7	6·0	4·8	4·1	3·6	0·7	...	...	...	34·1	277·9	0·123	26
March	...	...	0·8	9·2	12·3	13·0	13·3	14·6	16·3	13·6	13·7	11·1	4·5	1·0	...	...	123·4	366·9	0·336	37
April	...	2·0	6·8	8·9	9·9	12·1	15·0	14·8	13·3	14·0	12·7	12·4	9·8	8·9	4·1	...	144·7	414·9	0·349	48
May	1·4	11·0	16·1	16·6	19·4	19·6	17·7	19·5	18·6	20·2	19·3	19·7	19·4	18·2	12·6	2·3	251·6	482·1	0·522	57
June	3·7	7·6	7·8	9·8	9·2	8·5	9·9	13·2	14·2	15·7	17·7	16·0	15·3	14·4	10·2	5·1	178·3	494·5	0·361	62
July	2·1	13·9	17·1	19·8	18·7	17·6	19·9	18·5	20·1	20·8	18·5	17·6	16·7	16·5	11·9	3·0	252·7	496·8	0·509	60
August	0·1	7·6	15·0	14·3	17·0	17·8	18·4	18·1	16·1	16·6	17·0	18·6	19·4	14·7	8·7	0·4	219·8	449·1	0·489	52
September	...	0·5	4·4	5·3	10·9	8·9	10·8	13·0	13·2	12·2	12·5	10·3	7·9	4·6	...	...	114·5	376·9	0·304	41
October	...	...	...	2·3	5·0	9·8	11·8	14·5	16·9	18·0	15·1	12·7	5·5	0·1	...	...	111·7	328·7	0·340	30
November	...	...	...	...	1·8	1·6	5·1	8·8	8·5	7·3	5·9	2·7	...	...	...	...	41·7	264·4	0·158	20
December	...	...	...	...	0·2	4·4	9·0	10·7	10·0	9·5	5·9	0·6	...	...	...	...	50·3	242·7	0·207	16
For the Year	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1542·6	4454·0	0·346	...

The hours are reckoned from *apparent* midnight.

READINGS of DRY-BULB THERMOMETERS placed in a STEVENSON'S SCREEN near the Ordinary Stand, and of those mounted in a louvre-boarded shed on the ROOF of the MAGNET-HOUSE at an elevation of 20 feet above the GROUND; and EXCESS of the READINGS above those of the corresponding THERMOMETERS on the ORDINARY STAND, in the YEAR 1897.

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

[Observations of the maximum and minimum thermometers only have been made on Sundays, Good Friday, Christmas Day, and Public Holidays.]

JANUARY.

Days of the Month.	Readings of Thermometers in Stevenson's Screen, 4 ft. above the ground.						Excess above readings of Thermometers on ordinary stand, 4 ft. above the ground.					
	Maximum.	Minimum.	9^h	Noon.	15^h	21^h	Maximum.	Minimum.	9^h	Noon.	15^h	21^h
d	°	°	°	°	°	°	°	°	°	°	°	°
1	49·0	34·4	44·3	43·2	42·2	34·4	+0·7	+0·5	0·0	−1·2	0·0	+0·3
2	35·4	26·9	29·0	31·4	32·0	35·4	−0·2	−0·3	−0·5	−0·3	−0·3	0·0
3	44·8	33·5	...	...	...	...	+0·4	−0·1	...	...	...	...
4	38·5	33·1	35·2	38·1	37·1	35·4	−0·2	+0·2	−0·4	−0·3	0·0	−0·4
5	42·5	35·4	41·4	41·7	41·2	36·2	−0·3	+0·1	−0·3	0·0	+0·1	0·0
6	46·0	34·0	39·3	44·9	44·1	41·1	0·0	+0·4	+0·3	−0·5	+0·1	−0·1
7	45·4	40·0	44·5	44·6	44·5	40·8	−0·3	+1·2	−0·2	0·0	+0·1	−0·1
8	41·8	38·7	40·2	40·5	39·8	41·7	−0·3	−0·6	−0·2	−0·2	−0·2	−0·1
9	42·6	35·4	38·1	36·2	35·4	37·7	+0·5	0·0	0·0	−0·3	−0·5	−0·1
10	46·0	37·8	...	...	...	...	−0·1	+0·7	...	...	...	...
11	44·2	37·5	38·5	38·8	38·2	38·4	+0·1	0·0	−0·4	−0·2	−0·3	−0·2
12	40·4	38·4	39·4	39·8	40·2	39·5	−0·5	+0·2	−0·3	−0·1	−0·3	−0·1
13	40·0	36·5	36·5	37·4	39·0	38·9	+0·1	+0·2	−0·2	−0·3	−0·1	+0·3
14	39·9	34·9	37·7	38·7	39·4	34·9	−0·4	+0·2	0·0	−0·1	0·0	0·0
15	38·1	32·6	33·0	36·8	37·4	32·6	−0·5	+0·3	0·0	−0·8	−0·2	+0·1
16	34·1	31·1	33·5	33·7	32·8	31·1	0·0	−0·1	−0·2	−0·1	−0·1	−0·1
17	34·1	30·8	...	...	...	...	0·0	+0·2	...	...	...	...
18	33·9	24·4	24·8	28·6	30·4	33·6	+0·1	+0·6	−0·1	0·0	+0·1	+0·1
19	36·0	32·4	33·2	35·1	35·1	35·7	+0·2	+0·2	−0·1	−0·1	+0·1	+0·1
20	36·4	29·6	32·8	32·0	30·8	29·6	+0·4	−0·2	0·0	−0·2	−0·1	−0·4
21	35·4	29·5	30·9	32·3	32·8	33·1	+1·3	+0·2	0·0	−0·1	−0·2	+0·1
22	35·1	26·6	33·3	34·3	30·8	26·6	+0·4	+0·6	−0·1	−0·7	−0·7	0·0
23	30·6	25·8	27·4	30·0	29·0	27·4	−0·6	+0·2	−0·6	−0·7	−0·4	+0·1
24	31·6	24·8	...	...	...	...	−0·4	+0·5	...	...	...	...
25	39·7	30·1	35·7	38·7	38·3	32·4	−0·6	+0·6	+0·1	−0·3	+0·1	0·0
26	34·7	27·9	29·7	33·7	34·5	31·1	−0·2	+0·3	−0·1	−0·2	+0·1	+0·2
27	38·2	26·9	28·6	35·1	37·9	35·3	−0·9	+0·6	−0·1	−0·3	+0·2	+0·2
28	37·2	30·4	32·7	36·6	35·2	33·3	+0·1	+0·4	0·0	−0·1	+0·1	+1·3
29	36·9	31·4	33·2	35·6	36·8	34·7	−0·4	+0·7	−0·1	−0·1	0·0	+0·2
30	36·9	34·0	35·9	36·5	35·6	34·7	0·0	+0·2	−0·1	−0·2	−0·1	0·0
31	34·9	33·9	...	...	...	...	+0·1	+0·2	...	...	...	...
Means	38·7	32·2	35·0	36·7	36·6	34·8	0·0	+0·3	−0·1	−0·3	−0·1	0·0

Days of the Month.	Readings of Thermometers on the Roof of the Magnet House, 20 ft. above the ground.						Excess above readings of Thermometers on ordinary stand, 4 ft. above the ground.					
	Maximum.	Minimum.	9^h	Noon.	15^h	21^h	Maximum.	Minimum.	9^h	Noon.	15^h	21^h
d	°	°	°	°	°	°	°	°	°	°	°	°
1	48·5	33·4	44·4	43·2	42·3	34·7	+0·2	−0·5	+0·1	−1·2	+0·1	+0·6
2	35·3	26·3	28·9	31·7	32·1	35·3	−0·3	−0·9	−0·6	0·0	−0·2	−0·1
3	45·9	32·8	...	...	...	...	+1·5	−0·8	...	...	...	...
4	39·8	31·8	36·0	39·3	37·5	37·1	+1·1	−1·1	+0·4	+0·9	+0·4	+1·3
5	43·7	35·2	43·1	42·5	41·8	36·0	+0·9	−0·1	+1·4	+0·8	+0·7	−0·2
6	46·2	33·0	39·8	45·4	44·1	40·9	+0·2	−0·6	+0·8	0·0	+0·1	−0·3
7	46·2	39·3	45·3	44·7	44·7	40·7	+0·5	+0·5	+0·6	+0·1	+0·3	−0·2
8	41·6	38·7	39·9	40·5	39·5	41·6	−0·5	−0·6	−0·5	−0·2	−0·5	−0·2
9	41·6	35·1	37·8	36·2	35·7	37·8	−0·5	−0·3	−0·3	−0·3	−0·2	0·0
10	46·5	37·4	...	...	...	...	+0·4	+0·3	...	...	...	...
11	44·3	36·9	38·5	38·7	38·1	38·3	+0·2	−0·6	−0·4	−0·3	−0·4	−0·3
12	40·6	37·7	39·5	39·9	40·6	39·6	−0·3	−0·5	−0·2	0·0	+0·1	0·0
13	39·6	35·9	36·5	37·4	39·0	38·7	−0·3	−0·4	−0·2	−0·3	−0·1	+0·1
14	40·9	34·2	37·8	38·7	39·4	34·5	+0·6	−0·5	+0·1	−0·1	0·0	−0·4
15	38·3	31·2	32·8	37·1	37·5	32·0	−0·3	−1·1	−0·2	−0·5	−0·1	−0·5
16	34·3	30·1	33·7	33·7	32·7	30·9	+0·2	−1·1	0·0	−0·1	−0·2	−0·3
17	33·3	29·9	...	...	...	...	−0·8	−0·7	...	...	...	...
18	34·2	22·5	24·2	27·7	31·9	33·6	+0·4	−1·3	−0·7	−0·9	+1·6	+0·1
19	36·0	31·6	33·3	35·1	35·6	36·0	+0·2	−0·6	0·0	−0·1	+0·6	+0·4
20	36·2	29·2	32·8	32·4	30·8	29·8	+0·2	−0·6	0·0	+0·2	−0·1	−0·2
21	34·3	29·0	31·0	32·4	33·2	33·0	+0·2	−0·3	+0·1	0·0	+0·2	0·0
22	34·9	25·6	32·9	34·4	30·8	26·6	+0·2	−0·4	−0·5	−0·6	−0·7	0·0
23	30·6	25·1	27·5	30·5	29·2	27·9	−0·6	−0·5	−0·5	−0·2	−0·2	+0·6
24	31·4	24·1	...	...	...	...	−0·6	−0·2	...	...	...	...
25	40·0	29·1	35·6	39·0	38·9	32·2	−0·3	−0·4	0·0	0·0	+0·7	−0·2
26	34·8	26·5	29·8	33·8	34·4	31·0	−0·1	−1·1	0·0	−0·1	0·0	+0·1
27	38·6	24·9	28·7	35·4	38·2	35·1	−0·5	−1·4	0·0	0·0	+0·5	0·0
28	37·5	29·3	32·7	36·7	35·4	32·9	+0·4	−0·7	0·0	0·0	+0·3	+0·9
29	37·1	30·1	33·5	35·7	37·0	34·4	−0·2	−0·6	+0·2	0·0	+0·2	−0·1
30	37·2	33·9	36·2	36·5	35·8	34·7	+0·3	+0·1	+0·2	−0·2	+0·1	0·0
31	35·3	33·2	...	...	...	...	+0·5	−0·5	...	...	...	...
Means	38·9	31·4	35·1	36·9	36·8	34·8	+0·1	−0·6	0·0	−0·1	+0·1	0·0

READINGS of DRY-BULB THERMOMETERS in a STEVENSON'S SCREEN and on the ROOF of the MAGNET HOUSE—*continued.*

FEBRUARY.

Days of the Month.	Readings of Thermometers in Stevenson's Screen, 4 ft. above the ground.						Excess above readings of Thermometers on ordinary stand, 4 ft. above the ground.					
	Maximum.	Minimum.	9h	Noon.	15h	21h	Maximum.	Minimum.	9h	Noon.	15h	21h
d	°	°	°	°	°	°	°	°	°	°	°	°
1	37·0	33·2	33·5	35·5	36·6	34·8	−0·5	0·0	−0·3	−0·2	−0·1	0·0
2	37·4	32·7	35·7	36·3	36·2	32·7	+0·4	−0·1	−0·2	−0·1	−0·2	−0·1
3	38·8	32·5	33·7	35·1	38·1	38·5	−0·5	+0·1	−0·3	−0·6	−0·3	−0·1
4	47·9	38·3	44·4	46·9	47·1	43·6	−0·3	+0·3	0·0	−0·7	−0·2	0·0
5	46·1	38·1	40·8	43·8	46·1	38·1	−0·2	+0·1	0·0	−0·1	−0·2	+0·1
6	39·4	36·0	38·1	38·7	38·7	37·1	+0·1	+0·3	−0·1	0·0	0·0	0·0
7	40·5	34·0	...	...	...	...	−0·3	+0·4	...	...	...	...
8	42·6	30·4	34·5	39·8	41·3	42·4	+0·3	+0·4	−0·2	−0·2	−0·2	+0·1
9	51·5	42·2	48·1	49·8	51·0	49·0	+0·2	+0·4	0·0	+0·1	0·0	+0·4
10	49·2	44·3	45·8	46·3	46·6	44·8	+0·4	+0·4	−0·1	−0·2	−0·2	0·0
11	45·7	39·3	40·8	40·8	40·2	39·4	+0·7	+0·2	−0·2	−0·5	−0·5	0·0
12	41·0	36·6	37·1	39·8	40·9	37·3	−0·5	+0·2	−0·2	−0·2	−0·3	−0·3
13	48·4	37·1	40·0	43·7	46·7	48·3	+0·4	0·0	−0·2	0·0	0·0	+0·3
14	51·2	45·2	...	...	...	...	+0·1	+0·5	...	...	...	...
15	48·2	38·5	45·0	42·5	40·4	38·9	−0·5	−0·1	0·0	−0·2	−0·3	−0·1
16	44·0	36·8	38·4	42·1	43·2	39·7	−0·3	+0·5	−0·1	−0·3	−0·4	−0·1
17	48·1	34·2	37·5	45·8	47·8	35·0	−0·9	+0·7	−0·1	−0·8	−1·0	+0·3
18	52·1	31·2	39·5	48·1	51·8	41·9	−0·9	+0·5	−0·2	−1·6	−0·7	+0·2
19	48·4	42·6	46·6	47·5	47·1	47·5	−0·3	+0·3	−0·2	−0·2	−0·1	+0·1
20	53·0	46·2	47·0	49·5	52·6	46·2	−0·1	+0·6	−0·2	+0·1	−0·1	+0·2
21	50·6	44·2	...	...	...	...	−0·1	+0·3	...	...	...	...
22	54·2	45·3	50·5	53·5	53·9	52·1	−0·2	+0·4	0·0	−0·2	+0·1	+0·3
23	52·6	44·9	45·6	49·6	52·1	46·1	−0·5	+0·6	+0·2	−0·5	−0·6	+0·5
24	48·9	45·3	46·1	46·7	48·3	46·7	−0·2	+0·6	+0·1	0·0	−0·3	+0·1
25	50·5	46·3	48·5	50·2	50·1	49·8	−0·2	+0·3	+0·1	−0·2	−0·1	+0·1
26	56·9	47·1	50·5	55·1	55·2	47·1	−1·7	+0·6	−0·2	−1·6	−0·7	+0·1
27	51·0	42·3	45·2	49·0	49·9	42·7	−0·7	+0·2	−0·2	−0·7	−0·2	0·0
28	50·0	32·2	...	...	...	...	−0·9	+0·2	...	...	...	...
Means	47·3	39·2	42·2	44·8	45·9	42·5	−0·3	+0·3	−0·1	−0·4	−0·3	+0·1

Days of the Month.	Readings of Thermometers on the Roof of the Magnet House, 20 ft. above the ground.						Excess above readings of Thermometers on ordinary stand, 4 ft. above the ground.					
	Maximum.	Minimum.	9h	Noon.	15h	21h	Maximum.	Minimum.	9h	Noon.	15h	21h
d	°	°	°	°	°	°	°	°	°	°	°	°
1	37·8	32·7	34·0	36·0	37·3	35·0	+0·3	−0·5	+0·2	+0·3	+0·6	+0·2
2	36·5	32·1	35·9	36·5	35·9	32·5	−0·5	−0·7	0·0	+0·1	−0·5	−0·3
3	39·5	31·9	34·0	36·2	38·7	38·7	+0·2	−0·5	0·0	+0·5	+0·3	+0·1
4	49·2	38·3	44·6	48·7	47·9	44·7	+1·0	+0·3	+0·2	+1·1	+0·6	+1·1
5	46·5	37·0	40·9	44·0	46·1	37·5	+0·2	−1·0	+0·1	+0·1	−0·2	−0·5
6	39·3	35·3	38·3	38·7	38·7	37·4	0·0	−0·4	+0·1	0·0	0·0	+0·3
7	40·8	32·4	...	...	...	...	0·0	−1·2	...	...	...	...
8	43·2	29·0	35·6	41·9	42·4	42·9	+0·9	−1·0	+0·9	+1·9	+0·9	+0·6
9	51·8	42·7	48·2	49·9	51·4	48·4	+0·5	+0·9	+0·1	+0·2	+0·4	−0·2
10	48·5	44·1	46·4	46·3	47·4	45·0	−0·3	+0·2	+0·5	−0·2	+0·6	+0·2
11	45·4	38·6	40·8	41·4	40·4	39·3	+0·4	−0·5	−0·2	+0·1	−0·3	−0·1
12	42·0	36·1	37·5	40·5	41·7	37·2	+0·5	−0·3	+0·2	+0·5	+0·5	−0·4
13	48·2	36·8	40·6	44·3	47·0	48·0	+0·2	−0·3	+0·4	+0·6	+0·3	0·0
14	51·4	44·9	...	...	...	...	+0·3	+0·2	...	...	...	...
15	49·5	38·0	44·9	42·7	40·6	38·8	+0·8	−0·6	−0·1	0·0	−0·1	−0·2
16	44·8	35·4	39·0	43·5	43·6	39·7	+0·5	−0·9	+0·5	+1·1	0·0	−0·1
17	49·3	33·4	38·2	46·7	48·8	35·4	+0·3	−0·1	+0·6	+0·1	0·0	+0·7
18	52·8	30·4	40·6	49·1	51·6	41·6	−0·2	−0·3	+0·9	−0·6	−0·9	−0·1
19	48·7	41·1	47·0	47·3	47·4	47·6	0·0	−1·2	+0·2	−0·4	+0·2	+0·2
20	53·5	45·9	47·6	49·6	52·9	45·9	+0·4	+0·3	+0·4	+0·2	+0·2	−0·1
21	50·5	43·4	...	...	...	...	−0·2	−0·5	...	...	...	...
22	54·8	45·1	50·5	54·1	54·5	51·9	+0·4	+0·2	0·0	+0·4	+0·7	+0·1
23	53·1	44·3	45·3	49·9	52·8	45·4	0·0	0·0	−0·1	−0·2	+0·1	−0·2
24	49·0	44·3	46·2	47·2	48·4	46·5	−0·1	−0·4	+0·2	+0·5	−0·2	−0·1
25	50·7	46·0	48·6	50·4	50·3	49·7	0·0	0·0	+0·2	0·0	+0·1	0·0
26	58·1	46·1	51·1	56·3	56·0	46·8	−0·5	−0·4	+0·4	−0·4	+0·1	−0·2
27	51·6	40·2	45·2	50·0	50·0	42·3	−0·1	−1·9	−0·2	+0·3	−0·1	−0·4
28	50·9	30·9	...	...	...	...	0·0	−1·1	...	...	...	...
Means	47·8	38·4	42·5	45·5	46·3	42·4	+0·2	−0·5	+0·2	+0·3	+0·1	0·0

READINGS of DRY-BULB THERMOMETERS in a STEVENSON'S SCREEN and on the ROOF of the MAGNET HOUSE—*continued.*

MARCH.

Days of the Month.	Readings of Thermometers in Stevenson's Screen, 4 *ft.* above the ground.						Excess above readings of Thermometers on ordinary stand, 4 *ft.* above the ground.					
	Maximum.	Minimum.	9h	Noon.	15h	21h	Maximum.	Minimum.	9h	Noon.	15h	21h
d	°	°	°	°	°	°	°	°	°	°	°	°
1	48·1	38·0	42·8	46·4	44·8	38·0	−1·6	0·0	−0·1	−0·4	−0·2	−0·2
2	46·6	34·3	38·4	44·5	46·1	42·5	−1·5	+0·3	0·0	−1·2	−0·4	0·0
3	48·1	35·2	41·6	36·6	40·2	39·7	+0·3	+0·1	−0·3	−0·1	−0·2	0·0
4	49·3	35·8	40·6	43·3	49·0	40·1	−0·7	+0·7	−0·3	−0·2	−0·7	+0·4
5	46·8	35·0	40·0	45·1	45·7	36·2	−2·2	+0·7	−0·3	−0·9	−1·0	−0·1
6	43·5	33·5	39·0	38·0	42·8	36·8	−0·4	+0·2	−0·1	−0·3	−0·6	+0·1
7	43·7	32·4	...	...	...	...	+0·1	0·0	...	...	...	...
8	44·7	34·0	37·8	43·4	43·0	35·3	−2·8	+0·3	−0·6	−0·8	−0·4	+0·1
9	48·0	31·5	40·4	47·8	45·0	44·7	−1·0	+0·7	−0·3	−0·3	−0·1	0·0
10	48·2	40·1	42·8	45·7	46·5	40·1	−2·9	+0·5	−0·2	0·0	−0·4	+0·1
11	49·4	34·8	42·7	48·0	47·9	41·5	−0·8	+0·6	−0·3	−0·7	−0·5	+0·1
12	48·9	38·8	43·8	47·5	47·7	38·8	−1·0	0·0	0·0	−1·6	−1·2	0·0
13	47·9	35·4	39·7	44·5	47·6	41·1	−1·1	+0·6	−0·3	−1·2	−1·0	0·0
14	44·1	37·0	...	...	...	...	−0·1	+0·4	...	...	...	...
15	48·0	40·5	44·8	44·2	47·1	42·0	−0·6	+0·4	−0·1	0·0	−1·0	+0·2
16	53·0	39·1	44·8	48·0	51·9	45·7	−0·9	+0·3	+0·1	−0·2	−0·8	+0·1
17	53·0	42·9	48·6	52·5	50·4	49·6	−0·5	+0·6	0·0	−0·2	−0·1	+0·2
18	52·9	43·1	46·8	50·5	51·7	47·0	0·0	+0·5	−0·2	−0·6	0·0	+0·4
19	56·6	46·2	51·5	54·4	55·7	48·1	−1·1	+0·6	+0·3	−1·0	−0·2	+0·3
20	55·2	43·9	48·8	52·1	55·2	50·1	−1·7	+0·7	+0·1	−0·4	−0·6	+0·1
21	59·2	48·2	...	...	...	...	−1·5	+0·5	...	...	...	...
22	56·9	50·9	52·2	56·3	52·9	52·1	−1·1	+1·9	−0·3	−0·4	−0·3	+0·2
23	61·0	45·0	49·3	55·1	59·7	48·1	−1·2	+0·9	−0·1	−1·6	−0·8	−0·3
24	59·4	46·7	53·8	57·3	58·1	50·3	−1·6	+0·1	−0·4	−0·8	−1·0	+0·6
25	57·7	46·2	50·9	55·1	56·8	51·4	−1·3	+0·7	+0·2	−1·8	−0·6	0·0
26	55·8	49·1	50·0	53·0	54·0	49·8	−0·4	+0·4	0·0	−0·4	−0·4	+0·2
27	55·7	48·0	51·0	53·0	55·5	48·3	−1·4	+0·6	0·0	−0·4	−1·2	+0·2
28	56·4	45·3	...	...	...	...	−1·5	+0·3	...	...	...	...
29	51·6	38·8	41·4	44·8	47·0	40·7	+0·6	+0·2	−0·1	−1·3	−0·9	+0·3
30	51·9	30·2	39·9	47·1	50·3	41·0	−1·4	+0·3	+0·2	−1·9	−1·1	+0·1
31	52·0	40·0	46·1	48·4	50·2	41·3	−1·8	+0·6	−0·3	−0·6	−0·5	−0·2
Means	51·4	40·0	44·8	48·2	49·7	43·7	−1·1	+0·5	−0·1	−0·7	−0·6	+0·1

Days of the Month.	Readings of Thermometers on the Roof of the Magnet House, 20 ft. above the ground.						Excess above readings of Thermometers on ordinary stand, 4 ft. above the ground.					
	Maximum.	Minimum.	9h	Noon.	15h	21h	Maximum.	Minimum.	9h	Noon.	15h	21h
d	°	°	°	°	°	°	°	°	°	°	°	°
1	49·3	38·2	43·7	46·7	45·0	38·6	−0·4	+0·2	+0·8	−0·1	0·0	+0·4
2	47·7	32·8	39·3	45·8	46·5	42·6	−0·4	−1·2	+0·9	+0·1	0·0	+0·1
3	47·8	34·0	41·5	36·2	40·4	39·4	0·0	−1·1	−0·4	−0·5	0·0	−0·3
4	50·3	34·2	42·1	43·6	49·4	39·7	+0·3	−0·9	+1·2	+0·1	−0·3	0·0
5	48·2	33·8	40·8	46·2	46·8	36·5	−0·8	−0·5	+0·5	+0·2	+0·1	+0·2
6	43·6	33·1	39·4	37·8	42·8	36·4	−0·3	−0·2	+0·3	−0·5	−0·6	−0·3
7	42·7	32·6	...	...	...	...	−0·9	+0·2	...	...	...	...
8	45·7	33·1	38·7	44·1	43·8	34·2	−1·8	−0·6	+0·3	−0·1	+0·4	−1·0
9	49·5	29·9	42·1	49·4	45·9	45·0	+0·5	−0·9	+1·4	+1·3	+0·8	+0·3
10	49·7	38·4	43·4	45·7	46·4	39·7	−1·4	−1·2	+0·4	0·0	−0·5	−0·3
11	50·6	33·4	44·3	49·4	48·8	41·2	+0·4	−0·8	+1·3	+0·7	+0·4	−0·2
12	50·0	38·1	43·8	48·9	49·9	39·2	+0·1	−0·7	0·0	−0·2	+1·0	+0·4
13	48·8	33·6	40·6	46·5	47·9	40·9	−0·2	−1·2	+0·6	+0·8	−0·7	−0·2
14	44·7	35·3	...	...	...	...	+0·5	−1·3	...	...	...	...
15	48·8	40·0	44·9	44·9	47·7	41·7	+0·2	−0·1	0·0	+0·7	−0·4	−0·1
16	53·6	38·8	45·2	48·6	52·7	46·0	−0·3	0·0	+0·5	+0·4	0·0	+0·4
17	53·6	42·2	48·7	53·6	50·4	49·4	+0·1	−0·1	+0·1	+0·9	−0·1	0·0
18	53·0	41·6	46·7	50·8	51·7	46·7	+0·1	−1·0	−0·3	−0·3	0·0	+0·1
19	57·5	45·3	51·4	54·5	56·0	47·6	−0·2	−0·3	+0·2	−0·9	+0·1	−0·2
20	57·1	43·0	49·5	52·6	56·8	50·2	+0·2	−0·2	+0·8	+0·1	+1·0	+0·2
21	61·2	47·9	...	...	...	...	+0·5	+0·2	...	...	...	...
22	58·4	49·2	53·2	57·4	53·7	51·9	+0·4	+0·2	+0·7	+0·7	+0·5	0·0
23	63·4	43·3	49·7	57·0	62·4	48·0	+1·2	−0·8	+0·3	+0·3	+1·9	−0·4
24	60·5	46·8	54·2	57·7	58·7	49·7	−0·5	+0·2	0·0	−0·4	−0·4	0·0
25	58·7	45·0	51·6	55·7	57·9	51·0	−0·3	−0·5	+0·9	−1·2	+0·5	−0·4
26	56·2	48·9	50·0	53·3	54·7	49·3	0·0	+0·2	0·0	−0·1	+0·3	−0·3
27	56·3	47·2	51·0	53·7	55·8	47·8	−0·8	−0·2	0·0	+0·3	−0·9	−0·3
28	57·5	45·1	...	...	...	...	−0·4	+0·1	...	...	...	...
29	51·5	38·1	42·0	45·8	47·4	39·4	+0·5	−0·5	+0·5	−0·3	−0·5	−1·0
30	53·3	28·8	40·7	48·7	51·4	40·5	0·0	−1·1	+1·0	−0·3	0·0	−0·4
31	53·4	38·9	46·5	49·5	51·6	40·7	−0·4	−0·5	+0·1	+0·5	+0·9	−0·8
Means	52·3	39·1	45·4	49·0	50·5	43·5	−0·1	−0·5	+0·4	+0·1	+0·1	−0·2

READINGS of DRY-BULB THERMOMETERS in a STEVENSON'S SCREEN and on the ROOF of the MAGNET HOUSE—*continued.*

APRIL.

Days of the Month.	Readings of Thermometers in Stevenson's Screen, 4 ft. above the ground. Maximum.	Minimum.	9h	Noon.	15h	21h	Excess above readings of Thermometers on ordinary stand, 4 ft. above the ground. Maximum.	Minimum.	9h	Noon.	15h	21h	Days of the Month.	Readings of Thermometers on the Roof of the Magnet House, 20 ft. above the ground. Maximum.	Minimum.	9h	Noon.	15h	21	Excess above readings of Thermometers on ordinary stand, 4 ft. above the ground. Maximum.	Minimum.	9h	Noon.	15h	21h
d	°	°	°	°	°	°	°	°	°	°	°	°	d	°	°	°	°	°	°	°	°	°	°	°	°
1	42·7	34·4	34·8	37·6	41·2	38·8	−0·5	−0·1	−0·6	−0·7	−0·5	+0·1	1	42·5	32·9	34·4	36·5	41·5	38·7	−0·7	−1·6	−1·0	−1·8	−0·2	0·0
2	44·9	37·4	38·5	42·8	43·6	39·2	−2·1	+0·3	−0·4	−0·7	−0·3	+0·2	2	45·3	36·7	39·3	43·2	43·7	39·0	−1·7	−0·4	+0·4	−0·3	−0·2	0·0
3	44·2	35·4	41·0	43·0	41·5	41·0	−1·1	+0·4	−0·5	−0·5	−0·3	0·0	3	45·8	33·2	41·9	43·7	41·8	40·9	+0·5	−1·8	+0·4	+0·2	0·0	−0·1
4	46·6	39·2	...	...	...	...	−1·0	+0·2	...	...	...	...	4	48·5	38·3	...	...	...	...	+0·9	−0·7	...	...	...	...
5	45·9	30·9	41·6	45·4	44·5	36·9	−3·0	+0·5	−0·2	−2·3	−0·8	0·0	5	48·6	29·0	41·5	47·8	45·7	36·4	−0·3	−1·4	−0·3	+0·1	+0·4	−0·5
6	47·9	35·4	42·1	46·4	43·9	40·9	−2·0	−0·4	−0·7	−1·1	−0·6	0·0	6	50·4	34·0	43·0	47·3	45·6	40·7	+0·5	−1·8	+0·2	−0·2	+1·1	−0·2
7	50·2	35·6	39·7	44·8	42·6	40·5	−3·0	+0·5	0·0	−0·6	−0·4	−0·1	7	52·2	34·0	40·0	45·2	42·1	40·8	−1·0	−1·1	+0·3	−0·2	−0·9	+0·2
8	48·7	40·2	43·4	47·2	48·0	42·1	−1·0	+0·4	−1·0	−0·8	−0·2	0·0	8	48·9	39·2	43·1	47·7	48·4	42·9	−0·8	−0·6	−1·3	−0·3	+0·2	+0·8
9	54·7	36·9	47·7	53·0	51·3	47·0	−1·4	+0·2	−0·3	−0·8	−0·6	0·0	9	56·0	36·3	49·2	54·8	52·5	47·7	−0·1	−0·4	+1·2	+1·0	+0·6	+0·7
10	51·7	41·4	44·6	46·6	51·0	41·5	−1·7	+0·5	−0·1	−0·8	−1·2	+0·6	10	51·9	39·3	43·7	46·9	51·9	40·9	−1·5	−1·6	−1·0	−0·5	−0·3	0·0
11	51·8	29·9	...	...	...	...	−2·1	0·0	...	...	...	...	11	53·3	28·9	...	...	...	...	−0·6	−1·0	...	...	...	...
12	51·0	41·4	48·5	49·1	50·3	47·1	−0·8	+0·2	0·0	−0·1	−0·2	−0·1	12	52·2	41·2	49·5	50·5	51·6	47·0	+0·4	0·0	+1·0	+1·3	+1·1	−0·2
13	59·6	44·4	50·4	57·1	57·0	49·6	−0·7	+0·4	−0·7	−0·1	−0·1	+0·1	13	60·7	43·3	52·4	58·7	57·7	49·3	+0·4	−0·7	+1·3	+1·5	+0·6	−0·2
14	55·6	44·1	50·1	52·7	53·8	44·1	−1·3	+0·8	−0·1	−0·8	−0·9	+0·4	14	57·2	42·2	50·1	53·8	54·5	43·4	+0·3	−1·1	−0·1	+0·3	−0·2	−0·3
15	54·9	37·0	48·4	50·7	53·5	45·1	−1·6	+0·7	0·0	−1·0	−0·9	+0·1	15	55·7	35·0	48·1	52·1	53·6	44·9	−0·8	−1·3	−0·3	+0·4	−0·8	−0·1
16	53·1	42·1	...	...	...	...	−1·4	+0·7	...	...	...	...	16	54·5	40·8	...	...	...	...	0·0	−0·6	...	...	...	...
17	55·0	45·3	50·4	54·6	54·7	51·1	−0·1	+0·4	−0·1	+0·1	0·0	+0·1	17	55·4	44·0	50·7	54·7	54·9	51·0	+0·3	−0·9	+0·2	+0·2	+0·2	0·0
18	57·1	43·2	...	...	...	...	−1·1	+0·4	...	...	...	...	18	57·7	42·0	...	...	...	...	−0·5	−0·8	...	...	...	...
19	54·1	40·9	...	...	...	...	−1·9	+0·5	...	...	...	...	19	54·6	39·3	...	...	...	...	−1·4	−1·1	...	...	...	...
20	54·9	42·3	45·5	48·1	52·9	46·0	−1·4	+0·2	−0·3	−0·3	0·0	+0·2	20	55·8	40·2	45·9	48·0	52·7	46·8	−0·5	−1·9	+0·1	−0·4	−0·2	+1·0
21	54·0	44·5	47·3	51·7	53·5	48·5	−0·3	+0·3	−0·1	0·0	+0·1	0·0	21	55·0	44·3	48·4	53·4	54·4	48·5	+0·7	+0·1	+1·0	+1·7	+1·0	0·0
22	49·2	40·7	44·8	47·1	47·4	41·0	−2·8	+0·3	−0·6	−1·2	−1·0	+0·2	22	51·3	39·1	45·7	48·0	48·2	40·2	−0·7	−1·3	+0·3	−0·3	−0·2	−0·6
23	49·5	37·0	46·0	47·5	48·5	43·0	−1·4	+0·5	−0·4	−0·9	−1·2	+0·2	23	51·3	35·5	47·0	49·4	49·7	42·6	+0·4	−1·0	+0·6	+1·0	0·0	−0·2
24	49·9	39·2	45·1	49·9	45·4	43·2	−2·3	+0·6	−0·3	−2·0	−0·4	0·0	24	52·5	37·3	45·9	49·9	47·2	42·8	+0·3	−1·3	+0·5	−2·0	+1·4	−0·4
25	53·0	38·4	...	...	...	...	−1·1	+0·5	...	...	...	...	25	54·7	36·7	...	...	...	...	+0·6	−1·2	...	...	...	...
26	61·8	38·6	51·2	61·3	57·0	49·8	−1·2	+0·4	−0·8	−1·4	−1·7	+0·1	26	64·3	37·2	52·5	63·7	60·0	49·5	+1·3	−1·0	+0·5	+1·0	+1·3	−0·2
27	66·6	42·2	49·7	63·3	65·1	56·8	−1·2	+0·4	−1·0	−0·8	−0·3	+0·4	27	67·8	41·3	50·8	64·7	65·8	57·0	0·0	−0·5	+0·1	+0·6	+0·4	+0·6
28	65·7	45·8	53·0	58·6	63·6	56·5	−1·8	+0·7	−0·3	−0·8	−1·3	+0·1	28	67·9	44·9	53·7	61·2	66·9	56·6	+0·4	−0·2	+0·4	+1·8	+2·0	+0·2
29	64·5	46·9	53·1	62·1	61·9	49·8	−1·7	+0·3	−0·7	−0·6	−1·2	0·0	29	65·7	46·4	54·5	62·4	63·9	49·5	−0·5	−0·2	+0·7	−0·3	+0·8	−0·3
30	57·7	45·3	54·8	56·8	51·4	46·5	−1·4	+0·3	−0·4	−0·7	−0·6	+0·1	30	58·8	44·1	55·7	57·7	52·0	46·0	−0·3	−0·9	+0·5	+0·2	0·0	−0·4
Means	53·2	39·9	46·3	50·7	51·0	45·2	−1·5	+0·4	−0·4	−0·8	−0·6	+0·1	Means	54·6	38·6	47·0	51·7	51·9	45·1	−0·1	−0·9	+0·2	+0·2	+0·3	0·0

READINGS of DRY-BULB THERMOMETERS in a STEVENSON'S SCREEN and on the ROOF of the MAGNET HOUSE—*continued.*

MAY.

Days of the Month.	Readings of Thermometers in Stevenson's Screen, 4 ft. above the ground. Maximum.	Minimum.	9^h	Noon.	15^h	21^h	Excess above readings of Thermometers on ordinary stand, 4 ft. above the ground. Maximum.	Minimum.	9^h	Noon.	15^h	21^h
d	°	°	°	°	°	°	°	°	°	°	°	°
1	56·7	39·5	48·1	52·0	54·5	48·1	−0·9	+0·5	−0·3	−0·4	−0·2	+0·2
2	61·2	40·3	...	...	...	...	−1·7	+0·3	...	...	...	...
3	57·6	48·4	52·2	56·1	55·4	48·4	−1·7	+0·6	−0·2	−0·6	−0·8	+0·4
4	59·8	40·1	49·5	54·6	59·8	48·2	−1·4	+0·8	−0·1	−1·3	−0·8	0·0
5	57·9	45·4	50·1	52·4	55·5	45·4	−1·0	−0·6	−0·3	−0·3	−0·2	−0·6
6	53·0	36·7	45·3	48·3	50·5	46·4	−1·2	−0·3	−0·4	−0·4	−0·9	+0·6
7	54·7	39·3	50·3	51·1	53·3	48·4	−1·1	+0·3	−0·7	−0·4	−0·8	+0·2
8	63·8	46·2	54·5	58·0	62·6	56·8	−1·5	+0·4	−0·3	−0·7	−1·1	+0·1
9	57·6	47·5	...	...	...	...	−1·7	+0·5	...	...	...	...
10	55·4	41·4	51·4	54·5	53·6	51·3	−1·2	+0·6	−0·6	−1·3	−0·4	+0·5
11	52·1	36·1	43·5	48·1	50·5	41·1	−1·9	+0·3	−0·4	−0·5	−0·5	0·0
12	49·9	36·4	43·1	46·3	48·7	41·0	−1·6	+0·6	−0·4	−1·2	−1·9	−0·3
13	50·2	34·1	44·0	47·8	49·1	41·5	−1·5	+0·5	0·0	−0·7	−0·4	−0·6
14	56·1	36·2	48·8	54·1	54·8	51·1	−2·4	+0·5	+0·1	−0·3	−0·6	−0·4
15	62·1	47·0	57·6	59·8	60·3	49·0	−2·6	+0·4	−0·4	−2·0	−1·1	+0·1
16	65·4	41·2	...	...	...	...	−1·7	+0·7	...	...	...	...
17	72·0	47·9	58·6	67·8	70·9	55·1	−1·5	+0·4	−0·9	−2·0	−1·2	−0·1
18	74·5	50·4	66·8	74·1	72·2	50·5	−3·1	0·0	−1·2	−2·8	−1·6	0·0
19	66·0	44·9	57·2	64·1	64·6	48·2	−1·8	+0·3	−1·7	−1·7	−2·5	+0·1
20	70·6	40·9	56·1	65·9	69·2	57·6	−1·7	−0·3	−0·1	−2·7	−2·5	0·0
21	67·2	49·2	62·8	64·4	64·0	54·5	−1·9	+0·6	−1·7	−3·0	−2·3	+0·1
22	61·8	43·6	...	...	...	...	−3·5	+0·6	...	...	...	...
23	65·6	41·3	...	...	...	...	−1·9	+0·3	...	...	...	...
24	60·2	46·2	48·8	52·8	58·6	48·4	−1·7	0·0	−0·7	−0·9	−1·3	0·0
25	69·4	43·1	54·6	67·8	66·6	57·8	−2·9	+0·2	−0·4	−1·8	−0·6	+0·1
26	56·9	48·2	53·4	52·5	55·8	51·9	−1·4	+0·4	−0·3	−0·4	−0·5	0·0
27	63·0	48·0	52·5	60·8	62·5	52·4	−2·7	+0·5	−1·2	−0·9	−0·9	0·0
28	59·4	46·0	53·8	56·0	58·5	50·8	−1·8	+0·4	+0·1	0·0	−1·2	+0·1
29	59·6	49·2	57·9	57·5	56·2	54·6	−1·5	+0·7	−0·5	−0·2	−0·5	+0·1
30	72·1	53·0	...	...	...	...	−1·5	+0·3	...	...	...	...
31	70·1	50·0	61·6	66·7	68·4	56·9	−1·7	+0·6	+0·8	+0·7	−1·7	−0·1
Means	61·4	43·8	52·9	57·3	59·0	50·2	−1·8	+0·4	−0·5	−1·0	−1·1	0·0

Days of the Month.	Readings of Thermometers on the Roof of the Magnet House, 20 ft. above the ground. Maximum.	Minimum.	9^h	Noon.	15^h	21^h	Excess above readings of Thermometers on ordinary stand, 4 ft. above the ground. Maximum.	Minimum.	9^h	Noon.	15^h	21^h
d	°	°	°	°	°	°	°	°	°	°	°	°
1	57·7	38·0	49·2	52·7	55·0	48·0	+0·1	−1·0	+0·8	+0·3	+0·3	+0·1
2	63·0	38·9	...	...	...	...	+0·1	−1·1	...	...	...	...
3	59·2	46·7	52·4	56·9	55·9	47·4	−0·1	−1·1	0·0	+0·2	−0·3	−0·6
4	60·5	38·2	49·5	53·9	59·9	47·7	−0·7	−1·1	−0·1	−2·0	−0·7	−0·5
5	58·3	43·3	50·4	52·5	55·7	44·4	−0·6	−2·7	0·0	−0·2	0·0	−1·6
6	54·1	35·0	46·6	48·7	51·3	45·4	−0·1	−2·0	+0·9	0·0	−0·1	−0·4
7	56·8	38·0	50·2	51·7	55·0	48·6	+1·0	−1·0	−0·8	+0·2	+0·9	+0·4
8	65·4	45·4	55·9	59·7	63·5	56·7	+0·1	−0·4	+1·1	+1·0	−0·2	0·0
9	58·6	46·9	...	...	...	...	−0·7	−0·1	...	...	...	...
10	55·6	39·8	51·7	54·9	53·9	51·5	−1·0	−1·0	−0·3	−0·9	−0·1	+0·7
11	53·0	35·0	43·3	48·6	51·2	40·6	−1·0	−0·8	−0·6	0·0	+0·2	−0·5
12	50·7	34·3	43·5	46·7	50·4	40·5	−0·8	−1·5	0·0	−0·8	−0·2	−0·8
13	50·9	32·9	44·1	48·3	49·3	42·5	−0·8	−0·7	+0·1	−0·2	−0·2	+0·4
14	58·9	35·0	49·4	54·9	56·0	51·0	+0·4	−0·7	+0·7	+0·5	+0·6	−0·5
15	64·5	46·7	57·8	62·9	62·4	48·9	−0·2	+0·1	−0·2	+1·1	+1·0	0·0
16	65·1	39·2	...	...	...	...	−2·0	−1·3	...	...	...	...
17	73·6	46·9	58·5	67·9	72·5	54·7	+0·1	−0·6	−1·0	−1·9	+0·4	−0·5
18	75·8	49·3	65·9	73·4	72·4	49·7	−1·8	−1·1	−2·1	−3·5	−1·4	−0·8
19	66·3	43·9	55·4	64·7	65·5	47·4	−1·5	−0·7	−3·5	−1·1	−1·6	−0·7
20	71·7	40·2	54·0	67·8	70·8	56·8	−0·6	−1·0	−2·2	−0·8	−0·9	−0·8
21	67·3	48·1	64·7	66·8	65·4	53·7	−1·8	−0·5	+0·2	−0·6	−0·9	−0·7
22	61·5	42·0	...	...	...	...	−3·8	−1·0	...	...	...	...
23	64·7	40·0	...	...	...	...	−2·8	−1·0	...	...	...	...
24	61·2	45·2	48·7	52·7	58·3	47·7	−0·7	−1·0	−0·8	−1·0	−1·6	−0·7
25	71·4	42·3	56·0	68·1	67·0	56·7	−0·9	−0·6	+1·0	−1·5	−0·2	−1·0
26	58·1	47·2	53·8	53·7	57·2	51·9	−0·2	−0·6	+0·1	+0·8	+0·9	0·0
27	63·7	47·4	54·5	61·1	62·7	52·0	−2·0	−0·1	+0·8	−0·6	−0·7	−0·4
28	61·0	44·2	54·7	56·0	59·6	50·7	−0·2	−1·4	+1·0	0·0	−0·1	0·0
29	61·1	47·7	58·8	58·5	56·9	54·0	0·0	−0·8	+0·4	+0·8	+0·2	−0·5
30	73·5	51·9	...	...	...	...	−0·1	−0·8	...	...	...	...
31	72·3	49·1	62·1	67·1	70·3	56·9	+0·5	−0·3	+1·3	+1·1	+0·2	−0·1
Means	62·4	42·5	53·2	58·0	59·9	49·8	−0·7	−0·9	−0·1	−0·4	−0·2	−0·4

READINGS of DRY-BULB THERMOMETERS in a STEVENSON'S SCREEN and on the ROOF of the MAGNET HOUSE—*continued.*

JUNE.

Days of the Month.	Readings of Thermometers in Stevenson's Screen, 4 ft. above the ground.						Excess above readings of Thermometers on ordinary stand, 4 ft. above the ground.						Days of the Month.	Readings of Thermometers on the Roof of the Magnet House, 20 ft. above the ground.						Excess above readings of Thermometers on ordinary stand, 4 ft. above the ground.					
	Maximum.	Minimum.	9h	Noon.	15h	21h	Maximum.	Minimum.	9h	Noon.	15h	21h		Maximum.	Minimum.	9h	Noon.	15h	21h	Maximum.	Minimum.	9h	Noon.	15h	21h
d	°	°	°	°	°	°	°	°	°	°	°	°	d	°	°	°	°	°	°	°	°	°	°	°	°
1	69.2	52.0	56.3	62.8	64.9	57.5	−1.0	+0.2	−0.6	−1.4	−0.4	0.0	1	70.7	50.5	57.5	65.2	66.3	57.0	+0.5	−1.3	+0.6	+1.0	+1.0	−0.5
2	63.9	49.9	58.2	63.1	62.7	60.5	−0.5	+0.8	−0.2	−0.4	0.0	+0.1	2	65.2	48.5	59.5	64.9	62.9	60.5	+0.8	−0.6	+1.1	+1.4	+0.2	+0.1
3	65.9	53.2	60.0	63.1	64.8	58.1	−1.1	+0.5	−0.2	−0.6	−0.7	+0.1	3	65.7	52.2	60.7	63.8	65.5	57.8	−1.3	−0.5	+0.5	+0.1	0.0	−0.2
4	66.9	50.4	54.4	59.2	64.5	58.8	−0.7	+0.2	−0.3	−1.0	−1.0	−0.2	4	67.5	49.5	54.9	59.6	65.0	58.6	−0.1	−0.7	+0.2	−0.6	−0.5	−0.4
5	70.2	54.5	57.2	63.3	69.8	62.8	−2.8	−0.1	−0.5	−0.8	−1.6	+0.5	5	71.6	54.2	57.6	63.8	71.2	63.8	−1.4	−0.4	−0.1	−0.3	−0.2	+1.5
6	74.1	55.4	...	...	...	...	−0.8	+0.3	...	...	...	...	6	76.2	55.0	...	...	...	...	+1.3	−0.1	...	...	...	...
7	68.9	53.3	...	...	...	...	+1.9	0.0	...	...	...	...	7	66.1	53.1	...	...	...	...	−0.9	−0.2	...	...	...	...
8	54.9	50.4	51.9	52.6	53.7	51.7	−0.4	0.0	−0.6	−0.4	−0.7	−0.1	8	55.6	50.2	52.5	53.3	54.9	51.7	+0.3	−0.2	0.0	+0.3	+0.5	−0.1
9	52.2	49.3	50.3	50.7	51.7	49.9	−0.6	0.0	−0.4	−0.5	−0.4	0.0	9	53.0	49.0	49.8	50.3	51.9	49.7	+0.2	−0.3	−0.9	−0.9	−0.2	−0.2
10	64.8	45.3	52.0	57.6	63.8	56.1	−1.7	+0.6	−0.5	−0.7	0.0	0.0	10	65.7	44.0	53.4	58.8	64.7	55.9	−0.8	−0.7	+0.9	+0.5	+0.9	−0.2
11	74.6	48.2	66.1	73.0	73.8	61.3	−2.1	+0.4	−0.1	−1.0	−1.7	−0.2	11	77.5	48.2	68.3	74.2	74.9	61.7	+0.8	+0.4	+2.1	+0.2	−0.6	+0.2
12	80.3	52.7	72.3	78.3	80.1	67.5	−2.9	+0.6	+0.2	−0.4	−0.6	+0.1	12	82.8	52.3	73.3	79.4	81.8	66.9	−0.4	+0.2	+1.2	+0.7	+1.1	−0.5
13	81.2	56.3	...	...	...	...	−1.9	+0.4	...	...	...	...	13	82.6	55.0	...	...	...	...	−0.5	−0.9	...	...	...	...
14	72.1	59.2	68.7	69.1	70.6	62.9	−2.6	+0.2	−0.7	−1.0	−1.5	+0.3	14	72.8	59.2	69.6	70.6	71.1	61.7	−1.9	+0.2	+0.2	+0.5	−1.0	−0.9
15	72.6	51.2	61.4	70.1	72.1	59.8	−2.7	+0.4	−0.3	−2.0	−2.3	+0.1	15	74.3	49.3	63.3	70.5	73.3	59.4	−1.0	−1.5	+1.6	−1.6	−1.1	−0.3
16	63.7	54.1	58.6	61.3	60.9	54.1	−2.1	+0.4	−0.1	−0.5	−1.1	+0.1	16	64.2	52.5	59.0	61.7	61.2	53.3	−1.6	−1.2	+0.3	−0.1	−0.8	−0.7
17	61.2	45.2	54.1	58.4	59.8	53.9	−2.0	+0.8	−0.3	−0.3	−0.9	+0.1	17	62.2	43.1	54.9	57.6	60.5	53.4	−1.0	−1.3	+0.5	−1.1	−0.2	−0.4
18	65.2	47.9	61.6	59.5	61.9	49.7	−1.8	+0.2	−0.4	−0.2	−0.8	+0.1	18	66.4	47.8	63.2	60.0	63.0	49.4	−0.6	+0.1	+1.2	+0.3	+0.3	−0.2
19	61.2	46.2	53.7	57.1	59.5	50.8	−1.8	+0.4	−0.6	−0.7	−0.4	−0.3	19	61.7	45.0	53.5	57.7	60.5	50.7	−1.3	−0.8	−0.8	−0.1	+0.6	−0.4
20	58.2	47.6	...	...	...	...	−1.5	−0.7	...	...	...	...	20	59.3	47.7	...	...	...	...	−0.4	−0.6	...	...	...	...
21	74.0	49.0	62.8	70.5	69.9	66.2	−1.8	+0.5	−0.9	−1.9	−0.8	0.0	21	75.7	47.2	64.8	71.5	71.3	66.0	−0.1	−1.3	+1.1	−0.9	+0.6	−0.2
22	77.2	62.0	...	...	...	...	−2.0	+2.6	...	...	...	...	22	78.7	59.1	...	...	...	...	−0.5	−0.3	...	...	...	...
23	82.0	58.8	74.0	80.5	81.4	69.1	−1.7	+0.8	−0.4	+0.1	−0.9	+0.4	23	83.2	57.6	75.9	80.4	81.4	69.5	−0.5	−0.4	+1.5	0.0	−0.9	+0.8
24	87.4	59.0	79.9	86.4	81.7	59.4	−2.8	−0.2	−0.8	−1.3	−2.4	−0.2	24	89.3	58.7	83.6	86.9	84.2	59.1	−0.9	−0.5	+2.9	−0.8	+0.1	−0.5
25	62.2	54.7	56.6	59.9	62.0	58.0	−0.5	−0.5	−0.6	−0.8	−0.4	−0.1	25	65.9	54.5	56.3	61.0	62.9	57.9	+3.2	−0.7	−0.9	+0.3	+0.5	−0.2
26	69.6	54.1	58.8	66.9	68.7	59.8	−1.3	−0.4	−0.9	−1.8	−1.8	+0.1	26	71.4	53.8	59.4	66.9	70.2	59.5	+0.5	−0.7	−0.3	−1.8	−0.3	−0.2
27	67.9	56.3	...	...	...	...	−1.3	0.0	...	...	...	...	27	70.2	56.0	...	...	...	...	+1.0	−0.3	...	...	...	...
28	75.9	59.2	69.4	69.8	74.3	66.9	−2.4	+0.4	−0.4	−0.6	−0.4	0.0	28	79.0	58.3	70.7	72.4	76.1	67.5	+0.7	−0.5	+0.9	+2.0	+1.4	+0.6
29	75.3	61.2	62.6	71.1	73.5	62.8	−1.0	−0.1	−0.3	−0.6	−1.5	+0.1	29	76.3	61.2	63.3	72.4	74.0	62.5	0.0	−0.1	+0.4	+0.7	−1.0	−0.2
30	75.7	53.2	71.5	75.3	75.4	64.7	−2.0	+0.1	+0.4	−0.7	−1.4	+0.1	30	78.4	52.4	72.8	77.7	75.7	65.5	+0.7	−0.7	+1.7	+1.7	−1.1	+0.9
Means	69.6	53.0	61.3	65.8	67.6	59.3	−1.5	+0.3	−0.4	−0.8	−1.0	0.0	Means	71.0	52.2	62.4	66.7	68.5	59.1	−0.2	−0.5	+0.7	+0.1	0.0	−0.1

READINGS OF DRY-BULB THERMOMETERS in a STEVENSON'S SCREEN and on the ROOF of the MAGNET HOUSE—*continued.*

JULY.

Days of the Month.	Readings of Thermometers in Stevenson's Screen, 4 ft. above the ground. Maximum.	Minimum.	9h	Noon.	15h	21h	Excess above readings of Thermometers on ordinary stand, 4 ft. above the ground. Maximum.	Minimum.	9h	Noon.	15h	21h
d	°	°	°	°	°	°	°	°	°	°	°	°
1	76.2	55.3	67.8	71.7	74.6	64.5	−2.0	+0.3	−0.2	−1.7	−1.4	+0.1
2	64.6	58.2	59.0	61.0	61.2	59.3	0.0	−0.5	−0.3	−0.7	−2.2	−0.1
3	70.5	57.9	64.8	68.4	69.8	60.9	−2.3	+0.1	−0.9	−1.0	−2.3	+0.2
4	65.6	52.2	...	...	...	...	−2.2	+0.1	...	...	...	...
5	74.7	50.2	63.0	67.3	71.9	61.2	−2.8	+0.5	−0.9	−0.4	−1.5	−0.2
6	69.1	58.1	59.6	64.4	65.8	59.0	−1.3	+0.1	−0.1	−1.6	−1.2	−0.4
7	65.4	51.5	59.0	61.7	62.3	58.9	−3.1	+0.2	−0.1	−2.1	−1.0	+0.1
8	70.6	44.2	64.8	67.8	68.9	60.4	−3.5	+0.2	−0.1	−2.8	−2.1	0.0
9	72.1	55.2	60.5	65.7	70.3	64.8	−2.7	0.0	−0.5	−1.0	−1.5	+0.1
10	76.2	58.2	68.8	73.5	74.8	60.0	−2.2	−0.1	−0.6	−1.4	−2.1	0.0
11	71.2	51.9	...	...	...	...	−2.1	+0.7	...	...	...	...
12	66.5	52.0	60.2	60.9	63.5	58.4	−0.2	−0.1	−1.1	−1.0	−1.4	0.0
13	75.2	53.8	71.1	74.5	73.0	62.6	−2.3	+0.5	−1.3	−1.5	−2.0	0.0
14	76.8	53.3	72.0	76.8	75.8	62.6	−3.5	+0.4	−0.7	−2.0	−2.2	0.0
15	79.5	51.5	71.7	78.1	78.6	66.8	−2.6	+0.7	−1.4	−2.5	−1.5	+0.1
16	76.3	53.7	66.7	72.8	76.3	65.9	−3.4	+0.1	−0.1	−1.9	−2.3	+0.1
17	78.3	57.8	71.1	77.7	73.8	62.3	−2.4	+0.1	−0.7	−1.0	−0.6	0.0
18	80.2	56.3	...	...	...	...	−2.9	+0.3	...	...	...	...
19	75.9	56.9	70.8	75.9	72.5	60.5	−4.8	+0.2	−0.3	−2.2	−1.8	−0.6
20	75.9	58.4	65.0	73.9	72.4	63.3	−4.1	−0.2	−0.6	−2.5	−0.6	−0.1
21	72.8	56.5	60.3	69.6	65.5	63.3	−3.3	−0.4	−0.8	−1.5	−1.0	+0.4
22	72.1	57.5	61.0	69.8	71.5	66.3	−1.6	−0.4	−0.5	−0.2	−0.9	+0.1
23	75.9	52.6	63.1	73.8	74.6	66.9	−3.1	+0.5	−0.5	−1.9	−1.1	+0.2
24	82.4	59.1	71.1	80.1	82.0	68.4	−2.3	+0.4	−0.3	−0.2	−2.1	−0.1
25	75.3	59.5	...	...	...	...	−3.8	−1.6	...	...	...	...
26	69.0	57.9	65.7	66.9	66.8	58.9	−3.6	+0.4	0.0	−0.8	−1.2	+0.1
27	70.0	54.2	60.3	60.1	68.1	62.5	−2.2	+0.6	−0.3	−1.0	−0.7	+0.4
28	67.8	55.3	64.3	66.7	67.1	62.8	−2.6	+0.2	−0.4	−1.1	−0.7	+0.3
29	70.7	56.3	65.6	67.8	68.1	65.4	−1.2	+0.3	−0.3	0.0	+0.1	+0.1
30	79.9	59.5	69.7	76.4	79.6	64.3	−2.4	+0.5	0.0	−1.5	−1.0	+0.5
31	74.9	58.0	68.2	71.7	74.3	58.3	−3.1	+0.1	−1.5	−2.0	−1.8	−0.2
Means	73.3	55.3	65.4	70.2	71.2	62.5	−2.6	+0.1	−0.5	−1.4	−1.4	0.0

Days of the Month.	Readings of Thermometers on the Roof of the Magnet House, 20 ft. above the ground. Maximum.	Minimum.	9h	Noon.	15h	21h	Excess above readings of Thermometers on ordinary stand, 4 ft. above the ground. Maximum.	Minimum.	9h	Noon.	15h	21h
d	°	°	°	°	°	°	°	°	°	°	°	°
1	78.2	54.6	68.2	70.2	74.7	64.0	0.0	−0.4	+0.2	−3.2	−1.3	−0.4
2	64.4	58.0	58.8	61.7	63.7	58.8	−0.2	−0.7	−0.5	0.0	+0.3	−0.6
3	71.5	57.4	66.3	69.0	71.0	60.3	−1.3	−0.4	+0.6	−0.4	−1.1	−0.4
4	67.2	51.2	...	...	...	...	−0.6	−0.9	...	...	...	...
5	75.7	48.5	64.7	68.2	73.2	60.9	−1.8	−1.2	+0.8	+0.5	−0.2	−0.5
6	70.7	58.2	59.8	65.9	66.9	59.0	+0.3	+0.2	+0.1	−0.1	−0.1	−0.4
7	66.3	50.9	58.8	62.7	63.5	58.4	−2.2	−0.4	−0.3	−1.1	+0.2	−0.4
8	72.2	43.1	66.0	71.0	71.4	60.0	−1.9	−0.9	+1.1	+0.4	+0.4	−0.4
9	74.1	55.0	62.1	66.7	70.8	64.4	−0.7	−0.2	+1.1	0.0	−1.0	−0.3
10	75.8	58.0	68.4	71.7	74.4	59.1	−2.6	−0.3	−1.0	−3.2	−2.5	−0.9
11	72.9	50.1	...	...	...	...	−0.4	−1.1	...	...	...	...
12	65.1	51.2	61.0	61.8	63.6	58.0	−1.6	−0.9	−0.3	−0.1	−1.3	−0.4
13	76.8	53.1	70.4	74.4	73.2	61.9	−0.7	−0.2	−2.0	−1.6	−1.8	−0.7
14	77.5	52.9	70.3	76.7	76.7	61.9	−2.8	0.0	−2.4	−2.1	−1.3	−0.7
15	80.2	50.3	68.5	78.8	79.8	66.0	−1.9	−0.5	−4.6	−1.8	−0.3	−0.7
16	79.7	53.3	65.2	71.2	79.7	65.4	0.0	−0.3	−1.6	−3.5	+1.1	−0.4
17	79.5	57.3	72.0	79.4	74.0	61.7	−1.2	−0.4	+0.2	+0.7	−0.4	−0.6
18	80.7	55.3	...	...	...	...	−2.4	−0.7	...	...	...	...
19	77.2	56.4	68.9	76.1	73.7	60.1	−3.5	−0.3	−2.2	−2.0	−0.6	−1.0
20	79.2	58.5	67.1	76.0	74.5	63.4	−0.8	−0.1	+1.5	−0.4	+1.5	0.0
21	75.1	56.4	62.2	71.9	66.0	62.5	−1.0	−0.5	+1.1	+0.8	−0.5	−0.4
22	73.8	57.3	61.7	71.5	72.8	66.0	+0.1	−0.6	+0.2	+1.5	+0.4	−0.2
23	77.2	51.2	64.5	74.2	75.6	66.6	−1.8	−0.9	+0.9	−1.5	−0.1	−0.1
24	81.8	58.5	73.0	79.4	81.3	68.2	−2.9	−0.2	+1.6	−0.9	−2.8	−0.3
25	77.2	60.6	...	...	...	...	−1.9	−0.5	...	...	...	...
26	70.7	57.2	66.7	68.0	68.1	58.1	−1.9	−0.3	+1.0	+0.3	+0.1	−0.7
27	71.4	52.4	61.2	58.6	68.8	61.9	−0.8	−1.2	+0.6	−2.5	0.0	−0.2
28	69.6	54.5	66.0	68.7	68.6	62.2	−0.8	−0.6	+1.3	+0.9	+0.8	−0.3
29	72.7	56.3	66.7	68.5	68.4	65.9	+0.8	+0.3	+0.8	+0.7	+0.4	+0.6
30	81.4	59.1	68.7	74.9	80.5	63.8	−0.9	+0.1	−1.0	−3.0	−0.1	0.0
31	75.3	57.0	67.9	70.8	75.3	57.2	−2.7	−0.9	−1.8	−2.9	−0.8	−1.3
Means	74.6	54.6	65.7	70.7	72.2	62.1	−1.3	−0.5	−0.2	−0.9	−0.4	−0.4

READINGS of DRY-BULB THERMOMETERS in a STEVENSON'S SCREEN and on the ROOF of the MAGNET HOUSE—*continued.*

AUGUST.

Days of the Month.	Readings of Thermometers in Stevenson's Screen, 4 ft. above the ground.						Excess above readings of Thermometers on ordinary stand, 4 ft. above the ground.					
	Maximum.	Minimum.	9h	Noon.	15h	21h	Maximum.	Minimum.	9h	Noon.	15h	21h
d	°	°	°	°	°	°	°	°	°	°	°	°
1	75·0	51·5	...	...	...	...	−2·3	−0·2	...	...	...	...
2	82·9	53·7	...	...	...	...	−2·7	−0·2	...	...	...	...
3	78·0	53·9	61·8	75·3	76·6	64·4	−3·1	+0·2	−1·1	−1·3	−2·8	0·0
4	84·9	59·0	78·1	84·9	81·3	68·1	−3·8	+0·5	−0·1	−2·1	−1·1	−0·2
5	87·0	60·2	82·7	84·3	83·8	68·9	−2·5	+1·0	+0·8	−0·6	−0·9	0·0
6	74·8	60·2	67·8	70·9	74·8	62·4	−2·4	+0·3	−0·9	+0·2	−1·9	0·0
7	74·8	58·4	66·1	74·5	72·9	63·7	−3·5	+0·3	−0·3	−2·2	−2·1	0·0
8	71·0	59·0	...	...	...	...	−1·7	+0·3	...	...	...	...
9	73·7	58·2	63·1	69·1	71·4	65·7	−1·4	+0·1	−0·6	−0·9	−0·3	+0·3
10	77·2	54·3	68·3	75·7	74·6	65·3	−2·3	+0·3	+0·6	−0·6	−1·1	−0·1
11	72·1	60·4	66·0	70·1	66·7	63·5	−1·9	+0·1	−1·5	−0·7	−0·2	+0·1
12	71·6	52·3	64·6	68·0	70·3	60·1	−2·7	+0·3	+0·1	−2·4	−1·1	+0·4
13	70·7	50·3	60·8	65·9	68·2	59·8	−2·0	+0·1	+0·1	−0·6	−1·5	+0·1
14	73·2	54·2	63·5	72·7	71·5	60·1	−3·0	+0·4	−0·2	−1·7	−0·9	+0·1
15	68·3	54·5	...	...	...	...	−2·0	+0·3	...	...	...	...
16	71·9	52·2	63·8	71·4	68·8	61·0	−4·1	+0·2	−0·2	−1·6	−1·2	+0·1
17	68·7	56·2	62·8	65·8	65·1	62·0	−1·3	+0·2	−0·1	−0·7	−0·6	+0·2
18	73·0	56·4	66·4	70·9	72·6	59·2	−2·8	+0·3	−0·5	−2·0	−1·7	+0·2
19	69·5	54·0	60·1	64·9	66·8	57·4	−2·5	0·0	−0·5	−1·0	−0·8	+0·2
20	68·2	52·8	60·7	62·5	67·7	61·8	−2·0	+0·3	−0·1	−0·1	−0·5	+0·1
21	69·4	57·3	59·4	68·6	66·3	57·7	−2·9	+0·2	−0·1	−2·2	−0·6	+0·1
22	67·2	55·1	...	...	...	...	−2·8	+0·3	...	...	...	...
23	63·7	54·2	59·2	60·8	61·6	57·5	−3·3	+0·3	−0·5	−0·6	−0·5	+0·1
24	64·6	53·4	62·1	59·7	64·5	54·8	−1·9	−0·1	0·0	0·0	−0·9	−0·2
25	63·9	53·1	59·7	58·1	58·9	55·9	−1·2	+0·7	−0·4	+0·1	−0·2	+0·2
26	67·7	51·3	63·8	66·3	65·6	61·1	−1·5	+0·3	+0·3	0·0	−0·3	−0·3
27	68·7	54·7	63·0	65·0	68·5	56·3	−1·9	+0·5	+1·0	−1·1	+0·1	+0·2
28	69·0	52·0	61·9	67·9	65·8	57·1	−2·1	−0·1	0·0	−0·9	−1·3	+0·2
29	65·3	52·6	...	...	...	...	−1·7	+0·2	...	...	...	...
30	69·0	56·6	62·1	66·6	68·4	56·9	−3·0	+0·3	−0·4	−0·8	−1·3	+0·1
31	64·0	50·2	60·3	62·3	57·0	54·3	−2·0	+0·2	+0·6	−0·2	−0·2	+0·1
Means	71·6	54·9	64·3	68·9	69·2	60·6	−2·4	+0·2	−0·2	−1·0	−1·0	+0·1

Days of the Month.	Readings of Thermometers on the Roof of the Magnet House, 20 ft. above the ground.						Excess above readings of Thermometers on ordinary stand, 4 ft. above the ground.					
	Maximum.	Minimum.	9h	Noon.	15h	21h	Maximum.	Minimum.	9h	Noon.	15h	21h
d	°	°	°	°	°	°	°	°	°	°	°	°
1	75·2	51·3	...	...	...	...	−2·1	−0·4	...	...	...	...
2	82·8	53·2	...	...	...	...	−2·8	−0·7	...	...	...	...
3	79·2	52·9	62·2	74·2	78·6	63·4	−1·9	−0·8	−0·7	−2·4	−0·8	−1·0
4	86·3	58·0	77·9	84·7	82·4	67·3	−2·4	−0·5	−0·3	−2·3	0·0	−1·0
5	88·0	58·5	83·4	84·7	84·3	68·7	−1·5	−0·7	+1·5	−0·2	−0·4	−0·2
6	74·3	59·6	69·7	71·5	73·8	61·7	−2·9	−0·3	+1·0	+0·8	−2·9	−0·7
7	76·0	57·3	67·6	74·7	73·7	63·7	−2·3	−0·8	+1·2	−2·0	−1·3	0·0
8	72·5	58·1	...	...	...	...	−0·2	−0·6	...	...	...	...
9	75·5	58·0	64·4	70·4	72·6	65·2	+0·4	−0·1	+0·7	+0·4	+0·9	−0·2
10	79·2	53·1	68·8	76·8	77·4	65·1	−0·3	−0·9	+1·1	+0·5	+1·7	−0·3
11	72·6	59·8	66·8	71·9	67·2	62·7	−1·4	−0·5	−0·7	+1·1	+0·3	−0·7
12	73·2	50·7	65·1	69·9	71·4	58·4	−1·1	−1·3	+0·6	−0·5	0·0	−1·3
13	71·4	50·2	61·2	67·2	69·7	59·7	−1·3	0·0	+0·5	+0·7	0·0	0·0
14	74·8	53·1	64·7	73·1	71·8	59·6	−1·4	−0·7	+1·0	−1·3	−0·6	−0·4
15	71·2	53·8	...	...	...	...	+0·9	−0·4	...	...	...	...
16	73·5	51·1	64·5	72·4	70·1	60·7	−2·5	−0·9	+0·5	−0·6	+0·1	−0·2
17	69·3	55·5	63·2	66·5	65·8	61·5	−0·7	−0·5	+0·3	0·0	+0·1	−0·3
18	73·5	55·6	68·7	70·8	72·8	58·5	−2·3	−0·5	+1·8	−2·1	−1·5	−0·5
19	71·2	53·3	60·8	66·0	69·4	56·4	−0·8	−0·7	+0·2	+0·1	+1·8	−0·8
20	69·5	52·2	61·7	63·1	69·0	61·6	−0·7	−0·3	+0·9	+0·5	+0·8	−0·1
21	70·5	56·5	59·8	69·7	67·1	57·6	−1·8	−0·6	+0·3	−1·1	+0·2	0·0
22	67·7	54·4	...	...	...	...	−2·3	−0·4	...	...	...	...
23	65·2	53·3	60·4	62·7	62·9	57·2	−1·8	−0·6	+0·7	+1·3	+0·8	−0·2
24	65·9	53·1	63·3	59·8	65·2	54·7	−0·6	−0·4	+1·2	+0·1	−0·2	−0·3
25	64·3	52·3	59·0	58·4	58·8	55·2	−0·8	−0·1	−1·1	+0·4	−0·3	−0·5
26	69·3	50·2	64·4	67·7	66·7	61·0	+0·1	−0·8	+0·9	+1·4	+0·8	−0·4
27	70·0	53·4	63·7	66·7	69·7	55·7	−0·6	−0·8	+1·7	+0·6	+1·3	−0·4
28	70·7	52·1	62·8	69·1	68·4	56·6	−0·4	0·0	+0·9	+0·3	+1·3	−0·3
29	67·5	52·3	...	...	...	...	+0·5	−0·1	...	...	...	...
30	70·9	56·2	63·2	67·7	69·6	57·1	−1·1	−0·1	+0·7	+0·3	−0·1	+0·3
31	65·4	49·1	61·1	62·7	58·5	53·6	−0·6	−0·9	+1·4	+0·2	+1·3	−0·6
Means	72·8	54·1	65·1	69·7	70·3	60·1	−1·2	−0·5	+0·7	−0·2	+0·1	−0·4

READINGS of DRY-BULB THERMOMETERS in a STEVENSON'S SCREEN and on the ROOF of the MAGNET HOUSE—*continued.*

SEPTEMBER.

Days of the Month.	Readings of Thermometers in Stevenson's Screen, 4 ft. above the ground.						Excess above readings of Thermometers on ordinary stand, 4 ft. above the ground.					
	Maximum.	Minimum.	9h	Noon.	15h	21h	Maximum.	Minimum.	9h	Noon.	15h	21h
d	°	°	°	°	°	°	°	°	°	°	°	°
1	60·2	52·3	58·5	57·6	59·8	58·1	−0·1	+0·3	−0·2	−0·3	−0·3	0·0
2	65·9	56·5	61·8	64·8	62·9	57·0	−2·1	+0·3	+0·1	−1·5	−0·8	−0·1
3	59·0	49·2	55·8	58·8	57·6	51·2	−2·0	+0·3	+0·7	−1·4	−0·4	+0·5
4	56·9	42·0	52·1	52·8	56·8	50·2	−1·5	+0·1	−0·1	−0·5	−0·9	+0·4
5	59·3	46·2	...	...	...	...	−0·1	+0·6	...	...	...	...
6	63·0	55·1	57·3	59·8	62·7	55·7	−2·1	+0·7	−0·2	−0·2	−1·7	+0·4
7	59·9	46·4	54·2	57·5	57·8	52·4	−1·1	−1·8	+0·4	−0·1	−0·3	−0·1
8	60·1	50·0	55·1	60·1	57·9	52·9	−2·6	+0·3	−0·3	−1·5	−0·3	+0·1
9	57·0	48·2	50·3	55·8	56·9	48·7	−1·6	+0·2	−0·4	−1·0	−1·0	+0·1
10	62·7	40·4	55·8	60·3	62·7	50·5	−2·5	−0·6	+1·0	−1·1	−1·7	+0·1
11	64·0	43·8	58·0	61·8	64·0	54·1	−3·0	+0·7	+1·1	−0·9	−2·0	+0·4
12	63·0	40·9	...	...	...	...	−1·7	0·0	...	...	...	...
13	65·7	41·9	51·9	60·5	64·6	58·3	−2·2	−0·1	0·0	−1·3	−0·1	+0·2
14	62·4	54·1	55·6	61·2	61·3	56·3	−2·8	0·0	−0·6	−1·3	−0·7	+0·1
15	64·4	49·4	57·7	63·8	61·8	59·6	−2·6	+0·3	−0·2	−0·9	0·0	+0·4
16	61·6	55·0	59·3	59·8	60·0	55·0	−1·4	+0·2	+0·5	+0·2	0·0	+0·2
17	60·7	46·6	55·3	59·8	59·8	53·1	−2·4	+0·3	−0·3	−0·9	−0·2	0·0
18	53·6	45·2	48·7	51·5	51·9	46·5	−2·0	−0·1	−0·1	−0·2	−0·7	+0·3
19	54·9	38·4	...	...	...	...	−1·9	+0·2	...	...	...	...
20	59·6	47·2	51·8	56·3	59·6	53·9	−2·4	+0·1	−0·1	−1·1	−0·9	+0·2
21	64·3	48·8	57·1	62·3	63·8	52·9	−1·0	+0·4	−0·3	−0·7	−0·7	+0·3
22	56·9	48·1	51·8	56·6	56·7	52·1	−1·1	+0·3	+0·1	−0·5	+0·1	0·0
23	66·2	51·3	57·5	62·8	64·3	58·4	−2·6	+0·2	−0·4	−2·2	−0·5	+0·1
24	65·7	57·3	61·0	62·6	64·3	60·6	−2·3	−0·5	−0·4	−0·1	−0·4	+0·6
25	66·1	52·3	55·0	63·8	61·8	59·8	−3·0	+0·6	0·0	−2·9	−0·4	−0·1
26	67·6	58·2	...	...	...	...	−2·2	+0·2	...	...	...	...
27	66·9	46·5	53·6	59·3	65·2	54·8	−1·1	+0·1	−0·2	−0·9	−1·1	+0·1
28	61·6	53·3	56·9	60·4	61·6	58·1	−0·7	+0·1	−0·1	−0·8	−0·3	+0·3
29	69·2	52·8	59·8	68·4	69·1	60·0	−1·8	+0·3	−0·9	−0·2	−0·6	+0·3
30	61·2	50·3	51·7	56·7	57·8	54·1	+1·2	0·0	−0·4	−0·5	+0·6	−0·2
Means	62·0	48·9	55·5	59·8	60·9	54·8	−1·8	+0·1	−0·1	−0·9	−0·6	+0·2

Days of the Month.	Readings of Thermometers on the Roof of the Magnet House, 20 ft. above the ground.						Excess above readings of Thermometers on ordinary stand, 4 ft. above the ground.					
	Maximum.	Minimum.	9h	Noon.	15h	21h	Maximum.	Minimum.	9h	Noon.	15h	21h
d	°	°	°	°	°	°	°	°	°	°	°	°
1	61·0	51·3	60·5	58·6	60·3	57·7	+0·7	−0·7	+1·8	+0·7	+0·2	−0·4
2	67·6	55·8	62·5	66·0	64·1	57·2	−0·4	−0·4	+0·8	−0·3	+0·4	+0·1
3	61·4	48·1	55·7	59·7	58·9	50·4	+0·4	−0·8	+0·6	−0·5	+0·9	−0·3
4	57·7	40·4	52·7	53·4	57·4	49·7	−0·7	−1·5	+0·5	+0·1	−0·3	−0·1
5	59·5	44·5	...	...	...	...	+0·1	−1·1	...	...	...	...
6	64·8	53·4	58·0	60·8	64·7	55·0	−0·3	−1·0	+0·5	+0·8	+0·3	−0·3
7	60·7	47·2	54·2	57·7	59·1	52·5	−0·3	−1·0	+0·4	+0·1	+1·0	0·0
8	61·5	49·2	55·0	60·6	58·7	52·7	−1·2	−0·5	−0·4	−1·0	+0·5	−0·1
9	58·0	47·8	50·3	56·7	57·7	48·6	−0·6	−0·2	−0·4	−0·1	−0·2	0·0
10	63·0	40·2	54·3	59·2	62·1	50·2	−2·2	−0·8	−0·5	−2·2	−2·3	−0·2
11	66·3	42·2	55·3	63·5	65·2	53·7	−0·7	−0·9	−1·6	+0·8	−0·8	0·0
12	64·1	39·9	...	...	...	...	−0·6	−1·0	...	...	...	...
13	66·7	41·1	53·5	62·3	64·9	58·6	−1·2	−0·9	+1·6	+0·5	+0·2	+0·5
14	63·8	54·3	55·8	61·6	61·4	56·1	−1·4	+0·2	−0·4	−0·9	−0·6	−0·1
15	66·5	48·1	58·7	63·7	61·8	59·5	−0·5	−1·0	+0·8	−1·0	0·0	+0·3
16	62·6	54·3	59·7	60·4	60·2	55·2	−0·4	−0·5	+0·9	+0·8	+0·2	+0·4
17	62·0	45·4	56·0	60·1	59·9	52·8	−1·1	−0·9	+0·4	−0·6	−0·1	−0·3
18	53·2	44·1	49·3	50·6	52·3	45·4	−2·4	−1·2	+0·5	−1·1	−0·3	−0·8
19	56·0	36·3	...	...	...	...	−0·8	−1·9	...	...	...	...
20	60·7	46·6	51·7	56·8	60·7	53·6	−1·3	−0·5	−0·2	−0·6	+0·2	−0·1
21	65·0	48·2	57·7	63·1	64·3	52·6	−0·3	−0·2	+0·3	+0·1	−0·2	0·0
22	58·0	47·1	52·2	57·6	56·9	51·9	0·0	−0·7	+0·5	+0·5	+0·3	−0·2
23	67·2	51·6	59·5	64·6	65·4	58·3	−1·6	+0·5	+1·6	−0·4	+0·6	0·0
24	67·3	57·9	62·5	63·2	65·0	60·2	−0·7	+0·1	+1·1	+0·5	+0·3	+0·2
25	69·5	51·2	56·2	66·7	62·7	59·9	+0·4	−0·5	+1·2	0·0	+0·5	0·0
26	70·0	58·3	...	...	...	...	+0·2	+0·3	...	...	...	...
27	68·3	45·3	55·2	60·6	67·2	54·0	+0·3	−1·1	+1·4	+0·4	+0·9	−0·7
28	63·1	52·9	57·2	61·9	61·7	57·5	+0·8	−0·3	+0·2	+0·7	−0·2	−0·3
29	71·5	52·4	60·2	69·8	70·4	59·7	+0·5	−0·1	−0·5	+1·2	+0·7	0·0
30	60·2	49·6	52·2	58·0	58·2	54·3	+0·2	−0·7	+0·1	+0·8	+1·0	0·0
Means	63·2	48·2	56·0	60·7	61·6	54·5	−0·5	−0·6	+0·4	0·0	+0·1	−0·1

READINGS of DRY-BULB THERMOMETERS in a STEVENSON'S SCREEN and on the ROOF of the MAGNET HOUSE—*continued.*

OCTOBER.

Days of the Month.	Readings of Thermometers in Stevenson's Screen, 4 ft. above the ground.						Excess above readings of Thermometers on ordinary stand, 4 ft. above the ground.					
	Maximum.	Minimum.	9h	Noon.	15h	21h	Maximum.	Minimum.	9h	Noon.	15h	21h
d	°	°	°	°	°	°	°	°	°	°	°	°
1	59·1	49·3	51·8	56·1	58·1	55·4	−1·3	+0·1	+0·1	−0·3	−0·1	+0·1
2	58·8	48·0	51·8	57·2	58·7	53·8	−1·2	+0·3	−0·4	−1·0	0·0	+0·1
3	58·9	51·2	...	...	...	...	−1·2	+0·2	...	...	...	...
4	53·7	46·0	50·7	52·6	51·9	48·6	−1·1	+0·3	−0·3	−0·1	0·0	+0·1
5	54·0	42·6	50·0	51·3	54·0	45·1	−2·6	+0·6	−0·2	−0·7	−1·0	+0·1
6	53·4	37·6	45·3	52·9	51·3	42·3	−1·5	+0·3	−1·4	−1·6	−0·4	+1·1
7	54·3	33·1	40·2	48·8	54·3	42·6	−0·7	+0·1	−1·8	−0·9	−0·6	+0·1
8	53·8	37·7	48·1	53·1	53·8	48·3	−1·7	+0·4	−0·3	−0·3	−0·2	−0·2
9	56·0	46·8	50·8	54·5	53·9	49·0	−1·9	+0·5	0·0	−0·5	−0·1	+0·3
10	54·6	47·0	...	...	...	...	−1·1	+0·2	...	...	...	...
11	55·2	48·2	52·8	53·8	54·8	48·5	−1·5	+0·2	+0·1	0·0	0·0	+0·2
12	51·5	39·8	43·3	50·0	51·1	46·0	−1·2	+0·4	−0·2	−1·2	−0·2	+0·1
13	49·6	37·6	43·2	46·6	49·6	44·8	−1·4	+0·3	−0·3	−0·1	−0·1	−0·1
14	60·1	42·4	53·3	59·8	58·5	56·5	−1·6	−0·3	−0·2	+0·1	−0·2	0·0
15	63·0	54·4	59·8	63·0	60·8	61·0	−1·3	+0·1	−0·1	−0·7	−0·2	−0·1
16	64·0	54·1	58·9	62·8	62·6	58·1	−2·2	+0·1	−0·5	−0·9	−0·1	+0·1
17	65·9	55·5	...	...	...	...	−1·3	−0·1	...	...	...	...
18	63·6	54·0	58·8	62·8	62·3	54·5	−2·2	+0·2	+0·1	−1·6	−0·3	+0·1
19	63·9	52·6	56·6	61·8	60·3	53·1	−2·3	−0·4	−0·4	−1·7	−0·2	+0·1
20	58·1	44·5	45·6	50·9	58·1	50·6	−0·7	+0·7	+0·1	−0·6	−0·5	+0·2
21	57·1	41·3	46·2	55·0	55·3	47·0	−1·2	−0·3	−0·4	−0·8	−0·6	+0·3
22	52·9	44·2	50·8	52·6	52·6	50·5	−0·9	+0·2	−0·3	−0·3	−0·1	−0·2
23	55·4	49·2	51·3	52·5	54·1	51·1	−1·6	+0·2	0·0	−0·2	−0·6	+0·1
24	54·3	45·6	...	...	...	...	−1·0	+0·2	...	...	...	...
25	54·0	40·5	42·6	53·8	53·0	44·2	−2·2	+0·1	−0·3	−1·6	−0·6	+0·4
26	56·9	42·1	48·6	53·6	56·4	49·5	−1·9	+1·0	−0·1	−0·4	−0·1	+0·4
27	54·9	42·0	47·5	52·8	54·8	48·8	−0·3	−0·1	−0·2	−0·1	+0·2	+0·1
28	58·1	39·2	44·0	49·1	56·1	48·6	−1·1	0·0	−0·4	−1·4	−1·3	−0·3
29	63·2	40·4	45·6	61·7	62·7	49·8	−1·8	+0·2	−0·1	−1·8	−0·3	+0·6
30	62·1	45·5	51·3	60·6	61·5	47·5	−1·1	+0·4	−0·5	−1·2	−0·1	+0·3
31	57·2	41·4	...	...	...	...	−0·5	+0·3	...	...	...	...
Means	57·3	45·0	49·6	55·0	56·2	49·8	−1·4	+0·2	−0·3	−0·8	−0·3	+0·2

Days of the Month.	Readings of Thermometers on the Roof of the Magnet House, 20 ft. above the ground.						Excess above readings of Thermometers on ordinary stand, 4 ft. above the ground.					
	Maximum.	Minimum.	9h	Noon.	15h	21h	Maximum.	Minimum.	9h	Noon.	15h	21h
d	°	°	°	°	°	°	°	°	°	°	°	°
1	59·2	49·1	51·7	56·4	57·8	55·2	−1·2	−0·1	0·0	0·0	−0·4	−0·1
2	61·6	46·6	52·7	57·6	59·2	53·9	+1·6	−1·1	+0·5	−0·6	+0·5	+0·2
3	59·5	50·5	...	...	...	...	−0·6	−0·5	...	...	...	...
4	53·0	45·0	51·7	53·0	52·2	48·0	−1·8	−0·7	+0·7	+0·3	+0·3	−0·5
5	56·4	41·1	50·7	52·4	56·4	44·9	−0·2	−0·9	+0·5	+0·4	+1·4	−0·1
6	54·8	36·0	47·7	54·8	52·2	41·7	−0·1	−1·3	+1·0	+0·3	+0·5	+0·5
7	55·5	31·9	43·5	49·7	55·5	43·7	+0·5	−1·1	+1·5	0·0	+0·6	+1·2
8	55·7	37·3	49·5	54·4	54·0	48·2	+0·2	0·0	+1·1	+1·0	0·0	−0·3
9	57·4	45·2	50·9	55·0	54·0	48·6	−0·5	−1·1	+0·1	0·0	0·0	−0·1
10	55·5	46·3	...	...	...	...	−0·2	−0·5	...	...	...	...
11	56·2	47·3	53·2	54·5	55·2	48·0	−0·5	−0·7	+0·5	+0·7	+0·4	−0·3
12	52·3	38·0	43·7	50·7	51·7	46·1	−0·4	−1·4	+0·2	−0·5	+0·4	+0·2
13	49·8	36·8	44·0	47·5	49·7	44·7	−1·2	−0·5	+0·5	+0·8	0·0	−0·2
14	61·7	43·0	54·5	61·0	59·0	57·0	0·0	+0·3	+1·0	+1·3	+0·3	+0·5
15	64·5	54·4	60·6	64·4	61·4	61·7	+0·2	+0·1	+0·7	+0·7	+0·4	+0·6
16	65·7	54·1	60·2	64·0	63·7	58·5	−0·5	+0·1	+0·8	+0·3	+1·0	+0·5
17	67·0	55·6	...	...	...	...	−0·2	0·0	...	...	...	...
18	66·0	54·0	58·9	63·9	63·2	54·3	+0·2	+0·2	+0·2	−0·5	+0·6	−0·1
19	66·7	51·5	56·6	62·9	60·8	52·7	+0·5	−1·5	−0·4	−0·6	+0·3	−0·3
20	58·6	41·8	45·5	50·2	58·6	50·6	−0·2	−2·0	0·0	−1·3	0·0	+0·2
21	59·8	41·1	47·5	56·4	56·5	46·7	+1·5	−0·5	+0·9	+0·6	+0·6	0·0
22	53·9	43·9	51·6	53·6	53·2	50·5	+0·1	−0·1	+0·5	+0·7	+0·5	−0·2
23	56·7	49·0	51·5	52·9	54·8	50·9	−0·3	0·0	+0·2	+0·2	+0·1	−0·1
24	55·5	45·2	...	...	...	...	+0·2	−0·2	...	...	...	...
25	56·1	39·3	42·2	54·7	54·5	43·0	−0·1	−1·1	−0·7	−0·7	+0·9	−0·8
26	58·3	40·2	48·7	54·3	56·9	48·7	−0·5	−0·9	0·0	+0·3	+0·4	−0·4
27	55·5	41·3	47·5	52·8	55·0	48·7	+0·3	−0·8	−0·2	−0·1	+0·4	0·0
28	59·8	38·5	43·8	49·0	56·6	48·9	+0·6	−0·7	−0·6	−1·5	−0·8	0·0
29	65·9	39·9	47·5	63·9	63·7	48·5	+0·9	−0·3	+1·8	+0·4	+0·7	−0·7
30	64·5	44·9	52·9	62·7	62·6	47·5	+1·3	−0·2	+1·1	+0·9	+1·0	+0·3
31	57·7	40·8	...	...	...	...	0·0	−0·3	...	...	...	...
Means	58·7	44·2	50·3	55·9	56·9	49·7	0·0	−0·6	+0·5	+0·1	+0·4	0·0

READINGS of DRY-BULB THERMOMETERS in a STEVENSON'S SCREEN and on the ROOF of the MAGNET HOUSE—*continued.*

NOVEMBER.

Days of the Month.	Readings of Thermometers in Stevenson's Screen, 4 ft. above the ground.						Excess above readings of Thermometers on ordinary stand, 4 ft. above the ground.					
	Maximum.	Minimum.	9h	Noon.	15h	21h	Maximum.	Minimum.	9h	Noon.	15h	21h
d	°	°	°	°	°	°	°	°	°	°	°	°
1	55.1	42.1	44.4	52.4	51.8	47.6	−1.0	+0.1	−0.4	−1.5	−0.4	−0.1
2	48.9	43.4	44.7	46.7	48.7	46.3	−1.0	+0.2	−0.1	−0.3	−0.4	−0.3
3	49.8	43.3	45.8	48.9	48.5	44.1	−2.2	−0.1	0.0	−0.8	−0.2	−0.3
4	44.6	42.0	43.8	44.3	44.4	42.1	−0.2	0.0	−0.2	−0.4	−0.1	−0.3
5	43.3	39.7	40.6	41.8	43.3	43.1	−0.7	−0.1	0.0	−0.1	−0.2	+0.4
6	49.1	41.1	45.3	48.8	48.1	45.0	−0.8	+0.1	−0.2	−0.9	−0.2	+0.2
7	48.0	40.7	...	...	...	...	−1.0	−0.4	...	...	...	...
8	54.5	45.0	49.5	51.9	54.5	53.4	−0.1	0.0	0.0	−0.1	+0.1	+0.2
9	53.4	49.8	52.2	53.1	52.8	49.8	−0.5	+0.1	0.0	−0.3	−0.2	0.0
10	49.9	40.7	45.0	49.1	48.8	41.5	−1.4	+0.3	−0.1	−1.6	−0.1	0.0
11	41.9	32.2	33.8	37.3	37.8	39.7	+0.3	+0.1	−0.4	−0.5	−0.2	0.0
12	56.0	39.3	53.6	54.7	54.8	56.0	−0.1	+0.1	−0.1	0.0	+0.1	−0.1
13	58.2	52.5	55.9	57.6	57.6	53.2	−0.6	+0.2	0.0	−0.1	−0.1	0.0
14	58.2	51.1	...	...	...	...	−0.8	+0.2	...	...	...	...
15	53.9	36.7	42.6	42.5	43.0	37.3	+0.3	0.0	−0.1	−0.3	0.0	0.0
16	46.8	36.5	42.1	46.7	45.6	43.9	−0.5	+0.1	+0.2	−0.2	−0.1	−0.3
17	54.9	43.3	53.4	54.8	53.1	53.4	−0.1	−0.4	−0.2	0.0	+0.1	−0.1
18	57.6	46.4	56.6	57.3	52.9	46.8	−1.3	+0.4	+0.7	−0.3	−0.1	+0.2
19	48.3	36.1	36.8	43.8	48.3	43.1	−0.2	+0.3	+0.1	−1.2	−0.1	+0.2
20	50.5	40.4	44.8	49.2	50.4	49.3	−0.3	+0.4	−0.2	−0.1	−0.3	−0.8
21	50.3	40.2	...	...	...	...	−0.5	0.0	...	...	...	...
22	49.1	40.2	42.0	48.1	47.9	42.8	−0.4	+0.3	−0.5	−0.6	0.0	0.0
23	43.9	39.8	40.8	41.1	41.4	40.5	−0.1	−0.1	−0.3	−0.3	−0.3	−0.2
24	42.5	36.4	39.8	41.8	42.5	42.2	−0.5	−0.5	−0.3	−0.4	−0.3	0.0
25	48.4	37.8	43.8	48.3	44.3	37.9	−2.4	0.0	−0.2	−1.6	0.0	+0.1
26	42.0	29.2	30.7	40.0	41.1	42.0	−0.6	+0.3	−0.7	−0.8	+0.1	+0.1
27	52.5	41.5	50.3	52.0	52.5	50.0	0.0	−0.1	−0.1	−0.2	0.0	−0.3
28	50.2	41.2	...	...	...	...	0.0	−0.7	...	...	...	...
29	43.7	36.6	41.5	42.3	41.3	37.1	0.0	+0.3	0.0	−0.3	+0.1	+0.1
30	51.6	32.1	44.8	50.4	51.2	44.8	−0.5	−0.1	−0.2	−0.2	0.0	+0.1
Means	49.9	40.6	44.8	47.9	47.9	45.1	−0.6	0.0	−0.1	−0.5	−0.1	0.0

Days of the Month.	Readings of Thermometers on the Roof of the Magnet House, 20 ft. above the ground.						Excess above readings of Thermometers on ordinary stand, 4 ft. above the ground.					
	Maximum.	Minimum.	9h	Noon.	15h	21h	Maximum.	Minimum.	9h	Noon.	15h	21h
d	°	°	°	°	°	°	°	°	°	°	°	°
1	56.7	41.1	44.2	51.8	52.4	48.0	+0.6	−0.9	−0.6	−2.1	+0.2	+0.3
2	50.9	43.1	45.0	47.5	49.7	46.5	+1.0	−0.1	+0.2	+0.5	+0.6	−0.1
3	51.2	43.2	45.9	49.9	49.0	44.3	−0.8	−0.2	+0.1	+0.2	+0.3	−0.1
4	46.0	41.4	44.0	44.6	44.3	42.3	+1.2	−0.6	0.0	−0.1	−0.2	−0.1
5	44.0	39.2	40.6	41.7	43.8	43.1	0.0	−0.6	0.0	−0.2	+0.3	+0.4
6	49.5	41.0	45.5	48.9	48.5	45.1	−0.4	0.0	0.0	−0.8	+0.2	+0.3
7	49.6	40.3	...	...	...	...	+0.6	−0.8	...	...	...	...
8	54.8	44.5	49.7	52.5	54.8	53.5	+0.2	−0.5	+0.2	+0.5	+0.4	+0.3
9	53.6	49.6	52.2	53.5	53.0	49.7	−0.3	−0.1	0.0	+0.1	0.0	−0.1
10	51.8	38.9	45.1	50.6	49.7	40.6	+0.5	−1.5	0.0	−0.1	+0.8	−0.9
11	40.6	31.8	33.7	37.7	37.9	39.4	−1.0	−0.3	−0.5	−0.1	−0.1	−0.3
12	56.3	39.0	54.4	55.0	54.9	56.3	+0.2	−0.2	+0.7	+0.3	+0.2	+0.2
13	58.9	52.5	56.3	58.0	57.9	53.8	+0.1	+0.2	+0.4	+0.3	+0.2	+0.6
14	59.4	50.9	...	...	...	...	+0.4	0.0	...	...	...	...
15	54.3	35.7	41.7	42.4	42.9	37.3	+0.7	−1.0	−1.0	−0.4	−0.1	0.0
16	48.4	35.9	42.1	47.5	45.9	43.7	+1.1	−0.5	+0.2	+0.6	+0.2	−0.5
17	55.5	43.7	53.7	55.4	53.2	53.7	+0.5	0.0	+0.1	+0.6	+0.2	+0.2
18	57.9	45.4	56.0	57.7	52.8	46.8	−1.0	−0.6	+0.1	+0.1	−0.2	+0.2
19	49.2	35.8	36.6	44.7	48.7	43.0	+0.7	0.0	−0.1	−0.3	+0.3	+0.1
20	51.1	39.4	45.2	49.6	51.1	50.3	+0.3	−0.6	+0.2	+0.3	+0.4	+0.2
21	51.5	40.3	...	...	...	...	+0.7	+0.1	...	...	...	...
22	49.5	39.0	42.2	48.9	48.0	42.8	0.0	−0.9	−0.3	+0.2	+0.1	0.0
23	43.8	39.3	40.8	41.0	41.4	40.4	−0.2	−0.6	−0.3	−0.4	−0.3	−0.3
24	42.8	36.0	39.7	41.9	42.5	42.5	−0.2	−0.9	−0.4	−0.3	−0.3	+0.3
25	50.0	36.3	44.0	49.7	44.3	37.6	−0.8	−1.5	0.0	−0.2	0.0	−0.2
26	43.2	27.9	30.6	41.9	41.7	42.3	+0.6	−1.0	−0.8	+1.1	+0.7	+0.4
27	52.6	41.3	50.5	52.5	52.6	50.1	+0.1	−0.3	+0.1	+0.3	+0.1	−0.2
28	50.2	41.1	...	...	...	...	0.0	−0.8	...	...	...	...
29	44.0	36.2	41.7	42.5	41.4	37.2	+0.3	−0.1	+0.2	−0.1	+0.2	+0.2
30	52.0	30.9	45.5	50.7	51.6	44.5	−0.1	−1.3	+0.5	+0.1	+0.4	−0.2
Means	50.6	40.0	44.9	48.4	48.2	45.2	+0.2	−0.5	0.0	0.0	+0.2	0.0

READINGS of DRY-BULB THERMOMETERS in a STEVENSON'S SCREEN and on the ROOF of the MAGNET HOUSE—*concluded.*

DECEMBER.

Days of the Month.	Readings of Thermometers in Stevenson's Screen, 4 ft. above the ground.						Excess above readings of Thermometers on ordinary stand, 4 ft. above the ground.					
	Maximum.	Minimum.	9h	Noon.	15h	21h	Maximum.	Minimum.	9h	Noon.	15h	21h
d	°	°	°	°	°	°	°	°	°	°	°	°
1	44·6	36·3	36·8	43·0	43·5	38·1	−0·7	+0·2	−0·3	−0·4	−0·1	−0·1
2	40·4	35·2	36·5	39·3	39·7	36·8	−0·3	0·0	0·0	−0·9	0·0	+0·1
3	39·9	31·8	35·8	39·2	39·2	32·9	−0·7	+0·7	+0·1	−0·2	0·0	+0·4
4	35·3	25·2	27·2	32·8	35·1	35·1	−0·5	0·0	−0·6	−0·8	−0·3	−0·3
5	39·2	34·5	...	...	...	...	−0·3	−0·3	...	...	...	...
6	46·2	36·3	41·7	42·8	44·8	43·4	−0·1	−0·9	−0·1	−0·1	0·0	0·0
7	51·0	37·9	39·9	45·3	48·1	51·0	−0·6	+0·9	−0·4	−0·3	+0·1	−0·4
8	54·0	37·2	42·9	43·3	39·9	38·0	−0·1	0·0	+0·1	−0·4	−0·2	0·0
9	44·4	37·3	38·6	42·9	43·0	38·5	−0·7	+0·1	0·0	−0·4	+0·2	+0·1
10	48·1	35·1	38·3	41·9	43·4	47·7	−0·1	+0·3	−0·3	−0·1	−0·2	0·0
11	47·7	37·9	44·9	45·6	45·3	38·3	−0·1	+0·3	−0·1	−0·1	0·0	+0·5
12	37·9	34·4	...	...	...	...	−1·3	+0·6	...	...	...	...
13	52·8	32·3	42·1	47·5	50·9	52·8	0·0	+0·1	−0·2	−0·2	+0·1	0·0
14	53·4	46·2	49·6	50·3	49·0	47·9	−0·3	+1·2	−0·1	−0·4	+0·1	+0·2
15	52·0	42·3	48·3	50·1	49·8	46·8	0·0	−0·3	−0·1	−0·7	+0·1	−0·4
16	55·3	45·7	54·3	55·2	53·8	53·7	−0·2	−0·5	−0·2	−0·3	−0·2	+0·2
17	54·3	46·2	49·5	54·0	53·1	46·5	−1·4	+0·5	−0·3	−1·0	+0·1	+0·3
18	46·3	38·2	40·4	43·5	42·1	40·2	+0·2	+0·2	−0·3	−0·4	+0·1	−0·1
19	44·8	38·3	...	...	...	...	−0·1	0·0	...	...	...	...
20	41·9	37·4	41·2	41·7	41·6	37·4	−0·5	+0·6	+0·1	0·0	−0·1	+0·1
21	38·4	33·4	37·7	38·4	37·9	36·8	−0·2	+0·4	0·0	−0·1	−0·1	0·0
22	38·6	31·2	32·0	37·4	38·3	32·4	−0·4	+0·9	+0·3	−0·4	+0·2	+0·1
23	36·0	24·0	26·7	32·6	35·4	30·9	−1·1	+0·6	+0·1	−1·6	−0·8	0·0
24	37·9	23·3	26·2	31·9	37·3	34·4	−1·1	0·0	−0·4	−0·5	−0·5	−0·3
25	40·1	26·5	...	...	...	...	−0·8	+0·5	...	...	...	...
26	43·1	24·5	...	...	...	...	+0·1	+0·2	...	...	...	...
27	48·8	41·9	...	...	...	...	−0·3	+0·2	...	...	...	...
28	49·7	43·4	47·2	49·7	47·8	43·8	−0·2	+0·2	−0·3	−0·2	+0·1	+0·1
29	52·7	43·2	50·5	52·7	51·5	49·7	0·0	+0·2	−0·1	0·0	+0·1	+0·1
30	49·8	45·8	48·4	47·8	47·7	46·8	−0·1	+0·2	−0·3	−0·1	−0·1	−0·2
31	48·3	42·5	45·3	47·7	45·4	43·7	−1·4	−0·1	−0·2	−0·1	−0·4	−0·1
Means	45·6	36·3	40·9	43·9	44·1	41·7	−0·4	+0·2	−0·1	−0·4	−0·1	0·0

Days of the Month.	Readings of Thermometers on the Roof of the Magnet House, 20 ft. above the ground.						Excess above readings of Thermometers on ordinary stand, 4 ft. above the ground.					
	Maximum.	Minimum.	9h	Noon.	15h	21h	Maximum.	Minimum.	9h	Noon.	15h	21h
d	°	°	°	°	°	°	°	°	°	°	°	°
1	45·5	35·4	36·9	43·4	44·0	38·0	+0·2	−0·7	−0·2	0·0	+0·4	−0·2
2	40·5	33·3	37·0	39·5	39·7	37·0	−0·2	−1·9	+0·5	−0·7	0·0	+0·3
3	40·7	30·6	36·1	39·7	39·7	33·0	+0·1	−0·5	+0·4	+0·3	+0·5	+0·5
4	36·5	25·0	27·3	32·9	35·9	35·8	+0·7	−0·2	−0·5	−0·7	+0·5	+0·4
5	39·9	34·6	...	...	...	...	+0·4	−0·2	...	...	...	...
6	46·5	37·1	42·1	43·6	45·0	43·5	+0·2	−0·1	+0·3	+0·7	+0·2	+0·1
7	51·4	35·9	40·7	46·0	48·4	51·4	−0·2	−1·1	+0·4	+0·4	+0·4	0·0
8	54·2	36·3	42·8	43·6	39·7	37·8	+0·1	−0·9	0·0	−0·1	−0·4	−0·2
9	45·0	36·3	38·5	43·4	43·3	38·8	−0·1	−0·9	−0·1	+0·1	+0·5	+0·4
10	48·6	34·0	39·7	42·6	43·9	47·7	+0·4	−0·8	+1·1	+0·6	+0·3	0·0
11	47·7	37·0	45·1	45·7	45·4	37·7	−0·1	−0·6	+0·1	0·0	+0·1	−0·1
12	38·2	32·3	...	...	...	...	−1·0	−1·5	...	...	...	...
13	53·4	31·5	42·7	48·4	51·0	53·4	+0·6	−0·7	+0·4	+0·7	+0·2	+0·6
14	53·8	44·9	49·9	50·7	49·4	48·5	+0·1	−0·1	+0·2	0·0	+0·5	+0·8
15	51·4	42·3	48·5	50·7	49·9	47·6	−0·6	−0·3	+0·1	−0·1	+0·2	+0·4
16	55·9	46·5	55·0	55·7	54·5	53·9	+0·4	+0·3	+0·5	+0·2	+0·5	+0·4
17	56·8	45·1	50·2	55·6	53·5	46·0	+1·1	−0·6	+0·4	+0·6	+0·5	−0·2
18	46·8	38·0	41·3	44·1	42·4	40·1	+0·7	0·0	+0·6	+0·2	+0·4	−0·2
19	44·8	37·9	...	...	...	...	−0·1	−0·4	...	...	...	...
20	42·2	35·3	41·0	41·7	41·5	36·7	−0·2	−1·5	−0·1	0·0	−0·2	−0·6
21	38·6	31·7	37·7	38·6	38·1	36·5	0·0	−1·3	0·0	+0·1	+0·1	−0·3
22	39·5	28·2	31·2	38·0	38·0	31·5	+0·5	−2·1	−0·5	+0·2	−0·1	−0·8
23	36·2	22·5	27·0	35·2	35·8	31·0	−0·9	−0·9	+0·4	+1·0	−0·4	+0·1
24	37·9	22·5	26·2	31·7	37·9	33·4	−1·1	−0·8	−0·4	−0·7	+0·1	−1·3
25	42·3	25·9	...	...	...	...	+1·4	−0·1	...	...	...	...
26	43·8	23·9	...	...	...	...	+0·8	−0·4	...	...	...	...
27	49·5	41·8	...	...	...	...	+0·4	+0·1	...	...	...	...
28	50·3	43·0	48·0	50·3	47·0	43·7	+0·4	−0·2	+0·5	+0·4	−0·7	0·0
29	52·7	42·7	51·2	52·7	51·7	49·7	0·0	−0·3	+0·6	0·0	+0·3	+0·1
30	50·1	45·2	48·6	48·5	48·5	47·1	+0·2	−0·4	−0·1	+0·6	+0·7	+0·1
31	49·6	42·4	46·0	48·4	46·0	44·4	−0·1	−0·2	+0·5	+0·6	+0·2	+0·6
Means	46·1	35·5	41·2	44·4	44·4	41·8	+0·1	−0·6	+0·2	+0·2	+0·2	0·0

READINGS of the WET-BULB THERMOMETER placed in a STEVENSON'S SCREEN near the Ordinary Stand; and EXCESS of the READINGS above those of the corresponding THERMOMETER on the ORDINARY STAND, in the YEAR 1897.

[No observations have been made of this thermometer on Sundays, Good Friday, Christmas Day, and Public Holidays.]

Days of the Month.	Readings of the Wet-bulb Thermometer in Stevenson's Screen, 4 ft. above the ground.				Excess above readings of the Thermometer on ordinary stand, 4 ft. above the ground.			
	9h	Noon.	15h	21h	9h	Noon.	15h	21h
JANUARY.								
d	°	°	°	°	°	°	°	°
1	42·1	40·3	38·5	34·1	0·0	− 1·1	0·0	+ 0·7
2	29·0	31·4	32·0	35·1	− 0·5	− 0·1	− 0·2	+ 0·1
4	34·1	35·8	34·8	33·8	0·0	− 0·2	0·0	0·0
5	41·2	41·0	39·6	34·3	− 0·1	− 0·1	− 0·1	− 0·9
6	38·1	42·1	41·1	39·1	+ 0·2	− 0·6	0·0	+ 0·1
7	44·0	43·8	43·4	40·6	− 0·1	− 0·2	− 0·1	0·0
8	39·9	39·9	39·4	41·4	+ 0·1	0·0	− 0·1	0·0
9	37·9	36·1	35·4	37·7	0·0	− 0·2	− 0·1	0·0
11	38·5	38·8	38·0	38·3	− 0·1	+ 0·1	− 0·2	− 0·1
12	38·7	39·1	39·1	38·2	0·0	− 0·2	− 0·2	0·0
13	36·1	36·3	37·1	37·3	0·0	− 0·2	− 0·1	− 0·1
14	36·1	36·8	36·9	34·2	− 0·1	0·0	− 0·1	+ 0·2
15	32·8	35·4	34·9	31·7	+ 0·3	− 0·4	+ 0·2	+ 0·3
16	32·0	32·1	31·2	30·8	− 0·1	+ 0·3	0·0	− 0·1
18	24·5	27·6	29·4	32·1	− 0·1	0·0	+ 0·1	+ 0·4
19	32·7	34·1	34·3	35·2	− 0·3	− 0·3	− 0·1	+ 0·2
20	31·4	30·1	30·1	27·9	− 0·1	0·0	+ 0·2	+ 0·1
21	30·5	30·6	30·0	31·2	0·0	+ 0·1	0·0	− 0·1
22	32·0	31·2	29·8	25·3	0·0	− 0·8	− 0·4	+ 0·3
23	26·6	28·3	28·7	25·9	− 0·4	− 0·5	− 0·3	0·0
25	34·7	35·1	34·5	29·4	+ 0·1	− 0·3	− 0·2	0·0
26	28·1	30·0	30·9	28·6	− 0·1	− 0·1	+ 0·5	+ 0·2
27	27·2	32·1	34·7	32·2	+ 0·1	− 0·1	+ 0·1	+ 0·2
28	32·6	33·2	34·1	29·7	0·0	− 0·4	+ 0·2	+ 0·2
29	31·3	32·0	32·7	33·8	0·0	+ 0·3	− 0·3	+ 0·3
30	35·3	35·9	35·1	34·5	+ 0·2	− 0·2	− 0·2	0·0
Means	34·1	35·0	34·8	33·6	0·0	− 0·2	− 0·1	+ 0·1
FEBRUARY.								
d	°	°	°	°	°	°	°	°
1	33·5	35·1	36·1	34·8	0·0	− 0·4	− 0·3	+ 0·1
2	35·7	36·1	35·9	32·7	− 0·2	0·0	0·0	0·0
3	33·7	34·8	37·2	38·1	− 0·1	− 0·2	− 0·3	+ 0·2
4	43·3	45·4	45·5	42·6	− 0·2	− 0·3	− 0·3	0·0
5	40·5	43·3	45·7	37·4	− 0·2	− 0·3	+ 0·1	− 0·1
6	35·9	37·0	37·0	35·1	− 0·2	+ 0·1	+ 0·2	+ 0·1
8	32·4	36·4	39·1	41·7	− 0·6	− 0·2	0·0	+ 0·3
9	46·7	48·1	49·1	47·5	0·0	+ 0·1	− 0·3	+ 0·1
10	42·2	42·7	43·8	44·4	− 0·3	− 0·6	+ 0·1	− 0·2
11	40·6	40·6	40·1	37·9	− 0·1	− 0·2	− 0·1	− 0·1
12	36·3	37·4	38·6	35·8	− 0·1	− 0·4	− 0·2	+ 0·1
13	39·1	42·8	46·1	47·4	0·0	0·0	0·0	+ 0·1
15	44·4	42·1	40·1	37·1	− 0·3	− 0·4	− 0·3	+ 0·1
16	37·1	38·8	40·1	37·9	0·0	− 0·1	− 0·1	+ 0·1
17	36·1	42·9	43·3	33·3	+ 0·3	− 0·4	− 0·7	+ 0·4
18	38·6	45·1	47·3	41·0	− 0·2	− 1·2	− 0·8	+ 0·2
19	45·9	47·1	46·6	47·0	− 0·2	+ 0·1	− 0·1	+ 0·3
20	46·4	48·1	48·6	44·1	− 0·2	− 0·1	− 0·2	+ 0·2
22	48·1	49·1	49·9	50·1	+ 0·1	+ 0·1	+ 0·2	+ 0·5
23	44·9	46·9	47·6	44·1	+ 0·2	− 0·1	− 0·4	+ 0·5
24	43·1	43·1	43·9	43·5	+ 0·2	+ 0·2	− 0·1	0·0
25	46·1	47·8	48·3	48·7	+ 0·3	+ 0·1	0·0	+ 0·2
26	47·4	50·3	50·2	45·5	− 0·1	− 0·5	− 0·2	+ 0·4
27	42·7	43·8	43·5	39·0	+ 0·2	− 1·1	− 0·7	0·0
Means	40·9	42·7	43·5	41·1	− 0·1	− 0·2	− 0·2	+ 0·1

Days of the Month.	Readings of the Wet-bulb Thermometer in Stevenson's Screen, 4 ft. above the ground.				Excess above readings of the Thermometer on ordinary stand, 4 ft. above the ground.			
	9h	Noon.	15h	21h	9h	Noon.	15h	21h
MARCH.								
d	°	°	°	°	°	°	°	°
1	39·2	40·8	41·1	37·6	− 0·4	− 0·1	+ 0·1	− 0·1
2	36·1	39·1	39·9	41·3	− 0·3	− 1·3	− 0·5	− 0·1
3	38·1	35·6	37·0	36·2	− 0·2	− 0·1	+ 0·1	+ 0·2
4	38·3	42·1	42·1	37·1	0·0	+ 0·1	− 1·0	+ 0·3
5	37·1	38·4	41·0	35·4	− 0·4	− 1·3	− 0·9	− 0·1
6	38·1	37·2	40·1	36·1	0·0	− 0·4	− 0·6	+ 0·2
8	34·5	38·3	38·4	33·5	− 0·4	− 0·9	− 0·3	+ 0·4
9	38·0	44·1	43·9	44·1	+ 0·1	− 0·1	− 0·1	+ 0·1
10	39·3	40·6	42·3	38·3	− 0·2	− 0·1	+ 0·3	+ 0·3
11	40·2	43·0	42·9	40·1	− 0·1	+ 0·3	+ 0·2	+ 0·1
12	41·0	42·1	41·3	37·1	0·0	− 1·2	− 0·7	+ 0·3
13	38·5	42·1	43·9	39·4	− 0·2	− 1·1	− 0·9	0·0
15	43·0	43·1	43·3	40·3	+ 0·1	+ 0·3	− 1·1	+ 0·3
16	43·6	46·5	48·2	44·0	0·0	0·0	− 0·5	+ 0·3
17	46·2	49·5	49·4	47·8	− 0·2	− 0·2	0·0	+ 0·3
18	45·0	45·2	46·0	43·9	− 0·2	0·0	− 0·3	+ 0·5
19	46·1	47·9	47·8	45·3	+ 0·1	− 0·3	− 0·2	+ 0·5
20	44·8	45·4	47·6	48·1	+ 0·1	− 0·5	− 0·1	+ 0·1
22	51·1	52·7	50·5	50·0	− 0·3	− 0·3	− 0·2	+ 0·3
23	45·6	49·1	50·3	43·1	− 0·1	− 1·3	− 0·1	− 0·8
24	48·1	48·8	50·0	46·1	− 0·1	− 0·6	− 0·6	+ 0·4
25	46·5	47·1	49·1	48·6	0·0	− 1·2	− 0·3	+ 0·2
26	48·3	50·1	51·3	46·5	0·0	− 0·5	− 0·2	+ 0·2
27	46·1	46·1	47·3	44·4	+ 0·1	− 0·3	− 0·7	+ 0·1
29	37·1	38·2	39·6	36·4	+ 0·2	− 1·1	− 0·7	+ 0·4
30	37·0	40·2	42·9	38·1	+ 0·5	− 1·2	− 0·7	+ 0·6
31	43·3	46·2	49·0	41·0	− 0·1	− 0·2	+ 0·3	+ 0·2
Means	41·9	43·7	44·7	41·5	− 0·1	− 0·5	− 0·4	+ 0·2
APRIL.								
d	°	°	°	°	°	°	°	°
1	34·4	35·8	37·2	36·1	− 0·3	− 0·4	− 0·3	+ 0·2
2	36·9	37·0	37·1	37·5	− 0·2	− 0·9	− 0·7	+ 0·3
3	39·1	39·4	39·9	39·3	− 0·3	− 0·1	+ 0·1	+ 0·3
5	38·2	38·2	37·4	34·1	− 0·6	− 1·2	− 0·8	+ 0·2
6	36·9	38·4	38·4	37·7	− 0·8	− 1·1	− 0·3	+ 0·1
7	39·4	42·0	40·4	39·9	0·0	− 0·4	− 0·1	+ 0·3
8	41·0	43·2	43·2	40·1	− 0·5	− 0·5	+ 0·2	+ 0·4
9	44·8	46·4	46·9	46·4	+ 0·1	− 0·6	− 0·8	− 0·1
10	41·1	41·8	44·4	37·4	− 0·3	− 0·8	− 1·3	+ 0·1
12	43·5	44·1	45·1	44·0	+ 0·1	+ 0·1	+ 0·4	+ 0·1
13	47·2	49·8	51·9	47·8	− 0·9	+ 0·1	− 0·2	0·0
14	48·1	44·4	44·3	38·8	− 0·1	− 1·1	− 0·4	− 0·1
15	43·1	44·1	44·1	42·3	+ 0·2	− 1·6	− 1·9	0·0
17	50·1	52·1	51·6	49·3	− 0·1	0·0	− 0·1	− 0·2
20	42·3	43·6	45·6	42·4	− 0·6	+ 0·1	+ 0·1	− 0·3
21	46·3	50·5	52·1	48·1	− 0·1	+ 0·1	+ 0·3	+ 0·1
22	41·8	42·1	42·1	38·6	− 0·9	− 0·7	− 0·4	+ 0·1
23	41·9	41·7	42·6	40·1	− 0·9	− 1·1	− 1·1	− 0·4
24	40·7	42·1	39·7	41·1	− 0·8	− 1·3	− 0·6	− 0·1
26	47·4	52·8	51·0	48·1	− 1·0	− 1·1	− 1·4	+ 0·3
27	48·6	57·1	58·8	54·1	− 0·8	− 0·1	+ 0·1	+ 0·1
28	52·1	55·4	56·6	55·3	0·0	− 0·6	− 0·8	− 0·2
29	50·6	55·1	54·9	47·6	− 0·6	− 0·6	− 1·0	+ 0·1
30	49·6	50·1	50·1	44·1	− 0·1	− 0·6	− 0·2	+ 0·2
Means	43·5	45·3	45·6	42·9	− 0·4	− 0·6	− 0·5	+ 0·1

READINGS of the WET-BULB THERMOMETER in a STEVENSON'S SCREEN—*continued.*

MAY.

Days of the Month.	Readings of the Wet-bulb Thermometer in Stevenson's Screen, 4 ft. above the ground. 9h	Noon.	15h	21h	Excess above readings of the Thermometer on ordinary stand, 4 ft. above the ground. 9h	Noon.	15h	21h
d	°	°	°	°	°	°	°	°
1	44·1	45·9	47·2	44·1	− 0·3	− 0·9	− 0·2	+ 0·6
3	48·4	47·1	45·8	43·2	− 0·1	− 0·5	− 0·1	+ 0·2
4	42·6	45·4	48·3	44·1	− 0·3	− 0·5	− 0·1	0·0
5	49·3	47·2	46·1	42·3	− 0·1	− 0·7	− 0·1	+ 0·1
6	40·1	41·2	42·3	40·4	− 0·3	− 0·5	− 0·5	+ 0·5
7	44·6	45·1	46·6	46·6	− 0·9	+ 0·1	− 0·9	+ 0·3
8	51·2	53·9	57·1	54·5	− 0·3	− 0·5	− 0·6	+ 0·3
10	44·8	46·6	46·6	46·2	0·0	− 0·8	0·0	+ 0·5
11	37·1	40·1	42·1	39·2	+ 0·1	− 0·3	− 0·6	− 0·1
12	36·3	39·2	40·1	38·1	− 0·1	− 1·2	− 0·4	+ 0·2
13	39·8	39·9	41·4	38·9	− 0·2	− 0·4	− 0·3	− 0·1
14	43·4	46·4	47·1	46·3	+ 0·2	+ 0·4	− 0·4	− 0·1
15	50·4	50·9	50·9	45·6	+ 0·1	− 1·7	− 0·8	+ 0·4
17	53·3	60·1	60·4	52·2	− 0·6	− 1·3	− 0·7	0·0
18	58·4	61·8	60·4	47·1	− 1·3	− 1·1	− 1·1	+ 0·3
19	50·7	55·1	53·1	44·3	− 1·6	− 1·1	− 1·6	0·0
20	49·3	54·7	57·1	53·1	− 0·4	− 2·0	− 1·7	+ 0·1
21	53·1	53·5	51·0	48·5	− 1·3	− 2·6	− 1·8	0·0
24	47·1	49·1	53·1	46·8	− 0·5	− 0·6	− 0·6	+ 0·4
25	50·1	56·2	58·2	52·6	− 0·2	− 1·0	− 0·2	+ 0·1
26	50·1	51·1	51·4	49·6	0·0	+ 0·1	− 0·5	− 0·1
27	50·6	50·6	51·1	50·0	− 1·1	− 0·8	− 0·3	+ 0·3
28	48·3	50·1	51·1	48·1	− 0·1	− 0·1	− 0·7	− 0·1
29	51·9	53·1	55·1	51·9	− 0·5	0·0	− 0·3	0·0
31	54·4	57·4	57·1	52·6	+ 0·2	+ 1·2	− 1·1	+ 0·1
Means	47·6	49·7	50·4	46·7	− 0·4	− 0·7	− 0·6	+ 0·2

JUNE.

Days of the Month.	Readings of the Wet-bulb Thermometer in Stevenson's Screen, 4 ft. above the ground. 9h	Noon.	15h	21h	Excess above readings of the Thermometer on ordinary stand, 4 ft. above the ground. 9h	Noon.	15h	21h
d	°	°	°	°	°	°	°	°
1	55·6	60·6	61·3	55·5	− 0·5	− 1·1	− 0·4	− 0·4
2	55·1	58·0	57·0	56·1	+ 0·2	− 0·5	− 0·4	+ 0·1
3	57·5	59·9	61·0	56·9	− 0·4	− 0·8	− 0·6	− 0·1
4	52·7	56·1	59·8	57·1	0·0	− 0·4	− 0·6	0·0
5	55·3	59·2	63·1	59·7	− 0·5	− 1·0	− 0·8	+ 0·1
8	49·1	50·3	50·3	50·1	− 0·4	− 0·6	− 0·6	0·0
9	50·1	50·4	50·9	48·7	− 0·1	− 0·3	− 0·3	0·0
10	50·3	53·7	57·2	54·5	− 0·2	− 0·7	− 0·2	0·0
11	58·8	62·0	64·2	56·1	0·0	− 0·8	− 1·0	+ 0·1
12	63·0	67·3	68·4	62·2	+ 0·2	− 0·4	+ 0·1	− 0·2
14	62·6	61·0	58·9	55·1	− 0·4	− 0·6	− 0·8	+ 0·2
15	55·1	57·4	61·1	55·4	+ 0·2	− 1·5	− 0·8	+ 0·2
16	55·2	55·1	50·9	47·1	+ 0·2	− 0·5	− 0·8	+ 0·2
17	46·3	48·3	49·2	46·3	0·0	− 0·3	− 0·9	− 0·1
18	58·8	57·3	55·5	45·0	− 0·2	− 0·4	− 1·1	+ 0·1
19	47·6	49·1	50·1	49·9	− 0·9	− 0·6	− 0·8	− 0·2
21	57·4	63·8	63·7	61·1	− 0·8	− 0·4	− 0·8	+ 0·1
23	67·6	66·9	68·3	64·1	+ 0·2	+ 0·5	− 0·3	+ 0·1
24	68·6	72·2	68·7	58·4	− 1·3	− 0·8	− 1·0	− 0·2
25	56·1	58·1	59·6	56·9	− 0·3	− 0·9	− 0·3	− 0·2
26	57·3	61·1	60·1	56·1	− 1·0	− 1·7	− 1·3	− 0·2
28	65·1	65·4	66·1	63·5	− 0·6	− 0·2	− 0·5	− 0·2
29	60·9	64·1	63·2	58·3	− 0·1	− 0·1	− 0·6	− 0·1
30	60·6	63·7	64·5	60·1	+ 0·1	− 0·2	− 1·2	+ 0·2
Means	56·9	59·2	59·7	55·6	− 0·3	− 0·6	− 0·7	0·0

JULY.

Days of the Month.	Readings of the Wet-bulb Thermometer in Stevenson's Screen, 4 ft. above the ground. 9h	Noon.	15h	21h	Excess above readings of the Thermometer on ordinary stand, 4 ft. above the ground. 9h	Noon.	15h	21h
d	°	°	°	°	°	°	°	°
1	62·6	64·6	66·2	61·8	− 0·6	− 0·4	− 0·8	+ 0·1
2	57·1	58·1	58·8	57·8	− 0·1	− 0·6	− 0·9	− 0·1
3	59·1	60·9	58·8	53·2	− 0·8	− 0·5	− 0·9	+ 0·3
5	59·0	62·1	62·1	57·7	− 0·5	+ 0·3	− 0·9	− 0·2
6	54·2	56·4	56·1	50·8	− 0·4	− 0·5	− 0·5	− 0·4
7	51·1	52·0	52·1	50·2	− 0·6	− 0·4	− 0·6	− 0·4
8	54·1	55·0	55·4	52·9	− 0·5	− 1·1	− 1·0	+ 0·3
9	55·3	57·9	60·2	58·1	+ 0·1	− 0·3	− 0·7	+ 0·1
10	59·4	60·4	60·8	54·7	− 0·8	− 1·1	− 0·8	− 0·2
12	55·5	55·9	56·6	55·6	− 0·6	− 0·8	− 0·7	+ 0·2
13	62·1	59·8	58·2	55·9	− 0·2	− 1·2	− 0·7	+ 0·1
14	63·5	62·3	61·7	56·1	− 0·2	− 1·3	− 0·5	+ 0·1
15	59·1	61·3	61·2	60·0	− 0·2	− 1·1	− 0·5	+ 0·3
16	59·0	62·1	66·0	62·1	− 0·3	− 1·6	− 1·0	+ 0·5
17	63·9	64·1	64·4	60·2	− 0·8	− 0·6	− 0·2	0·0
19	60·2	63·9	62·5	58·2	− 0·1	− 1·4	− 0·9	− 0·5
20	61·0	63·1	62·1	60·3	− 0·1	− 1·3	− 0·5	− 0·1
21	58·4	63·0	58·7	60·1	− 0·4	− 0·5	− 0·9	+ 0·4
22	58·4	62·4	63·2	61·8	− 0·2	+ 0·1	− 0·5	+ 0·5
23	56·9	63·2	65·1	64·1	− 0·1	− 0·6	− 0·6	+ 0·5
24	66·1	68·3	68·1	64·1	+ 0·1	+ 1·4	− 0·3	+ 0·5
26	58·9	59·1	60·1	57·2	+ 0·9	+ 0·7	− 0·5	+ 0·3
27	58·5	58·8	58·6	56·6	+ 0·1	+ 0·2	− 0·4	+ 0·6
28	58·9	57·2	58·2	59·1	+ 0·2	− 1·4	− 1·0	+ 0·1
29	62·7	63·1	63·9	63·5	− 0·2	+ 0·3	0·0	0·0
30	62·2	65·8	67·4	60·2	− 0·8	− 1·4	− 1·1	+ 0·2
31	60·8	62·6	60·7	56·1	− 1·5	− 1·6	− 1·2	0·0
Means	59·2	60·9	61·0	58·1	− 0·3	− 0·6	− 0·7	+ 0·1

AUGUST.

Days of the Month.	Readings of the Wet-bulb Thermometer in Stevenson's Screen, 4 ft. above the ground. 9h	Noon.	15h	21h	Excess above readings of the Thermometer on ordinary stand, 4 ft. above the ground. 9h	Noon.	15h	21h
d	°	°	°	°	°	°	°	°
3	61·0	66·2	65·7	62·8	− 0·6	− 1·3	− 2·0	+ 0·1
4	67·7	69·8	67·4	61·9	− 1·2	− 0·5	− 1·0	− 0·3
5	70·2	69·1	69·1	64·0	− 0·5	− 1·1	− 0·8	− 0·2
6	63·0	62·1	64·2	59·9	− 0·6	+ 0·5	− 1·3	+ 0·2
7	60·1	62·0	60·4	58·0	− 0·1	− 1·2	− 1·3	+ 0·2
9	59·4	62·0	62·0	60·2	− 0·3	− 0·4	− 0·5	− 0·2
10	61·6	63·8	64·1	61·2	− 0·1	− 0·1	− 0·8	− 0·4
11	63·9	62·8	62·9	59·7	− 0·2	− 0·4	− 0·6	0·0
12	57·1	57·1	57·4	53·6	− 0·4	− 1·9	− 1·0	− 0·1
13	57·3	57·4	58·4	56·6	− 0·2	− 0·3	− 1·1	+ 0·1
14	58·1	60·3	60·1	56·3	− 0·1	− 0·6	− 0·7	0·0
16	58·7	58·8	57·7	57·1	− 0·6	− 0·8	− 1·0	+ 0·4
17	59·1	62·3	62·1	58·7	+ 0·2	− 0·1	− 0·6	+ 0·3
18	59·5	62·3	62·0	56·6	− 0·5	− 0·8	− 0·6	0·0
19	55·4	56·1	56·2	54·1	− 0·6	− 0·2	− 0·9	+ 0·3
20	58·1	60·4	63·0	59·8	+ 0·1	+ 0·1	0·0	+ 0·2
21	57·2	57·4	56·9	53·6	− 0·1	− 1·3	+ 0·1	+ 0·2
23	55·1	52·6	53·9	53·4	− 0·1	+ 0·2	+ 0·4	+ 0·1
24	58·1	58·4	58·5	54·1	+ 0·3	+ 0·1	− 0·9	0·0
25	57·4	55·4	57·2	54·8	− 0·6	+ 0·5	− 0·3	+ 0·3
26	58·1	58·6	60·1	61·0	− 0·1	+ 0·6	+ 0·4	+ 0·1
27	56·1	55·9	59·2	54·4	+ 0·8	− 0·2	+ 0·7	+ 0·1
28	58·1	59·9	59·1	55·2	+ 0·4	− 0·1	− 0·6	0·0
30	57·2	58·1	58·5	55·1	− 0·4	− 0·1	− 0·2	+ 0·4
31	55·1	55·4	55·7	51·8	+ 0·5	+ 0·2	− 0·3	+ 0·3
Means	59·3	60·2	60·5	57·4	− 0·2	− 0·4	− 0·6	+ 0·1

READINGS of the WET-BULB THERMOMETER in a STEVENSON'S SCREEN—*concluded.*

SEPTEMBER.

Days of the Month.	Readings of the Wet-bulb Thermometer in Stevenson's Screen, 4 ft. above the ground. 9h	Noon.	15h	21h	Excess above readings of the Thermometer on ordinary stand, 4 ft. above the ground. 9h	Noon.	15h	21h
d	°	°	°	°	°	°	°	°
1	55·7	56·0	58·0	55·8	+ 0·2	+ 0·2	+ 0·3	− 0·1
2	55·9	58·1	57·1	55·8	+ 0·6	− 0·4	− 0·2	+ 0·1
3	50·0	51·2	49·6	45·8	+ 0·8	− 0·5	− 0·1	+ 0·6
4	46·5	47·1	49·9	46·3	0·0	− 0·3	− 0·2	+ 0·3
6	54·4	55·5	57·1	51·5	− 0·1	− 0·2	− 0·8	+ 0·1
7	52·2	52·9	53·9	51·1	+ 0·2	− 0·3	− 0·2	+ 0·3
8	52·2	54·4	52·6	51·6	− 0·2	− 0·6	− 0·1	+ 0·5
9	50·0	51·6	50·8	45·4	+ 0·1	− 0·9	− 0·5	+ 0·2
10	51·9	54·1	53·1	47·5	+ 0·4	− 0·7	− 1·0	+ 0·1
11	53·8	55·0	54·6	52·6	+ 0·4	− 0·9	− 1·5	+ 0·4
13	50·7	55·6	57·6	55·6	+ 0·3	− 1·1	0·0	+ 0·1
14	52·0	54·5	54·3	54·1	− 0·3	− 0·9	− 0·6	+ 0·3
15	54·2	56·2	57·8	57·3	− 0·5	− 1·0	+ 0·2	+ 0·2
16	55·1	56·1	56·0	51·6	+ 0·4	+ 0·4	0·0	− 0·1
17	51·7	52·1	52·1	50·2	+ 0·2	− 0·1	0·0	+ 0·4
18	46·7	47·8	46·9	44·1	+ 0·1	+ 0·1	− 0·1	+ 0·4
20	49·3	50·6	52·0	50·3	− 0·3	− 0·3	+ 0·3	+ 0·3
21	54·1	57·1	55·1	47·7	+ 0·1	− 0·3	+ 0·3	+ 0·6
22	48·7	50·6	51·7	50·9	+ 0·1	− 0·1	+ 0·1	+ 0·4
23	53·6	55·4	58·1	56·1	+ 0·1	− 1·4	0·0	+ 0·2
24	56·2	55·9	57·1	56·9	− 0·1	+ 0·2	+ 0·2	+ 0·1
25	52·6	55·9	58·1	58·3	− 0·1	− 1·4	− 0·3	− 0·1
27	52·1	55·7	57·9	53·1	− 0·1	0·0	+ 0·2	+ 0·4
28	55·5	58·6	59·8	57·4	+ 0·1	− 0·6	+ 0·1	+ 0·4
29	59·1	63·1	64·7	59·8	− 0·4	− 0·2	− 0·4	+ 0·1
30	51·0	54·3	54·2	52·1	− 0·1	− 0·1	− 0·4	+ 0·3
Means	52·5	54·4	55·0	52·3	+ 0·1	− 0·4	− 0·2	+ 0·2

OCTOBER.

Days of the Month.	9h	Noon.	15h	21h	9h	Noon.	15h	21h
d	°	°	°	°	°	°	°	°
1	50·1	53·1	54·9	54·0	− 0·1	− 0·1	0·0	+ 0·2
2	50·4	52·4	53·1	52·2	− 0·1	− 0·6	− 0·3	+ 0·3
4	47·7	49·4	50·2	47·7	− 0·2	0·0	0·0	+ 0·3
5	45·6	47·1	47·2	43·1	− 0·1	− 0·4	− 0·5	+ 0·2
6	44·0	45·8	45·2	40·1	− 0·7	− 1·7	− 0·5	+ 0·6
7	39·1	45·3	46·8	40·4	− 0·6	− 0·9	− 0·4	+ 0·3
8	44·4	46·8	48·1	47·2	− 0·1	+ 0·2	+ 0·4	− 0·3
9	47·6	48·4	48·1	46·1	− 0·1	− 0·3	− 0·1	+ 0·4
11	47·6	47·8	48·0	46·0	0·0	+ 0·4	+ 0·3	+ 0·4
12	41·1	44·2	44·1	43·1	0·0	− 0·6	+ 0·1	+ 0·2
13	41·3	44·1	43·8	43·1	− 0·2	+ 0·4	+ 0·1	+ 0·1
14	52·1	55·1	55·1	54·4	+ 0·1	+ 0·1	+ 0·2	0·0
15	55·9	57·1	56·3	57·1	+ 0·1	− 0·1	− 0·2	+ 0·2
16	55·0	56·5	56·4	55·4	+ 0·2	− 0·6	− 0·1	+ 0·1
18	56·7	56·1	55·2	54·0	+ 0·3	− 0·9	− 0·5	+ 0·1
19	56·1	59·1	57·6	52·5	− 0·6	− 0·5	− 0·1	0·0
20	45·4	50·2	53·3	49·3	+ 0·1	− 0·2	− 0·1	+ 0·1
21	46·2	51·1	50·1	45·9	− 0·3	− 0·7	− 0·3	+ 0·1
22	48·6	49·3	49·2	48·4	− 0·3	− 0·4	− 0·3	− 0·1
23	48·4	49·7	50·8	49·8	− 0·1	0·0	− 0·3	+ 0·1
25	42·6	48·2	47·9	43·1	− 0·3	− 0·6	− 0·1	+ 0·3
26	48·3	52·9	53·4	48·9	− 0·2	− 0·2	− 0·5	+ 0·4
27	47·3	50·6	52·2	48·6	0·0	− 0·2	− 0·2	+ 0·2
28	44·0	48·9	55·0	47·3	− 0·4	− 1·0	− 0·2	0·0
29	45·6	54·7	55·9	47·5	− 0·1	− 0·8	0·0	+ 0·3
30	49·6	55·6	54·8	46·7	− 0·3	− 0·6	+ 0·4	+ 0·2
Means	47·7	50·8	51·3	48·1	− 0·2	− 0·4	− 0·1	+ 0·2

NOVEMBER.

Days of the Month.	Readings of the Wet-bulb Thermometer in Stevenson's Screen, 4 ft. above the ground. 9h	Noon.	15h	21h	Excess above readings of the Thermometer on ordinary stand, 4 ft. above the ground. 9h	Noon.	15h	21h
d	°	°	°	°	°	°	°	°
1	44·4	50·7	49·1	47·3	− 0·3	− 0·7	− 0·3	+ 0·1
2	42·9	44·2	46·1	45·1	− 0·2	− 0·6	− 0·3	+ 0·2
3	43·8	45·8	45·5	42·2	0·0	− 0·6	0·0	0·0
4	41·7	42·1	41·8	40·0	− 0·2	+ 0·1	+ 0·1	− 0·1
5	38·1	39·1	40·2	41·0	− 0·1	0·0	0·0	+ 0·5
6	44·5	45·6	45·0	43·2	0·0	− 0·4	+ 0·1	+ 0·3
8	49·1	51·5	54·1	53·1	+ 0·1	− 0·2	+ 0·3	+ 0·2
9	52·1	53·0	52·8	49·6	+ 0·2	+ 0·1	+ 0·1	+ 0·1
10	43·1	45·9	45·4	40·5	− 0·1	− 1·1	− 0·1	+ 0·3
11	33·8	37·3	37·8	39·6	− 0·2	− 0·2	− 0·1	+ 0·1
12	52·6	53·1	53·0	53·6	+ 0·1	+ 0·4	+ 0·3	+ 0·3
13	54·1	54·9	54·6	51·2	0·0	+ 0·3	+ 0·1	+ 0·1
15	41·3	40·1	40·1	36·1	0·0	+ 0·1	+ 0·3	+ 0·2
16	39·4	41·1	40·3	42·2	+ 0·1	+ 0·1	+ 0·1	− 0·3
17	52·7	53·3	51·8	52·3	+ 0·1	0·0	+ 0·3	+ 0·1
18	52·7	53·1	50·3	45·8	+ 0·1	+ 0·2	− 0·1	+ 0·4
19	36·8	42·7	44·7	41·8	+ 0·2	− 0·3	+ 0·2	+ 0·5
20	44·0	47·1	49·1	48·4	0·0	+ 0·2	+ 0·4	− 0·1
22	41·6	46·6	46·6	42·8	− 0·3	− 0·2	0·0	0·0
23	40·8	40·8	41·1	40·4	− 0·1	− 0·2	+ 0·1	0·0
24	39·8	41·4	42·1	42·0	+ 0·1	− 0·3	0·0	0·0
25	43·6	46·1	43·1	37·1	+ 0·1	− 0·6	+ 0·1	+ 0·2
26	29·3	34·3	37·4	41·1	− 0·6	− 0·5	+ 0·2	+ 0·2
27	48·8	49·9	50·2	49·5	+ 0·3	+ 0·2	+ 0·2	− 0·1
29	36·9	37·1	36·4	33·3	+ 0·4	+ 0·4	+ 0·3	+ 0·2
30	43·3	47·9	48·0	43·2	0·0	+ 0·2	+ 0·3	− 0·1
Means	43·5	45·6	45·6	43·9	0·0	− 0·1	+ 0·1	+ 0·1

DECEMBER.

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

(I.)—Reading of a Thermometer whose bulb is sunk to the depth of 25·6 feet (24 French feet) below the surface of the soil, at Noon on every Day of the Year.

1897.												
Days of the Month.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
d	°	°	°	°	°	°	°	°	°	°	°	°
1	52·31	51·26	50·30	49·38	48·91	48·78	49·09	49·90	51·07	52·15	52·75	52·81
2	52·25	51·23	50·26	49·38	48·90	48·78	49·10	49·95	51·12	52·18	52·75	52·79
3	52·22	51·21	50·21	49·33	48·89	48·80	49·13	49·98	51·14	52·22	52·77	52·78
4	52·20	51·18	50·19	49·32	48·88	48·78	49·13	50·02	51·18	52·23	52·76	52·76
5	52·19	51·15	50·15	49·28	48·88	48·79	49·16	50·06	51·22	52·26	52·75	52·77
6	52·15	51·10	50·11	49·27	48·85	48·79	49·18	50·08	51·27	52·28	52·78	52·78
7	52·13	51·07	50·07	49·25	48·85	48·80	49·20	50·12	51·30	52·29	52·78	52·80
8	52·08	51·05	50·05	49·23	48·85	48·80	49·22	50·15	51·34	52·34	52·80	52·77
9	52·03	51·02	50·03	49·23	48·85	48·80	49·25	50·20	51·38	52·36	52·82	52·75
10	52·02	50·97	49·98	49·20	48·83	48·81	49·23	50·24	51·43	52·37	52·81	52·75
11	51·97	50·93	49·96	49·18	48·83	48·83	49·29	50·26	51·47	52·40	52·80	52·75
12	51·95	50·90	49·93	49·16	48·81	48·83	49·32	50·30	51·50	52·41	52·83	52·73
13	51·91	50·87	49·90	49·15	48·80	48·84	49·35	50·33	51·53	52·43	52·85	52·75
14	51·88	50·85	49·85	49·13	48·80	48·85	49·38	50·38	51·58	52·43	52·85	52·74
15	51·83	50·79	49·83	49·12	48·80	48·85	49·35	50·42	51·63	52·51	52·83	52·73
16	51·80	50·75	49·80	49·10	48·80	48·86	49·43	50·46	51·66	52·53	52·83	52·73
17	51·78	50·71	49·80	49·08	48·80	48·82	49·45	50·49	51·68	52·56	52·85	52·74
18	51·71	50·65	49·75	49·07	48·80	48·88	49·48	50·54	51·72	52·57	52·86	52·68
19	51·71	50·66	49·73	49·04	48·78	48·90	49·51	50·55	51·74	52·58	52·84	52·70
20	51·65	50·62	49·71	49·03	48·78	48·89	49·54	50·60	51·79	52·59	52·84	52·66
21	51·64	50·58	49·67	49·03	48·78	48·88	49·56	50·64	51·85	52·61	52·83	52·65
22	51·60	50·56	49·66	49·01	48·77	48·95	49·59	50·68	51·87	52·62	52·84	52·63
23	51·55	50·52	49·63	49·00	48·78	48·95	49·63	50·71	51·92	52·64	52·85	52·59
24	51·52	50·48	49·60	48·97	48·77	48·98	49·67	50·75	51·95	52·63	52·83	52·58
25	51·51	50·46	49·57	48·96	48·79	48·98	49·70	50·78	51·98	52·65	52·83	52·58
26	51·45	50·42	49·55	48·96	48·77	48·99	49·71	50·83	52·02	52·68	52·82	52·57
27	51·44	50·38	49·51	48·95	48·77	49·00	49·74	50·87	52·03	52·68	52·85	52·60
28	51·40	50·33	49·48	48·95	48·76	49·03	49·78	50·86	52·08	52·70	52·83	52·57
29	51·36		49·46	48·94	48·77	49·05	49·81	50·96	52·12	52·72	52·81	52·56
30	51·35		49·43	48·93	48·78	49·07	49·85	51·00	52·12	52·74	52·83	52·54
31	51·29		49·42		48·78		49·88	51·03		52·74		52·53
Means	51·80	50·81	49·83	49·12	48·81	48·88	49·44	50·46	51·62	52·49	52·82	52·69

The mean of the twelve monthly values is 50°·73.

(II.)—Reading of a Thermometer whose bulb is sunk to the depth of 12·8 feet (12 French feet) below the surface of the soil, at Noon on every Day of the Year.

1897.												
Days of the Month.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
d	°	°	°	°	°	°	°	°	°	°	°	°
1	49·30	47·32	45·97	46·15	46·90	48·60	51·60	54·85	57·00	56·50	55·27	53·52
2	49·20	47·25	46·00	46·21	46·92	48·70	51·67	54·97	57·03	56·47	55·20	53·43
3	49·11	47·20	45·90	46·23	46·96	48·80	51·81	55·07	57·00	56·47	55·16	53·37
4	49·01	47·09	45·98	46·27	46·98	48·88	51·88	55·22	56·90	56·38	55·09	53·27
5	49·00	46·98	45·98	46·30	47·03	49·00	52·01	55·30	57·01	56·38	55·00	53·22
6	48·90	46·74	46·00	46·36	47·07	49·10	52·12	55·32	57·05	56·33	54·98	53·18
7	48·86	46·64	46·02	46·38	47·11	49·18	52·20	55·40	57·02	56·27	54·93	53·15
8	48·80	46·63	46·06	46·40	47·20	49·28	52·36	55·43	57·06	56·30	54·90	53·03
9	48·50	46·57	46·06	46·43	47·23	49·36	52·46	55·60	57·05	56·27	54·86	52·95
10	48·50	46·48	46·07	46·47	47·28	49·50	52·60	55·70	57·07	56·24	54·77	52·87

(II.)—Reading of a Thermometer whose bulb is sunk to the depth of 12·8 feet (12 French feet) below the surface of the soil, at Noon on every Day of the Year—*concluded.*

1897.												
Days of the Month.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
d	°	°	°	°	°	°	°	°	°	°	°	°
11	48·45	46·42	46·10	46·50	47·32	49·60	52·69	55·79	57·07	56·21	54·67	52·79
12	48·40	46·40	46·10	46·48	47·38	49·72	52·79	55·85	57·06	56·16	54·68	52·70
13	48·40	46·29	46·10	46·51	47·41	49·81	52·92	55·90	57·01	56·10	54·67	52·61
14	48·32	46·30	46·08	46·52	47·50	49·89	53·01	56·03	57·03	56·15	54·57	52·53
15	48·28	46·21	46·05	46·56	47·55	49·99	53·12	56·09	57·02	56·12	54·46	52·41
16	48·22	46·18	46·05	46·54	47·60	50·06	53·20	56·20	56·99	56·09	54·38	52·37
17	48·20	46·12	46·10	46·55	47·67	50·14	53·31	56·23	56·97	56·07	54·38	52·30
18	48·11	46·10	46·08	46·57	47·72	50·25	53·39	56·34	56·88	55·97	54·32	52·13
19	48·10	46·07	46·04	46·57	47·72	50·33	53·50	56·37	56·86	55·91	54·21	52·06
20	48·05	46·06	46·10	46·57	47·76	50·42	53·60	56·45	56·84	55·81	54·16	51·95
21	48·02	46·03	46·03	46·60	47·81	50·60	53·68	56·53	56·87	55·77	54·11	51·87
22	47·98	46·07	46·02	46·63	47·87	50·70	53·78	56·58	56·79	55·71	54·03	51·79
23	47·90	46·02	46·02	46·65	47·90	50·82	53·92	56·60	56·80	55·65	54·00	51·67
24	47·85	46·00	46·03	46·67	47·94	50·93	54·06	56·68	56·77	55·59	53·90	51·60
25	47·80	46·01	46·02	46·70	48·03	50·98	54·15	56·72	56·74	55·55	53·87	51·53
26	47·73	46·00	46·04	46·75	48·07	51·08	54·22	56·80	56·72	55·51	53·80	51·48
27	47·70	46·00	46·03	46·77	48·15	51·17	54·30	56·85	56·64	55·46	53·78	51·46
28	47·63	45·98	46·07	46·80	48·22	51·30	54·42	56·91	56·65	55·41	53·71	51·37
29	47·57		46·07	46·83	48·33	51·40	54·55	56·91	56·63	55·40	53·61	51·31
30	47·51		46·10	46·86	48·42	51·50	54·70	56·95	56·57	55·37	53·61	51·20
31	47·40		46·12		48·50		54·77	56·95		55·30		51·17
Means	48·28	46·40	46·04	46·53	47·60	50·04	53·19	56·08	56·90	55·97	54·44	52·33

The mean of the twelve monthly values is 51°·15.

(III.)—Reading of a Thermometer whose bulb is sunk to the depth of 6·4 feet (6 French feet) below the surface of the soil, at Noon on every Day of the Year.

1897.												
Days of the Month.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
d	°	°	°	°	°	°	°	°	°	°	°	°
1	46·11	43·60	45·27	47·01	48·32	52·67	57·42	61·02	61·10	58·19	55·27	52·20
2	46·11	...	45·49	47·10	48·49	52·74	57·54	61·10	61·05	38·17	55·11	52·01
3	46·17	...	45·46	47·02	48·65	52·98	57·80	61·17	61·02	58·19	55·03	51·86
4	46·20	...	45·52	46·98	48·77	53·10	57·90	61·35	60·75	58·10	54·90	51·66
5	46·20	...	45·54	46·95	48·88	53·29	58·10	61·48	60·68	58·07	54·74	51·47
6	46·12	...	45·52	46·86	48·97	53·47	58·20	61·50	60·55	57·97	54·67	51·26
7	46·10	...	45·49	46·74	49·07	53·57	58·25	61·66	60·35	57·81	54·52	51·05
8	45·81	...	45·43	46·75	49·20	53·73	58·38	61·77	60·21	57·73	54·41	50·77
9	45·51	...	45·35	46·72	49·23	53·95	58·42	62·10	60·03	57·55	54·29	50·56
10	45·63	...	45·29	46·68	49·26	54·20	58·53	62·16	59·92	57·32	54·12	50·42
11	45·70	...	45·26	46·68	49·33	54·31	58·56	62·19	59·80	57·13	54·00	50·32
12	45·71	...	45·12	46·64	49·40	54·35	58·59	62·19	59·64	56·91	53·99	50·18
13	45·80	...	45·10	46·70	49·47	54·38	58·79	62·18	59·48	56·75	53·93	49·90
14	45·80	43·70	45·10	46·73	49·52	54·44	58·91	62·23	59·40	56·69	53·80	49·80
15	45·80	43·78	45·05	46·83	49·52	54·62	59·06	62·20	59·29	56·55	53·69	49·70

(III.)—Reading of a Thermometer whose bulb is sunk to the depth of 6·4 feet (6 French feet) below the surface of the soil, at Noon on every Day of the Year—*concluded.*

1897.												
Days of the Month.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
d	°	°	°	°	°	°	°	°	°	°	°	°
16	45·78	43·90	45·09	46·95	49·50	54·83	59·18	62·18	59·16	56·40	53·63	49·63
17	45·77	44·01	45·11	47·05	49·50	55·10	59·40	62·12	59·10	56·29	53·64	49·63
18	45·67	44·12	45·08	47·17	49·60	55·40	59·56	62·12	58·98	56·17	53·59	49·56
19	45·55	44·20	45·13	47·23	49·65	55·59	59·78	62·11	58·92	56·13	53·46	49·60
20	45·42	44·22	45·25	47·31	49·85	55·68	59·95	62·00	58·87	56·10	53·40	49·59
21	45·25	44·32	45·37	47·43	50·12	55·87	60·09	61·97	58·81	56·12	53·33	49·60
22	45·08	44·40	45·50	47·53	50·41	55·90	60·25	61·91	58·62	56·13	53·27	49·59
23	44·93	44·50	45·62	47·60	50·70	55·94	60·43	61·80	58·55	56·12	53·18	49·50
24	44·80	44·60	45·80	47·65	50·98	56·03	60·62	61·73	58·42	56·06	53·04	49·40
25	44·62	44·75	46·02	47·71	51·32	56·10	60·68	61·68	58·31	55·98	52·97	49·26
26	44·48	44·87	46·19	47·80	51·53	56·33	60·70	61·60	58·27	55·91	52·83	49·08
27	44·38	45·04	46·37	47·85	51·77	56·59	60·79	61·52	58·19	55·81	52·77	48·90
28	44·19	45·15	46·53	47·90	51·95	56·89	60·95	61·44	58·22	55·70	52·60	48·65
29	44·02		46·71	48·01	52·15	57·05	61·00	61·31	58·27	55·63	52·43	48·46
30	43·90		46·90	48·15	52·32	57·22	61·10	61·25	58·18	55·52	52·37	48·30
31	43·77		46·98		52·52		61·06	61·17		55·39		48·25
Means	45·37	...	45·60	47·19	50·00	54·88	59·35	61·75	59·40	56·73	53·77	50·01

At temperatures below 43°·60 the spirit of this thermometer passes beyond range of the scale and descends into the capillary tube. The readings were out of range on this account, from February 2 to 13 inclusive.

(IV.)—Reading of a Thermometer whose bulb is sunk to the depth of 3·2 feet (3 French feet) below the surface of the soil, at Noon on every Day of the Year.

1897.												
Days of the Month.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
d	°	°	°	°	°	°	°	°	°	°	°	°
1	43·10	38·07	44·35	46·00	49·50	55·75	62·20	64·33	61·58	58·05	52·90	48·30
2	43·22	38·05	44·27	45·79	49·35	56·06	62·25	64·70	61·32	57·92	52·70	48·00
3	42·83	38·10	43·75	45·35	49·31	56·20	62·50	65·05	60·90	57·80	52·60	47·62
4	42·55	38·23	43·62	45·07	49·50	56·17	62·25	65·57	60·69	57·58	52·40	47·01
5	42·31	38·73	43·32	44·95	49·60	56·38	62·10	66·00	60·19	57·20	52·10	46·45
6	42·12	39·41	43·05	44·80	49·66	56·81	61·90	66·16	59·59	56·70	51·86	46·10
7	42·10	39·70	42·81	44·58	49·41	57·20	61·88	66·36	59·51	56·13	51·62	46·01
8	42·11	39·72	42·58	44·54	49·30	57·40	61·78	66·27	59·40	55·60	51·41	45·88
9	42·07	39·60	42·41	44·63	49·50	57·30	61·56	66·10	59·20	55·08	51·39	46·20
10	42·25	40·07	42·30	44·73	49·90	56·60	61·74	65·82	59·07	54·87	51·55	46·02
11	42·38	40·70	42·48	45·12	49·90	56·30	62·07	65·59	58·78	54·76	51·55	45·80
12	42·50	41·16	42·42	45·18	49·60	56·55	62·33	65·46	58·60	54·67	51·30	45·78
13	42·60	41·20	42·60	45·50	49·22	57·35	62·80	65·20	58·47	54·32	51·20	45·32
14	42·49	41·40	42·62	45·94	48·93	58·32	63·06	65·00	58·41	54·08	51·40	45·25
15	42·31	41·75	42·60	46·43	48·73	59·20	63·50	64·74	58·57	53·95	51·50	45·62
16	42·00	42·11	42·76	46·50	49·10	59·50	63·81	64·62	58·68	54·19	51·47	46·00
17	41·69	42·07	42·99	46·54	49·65	59·60	64·25	64·39	58·70	54·60	51·15	46·33
18	41·19	41·90	43·57	46·70	50·55	59·35	64·47	64·31	58·45	54·88	51·09	46·63
19	40·70	41·63	43·70	46·82	51·48	58·95	64·62	64·18	58·15	55·18	51·20	46·71
20	40·30	41·96	44·08	46·92	52·31	58·37	64·81	64·00	57·67	55·32	51·06	46·65

(IV.)—Reading of a Thermometer whose bulb is sunk to the depth of 3·2 feet (3 French feet) below the surface of the soil, at Noon on every Day of the Year—*concluded.*

1897.												
Days of the Month.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
d	°	°	°	°	°	°	°	°	°	°	°	°
21	40·05	42·47	44·42	47·03	53·02	58·22	64·90	63·77	57·49	55·22	50·72	46·47
22	39·80	42·72	44·87	47·20	53·70	58·21	64·90	63·57	57·35	55·00	50·55	46·10
23	39·52	43·00	45·51	47·39	54·08	59·00	64·80	63·18	57·30	54·70	50·31	45·50
24	39·26	43·39	45·93	47·30	54·25	60·01	64·78	62·90	57·29	54·51	50·12	44·82
25	39·10	43·70	46·30	47·21	54·62	60·83	64·92	62·63	57·57	54·36	49·90	44·25
26	38·90	43·90	46·52	47·31	54·62	61·16	65·19	62·46	57·82	54·08	49·70	43·70
27	38·76	44·30	46·80	47·57	54·68	61·13	65·00	62·21	58·05	53·79	49·30	43·33
28	38·55	44·50	46·94	48·17	54·65	61·39	64·69	62·23	58·10	53·60	49·10	43·47
29	38·36		47·00	48·80	54·80	61·59	64·37	62·15	58·15	53·45	49·08	43·89
30	38·30		46·80	49·22	54·71	62·00	64·20	62·10	58·00	53·25	48·77	44·30
31	38·10		46·34		55·22		64·15	62·01		53·02		44·81
Means	41·02	41·20	44·18	46·31	51·38	58·43	63·48	64·29	58·77	55·09	51·03	45·75
The mean of the twelve monthly values is 51°·74.												

(V.)—Reading of a Thermometer whose bulb is sunk to the depth of 1 inch below the surface of the soil, at Noon on every Day of the Year.

1897.												
Days of the Month	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
d	°	°	°	°	°	°	°	°	°	°	°	°
1	43·9	35·3	43·9	42·0	49·0	59·2	66·0	64·8	58·2	55·3	49·1	47·6
2	36·9	36·7	41·2	42·8	49·0	58·6	65·0	66·2	58·7	55·3	48·7	41·5
3	39·0	34·0	41·5	42·8	51·7	59·1	65·0	67·5	56·6	55·0	49·0	39·7
4	36·1	39·9	41·0	43·0	48·7	58·1	63·0	70·0	54·0	53·0	47·7	37·1
5	40·0	42·0	40·9	41·9	51·1	60·1	63·5	71·9	55·3	51·7	46·0	39·7
6	37·8	39·0	40·2	42·6	47·9	62·8	63·0	69·0	57·6	50·6	47·8	42·1
7	40·9	38·5	38·8	41·9	49·0	61·7	61·1	67·5	56·0	48·0	47·2	41·7
8	41·0	36·7	38·9	43·9	51·8	57·3	61·0	64·0	56·8	49·5	49·1	44·7
9	40·1	43·0	39·7	44·5	51·7	54·0	63·0	65·2	56·0	51·1	51·0	41·2
10	42·0	43·0	42·0	45·7	50·7	54·7	65·0	64·7	54·5	51·2	49·1	40·0
11	41·0	42·8	40·8	43·3	47·3	58·1	64·4	67·0	55·2	52·5	44·3	43·9
12	40·0	39·8	42·2	46·3	46·0	62·0	64·6	66·5	55·3	49·0	49·5	39·8
13	39·8	41·2	41·1	48·2	46·0	64·7	65·7	63·7	54·5	48·0	52·7	40·3
14	39·0	44·0	41·2	49·2	47·0	66·0	66·9	64·0	58·0	51·5	52·0	46·5
15	37·5	44·0	42·8	46·0	50·9	63·0	66·1	64·1	58·0	54·8	47·0	45·2
16	36·1	41·2	43·4	47·9	51·5	62·3	66·9	63·0	58·1	56·0	46·0	48·0
17	34·9	39·9	45·2	49·0	55·0	58·1	68·9	64·0	56·5	56·7	50·5	47·3
18	32·9	38·7	44·1	47·3	58·5	60·0	66·2	64·6	54·8	57·0	52·3	45·0
19	34·7	42·7	46·7	47·7	56·8	56·3	68·0	60·8	51·7	56·7	46·1	44·8
20	35·0	45·0	45·9	46·8	55·8	57·5	68·0	62·0	53·9	52·7	47·0	43·3
21	34·0	43·7	48·1	48·0	58·8	60·0	66·8	62·0	55·7	51·7	47·5	40·0
22	34·7	45·4	50·7	48·0	57·1	63·7	65·7	61·0	54·8	52·0	46·7	37·5
23	32·5	46·0	48·7	46·7	55·8	67·1	65·7	60·7	56·0	52·0	46·0	36·0
24	32·2	45·2	50·0	46·7	55·0	69·3	68·7	61·2	58·2	51·8	45·0	35·1
25	34·7	46·3	49·0	47·0	57·2	64·2	69·1	60·1	57·2	50·0	46·2	35·9

(V.)—Reading of a Thermometer whose bulb is sunk to the depth of 1 inch below the surface of the soil, at Noon on every Day of the Year—*concluded.*

1897.												
Days of the Month.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
d	°	°	°	°	°	°	°	°	°	°	°	°
26	33·1	48·0	50·2	48·3	56·1	63·2	66·0	60·2	59·9	51·0	41·3	39·1
27	32·2	46·1	49·7	50·8	55·9	63·6	62·1	61·0	56·0	50·2	47·0	41·5
28	33·9	43·8	49·5	52·0	55·7	66·0	63·2	61·3	57·8	49·2	46·0	44·1
29	33·9		45·0	53·0	56·4	66·1	64·7	61·8	59·0	50·0	43·1	46·0
30	33·8		42·2	53·0	58·8	66·0	65·2	62·0	56·7	51·0	44·0	46·0
31	34·9		45·6		58·9		66·0	60·0		49·8		45·0
Means	36·7	41·9	44·2	46·5	52·9	61·4	65·3	63·9	56·4	52·1	47·5	42·1

The mean of the twelve monthly values is 50°·91.

(VI.)—Reading of a Thermometer within the case covering the deep-sunk Thermometers, whose bulb is placed on a level with their scales, at Noon on every Day of the Year.

1897.												
Days of the Month.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
d	°	°	°	°	°	°	°	°	°	°	°	°
1	43·1	36·0	46·0	38·0	52·2	63·4	72·3	67·3	58·8	55·2	51·3	42·3
2	32·4	36·8	43·9	43·2	56·2	62·3	63·0	72·5	64·8	55·4	47·6	39·5
3	41·2	35·3	37·1	43·9	56·0	63·5	68·6	72·5	58·4	57·5	50·3	38·2
4	37·2	46·1	43·7	44·8	53·0	60·3	62·0	80·7	53·2	53·0	45·1	32·6
5	42·6	44·0	45·8	44·8	53·6	64·7	69·0	84·7	56·7	51·7	42·0	37·9
6	43·5	38·1	39·2	46·2	48·8	70·7	64·7	71·9	59·8	50·9	47·8	43·3
7	44·9	40·2	38·9	44·0	52·0	61·3	62·5	73·0	56·0	46·8	46·8	44·5
8	41·7	38·7	41·2	47·0	59·0	54·2	69·0	63·6	59·0	53·5	52·1	43·2
9	37·5	49·8	47·0	53·0	54·0	52·1	67·0	69·0	55·2	53·8	53·5	42·2
10	45·2	45·0	45·0	46·3	54·0	57·0	72·3	72·3	59·0	52·2	48·3	41·7
11	39·9	42·0	47·2	48·6	48·3	70·9	70·6	70·7	60·0	53·7	38·7	45·1
12	40·0	39·8	47·0	49·5	47·0	74·8	64·2	70·2	58·9	48·5	54·0	38·2
13	38·1	44·0	44·3	56·5	46·0	76·0	73·7	66·8	56·3	46·0	57·6	46·5
14	38·0	48·6	40·2	52·5	53·0	71·0	75·0	71·0	61·5	58·3	57·2	50·0
15	36·1	44·0	44·8	50·3	60·0	69·1	73·7	68·0	62·0	62·1	43·5	49·4
16	34·0	41·3	47·5	50·5	61·0	61·9	72·3	69·7	60·5	64·0	45·8	54·4
17	33·3	42·5	52·1	54·0	66·1	59·0	75·1	66·6	60·2	65·3	54·4	52·9
18	27·8	47·0	49·2	51·9	72·2	62·0	72·2	70·9	53·1	62·2	56·0	43·2
19	34·9	47·8	53·9	54·0	63·5	58·0	74·8	64·0	51·4	61·0	44·2	45·1
20	32·1	49·1	51·0	46·8	63·5	57·4	73·5	63·3	55·6	51·1	48·2	41·8
21	35·2	47·2	54·0	51·8	65·7	70·3	70·0	67·1	61·4	53·2	48·0	38·1
22	34·1	52·1	56·3	48·2	62·0	71·6	68·9	67·0	56·8	53·1	47·0	35·7
23	30·3	48·5	53·7	49·1	59·8	78·7	72·2	61·5	62·6	52·4	43·0	31·7
24	31·0	46·2	57·3	48·2	53·9	82·0	78·9	61·6	62·1	51·8	42·0	30·2
25	37·6	50·2	55·3	51·2	67·3	62·3	74·3	60·0	61·5	51·0	47·1	35·8
26	33·0	54·0	53·8	58·2	55·0	67·0	68·7	66·1	63·7	53·8	39·0	38·2
27	33·6	47·9	53·2	59·8	59·0	61·8	63·0	64·8	56·9	51·2	51·8	48·3
28	35·3	46·0	52·9	57·0	57·0	72·0	67·0	68·4	60·5	48·6	45·9	48·5
29	34·5		45·3	60·3	59·3	70·3	67·5	65·2	66·9	57·0	42·0	52·0
30	37·2		44·9	57·9	62·5	73·1	73·3	67·3	56·6	58·8	50·0	47·1
31	35·0		49·4		64·9		71·5	62·5		52·0		47·8
Means	36·8	44·6	47·8	50·3	57·6	66·0	70·0	68·4	59·0	54·4	48·0	42·8

The mean of the twelve monthly values is 53°·81.

ABSTRACT of the CHANGES of the DIRECTION of the WIND, as derived from the Records of OSLER'S ANEMOMETER in the Year 1897.

(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.)

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

Greenwich Civil Time.		Change of Direction.		Amount of Motion.	
From	To	From	To	Direct.	Retrograde.
				°	°
January.					
d h	d h				
1. 6	1. 6¼	W.S.W.	N.	112½	
1. 9½	1. 10	N.	N.N.E.	22½	
1. 20½	1. 20¾	N.N.E.	S.S.E.	135	
2. 0¾	2. 2	S.S.E.	S.E.	337½	
2. 10¾	2. 11½	S.E.	N.E.		90
2. 14	2. 14½	N.E.	E.	45	
2. 15½	2. 15¾	E.	S.E.	45	
3. 8	3. 8½	S.E.	S.W.	90	
3. 10	3. 12	S.W.	S.		45
3. 22	3. 23	S.	S.S.E.		22½
4. 2½	4. 3	S.S.E.	S.	22½	
4. 10	4. 10½	S.	S.S.W.	22½	
4. 17½	4. 18	S.S.W.	S.S.E.		45
4. 20½	4. 21¼	S.S.E.	S.S.W.	45	
4. 23	4. 23½	S.S.W.	S.		22½
5. 7½	5. 8	S.	S.S.W.	22½	
5. 9½	5. 9¾	S.S.W.	S.W.	22½	
5. 11	5. 12	S.W.	S.		45
5. 13	5. 14	S.	S.S.E.		22½
5. 17½	5. 18½	S.S.E.	S.E.		22½
6. 2½	6. 3	S.E.	E.S.E.		22½
6. 8	6. 8½	E.S.E.	S.E.	22½	
6. 19½	6. 20	S.E.	E.S.E.		22½
7. 3½	7. 4	E.S.E.	S.E.	22½	
7. 7	7. 7½	S.E.	S.S.E.	22½	
7. 10½	7. 10¾	S.S.E.	S.E.		22½
7. 13½	7. 13¾	S.E.	E.		45
8. 6½	8. 6¾	E.	E.N.E.		22½
8. 9½	8. 10½	E.N.E.	E.	22½	
8. 20½	8. 21	E.	E.N.E.		22½
9. 20½	9. 21	E.N.E.	E.	22½	
10. 2½	10. 2¾	E.	S.E.	45	
10. 3½	10. 4	S.E.	S.S.E.	22½	
10. 8¼	10. 9¼	S.S.E.	E.S.E.		45
10. 16½	10. 17½	E.S.E.	E.		22½
10. 20½	10. 22	E.	N.E.		45
11. 5½	11. 6	N.E.	N.N.E.		22½
11. 9	11. 10	N.N.E.	N.		22½
12. 2½	12. 3	N.	N.N.E.	22½	
12. 6½	12. 7	N.N.E.	E.N.E.	45	
12. 14½	12. 14¾	E.N.E.	N.E.		22½
12. 15¼	12. 15½	N.E.	E.	45	
12. 17½	12. 17¾	E.	E.N.E.		22½
13. 0	13. 0½	E.N.E.	N.E.		22½
13. 12½	13. 13	N.E.	N.N.E.		22½
14. 12½	14. 12¾	N.N.E.	N.E.	22½	
14. 14	14. 14½	N.E.	N.N.E.		22½
15. 11	15. 11½	N.N.E.	N.E.	22½	
16. 5½	16. 6	N.E.	E.N.E.	22½	
16. 10½	16. 11	E.N.E.	N.E.		22½

Greenwich Civil Time.		Change of Direction.		Amount of Motion.	
From	To	From	To	Direct.	Retrograde.
				°	°
Jan.—*cont.*					
d h	d h				
16. 15	16. 15¼	N.E.	N.N.E.		22½
16. 23½	16. 23¾	N.N.E.	N.		22½
17. 5	17. 6	N.	N.N.W.		22½
17. 19	17. 19½	N.N.W.	N.W.		22½
17. 22	18. 0½	N.W.	W.S.W.		67½
18. 6½	18. 7	W.S.W.	S.W.		22½
18. 13¾	18. 15	S.W.	N.	135	
19. 13	19. 14	N.	N.N.E.	22½	
19. 17	19. 19½	N.N.E.	E.N.E.	45	
21. 9	21. 9½	E.N.E.	N.E.		22½
21. 17	21. 20½	N.E.	W.		135
22. 0	22. 4	W.	N.	90	
22. 9	22. 10	N.	N.N.E.	22½	
22. 12½	22. 13	N.N.E.	N.		22½
22. 14½	22. 16	N.	N.E.	45	
22. 17½	22. 18½	N.E.	N.N.E.		22½
22. 22½	22. 23	N.N.E.	N.		22½
23. 9	23. 10	N.	N.N.E.	22½	
23. 23	24. 1	N.N.E.	N.		22½
24. 14¼	24. 16½	N.	W.		90
24. 18½	24. 18¾	W.	W.S.W.		22½
25. 6	25. 7	W.S.W.	W.	22½	
25. 16½	25. 17	W.	N.W.	45	
25. 22½	25. 23	N.W.	W.N.W.		22½
26. 0½	26. 1	W.N.W.	W.		22½
26. 11½	26. 12	W.	W.N.W.	22½	
26. 18½	26. 19	W.N.W.	W.		22½
27. 9	27. 11	W.	N.W.	45	
27. 16	27. 18	N.W.	N.	45	
27. 22	27. 22½	N.	N.N.W.		22½
28. 0¾	28. 1½	N.N.W.	N.W.		22½
28. 3½	28. 4	N.W.	W.N.W.		22½
28. 10½	28. 11½	W.N.W.	N.W.	22½	
28. 13	28. 14	N.W.	W.N.W.		22½
28. 15	28. 16	W.N.W.	N.N.W.	45	
29. 2	29. 3	N.N.W.	N.W.		22½
29. 4½	29. 5	N.W.	W.N.W.		22½
29. 11½	29. 11¾	W.N.W.	N.W.	22½	
29. 13¾	29. 14	N.W.	W.N.W.		22½
29. 16	29. 18	W.N.W.	W.S.W.		45
29. 21	29. 23	W.S.W.	S.S.W.		45
30. 0½	30. 1½	S.S.W.	S.		22½
30. 4	30. 6	S.	S.E.		45
30. 11½	30. 14	S.E.	E.		45
30. 16	30. 16½	E.	E.N.E.		22½
30. 18¼	30. 18½	E.N.E.	N.E.		22½
31. 14½	31. 16	N.E.	S.S.W.	157½	
31. 17½	31. 18	S.S.W.	S.W.	22½	
			Sums	2115	1777½

Greenwich Civil Time.		Change of Direction.		Amount of Motion.	
From	To	From	To	Direct.	Retrograde.
				°	°
February.					
d h	d h				
1. 3	1. 7	S.W.	E.S.E.		112½
1. 11¾	1. 12½	E.S.E.	S.E.	22½	
2. 2¾	2. 3½	S.E.	N.E.		90
2. 5½	2. 6	N.E.	S.E.	90	
2. 7½	2. 8	S.E.	E.		45
2. 10	2. 10½	E.	N.E.		45
2. 13¾	2. 14	N.E.	N.N.E.		22½
2. 17¼	2. 17½	N.N.E.	E.N.E.	45	
2. 18½	2. 19½	E.N.E.	S.E.	67½	
2. 21½	2. 22½	S.E.	N.E.		90
3. 8½	3. 9	N.E.	S.E.	90	
3. 18	3. 19	S.E.	S.S.E.	22½	
3. 22	4. 1	S.S.E.	S.W.	67½	
4. 12½	4. 13	S.W.	S.S.W.		22½
4. 18	4. 18½	S.S.W.	S.S.E.		45
5. 0½	5. 2	S.S.E.	S.E.		22½
5. 5	5. 6	S.E.	E.S.E.		22½
5. 14	5. 20	E.S.E.	W.	157½	
5. 23	6. 1	W.	W.N.W.	22½	
6. 11	6. 12	W.N.W.	W.		22½
6. 13¼	6. 13½	W.	N.N.E.	112½	
6. 17½	6. 20½	N.N.E.	N.N.W.		45
6. 22½	6. 23	N.N.W.	N.W.		22½
7. 3½	7. 3¾	N.W.	N.N.W.	22½	
7. 9½	7. 10	N.N.W.	N.	22½	
7. 22½	7. 23	N.	N.N.W.		22½
8. 0¾	8. 1	N.N.W.	W.		67½
8. 3	8. 5½	W.	S.		90
8. 11	8. 11½	S.	S.S.W.	22½	
8. 15	8. 16	S.S.W.	S.		22½
8. 18½	8. 19	S.	S.S.W.	22½	
8. 22	9. 0	S.S.W.	S.W.	22½	
9. 3½	9. 4	S.W.	W.S.W.	22½	
9. 18	9. 18½	W.S.W.	W.	22½	
10. 3¾	10. 4	W.	N.N.E.	112½	
10. 10½	10. 12¾	N.N.E.	S.W.	202½	
10. 13¾	10. 14	S.W.	S.S.W.		22½
10. 18¾	10. 19	S.S.W.	S.		22½
10. 20	10. 20½	S.	S.E.		45
11. 4	11. 4¼	S.E.	E.		45
11. 6	11. 6½	E.	E.S.E.	22½	
11. 20	11. 20¼	E.S.E.	E.		22½
12. 7½	12. 9	E.	E.S.E.	22½	
12. 19	12. 19½	E.S.E.	S.E.	22½	
13. 1½	13. 2	S.E.	S.S.E.	22½	
13. 4½	13. 7½	S.S.E.	S.W.	67½	
13. 14	13. 15	S.W.	W.S.W.	22½	
13. 18½	13. 19½	W.S.W.	W.	22½	
14. 8	14. 10¼	W.	N.N.W.	67½	
14. 17½	14. 18¼	N.N.W.	N.W.		22½

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

Greenwich Civil Time. From	Greenwich Civil Time. To	Change of Direction. From	Change of Direction. To	Amount of Motion. Direct.	Amount of Motion. Retrograde.
				°	°
Feb.—*cont.*					
d h	d h				
15. 3	15. 5	N.W.	N.	45	
15. 8	15. 9	N.	N.N.E.	22½	
15. 10½	15. 10¾	N.N.E.	E.	67½	
15. 16½	15. 17	E.	E.S.E.	22½	
15. 22½	15. 23½	E.S.E.	S.E.	22½	
16. 12	16. 15	S.E.	W.S.W.	112½	
16. 17	16. 18	W.S.W.	S.W.		22½
17. 13½	17. 14	S.W.	S.S.W.		22½
18. 15	18. 15½	S.S.W.	S.W.	22½	
20. 10½	20. 11	S.W.	W.S.W.	22½	
20. 19½	20. 21	W.S.W.	S.W.		22½
21. 1½	21. 3	S.W.	W.N.W.	67½	
21. 6	21. 7	W.N.W.	N.W.	22½	
21. 16½	21. 18½	N.W.	W.		45
21. 22½	21. 23¼	W.	W.S.W.		22½
22. 6	22. 8	W.S.W.	W.N.W.	45	
22. 16	22. 16½	W.N.W.	W.		22½
23. 2	23. 3	W.	W.S.W.		22½
23. 23	24. 0	W.S.W.	W.	22½	
24. 3	24. 4	W.	W.S.W.		22½
24. 10	24. 11	W.S.W.	S.W.		22½
25. 13	25. 14	S.W.	W.S.W.	22½	
27. 5½	27. 8	W.S.W.	N.	112½	
27. 10	27. 12	N.	N.N.E.	22½	
27. 17¼	27. 17½	N.N.E.	N.E.	22½	
27. 23	27. 23½	N.E.	S.E.	90	
28. 0¾	28. 1½	S.E.	N.E.		90
28. 3½	28. 3¾	N.E.	E.	45	
28. 7½	28. 9	E.	S.S.E.	67½	
28. 10	28. 10½	S.S.E.	S.	22½	
28. 12¾	28. 13½	S.	S.S.W.	22½	
			Sums	2362½	1305
March.					
1. 3¼	1. 3¾	S.S.W.	S.W.	22½	
1. 22	1. 22¼	S.W.	W.S.W.	22½	
2. 14	2. 17	W.S.W.	S.S.W.		45
2. 23	3. 1	S.S.W.	S.W.	22½	
3. 8½	3. 10	S.W.	W.	45	
4. 4½	4. 8	W.	S.S.W.		67½
4. 11	4. 12	S.S.W.	S.W.	22½	
5. 14	5. 15	S.W.	S.S.W.		22½
6. 4	6. 7	S.S.W.	W.S.W.	45	
6. 9	6. 9¼	W.S.W.	N.	112½	
6. 14½	6. 15½	N.	N.E.	45	
6. 16½	6. 16¾	N.E.	E.	45	
6. 18	6. 18¼	E.	E.S.E.	22½	
6. 21	6. 21¼	E.S.E.	N.N.E.		90
7. 2¼	7. 5	N.N.E.	N.	337½	
7. 6¾	7. 7	N.	N.E.	45	
7. 11½	7. 12½	N.E.	N.		45
8. 3	8. 6½	N.	W.		90
8. 7½	8. 8¾	W.	N.	90	
March—*cont.*					
d h	d h				
8. 10½	8. 12½	N.	N.E.	45	
8. 14¾	8. 15	N.E.	E.	45	
8. 17	8. 21	E.	S.	90	
9. 2½	9. 3	S.	S.E.		45
9. 8¼	9. 8½	S.E.	S.S.E.	22½	
9. 10½	9. 10¾	S.S.E.	S.	22½	
9. 22	9. 23½	S.	S.W.	45	
10. 3½	10. 4	S.W.	W.S.W.	22½	
10. 13½	10. 13¾	W.S.W.	N.W.	67½	
10. 15	10. 17½	N.W.	S.W.		90
11. 10	11. 10½	S.W.	S.S.W.		22½
11. 14½	11. 14¾	S.S.W.	S.		22½
11. 16	11. 17½	S.	S.E.		45
11. 18½	11. 19	S.E.	S.S.E.	22½	
11. 23½	12. 0½	S.S.E.	S.W.	67½	
12. 16½	12. 16¾	S.W.	W.S.W.	22½	
12. 19	12. 20	W.S.W.	S.S.W.		45
12. 23½	12. 23¾	S.S.W.	S.E.		67½
13. 1¼	13. 1½	S.E.	N.N.E.		112½
13. 2½	13. 2¾	N.N.E.	N.E.	22½	
13. 6	13. 6¾	N.E.	N.N.E.		22½
13. 11½	13. 11¾	N.N.E.	E.N.E.	45	
13. 16½	13. 18	E.N.E.	S.E.	67½	
13. 19½	13. 20¼	S.E.	W.S.W.	112½	
13. 22	13. 22¼	W.S.W.	S.E.		112½
14. 10	14. 10½	S.E.	S.S.E.	22½	
14. 11¾	14. 12	S.S.E.	S.E.		22½
14. 16	14. 17	S.E.	E.S.E.		22½
14. 21½	14. 23	E.S.E.	S.S.W.	90	
15. 7½	15. 8	S.S.W.	S.		22½
15. 11½	15. 12	S.	S.S.W.	22½	
15. 18	15. 18½	S.S.W.	S.W.	22½	
15. 22½	15. 23	S.W.	S.S.W.		22½
16. 1	16. 2	S.S.W.	S.		22½
16. 10	16. 10½	S.	S.S.W.	22½	
17. 21½	17. 22	S.S.W.	S.W.	22½	
18. 8	18. 8½	S.W.	W.S.W.	22½	
18. 13	18. 13¼	W.S.W.	W.	22½	
18. 16	18. 16½	W.	W.S.W.		22½
18. 20	18. 20¾	W.S.W.	S.W.		22½
19. 4	19. 5¾	S.W.	W.S.W.	22½	
19. 6¼	19. 7	W.S.W.	W.	22½	
19. 16½	19. 17	W.	W.S.W.		22½
19. 23½	20. 0	W.S.W.	W.	22½	
20. 5½	20. 6¼	W.	W.S.W.		22½
20. 7½	20. 8¼	W.S.W.	W.N.W.	45	
20. 9	20. 9¾	W.N.W.	N.N.W.	45	
20. 12¼	20. 12½	N.N.W.	W.S.W.		90
20. 17	20. 17½	W.S.W.	S.W.		22½
21. 0	21. 0¼	S.W.	W.S.W.	22½	
21. 8	21. 8½	W.S.W.	W.	22½	
21. 10	21. 10½	W.	W.N.W.	22½	
21. 11¼	21. 12	W.N.W.	W.S.W.		45
21. 13½	21. 14	W.S.W.	S.W.		22½
22. 8½	22. 10	S.W.	S.S.W.		22½
22. 15	22. 15½	S.S.W.	S.W.	22½	
22. 18½	22. 19½	S.W.	W.S.W.	22½	
23. 16	23. 16½	W.S.W.	S.W.		22½
24. 2½	24. 3	S.W.	W.S.W.	22½	
March—*cont.*					
d h	d h				
24. 10	24. 10½	W.S.W.	W.	22½	
24. 16	24. 16½	W.	W.S.W.		22½
25. 11¾	25. 12	W.S.W.	W.	22½	
25. 19	25. 20	W.	W.S.W.		22½
25. 22	25. 22½	W.S.W.	S.W.		22½
26. 23	27. 0	SW.	W.S.W.	22½	
27. 5	27. 6	W.S.W.	W.	22½	
27. 19	27. 20	W.	W.S.W.		22½
28. 1	28. 2½	W.S.W.	S.S.W.		45
28. 11	28. 11½	S.S.W.	S.W.	22½	
28. 19	28. 20½	S.W.	W.N.W.	67½	
29. 7	29. 7½	W.N.W.	N.W.	22½	
29. 17½	29. 18½	N.W.	N.	45	
30. 5	30. 5¼	N.	N.N.E.	22½	
30. 6	30. 6¼	N.N.E.	S.W.	202½	
30. 9	30. 10	S.W.	W.S.W.	22½	
30. 12½	30. 13	W.S.W.	E.	202½	
30. 14	30. 15½	E.	S.W.	135	
31. 14¼	31. 14½	S.W.	W.S.W.	22½	
31. 15¾	31. 16¼	W.S.W.	N.N.E.		225
31. 18½	31. 20	N.N.E.	E.N.E.	45	
31. 22	31. 22½	E.N.E.	N.E.		22½
			Sums	3037½	1755
April.					
1. 15	1. 17	N.E.	N.		45
2. 9½	2. 10	N.	N.N.W.		22½
2. 18	2. 21	N.N.W.	S.	202½	
2. 23½	3. 2	S.	S.E.		45
3. 12½	3. 13	S.E.	E.S.E.		22½
3. 20	3. 21	E.S.E.	E.		22½
4. 0½	4. 1	E.	E.N.E.		22½
4. 4	4. 4½	E.N.E.	N.E.		22½
5. 8	5. 9	N.E.	E.N.E.	22½	
5. 13½	5. 14½	E.N.E.	E.S.E.	45	
5. 16½	5. 17	E.S.E.	S.E.	22½	
6. 4½	6. 5½	S.E.	E.S.E.		22½
6. 12	6. 12½	E.S.E.	S.E.	22½	
6. 14	6. 14½	S.E.	E.S.E.		22½
6. 19	6. 20	E.S.E.	S.E.	22½	
7. 6	7. 7	S.E.	E.N.E.		67½
7. 7½	7. 7¾	E.N.E.	E.	22½	
7. 8½	7. 9¼	E.	W.S.W.	157½	
7. 13½	7. 13¾	W.S.W.	N.N.E.	135	
7. 14	7. 16	N.N.E.	W.N.W.	270	
7. 18	7. 18½	W.N.W.	W.S.W.		45
7. 20¾	7. 21	W.S.W.	N.	112½	
8. 16½	8. 17	N.	S.E.	135	
8. 20½	8. 21	S.E.	S.S.W.	67½	
9. 5½	9. 6	S.S.W.	S.		22½
9. 7½	9. 8	S.	S.S.W.	22½	
9. 10½	9. 11	S.S.W.	S.W.	22½	
10. 3½	10. 4½	S.W.	W.N.W.	67½	
10. 5½	10. 6	W.N.W.	N.	67½	

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

Greenwich Civil Time. From	Greenwich Civil Time. To	Change of Direction. From	Change of Direction. To	Amount of Motion. Direct.	Amount of Motion. Retrograde.
				°	°
April—*cont.*					
d h	d h				
10. 14	10. 15	N.	N.N.E.	22½	
10. 21	10. 22	N.N.E.	N.E.	22½	
11. 3½	11. 4	N.E.	S.S.W.	157½	
11. 6½	11. 6¾	S.S.W.	S.E.		67½
11. 9	11. 12½	S.E.	S.W.	90	
11. 17½	11. 18	S.W.	S.S.W.		22½
11. 20	11. 20½	S.S.W.	S.		22½
12. 13	12. 14	S.	S.S.E.		22½
12. 16	12. 16½	S.S.E.	S.E.		22½
12. 20	12. 20½	S.E.	E.S.E.		22½
13. 9½	13. 12	E.S.E.	S.	67½	
13. 14	13. 14½	S.	S.S.W.	22½	
13. 19	13. 19½	S.S.W.	S.		22½
13. 23	14. 0	S.	S.W.	45	
14. 8½	14. 9	S.W.	W.	45	
14. 20	14. 21	W.	W.S.W.		22½
15. 13	15. 14	W.S.W.	W.	22½	
15. 19	15. 20½	W.	S.W.		45
16. 15	16. 16	S.W.	W.S.W.	22½	
16. 17¼	16. 17½	W.S.W.	W.N.W.	45	
16. 18½	16. 18¾	W.N.W.	W.S.W.		45
16. 22½	17. 0	W.S.W.	S.W.		22½
17. 22	18. 1	S.W.	W.N.W.	67½	
18. 4	18. 4¼	W.N.W.	W.		22½
18. 7	18. 7½	W.	W.N.W.	22½	
18. 8¾	18. 9	W.N.W.	N.W.	22½	
18. 15	18. 16	N.W.	N.N.W.	22½	
18. 21¼	18. 21½	N.N.W.	S.W.		112½
19. 2	19. 2½	S.W.	W.S.W.	22½	
19. 4¾	19. 5	W.S.W.	S.W.		22½
19. 7	19. 7½	S.W.	W.S.W.	22½	
19. 15	19. 15½	W.S.W.	S.W.		22½
19. 22	20. 0	S.W.	W.	45	
20. 2½	20. 3½	W.	N.N.W.	67½	
20. 4	20. 4¼	N.N.W.	W.N.W.		45
20. 5	20. 5¼	W.N.W.	N.W.	22½	
20. 6	20. 6¼	N.W.	N.N.W.	22½	
20. 10½	20. 11	N.N.W.	N.W.		22½
20. 17½	20. 20	N.W.	S.W.		90
21. 1½	21. 2	S.W.	S.		45
21. 4½	21. 5½	S.	S.S.E.		22½
21. 13½	21. 14	S.S.E.	S.S.W.	45	
21. 16¼	21. 16½	S.S.W.	S.S.E.		45
21. 19½	21. 19¾	S.S.E.	E.N.E.		90
22. 1½	22. 1¾	E.N.E.	N.E.		22½
22. 17¼	22. 17½	N.E.	E.N.E.	22½	
22. 20	22. 20½	E.N.E.	N.E.		22½
23. 6½	23. 7	N.E.	E.N.E.	22½	
23. 23½	24. 0½	E.N.E.	N.E.		22½
24. 7½	24. 8	N.E.	E.N.E.	22½	
24. 22	24. 23	E.N.E.	N.E.		22½
25. 5½	25. 6½	N.E.	E.N.E.	22½	
25. 17	25. 18	E.N.E.	E.S.E.	45	
25. 23	26. 2	E.S.E.	E.N.E.		45
26. 4	26. 4½	E.N.E.	N.E.		22½
26. 7	26. 8	N.E.	E.N.E.	22½	
26. 13	26. 14	E.N.E.	E.	22½	
26. 18	26. 18¼	E.	E.N.E.		22½
26. 20	26. 20½	E.N.E.	N.E.		22½

Greenwich Civil Time. From	Greenwich Civil Time. To	Change of Direction. From	Change of Direction. To	Amount of Motion. Direct.	Amount of Motion. Retrograde.
				°	°
April—*cont.*					
d h	d h				
26. 22¾	26. 23	N.E.	N.N.E.		22½
27. 11¾	27. 12	N.N.E.	E.S.E.	90	
27. 12¾	27. 13	E.S.E.	N.		112½
27. 15½	27. 16½	N.	N.E.	45	
27. 18	27. 18¾	N.E.	S.W.	180	
27. 20¾	27. 21	S.W.	W.	45	
27. 22¼	28. 0¼	W.	S.S.E.	247½	
28. 3¾	28. 4	S.S.E.	W.	112½	
28. 9	28. 9¼	W.	E.	180	
28. 9½	28. 10	E.	S.S.E.	67½	
28. 11½	28. 12½	S.S.E.	W.S.W.	90	
28. 14½	28. 15	W.S.W.	S.W.		22½
28. 18½	28. 19	S.W.	S.S.W.		22½
28. 20	28. 20½	S.S.W.	S.W.	22½	
29. 5	29. 6	S.W.	W.S.W.	22½	
29. 13	29. 13¼	W.S.W.	S.W.		22½
29. 21½	29. 22	S.W.	S.S.W.		22½
30. 7½	30. 8	S.S.W.	S.W.	22½	
30. 15	30. 15½	S.W.	W.S.W.	22½	
30. 18	30. 18½	W.S.W.	W.	22½	
30. 20½	30. 21	W.	N.	90	
30. 22½	30. 23¼	N.	W.N.W.		67½
			Sums	3802½	1755
May.					
1. 0½	1. 1	W.N.W.	N.W.	22½	
1. 2¾	1. 3½	N.W.	W.N.W.		22½
1. 6¼	1. 6½	W.N.W.	N.N.W.	45	
1. 8	1. 8½	N.N.W.	N.	22½	
1. 16½	1. 17	N.	N.N.W.		22½
1. 18	1. 18¼	N.N.W.	W.		67½
1. 19	1. 20	W.	S.W.		45
1. 21½	1. 21¾	S.W.	W.S.W.	22½	
2. 17	2. 18	W.S.W.	S.W.		22½
3. 6	3. 7	S.W.	W.	45	
3. 16½	3. 17	W.	W.N.W.	22½	
3. 20	3. 20½	W.N.W.	W.		22½
3. 22¾	3. 23	W.	W.N.W.	22½	
4. 6½	4. 7	W.N.W.	N.N.W.	45	
4. 10½	4. 11½	N.N.W.	W.S.W.		90
4. 19	4. 20	W.S.W.	S.W.		22½
5. 8¾	5. 9	S.W.	W.S.W.	22½	
5. 11¾	5. 12	W.S.W.	W.N.W.	45	
5. 15½	5. 16	W.N.W.	W.		22½
5. 19	5. 19½	W.	W.S.W.		22½
5. 21½	5. 22½	W.S.W.	W.N.W.	45	
6. 0½	6. 1½	W.N.W.	W.S.W.		45
6. 5¾	6. 7½	W.S.W.	N.W.	67½	
6. 17½	6. 18	N.W.	N.N.W.	22½	
6. 22	7. 0	N.N.W.	S.W.		112½
7. 1½	7. 2	S.W.	W.S.W.	22½	
7. 6	7. 7	W.S.W.	W.	22½	
7. 8	7. 8¼	W.	W.N.W.	22½	

Greenwich Civil Time. From	Greenwich Civil Time. To	Change of Direction. From	Change of Direction. To	Amount of Motion. Direct.	Amount of Motion. Retrograde.
				°	°
May—*cont.*					
d h	d h				
7. 10¾	7. 11	W.N.W.	W.		22½
7. 14½	7. 15	W.	W.S.W.		22½
7. 19	7. 20	W.S.W.	S.W.		22½
8. 19	8. 21½	S.W.	W.N.W.	67½	
9. 0½	9. 1	W.N.W.	N.N.W.	45	
9. 1½	9. 2	N.N.W.	N.	22½	
9. 3	9. 3½	N.	N.N.W.		22½
9. 7½	9. 8	N.N.W.	N.	22½	
9. 10	9. 10½	N.	N.N.W.		22½
9. 22½	9. 23½	N.N.W.	W.N.W.		45
10. 0½	10. 1	W.N.W.	W.		22½
10. 3	10. 3½	W.	W.N.W.	22½	
10. 5½	10. 5¾	W.N.W.	N.W.	22½	
10. 20½	10. 21	N.W.	N.N.W.	22½	
11. 0	11. 0½	N.N.W.	N.	22½	
11. 8	11. 8¼	N.	N.N.W.		22½
12. 12	12. 12¼	N.N.W.	N.	22½	
12. 19	12. 19¼	N.	N.E.	45	
12. 20	12. 20¼	N.E.	N.		45
13. 2½	13. 4½	N.	S.W.		135
13. 5½	13. 6	S.W.	W.S.W.	22½	
13. 9¼	13. 9½	W.S.W.	N.N.W.	90	
13. 11	13. 11¼	N.N.W.	W.N.W.		45
13. 12	13. 12½	W.N.W.	N.N.W.	45	
13. 13¾	13. 14	N.N.W.	N.	22½	
13. 15¼	13. 15½	N.	N.N.E.	22½	
13. 17	13. 17¼	N.N.E.	E.N.E.	45	
13. 18½	13. 19¼	E.N.E.	S.E.	67½	
13. 20	13. 20¼	S.E.	S.S.E.	22½	
13. 21	13. 23	S.S.E.	S.W.	67½	
14. 2¾	14. 3	S.W.	W.N.W.	67½	
14. 4	14. 4½	W.N.W.	W.		22½
14. 7	14. 7¼	W.	W.S.W.		22½
14. 8½	14. 9	W.S.W.	W.N.W.	45	
14. 9¼	14. 9¼	W.N.W.	S.E.	202½	
14. 9½	14. 10	S.E.	W.N.W.	157½	
14. 19	14. 19½	W.N.W.	E.S.E.	180	
14. 21¼	14. 22	E.S.E.	S.	67½	
15. 4¾	15. 5	S.	N.E.		135
15. 6¾	15. 7	N.E.	E.	45	
15. 9	15. 9¼	E.	E.N.E.		22½
15. 15¾	15. 16½	E.N.E.	E.S.E.	45	
15. 19½	15. 21½	E.S.E.	E.N.E.		45
16. 1	16. 2	E.N.E.	N.E.		22½
16. 5	16. 6	N.E.	N.N.E.		22½
16. 8½	16. 9	N.N.E.	N.E.	22½	
16. 17½	16. 18	N.E.	N.N.E.		22½
17. 12	17. 12¼	N.N.E.	N.E.	22½	
17. 13¾	17. 14	N.E.	E.N.E.	22½	
17. 17	17. 18	E.N.E.	N.N.E.		45
18. 8½	18. 9	N.N.E.	N.E.	22½	
18. 11	18. 11½	N.E.	E.N.E.	22½	
18. 14½	18. 15	E.N.E.	N.E.		22½
18. 18½	18. 19	N.E.	N.N.E.		22½
18. 20	18. 20½	N.N.E.	N.E.	22½	
19. 0½	19. 1	N.E.	N.N.E.		22½
19. 9	19. 9½	N.N.E.	N.E.	22½	
20. 7	20. 7¼	N.E.	N.N.E.		22½
20. 10	20. 11	N.N.E.	N.E.	22½	

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

Greenwich Civil Time. From	Greenwich Civil Time. To	Change of Direction. From	Change of Direction. To	Amount of Motion. Direct.	Amount of Motion. Retrograde.
				°	°
May—*cont.*					
d h	d h				
20. 15½	20. 16½	N.E.	E.S.E.	67½	
20. 19¼	20. 21	E.S.E.	N.E.		67½
21. 4	21. 5	N.E.	N.N.E.		22½
21. 6¾	21. 7	N.N.E.	E.N.E.	45	
21. 9½	21. 10	E.N.E.	N.E.		22½
21. 11	21. 11¼	N.E.	E.	45	
21. 20	21. 21	E.	E.N.E.		22½
22. 9½	22. 9¾	E.N.E.	N.E.		22½
22. 12	22. 12¼	N.E.	N.N.E.		22½
23. 6¾	23. 7	N.N.E.	N.		22½
23. 13¾	23. 14	N.	N.N.E.	22½	
23. 23½	24. 0½	N.N.E	N.		22½
24. 19	24. 19¼	N.	N.N.E.	22½	
25. 0½	25. 1	N.N.E.	N.		22½
25. 2¾	25. 4	N.	S.S.W.	202½	
25. 6	25. 6½	S.S.W.	W.S.W.	45	
25. 14¼	25. 14½	W.S.W.	S.S.W.		45
25. 16½	25. 17	S.S.W.	W.S.W.	45	
25. 20	25. 20½	W.S.W.	S.W.		22½
26. 21	26. 22	S.W.	S.		45
27. 1	27. 2	S.	S.S.E.		22½
27. 8¼	27. 8½	S.S.E.	S.E.		22½
27. 9½	27. 10¼	S.E.	S.	45	
27. 11¾	27. 12	S.	S.S.W.	22½	
27. 15¾	27. 16	S.S.W.	S.		22½
27. 18	27. 18½	S.	S.S.E.		22½
27. 22	27. 22½	S.S.E.	S.S.W.	45	
28. 2¼	28. 2½	S.S.W.	S.S.E.		45
28. 4	28. 4½	S.S.E.	S.E.		22½
28. 6½	28. 8¼	S.E.	S.S.W.	67½	
28. 10¼	28. 10½	S.S.W.	S.W.	22½	
29. 13	29. 13½	S.W.	S.S.W.		22½
29. 15	29. 15¼	S.S.W.	S.W.	22½	
29. 21	29. 22½	S.W.	S.		45
30. 2	30. 2¼	S.	S.S.W.	22½	
30. 7½	30. 8	S.S.W.	S.W.	22½	
30. 17	30. 19	S.W.	E.		135
30. 19½	30. 19¾	E.	S.W.	135	
30. 20½	30. 21	S.W.	W.	45	
30. 22	30. 22½	W.	S.		90
30. 23¾	31. 0	S.	S.W.	45	
31. 14½	31. 17	S.W.	E.N.E.		157½
			Sums	3217½	2362½
June.					
1. 2	1. 2¼	E.N.E.	N.E.		22½
1. 3½	1. 4½	N.E.	N.E.	360	
1. 7½	1. 8	N.E.	E.	45	
1. 11½	1. 12	E.	S.E.	45	
1. 13¾	1. 14	S.E.	S.W.	90	
1. 16½	1. 17	S.W.	W.S.W.	22½	
2. 11	2. 11½	W.S.W.	W.	22½	
2. 12¼	2. 12½	W.	N.	90	

Greenwich Civil Time. From	Greenwich Civil Time. To	Change of Direction. From	Change of Direction. To	Amount of Motion. Direct.	Amount of Motion. Retrograde.
				°	°
June—*cont.*					
d h	d h				
2. 17½	2. 18½	N.	N.N.W.		22½
2. 23¾	3. 0	N.N.W.	W.S.W.		90
3. 2½	3. 3	W.S.W.	N.N.W.	90	
3. 5	3. 5¼	N.N.W.	W.S.W.		90
3. 6½	3. 7	W.S.W.	N.	112½	
3. 11	3. 12	N.	N.N.E.	22½	
3. 12¼	3. 12½	N.N.E.	N.E.	22½	
3. 13¾	3. 14	N.E.	N.N.E.		22½
4. 22	4. 23	N.N.E.	N.E.	22½	
5. 5	5. 5½	N.E.	N.N.E.		22½
5. 11	5. 11½	N.N.E.	N.E.	22½	
5. 15	5 15½	N.E.	N.N.E.		22½
5. 20¾	5. 21½	N.N.E.	S.W.	202½	
5. 22¾	5. 23	S.W.	W.S.W.	22½	
6. 7	6. 7½	W.S.W.	N.E.	157½	
6. 10½	6. 10¾	N.E.	E.S.E.	67½	
6. 11¼	6. 11½	E.S.E.	N.E.		67½
6. 14½	6. 14¾	N.E.	S.	135	
6. 19¼	6. 19½	S.	N.		180
6. 20½	6. 20¾	N.	N.E.	45	
6. 22¼	6. 22½	N.E.	N.N.W.		67½
7. 0	7. 0½	N.N.W.	N.	22½	
7. 6½	7. 7	N.	N.N.E.	22½	
7. 10	7. 10¼	N.N.E.	N.E.	22½	
7. 15	7. 15¼	N.E.	S.E.	90	
7. 23	8. 0	S.E.	E.S.E.		22½
8. 11½	8. 12	E.S.E.	E.		22½
9. 6½	9. 9	E.	N.N.E.		67½
9. 14	9. 14½	N.N.E.	N.		22½
9. 16	9. 16½	N.	N.N.E.	22½	
9. 22	9. 22½	N.N.E.	N.		22½
10. 9½	10. 9¾	N.	N.N.E.	22½	
10. 12¼	10. 12½	N.N.E.	N.E.	22½	
10. 15¼	10. 15½	N.E.	S.W.		180
10. 16¾	10. 17	S.W.	N.E.		180
10. 17½	10. 17¾	N.E.	E.	45	
10. 18¾	10. 19	E.	S.E.	45	
10. 23	10. 23½	S.E.	S.S.E.	22½	
11. 2¼	11. 2½	S.S.E.	S.W.	67½	
11. 5½	11. 5¾	S.W.	S.S.E.		67½
11. 6¾	11. 7½	S.S.E.	W.S.W.	90	
11. 16½	11. 17	W.S.W.	S.W.		22½
11. 19¾	11. 20	S.W.	S.S.W.		22½
12. 5½	12. 5¾	S.S.W.	N.N.E.		180
12. 6½	12. 6¾	N.N.E.	S.S.W.	180	
12. 7½	12. 8	S.S.W.	S.W.	22½	
12. 16	12. 16½	S.W.	S.S.W.		22½
12. 19¾	12. 20	S.S.W.	S.E.		67½
12. 20½	12. 20¾	S.E.	E.S.E.		22½
13. 1	13. 1¼	E.S.E.	N.E.		67½
13. 3	13. 3¾	N.E.	E.S.E.	67½	
13. 5½	13. 5¾	E.S.E.	E.N.E.		45
13. 6½	13. 8¼	E.N.E.	S.E.	67½	
13. 12	13. 12¼	S.E	S.S.E.	22½	
13. 16	13. 17	S.S.E.	S.	22½	
14. 2	14. 2½	S.	W.S.W.	67½	
14. 5¾	14. 6¼	W.S.W.	W.	22½	
14. 6¾	14. 7	W.	W.N.W.	22½	
14. 16½	14. 17	W.N.W.	N.W.	22½	

Greenwich Civil Time. From	Greenwich Civil Time. To	Change of Direction. From	Change of Direction. To	Amount of Motion. Direct.	Amount of Motion. Retrograde.
				°	°
June—*cont.*					
d h	d h				
14. 18¼	14. 18½	N.W.	N.N.W.	22½	
14. 22½	14. 23	N.N.W.	N.	22½	
15. 0¼	15. 0½	N.	W.S.W.		112½
15. 7	15. 7¾	W.S.W.	S.E.		112½
15. 8¾	15. 9	S.E.	S.W.	90	
15. 11¾	15. 12	S.W.	W.S.W.	22½	
15. 17	15. 17¼	W.S.W.	S.W.		22½
16. 10½	16. 11½	S.W.	W.	45	
16. 15¾	16. 16	W.	W.N.W.	22½	
16. 21¼	16. 21¾	W.N.W.	W.		22½
16. 23¾	17. 0	W.	W.S.W.		22½
17. 7	17. 8	W.S.W.	W.N.W.	45	
17. 15¾	17. 16	W.N.W.	W.		22½
17. 18¼	17. 18½	W.	W.S.W.		22½
17. 22	17. 22½	W.S.W.	S.S.W.		45
17. 23¼	17. 23½	S.S.W.	S.W.	22½	
18. 1	18. 1½	S.W.	S.S.W.		22½
18. 2½	18. 3	S.S.W.	S.W.	22½	
18. 11½	18. 12	S.W.	W.S.W.	22½	
18. 16¼	18. 16¾	W.S.W.	N.W.	67½	
18. 22	18. 22½	N.W.	W.N.W.		22½
19. 6	19. 7	W.N.W.	N.W.	22½	
19. 15	19. 15½	N.W.	W.		45
19. 17¾	19. 18	W.	W.S.W.		22½
19. 21½	19. 23	W.S.W.	S.S.W.		45
20. 0	20. 5	S.S.W.	W.	67½	
20. 9	20. 10½	W.	N.W.	45	
20. 13½	20. 14	N.W.	N.N.W.	22½	
21. 0	21. 0½	N.N.W.	W.S.W.		90
21. 4¼	21. 4¾	W.S.W.	S.S.W.		45
21. 7	21. 7¼	S.S.W.	W.S.W.	45	
21. 12	21. 12¼	W.S.W.	W.	22½	
21. 22¾	21. 23	W.	W.N.W.	22½	
22. 2	22. 2¼	W.N.W.	W.S.W.		45
22. 3¼	22. 3½	W.S.W.	W.	22½	
22. 6	22. 8	W.	S.W.		45
22. 18	22. 18¼	S.W.	S.S.W.		22½
22. 21	22. 21¼	S.S.W.	S.		22½
22. 23½	22. 23¾	S.	S.E.		45
23. 3	23. 3½	S.E.	S.S.E.	22½	
23. 4½	23. 4¾	S.S.E.	N.E.		112½
23. 5½	23. 6½	N.E.	S.S.E.	112½	
23. 11	23. 11½	S.S.E.	S.E.		22½
23. 17	23. 18	S.E.	S.S.E.	22½	
24. 1	24. 1¼	S.S.E.	E.N.E.		90
24. 2¼	24. 2½	E.N.E.	S.S.E.	90	
24. 3¾	24. 4	S.S.E.	N.E.		112½
24. 5	24. 5½	N.E.	W.		135
24. 7	24. 7¼	W.	W.S.W.		22½
24. 9¾	24. 10	W.S.W.	N.N.W.	90	
24. 10¾	24. 12	N.N.W.	S.S.W.	225	
24. 13¾	24. 15½	S.S.W.	E.N.E.	225	
24. 16½	24. 17	E.N.E.	N.E.		22½
24. 20¾	24. 21¼	N.E.	N.N.E.		22½
25. 0½	25. 1½	N.N.E.	N.		22½
25. 5	25. 6	N.	N.E.	45	
25. 10	25. 11	N.E.	E.N.E.	22½	
25. 17¼	25. 17½	E.N.E.	E.	22½	
25. 22½	25. 22¾	E.	N.E.		45

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

Greenwich Civil Time.		Change of Direction.		Amount of Motion.	
From	To	From	To	Direct.	Retrograde.
				°	°
June—*cont.*					
d h	d h				
26. 6	26. 7	N.E.	E.N.E.	22½	
26. 12	26. 12¼	E.N.E.	E.	22½	
26. 14	26. 14¼	E.	E.N.E.		22½
27. 12	27. 12¼	E.N.E.	E.	22½	
27. 14¾	27. 15	E.	E.N.E.		22½
27. 16½	27. 16¾	E.N.E.	E.	22½	
27. 18	27. 19	E.	S.S.E.	67½	
27. 20½	27. 21	S.S.E.	S.E.		22½
28. 2½	28. 2¾	S.E.	E.S.E.		22½
28. 3¾	28. 4	E.S.E.	S.E.	22½	
28. 5¼	28. 5½	S.E.	S.	45	
28. 6¼	28. 6½	S.	W.S.W.	67½	
28. 13	28. 13¼	W.S.W.	S.S.W.		45
28. 17	28. 18½	S.S.W.	S.E.		67½
28. 21½	28. 22	S.E.	E.N.E.		67½
29. 0½	29. 1	E.N.E.	E.	22½	
29. 2½	29. 3¼	E.	E.S.E.	22½	
29. 3¾	29. 4½	E.S.E.	S.	67½	
29. 7¼	29. 7½	S.	S.W.	45	
29. 21	29. 22	S.W.	W.S.W.	22½	
30. 8½	30. 9	W.S.W.	S.W.		22½
30. 11¾	30. 12½	S.W.	N.E.		180
30. 16	30. 17	N.E.	S.E.	90	
30. 18	30. 19	S.E.	N.N.W.	202½	
30. 20	30. 21¾	N.N.W.	S.S.W.	225	
30. 22¼	30. 22½	S.S.W.	N.N.E.		180
			Sums	5152½	3757½
July.					
1. 0¾	1. 1	N.N.E.	S.	157½	
1. 1½	1. 2¼	S.	N.E.	225	
1. 2¾	1. 3	N.E.	S.S.E.	112½	
1. 4¾	1. 7	S.S.E.	N.	202½	
1. 10	1. 10¼	N.	N.N.E.	22½	
1. 13¾	1. 14	N.N.E.	N.E.	22½	
1. 15	1. 15½	N.E.	N.		405
1. 19¾	1. 20	N.	N.N.E.	22½	
2. 9	2. 10	N.N.E.	N.E.	22½	
2. 11¾	2. 13	N.E.	S.S.E.	112½	
2. 21½	2. 21¾	S.S.E.	S.	22½	
2. 22½	3. 1	S.	W.S.W.	67½	
3. 6½	3. 7	W.S.W.	W.	22½	
3. 13	3. 13¼	W.	W.N.W.	22½	
3. 14½	3. 14¾	W.N.W.	N.W.	22½	
3. 16½	3. 16¾	N.W.	N.N.W.	22½	
3. 19	3. 19½	N.N.W.	N.W.		22½
3. 21½	3. 22	N.W.	W.		45
4. 1½	4. 2½	W.	W.S.W.		22½
4. 5	4. 7	W.S.W.	N.W.	67½	
4. 14¼	4. 14½	N.W.	N.N.W.	22½	
4. 19	4. 19½	N.N.W.	N.	22½	
4. 22	4. 22¾	N.	W.S.W.		112½
5. 1¾	5. 2	W.S.W.	S.W.		22½

Greenwich Civil Time.		Change of Direction.		Amount of Motion.	
From	To	From	To	Direct.	Retrograde.
				°	°
July—*cont.*					
d h	d h				
5. 5	5. 5¼	S.W.	W.S.W.	22½	
5. 16	5. 17	W.S.W.	S.W.		22½
6. 6	6. 6½	S.W.	W.S.W.	22½	
6. 13¾	6. 14	W.S.W.	W.	22½	
6. 22	6. 22¾	W.	W.S.W.		22½
7. 4½	7. 5	W.S.W.	W.	22½	
7. 7	7. 7¼	W.	W.N.W.	22½	
7. 11	7. 12	W.N.W.	W.		22½
7. 14¾	7. 15	W.	W.N.W.	22½	
7. 16¾	7. 17	W.N.W.	N.W.	22½	
7. 19	7. 19¼	N.W.	N.N.W.	22½	
7. 23¾	8. 0¼	N.N.W.	W.S.W.		90
8. 4½	8. 5¼	W.S.W.	S.W.		22½
8. 6½	8. 6¾	S.W.	S.		45
8. 8	8. 8¼	S.	S.W.	45	
8. 20½	8. 21	S.W.	W.S.W.	22½	
9. 17½	9. 18¼	W.S.W.	W.N.W.	45	
9. 20	9. 22	W.N.W.	W.S.W.		45
10. 4¾	10. 5	W.S.W.	N.	112½	
10. 14	10. 14¼	N.	N.E.	45	
10. 18	10. 18¼	N.E.	E.S.E.	67½	
11. 2	11. 2½	E.S.E.	E.N.E.		45
12. 20¾	12. 21	E.N.E.	N.E.		22½
13. 0	13. 0½	N.E.	N.N.E.		22½
13. 5	13. 9	N.N.E.	E.	67½	
13. 19	13. 20	E.	E.N.E.		22½
14. 0	14. 1	E.N.E.	N.E.		22½
14. 6	14. 6½	N.E.	E.N.E.	22½	
14. 10½	14. 10¾	E.N.E.	E.	22½	
14. 22½	15. 0½	E.	N.E.		45
15. 10	15. 10½	N.E.	N.N.E.		22½
15. 20¼	15. 20½	N.N.E.	N.E.	22½	
16. 0¼	16. 0½	N.E.	W.S.W.	202½	
16. 1¼	16. 1½	W.S.W.	N.E.	157½	
16. 4	16. 5	N.E.	N.N.E.		22½
16. 15½	16. 16	N.N.E.	N.E.	22½	
16. 18¼	16. 18½	N.E.	S.E.	90	
16. 19¾	16. 20	S.E.	E.S.E.		22½
16. 20½	16. 20¾	E.S.E.	S.S.W.	90	
16. 22¾	17. 2	S.S.W.	W.	67½	
17. 9	17. 9½	W.	N.N.E.	112½	
17. 16	17. 17	N.N.E.	N.E.	22½	
19. 10½	19. 12	N.E.	E.	45	
19. 20	19. 21	E.	W.S.W.	157½	
20. 19	20. 19½	W.S.W.	W.	22½	
20. 21	20. 22½	W.	W.S.W.		22½
21. 0	21. 0¼	W.S.W.	N.E.	157½	
21. 2	21. 2½	N.E.	S.S.E.	112½	
21. 3	21. 3½	S.S.E.	W.		247½
21. 4	21. 5	W.	W.S.W.		22½
21. 12	21. 12¼	W.S.W.	N.N.E.	135	
21. 12½	21. 13¼	N.N.E.	W.S.W.		135
21. 19¼	21. 19½	W.S.W.	N.N.W.	90	
21. 21	21. 21¾	N.N.W.	W.S.W.		90
22. 4	22. 5	W.S.W.	N.W.	67½	
22. 10	22. 10¼	N.W.	N.N.W.	22½	
22. 12	22. 12¼	N.N.W.	W.N.W.		45
22. 12¾	22. 13	W.N.W.	N.W.	22½	
22. 16½	22. 17	N.W.	W.		45

Greenwich Civil Time.		Change of Direction.		Amount of Motion.	
From	To	From	To	Direct.	Retrograde
				°	°
July—*cont.*					
d h	d h				
22. 22	22. 22¼	W.	W.N.W.	22½	
23. 9½	23. 9¾	W.N.W.	W.		22½
23. 19	23. 21	W.	S.W.		45
24. 8	24. 8½	S.W.	S.S.W.		22½
24. 19¼	24. 19½	S.S.W.	S.S.E.		45
25. 1	25. 2	S.S.E.	W.S.W.	90	
25. 10½	25. 11	W.S.W.	S.W.		22½
25. 14½	25. 15	S.W.	W.S.W.	22½	
25. 16	25. 16½	W.S.W.	S.W.		22½
26. 5¾	26. 6	S.W.	W.S.W.	22½	
26. 15	26. 15½	W.S.W.	S.W.		22½
27. 3	27. 4	S.W.	W.S.W.	22½	
27. 8¼	27. 8½	W.S.W.	N.W.	67½	
27. 11	27. 11¼	N.W.	N.N.W.	22½	
27. 17	27. 17½	N.N.W.	N.W.		22½
27. 20	27. 22	N.W.	W.		45
28. 0½	28. 1	W.	W.S.W.		22½
28. 2	28. 3	W.S.W.	S.W.		22½
28. 4½	28. 7	S.W.	W.	45	
28. 20½	28. 22	W.	N.N.W.	67½	
29. 0½	29. 0¾	N.N.W.	S.W.		112½
29. 9	29. 9½	S.W.	N.N.W.	112½	
29. 14	29. 14½	N.N.W.	N.	22½	
29. 16	29. 17	N.	S.		180
29. 18¾	29. 19	S.	S.S.E.		22½
29. 20¾	29. 21¼	S.S.E.	S.	22½	
29. 23½	29. 23¾	S.	W.N.W.	112½	
30. 1¾	30. 2	W.N.W.	N.	67½	
30. 13	30. 13¼	N.	N.N.E.	22½	
30. 16	30. 16½	N.N.E.	E.	67½	
30. 20	30. 21	E.	S.E.	45	
30. 23	31. 0	S.E.	E.		45
31. 1¼	31. 2	E.	N.		90
31. 4	31. 4½	N.	N.N.E.	22½	
31. 12	31. 12½	N.N.E.	N.E.	22½	
31. 16½	31. 16¾	N.E.	E.S.E.	67½	
31. 22¾	31. 23	E.S.E.	N.E.		67½
			Sums	4410	2587½
August.					
1. 0	1. 1	N.E.	N.N.E.		22½
1. 14	1. 17	N.N.E.	E.S.E.	90	
1. 21¾	1. 22	E.S.E.	E.N.E.		45
1. 23½	2. 0	E.N.E.	N.E.		22½
2. 3	2. 3½	N.E.	N.N.E.		22½
2. 9	2. 10	N.N.E.	N.		22½
2. 12	2. 12½	N.	N.N.E.	22½	
2. 17	2. 17¼	N.N.E.	E.S.E.	90	
2. 23¾	3. 0	E.S.E.	E.		22½
3. 3½	3. 4	E.	E.N.E.		22½
3. 5	3. 6	E.N.E.	N.E.		22½
3. 8½	3. 8¾	N.E.	E.N.E.	22½	
3. 11½	3. 12	E.N.E.	E.	22½	

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

Greenwich Civil Time. From	Greenwich Civil Time. To	Change of Direction. From	Change of Direction. To	Amount of Motion. Direct.	Amount of Motion. Retrograde.
				°	°
Aug.—*cont.*					
d h	d h				
3. 14	3. 14¼	E.	E.S.E.	22½	
3. 21	3. 21½	E.S.E.	E.		22½
5. 6	5. 8	E.	S.E.	45	
5. 12	5. 15	S.E.	W.S.W.	112½	
5. 23½	6. 0	W.S.W.	S.W.		22½
6. 11¾	6. 12	S.W.	S.S.W.		22½
7. 1	7. 2	S.S.W.	S.W.	22½	
7. 18	7. 19	S.W.	S.S.W.		22½
7. 21	7. 22½	S.S.W.	S.E.		67½
8. 4	8. 4¼	S.E.	S.S.E.	22½	
8. 10½	8. 11	S.S.E.	S.E.		22½
8. 12	8. 13¼	S.E.	W.S.W.	112½	
8. 21	8. 22¼	W.S.W.	W.N.W.	45	
9. 2	9. 3	W.N.W.	W.		22½
9. 17½	9. 18	W.	W.N.W.	22½	
9. 20	9. 20½	W.N.W.	W.S.W.		45
10. 15	10. 15¼	W.S.W.	S.W.		22½
11. 3	11. 4	S.W.	S.S.W.		22½
11. 6¾	11. 7	S.S.W.	S.W.	22½	
11. 19	11. 19½	S.W.	W.S.W.	22½	
11. 21	11. 21½	W.S.W.	N.W.	67½	
11. 23½	12. 1½	N.W.	W.S.W.		67½
12. 5¾	12. 6	W.S.W.	W.	22½	
12. 18	12. 18½	W.	W.N.W.	22½	
12. 19½	12. 23	W.N.W.	S.W.		67½
13. 3¾	13. 4	S.W.	S.S.W.		22½
13. 6½	13. 7	S.S.W.	S.W.	22½	
13. 18	13. 19¼	S.W.	S.		45
13. 21½	13. 23½	S.	S.W.	45	
14. 2	14. 3	S.W.	W.S.W.	22½	
14. 13	14. 13½	W.S.W.	S.W.		22½
14. 23¾	15. 0	S.W.	S.S.W.		22½
15. 2¾	15. 3	S.S.W.	S.		22½
15. 15	15. 16	S.	S.E.		45
15. 18¼	15. 18½	S.E.	E.N.E.		67½
15. 19	15. 19¼	E.N.E.	E.S.E.	45	
15. 21¼	15. 22¼	E.S.E.	N.		112½
16. 0¾	16. 1	N.	W.		90
16. 2½	16. 3	W.	W.S.W.		22½
16. 7	16. 7½	W.S.W.	W.	22½	
16. 15	16. 15½	W.	W.S.W.		22½
16. 18	16. 18½	W.S.W.	S.W.		22½
17. 3	17. 4	S.W.	S.S.W.		22½
17. 6	17. 6¼	S.S.W.	S.W.	22½	
18. 5¾	18. 6	S.W.	W.S.W.	22½	
18. 10½	18. 11½	W.S.W.	S.W.		22½
18. 15¼	18. 16	S.W.	W.S.W.	22½	
18. 21¾	18. 22	W.S.W.	S.W.		22½
19. 0	19. 0½	S.W.	W.S.W.	22½	
19. 3¼	19. 5	W.S.W.	W.N.W.	45	
19. 8½	19. 8¾	W.N.W.	N.W.	22½	
19. 10¾	19. 11½	N.W.	W.		45
19. 15	19. 15¾	W.	W.S.W.		22½
19. 19	19. 20	W.S.W.	S.W.		22½
20. 3¼	20. 3½	S.W.	S.S.W.		22½
20. 6	20. 7	S.S.W.	S.W.	22½	
20. 9½	20. 10	S.W.	S.S.W.		22½
20. 11	20. 11½	S.S.W.	S.W.	22½	
20. 20	20. 21	S.W.	W.S.W.	22½	
Aug.—*cont.*					
22. 16	22. 16½	W.S.W.	W.	22½	
22. 18¼	22. 19	W.	W.S.W.		22½
23. 12	23. 12¼	W.S.W.	W.	22½	
23. 14	23. 14½	W.	W.S.W.		22½
23. 17½	23. 19	W.S.W.	S.W.		22½
23. 23	24. 0	S.W.	S.		45
24. 7	24. 8	S.	S.S.E.		22½
24. 11	24. 12	S.S.E.	S.S.W.	45	
24. 14	24. 15	S.S.W.	S.W.	22½	
24. 17¾	24. 18	S.W.	S.S.W.		22½
24. 20	24. 20½	S.S.W.	S.S.E.		45
25. 1¼	25. 1½	S.S.E.	S.E.		22½
25. 2¾	25. 3	S.E.	S.S.E.	22½	
25. 4½	25. 4¾	S.S.E.	N.E.		112½
25. 6	25. 7	N.E.	N.		45
25. 8	25. 8¼	N.	N.N.E.	22½	
25. 10¾	25. 11	N.N.E.	W.S.W.	225	
25. 12	25. 12½	W.S.W.	W.N.W.	45	
25. 13¼	25. 13½	W.N.W.	W.S.W.		45
25. 14½	25. 14¾	W.S.W.	N.N.W.	90	
25. 15¼	25. 15½	N.N.W.	N.	22½	
25. 16½	25. 16¾	N.	N.E.	45	
25. 17¾	25. 18½	N.E.	S.S.W.	157½	
26. 1½	26. 2	S.S.W.	S.W.	22½	
26. 6	26. 8	S.W.	S.S.W.		22½
26. 9¾	26. 10	S.S.W.	S.		22½
26. 12	26. 12¼	S.	S.S.E.		22½
26. 23¼	26. 23½	S.S.E.	W.S.W.	90	
27. 0	27. 0½	W.S.W.	W.	22½	
27. 5	27. 6	W.	W.S.W.		22½
27. 17	27. 17½	W.S.W.	S.W.		22½
27. 22½	27. 22¾	S.W.	S.S.W.		22½
28. 1	28. 2	S.S.W.	S.W.	22½	
28. 3¾	28. 4	S.W.	S.		45
28. 5	28. 5½	S.	S.S.W.	22½	
28. 7¼	28. 7¾	S.S.W.	S.W.	22½	
29. 3	29. 3½	S.W.	S.S.W.		22½
29. 7	29. 8	S.S.W.	S.W.	22½	
29. 11¾	29. 12	S.W.	S.S.W.		22½
29. 17	29. 17¼	S.S.W.	S.		22½
29. 23	30. 0	S.	S.S.W.	22½	
30. 6¾	30. 7¼	S.S.W.	S.W.	22½	
30. 20	30. 22½	S.W.	S.S.E.		67½
31. 0½	31. 0¾	S.S.E.	S.W.	67½	
31. 6	31. 7	S.W.	W.S.W.	22½	
31. 18	31. 18½	W.S.W.	S.W.		22½
			Sums	2295	2115
September.					
1. 12	1. 14	S.W.	S.		45
1. 15½	1. 16	S.	S.S.E.		22½
1. 19	1. 21	S.S.E.	S.W.	67½	
2. 18½	2. 19	S.W.	N.W.	90	
Sept.—*cont.*					
2. 19¼	2. 20	N.W.	S.W.		90
2. 21	2. 22	S.W.	W.S.W.	22½	
2. 23½	3. 0¼	W.S.W.	N.W.	67½	
3. 21	3. 22½	N.W.	W.S.W.		67½
4. 23¼	5. 0	W.S.W.	S.W.		22½
5. 5	5. 7	S.W.	S.S.W.		22½
5. 11¾	5. 12	S.S.W.	S.W.	22½	
5. 22	6. 1	S.W.	W.N.W.	67½	
6. 2¼	6. 2½	W.N.W.	W.		22½
6. 4	6. 5	W.	W.S.W.		22½
6. 15	6. 15½	W.S.W.	W.N.W.	45	
6. 17¼	6. 17½	W.N.W.	W.		22½
6. 19	6. 20	W.	N.N.W.	67½	
6. 20½	6. 22¼	N.N.W.	W.S.W.		90
7. 4	7. 4½	W.S.W.	S.W.		22½
7. 8	7. 8¼	S.W.	S.		45
7. 9¼	7. 9½	S.	N.N.E.		157½
7. 9¾	7. 10	N.N.E.	E.N.E.	45	
7. 10½	7. 11½	E.N.E.	W.S.W.		180
7. 12	7. 15	W.S.W.	E.	202½	
7. 16	7. 16½	E.	N.		90
7. 17	7. 19¼	N.	S.S.E.	157½	
7. 20¾	7. 21½	S.S.E.	S.	22½	
7. 22½	8. 0	S.	W.S.W.	67½	
8. 3½	8. 3¾	W.S.W.	N.N.W.	90	
8. 6	8. 6½	N.N.W.	N.	22½	
8. 9	8. 10	N.	N.E.	45	
8. 12¾	8. 13¼	N.E.	S.E.	90	
8. 14½	8. 14¾	S.E.	E.		45
8. 16	8. 19½	E.	S.S.E.	67½	
8. 22	9. 0	S.S.E.	E.		67½
9. 6¼	9. 7	E.	E.N.E.		22½
9. 17¼	9. 17½	E.N.E.	N.E.		22½
9. 22¼	9. 23	N.E.	N.N.E.		22½
10. 5	10. 5½	N.N.E.	N.		22½
10. 8¼	10. 8½	N.	N.N.E.	22½	
10. 11¾	10. 12	N.N.E.	N.E.	22½	
10. 20	10. 21	N.E.	N.N.E.		22½
11. 4½	11. 4¾	N.N.E.	N.E.	22½	
11. 9½	11. 10	N.E.	E.N.E.	22½	
11. 16	11. 16¼	E.N.E.	E.	22½	
11. 17	11. 17¼	E.	E.S.E.	22½	
11. 19½	11. 20	E.S.E.	E.		22½
12. 0½	12. 0¾	E.	N.N.E.		67½
12. 6½	12. 6¾	N.N.E.	N.N.W.		45
12. 7½	12. 7¾	N.N.W.	E.S.E.	135	
12. 9¼	12. 9½	E.S.E.	N.E.		67½
12. 11½	12. 12	N.E.	N.N.E.		22½
12. 16	12. 16¼	N.N.E.	N.E.	22½	
13. 1	13. 1¼	N.E.	N.N.E.		22½
13. 3¼	13. 3½	N.N.E.	W.N.W.		90
13. 4½	13. 5	W.N.W.	W.S.W.		45
13. 5½	13. 6¼	W.S.W.	W.	22½	
13. 7	13. 8	W.	S.S.E.		112½
13. 9½	13. 9¾	S.S.E.	W.S.W.	90	
13. 11¼	13. 11½	W.S.W.	N.N.E.	135	
13. 12½	13. 13	N.N.E.	N.E.	22½	
13. 15	13. 16	N.E.	N.N.E.		22½
13. 19	13. 20¼	N.N.E.	N.E.	22½	

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

Greenwich Civil Time. From	Greenwich Civil Time. To	Change of Direction. From	Change of Direction. To	Amount of Motion. Direct.	Amount of Motion. Retrograde.
				°	°
Sept.—*cont.*					
d h	d h				
14.15½	14.15¾	N.E.	N.N.E.		22½
14.22	14.22½	N.N.E.	N.E.	22½	
15.0¾	15.1	N.E.	N.N.E.		22½
15.7½	15.8	N.N.E.	N.		22½
15.12	15.12¼	N.	N.N.E.	22½	
15.13	15.14	N.N.E.	W.	247½	
15.21¾	15.22	W.	W.S.W.		22½
15.23	16.0	W.S.W.	W.	22½	
16.1	16.3	W.	N.N.W.	67½	
16.8¾	16.9	N.N.W.	N.	22½	
16.11½	16.12¼	N.	N.N.W.		22½
16.18	16.19	N.N.W.	N.	22½	
16.22	16.23	N.	N.W.		45
16.23¾	17.2½	N.W.	W.S.W.		67½
17.7½	17.8	W.S.W.	W.	22½	
17.16	17.16¼	W.	N.W.	45	
17.17	17.18	N.W.	W.S.W.		67½
18.1	18.1¾	W.S.W.	W.	22½	
18.3	18.3¼	W.	N.	90	
18.8	18.8¾	N.	N.N.W.		22½
18.10	18.10½	N.N.W.	N.	22½	
18.19	18.19¼	N.	N.N.W.		22½
18.22	19.0	N.N.W.	W.		67½
19.3	19.3½	W.	W.S.W.		22½
19.9	19.9½	W.S.W.	N.N.W.	90	
19.12½	19.13	N.N.W.	N.	22½	
19.16	19.17	N.	N.N.W.		22½
19.18½	19.19	N.N.W.	N.W.		22½
19.21	19.21¾	N.W.	W.S.W.		67½
19.22	19.23½	W.S.W.	N.N.W.	90	
20.2½	20.4½	N.N.W.	N.N.E.	45	
20.6	20.6½	N.N.E.	N.		22½
20.11¼	20.11½	N.	N.N.W.		22½
20.14¾	20.15	N.N.W.	W.N.W.		45
20.19	20.20½	W.N.W.	W.S.W.		45
21.12	21.12¼	W.S.W.	W.N.W.	45	
21.13¼	21.13½	W.N.W.	N.W.	22½	
21.14	21.14¼	N.W.	N.N.W.	22½	
21.18¾	21.19	N.N.W.	N.W.		22½
21.22¼	21.22¾	N.W.	W.		45
22.0	22.1	W.	W.S.W.		22½
22.18¾	22.19	W.S.W.	S.W.		22½
22.22	22.22¾	S.W.	W.S.W.	22½	
23.11¼	23.11½	W.S.W.	S.W.		22½
25.1	25.1½	S.W.	W.S.W.	22½	
25.2¾	25.3	W.S.W.	W.	22½	
25.4	25.4¼	W.	N.W.	45	
25.4¾	25.5	N.W.	W.N.W.		22½
25.7¾	25.8	W.N.W.	N.N.E.	90	
25.9¼	25.9½	N.N.E.	S.S.E.	135	
25.11	25.11¼	S.S.E.	S.	22½	
25.12	25.12¼	S.	S.S.W.	22½	
25.14½	25.15	S.S.W.	S.W.	22½	
26.12	26.12½	S.W.	W.S.W.	22½	
27.15½	27.15¾	W.S.W.	E.S.E.		135
28.0	28.2	E.S.E.	E.N.E.		45
28.4	28.5	E.N.E.	E.S.E.	45	
28.18¼	28.19	E.S.E.	S.S.E.	45	
29.1¾	29.2	S.S.E.	S.S.W.	45	

Greenwich Civil Time. From	Greenwich Civil Time. To	Change of Direction. From	Change of Direction. To	Amount of Motion. Direct.	Amount of Motion. Retrograde.
				°	°
Sept.—*cont.*					
d h	d h				
29.3¾	29.4	S.S.W.	E.S.E.		90
29.4½	29.4¾	E.S.E.	S.S.E.	45	
29.5½	29.5¾	S.S.E.	W.S.W.	90	
29.6½	29.6¾	W.S.W.	S.E.		112½
29.8½	29.11	S.E.	S.S.W.	67½	
29.13	29.14	S.S.W.	S.W.	22½	
29.16	29.16½	S.W.	S.		45
29.20	29.20¼	S.	S.W.	45	
29.20¾	29.21	S.W.	S.		45
29.21½	29.21¾	S.	S.W.	45	
30.0¾	30.1¾	S.W.	W.N.W.	67½	
30.3¾	30.4½	W.N.W.	W.S.W.		45
30.11	30.11¼	W.S.W.	S.S.W.		45
30.12	30.12¼	S.S.W.	N.N.E.		180
30.15	30.15¼	N.N.E.	E.	67½	
30.19	30.19¼	E.	N.E.		45
30.20¾	30.21	N.E.	N.N.E.		22½
			Sums	3825	3307½
October.					
1.0¼	1.0½	N.N.E.	N.		22½
1.4	1.4½	N.	N.N.E.	22½	
1.8¼	1.8½	N.N.E.	N.		22½
1.13	1.13½	N.	N.N.E.	22½	
1.15	1.15½	N.N.E.	N.		22½
1.18	1.18¼	N.	N.N.E.	22½	
2.0	2.1	N.N.E.	N.		22½
2.6¾	2.7	N.	S.W.		135
2.8	2.8¼	S.W.	W.S.W.	22½	
2.9¾	2.10	W.S.W.	W.	22½	
2.11	2.11½	W.	N.	90	
2.12½	2.13½	N.	W.N.W.		67½
2.16	2.16¼	W.N.W.	N.	67½	
2.16¾	2.17	N.	N.N.E.	22½	
2.18¾	2.20	N.N.E.	W.S.W.	225	
3.0½	3.1	W.S.W.	S.W.		22½
3.2½	3.3	S.W.	W.S.W.	22½	
3.5	3.5¾	W.S.W.	W.	22½	
3.6¾	3.7¼	W.	N.N.W.	67½	
4.2	4.3	N.N.W.	N.	22½	
4.16½	4.18	N.	E.N.E.	67½	
4.19	4.19½	E.N.E.	N.E.		22½
5.5½	5.6	N.E.	E.N.E.	22½	
5.10¼	5.10½	E.N.E.	E.	22½	
5.12	5.12¼	E.	E.S.E.	22½	
5.17½	5.18	E.S.E.	E.		22½
5.20¼	5.20½	E.	N.E.		45
5.21¾	5.22	N.E.	E.	45	
5.23¼	5.23½	E.	N.E.		45
6.0½	6.0¾	N.E.	N.N.W.		67½
6.1½	6.1¾	N.N.W.	N.E.	67½	
6.2¼	6.2½	N.E.	N.N.W.		67½
6.2¾	6.3	N.N.W.	S.S.E.	180	

Greenwich Civil Time. From	Greenwich Civil Time. To	Change of Direction. From	Change of Direction. To	Amount of Motion. Direct.	Amount of Motion. Retrograde.
				°	°
Oct.—*cont.*					
d h	d h				
6.3¼	6.3½	S.S.E.	N.N.W.	180	
6.7½	6.8	N.N.W.	E.N.E.	90	
6.11¼	6.11½	E.N.E.	E.	22½	
6.22½	6.22¾	E.	S.S.E.	67½	
6.23¼	6.23½	S.S.E.	N.W.		202½
7.0½	7.0¾	N.W.	S.S.W.		112½
7.1¾	7.2	S.S.W.	W.S.W.	45	
7.2½	7.2¾	W.S.W.	S.W.		22½
7.8	7.8½	S.W.	S.S.W.		22½
7.10¼	7.12¼	S.S.W.	W.S.W.	45	
7.14¾	7.15	W.S.W.	S.W.		22½
7.18	7.18½	S.W.	S.S.W.		22½
8.0	8.1	S.S.W.	S.W.	22½	
8.3½	8.4	S.W.	S.S.W.		22½
8.11¾	8.12	S.S.W.	S.W.	22½	
8.20	8.21	S.W.	W.S.W.	22½	
8.22¾	8.23	W.S.W.	W.	22½	
9.2	9.2½	W.	N.W.	45	
9.7	9.8	N.W.	N.N.W.	22½	
9.14½	9.15	N.N.W.	N.W.		22½
9.16	9.16½	N.W.	N.N.W.	22½	
9.17½	9.18¼	N.N.W.	W.N.W.		45
9.20¼	9.20½	W.N.W.	W.S.W.		45
10.3	10.5	W.S.W.	S.W.		22½
10.12	10.13	S.W.	W.S.W.	22½	
11.7	11.7½	W.S.W.	W.N.W.	45	
11.14¾	11.15	W.N.W.	W.		22½
11.19	11.20	W.	W.N.W.	22½	
11.22	11.22¼	W.N.W.	W.		22½
12.4½	12.5	W.	W.S.W.		22½
12.9	12.10	W.S.W.	N.W.	67½	
12.16	12.16¾	N.W.	W.N.W.		22½
12.19½	12.19¾	W.N.W.	S.W.		67½
12.23	12.23½	S.W.	W.S.W.	22½	
13.1	13.1½	W.S.W.	S.W.		22½
13.10½	13.10¾	S.W.	S.		45
13.11¾	13.12¼	S.	N.	180	
13.16¼	13.16½	N.	S.W.	225	
13.17¾	13.18	S.W.	S.		45
13.20¾	13.21	S.	S.E.		45
14.0½	14.1	S.E.	E.S.E.		22½
14.2	14.2¾	E.S.E.	S.E.	22½	
14.5	14.5½	S.E.	S.S.E.	22½	
14.13½	14.14	S.S.E.	S.	22½	
15.3	15.4	S.	S.S.E.		22½
15.7	15.8½	S.S.E.	S.S.W.	45	
15.13	15.13¼	S.S.W.	S.		22½
15.22	15.23	S.	S.E.		45
15.23½	16.0	S.E.	S.	45	
16.1½	16.2	S.	S.W.	45	
16.3	16.4¼	S.W.	S.		45
16.5	16.6	S.	S.W.	45	
16.18	16.19	S.W.	S.		45
16.20	16.21	S.	S.S.W.	22½	
17.5½	17.6	S.S.W.	S.		22½
17.11¾	17.12	S.	S.S.W.	22½	
18.2¾	18.3	S.S.W.	S.W.	22½	
18.11¾	18.12	S.W.	W.S.W.	22½	
18.16	18.17	W.S.W.	S.W.		22½

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

Greenwich Civil Time. From	Greenwich Civil Time. To	Change of Direction. From	Change of Direction. To	Amount of Motion. Direct.	Amount of Motion. Retrograde.
				°	°
Oct.—*cont.*					
d h	d h				
18. 18½	18. 19	S.W.	S.S.W.		22½
19. 3½	19. 3¾	S.S.W.	S.		22½
19. 4½	19. 5	S.	N.E.		135
19. 7¼	19. 7½	N.E.	E.	45	
19. 12	19. 14	E.	N.	270	
19. 17¼	19. 17½	N.	N.N.E.	22½	
20. 3	20. 4¼	N.N.E.	S.W.		157½
20. 4¾	20. 5	S.W.	S.E.		90
20. 5¾	20. 6	S.E.	S.W.	90	
20. 12½	20. 13	S.W.	N.N.E.	157½	
20. 15	20. 16½	N.N.E.	N.E.	22½	
21. 6¾	21. 7	N.E.	E.	45	
21. 8¼	21. 8½	E.	N.E.		45
21. 11¼	21. 11½	N.E.	E.N.E.	22½	
21. 13¾	21. 14	E.N.E.	E.	22½	
21. 18	21. 18½	E.	E.N.E.		22½
21. 20¼	21. 21	E.N.E.	N.E.		22½
22. 8	22. 8½	N.E.	E.N.E.	22½	
23. 19½	23. 20½	E.N.E.	N.N.E.		45
23. 21½	23. 22½	N.N.E.	N.E.	22½	
24. 6¾	24. 7	N.E.	E.N.E.	22½	
25. 3	25. 4	E.N.E.	E.	22½	
25. 5	25. 6½	E.	N.E.		45
25. 10¼	25. 11½	N.E.	E.S.E.	67½	
25. 12¾	25. 13	E.S.E.	E.		22½
25. 17	25. 18	E.	E.S.E.	22½	
26. 2	26. 3	E.S.E.	S.S.E.	45	
26. 4¾	26. 5¼	S.S.E.	E.S.E.		45
26. 12	26. 13	E.S.E.	E.		22½
27. 6	27. 7	E.	E.	360	
27. 9	27. 9½	E.	N.E.		45
27. 10¾	27. 11	N.E.	E.S.E.	67½	
27. 15¼	27. 15½	E.S.E.	E.N.E.		45
27. 21½	27. 22	E.N.E.	S.E.	67½	
28. 1¾	28. 2	S.E.	E.S.E.		22½
28. 3¾	28. 4	E.S.E.	S.E.	22½	
28. 5	28. 6	S.E.	N.E.		90
28. 13¾	28. 14	N.E.	E.	45	
28. 14¾	28. 15	E.	S.S.E.	67½	
28. 16	28. 18	S.S.E.	E.S.E.		45
29. 2½	29. 3	E.S.E.	N.E.		67½
29. 7½	29. 8¾	N.E.	E.S.E.	67½	
29. 10¼	29. 10½	E.S.E.	S.S.E.	45	
29. 17¼	29. 17½	S.S.E.	E.S.E.		45
29. 22	29. 22¼	E.S.E.	S.S.E.	45	
30. 15¾	30. 16	S.S.E.	S.E.		22½
30. 19¾	30. 20	S.E.	E.N.E.		67½
31. 11¾	31. 12	E.N.E.	E.	22½	
			Sums	4365	2857½

Greenwich Civil Time. From	Greenwich Civil Time. To	Change of Direction. From	Change of Direction. To	Amount of Motion. Direct.	Amount of Motion. Retrograde.
				°	°
November.					
d h	d h				
1. 2	1. 2½	E.	E.N.E.		22½
1. 7½	1. 8½	E.N.E.	N.E.		22½
2. 3	2. 4	N.E.	E.	45	
4. 1¼	4. 2	E.	E.N.E.		22½
4. 11¾	4. 12	E.N.E.	N.E.		22½
4. 21½	4. 21¾	N.E.	S.S.E.	112½	
4. 23	4. 23¼	S.S.E.	N.N.E.		135
5. 3¾	5. 4	N.N.E.	N.		22½
5. 8½	5. 9	N.	N.N.E.	22½	
5. 14	5. 14½	N.N.E.	N.E.	22½	
5. 17¼	5. 17½	N.E.	S.S.W.	157½	
5. 19½	5. 19¾	S.S.W.	N.	157½	
5. 21¼	5. 21¾	N.	S.	180	
5. 22¼	5. 22½	S.	S.S.E.		22½
6. 0¼	6. 0½	S.S.E.	N.N.E.	225	
6. 0¾	6. 1	N.N.E.	S.S.E.	135	
6. 2¾	6. 3	S.S.E.	N.	202½	
6. 17¾	6. 18	N.	N.N.E.	22½	
7. 1	7. 2	N.N.E.	N.E.	22½	
7. 5	7. 6	N.E.	N.N.E.		22½
7. 10	7. 10½	N.N.E.	N.E.	22½	
7. 13	7. 13½	N.E.	E.	45	
7. 16	7. 17	E.	E.S.E.	22½	
7. 22	7. 22¾	E.S.E.	E.		22½
8. 2¾	8. 3	E.	E.S.E.	22½	
9. 7¼	9. 7½	E.S.E.	E.N.E.		45
9. 11½	9. 12	E.N.E.	E.	22½	
10. 7¼	10. 7½	E.	E.S.E.	22½	
10. 13	10. 13¼	E.S.E.	E.		22½
10. 16¾	10. 17	E.	E.S.E.	22½	
10. 23¾	11. 0	E.S.E.	W.N.W.		180
11. 0¾	11. 1	W.N.W.	N.E.	112½	
11. 2	11. 2¼	N.E.	E.S.E.	67½	
11. 4½	11. 4¾	E.S.E.	S.S.W.	90	
11. 9	11. 10	S.S.W.	S.W.	22½	
11. 15	11. 15¼	S.W.	S.S.W.		22½
11. 16½	11. 17	S.S.W.	S.W.	22½	
11. 22	11. 23	S.W.	S.		45
12. 3½	12. 4	S.	S.S.W.	22½	
13. 16	13. 16½	S.S.W.	S.		22½
13. 23	14. 0	S.	S.S.E.		22½
14. 11	14. 11¾	S.S.E.	S.	22½	
14. 15½	14. 16½	S.	S.S.E.		22½
14. 18	14. 18½	S.S.E.	S.	22½	
14. 21	14. 22	S.	S.W.	45	
15. 1½	15. 2	S.W.	N.	135	
15. 5	15. 5¼	N.	N.N.E.	22½	
15. 8	15. 8½	N.N.E.	N.		22½
15. 12	15. 12½	N.	N.N.E.	22½	
15. 19¾	15. 20	N.N.E.	N.E.	22½	
16. 0¾	16. 1½	N.E.	E.N.E.	22½	
16. 5	16. 6	E.N.E.	E.	22½	
16. 9	16. 9¼	E.	E.S.E.	22½	
16. 10¼	16. 11	E.S.E.	S.E.	22½	
16. 21	17. 0	S.E.	S.S.W.	67½	
17. 12	17. 12½	S.S.W.	S.W.	22½	
17. 17½	17. 18	S.W.	S.S.W.		22½
18. 1	18. 2	S.S.W.	S.W.	22½	
18. 8	18. 9	S.W.	W.S.W.	22½	

Greenwich Civil Time. From	Greenwich Civil Time. To	Change of Direction. From	Change of Direction. To	Amount of Motion. Direct.	Amount of Motion. Retrograde.
				°	°
Nov.—*cont.*					
d h	d h				
18. 12¼	18. 12¾	W.S.W.	W.N.W.	45	
18. 13¼	18. 13½	W.N.W.	N.N.W.	45	
18. 14	18. 14¼	N.N.W.	N.	22½	
18. 23½	19. 1½	N.	S.W.	225	
19. 11	19. 11¾	S.W.	W.S.W.	22½	
19. 16	19. 17	W.S.W.	S.W.		22½
20. 23¼	20. 23½	S.W.	S.		45
21. 0¼	21. 0½	S.	S.W.	45	
21. 4½	21. 4¾	S.W.	N.E.		180
21. 6½	21. 6¾	N.E.	S.W.	180	
21. 7¼	21. 7½	S.W.	S.S.E.		67½
21. 8¼	21. 8½	S.S.E.	S.	22½	
21. 11	21. 11¼	S.	S.S.W.	22½	
21. 11¾	21. 12	S.S.W.	S.W.	22½	
21. 12¾	21. 13	S.W.	S.S.E.		67½
21. 17	21. 18½	S.S.E.	E.S.E.		45
21. 22½	21. 22¾	E.S.E.	N.N.E.		90
22. 7½	22. 7¾	N.N.E.	E.N.E.	45	
22. 10½	22. 10¾	E.N.E.	N.E.		22½
22. 11¾	22. 12¼	N.E.	E.S.E.	67½	
22. 13	22. 14	E.S.E.	S.E.	22½	
22. 15	22. 15½	S.E.	E.S.E.		22½
23. 6	23. 6¼	E.S.E.	N.E.		67½
23. 7¼	23. 7¾	N.E.	E.S.E.	67½	
23. 9	23. 9¼	E.S.E.	N.E.		67½
23. 9¾	23. 10	N.E.	E.S.E.	67½	
23. 16	23. 16¼	E.S.E.	N.E.		67½
23. 17¼	23. 17½	N.E.	E.S.E.	67½	
23. 20½	23. 20¾	E.S.E.	N.E.		67½
24. 5½	24. 5¾	N.E.	S.S.E.	112½	
24. 7¼	24. 8¾	S.S.E.	N.	202½	
24. 9½	24. 10	N.	E.	90	
24. 10¾	24. 11	E.	S.S.W.	112½	
24. 11¾	24. 12	S.S.W.	N.N.E.		180
24. 13	24. 13½	N.N.E.	N.		22½
24. 14	24. 14½	N.	N.N.E.	22½	
24. 15½	24. 15¾	N.N.E.	E.S.E.	90	
24. 17¼	24. 17½	E.S.E.	E.N.E.		45
24. 19¼	24. 19½	E.N.E.	E.S.E.	45	
24. 21¼	24. 21½	E.S.E.	S.S.W.	90	
24. 22¼	24. 22½	S.S.W.	W.S.W.	45	
24. 23¼	24. 23½	W.S.W.	E.N.E.		180
25. 1½	25. 1¾	E.N.E.	N.		67½
25. 2½	25. 2¾	N.	E.S.E.	112½	
25. 4½	25. 4¾	E.S.E.	E.N.E.		45
25. 8	25. 8¼	E.N.E.	N.E.		22½
25. 9	25. 9¼	N.E.	E.N.E.	22½	
25. 17¾	25. 18	E.N.E.	N.E.		22½
25. 21½	25. 22½	N.E.	S.E.	90	
26. 2¼	26. 2½	S.E.	E.		45
26. 3¼	26. 3¾	E.	S.E.	45	
26. 4½	26. 4¾	S.E.	N.E.		90
26. 5¼	26. 5½	N.E.	S.E.	90	
26. 8¾	26. 9	S.E.	S.S.E.	22½	
26. 10	26. 11	S.S.E.	S.S.W.	45	
26. 23	26. 23¼	S.S.W.	S.W.	22½	
27. 2¾	27. 3	S.W.	W.S.W.	22½	
27. 21½	27. 21¾	W.S.W.	N.	112½	
28. 1½	28. 2	N.	W.S.W.		112½

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

Greenwich Civil Time. From	Greenwich Civil Time. To	Change of Direction. From	Change of Direction. To	Amount of Motion. Direct.	Amount of Motion. Retrograde.
				°	°
Nov.—*cont.*					
d h	d h				
28. 17¼	28. 17½	W.S.W.	W.N.W.	45	
29. 5	29. 6½	W.N.W.	N.N.W.	45	
29. 17	29. 18	N.N.W.	N.W.		22½
29. 21	29. 23	N.W.	S.W.		90
30. 19¼	30. 19¾	S.W.	W.S.W.	22½	
			Sums	4837½	2520
December.					
1. 15	1. 16	W.S.W.	S.W.		22½
1. 17	1. 17¼	S.W.	W.S.W.	22½	
1. 18½	1. 18¾	W.S.W.	N.N.E.	135	
2. 1	2. 1½	N.N.E.	N.		22½
3. 22	3. 23	N.	S.W.		135
4. 3¾	4. 4	S.W.	S.		45
4. 15	4. 15½	S.	S.S.E.		22½
4. 23	4. 23½	S.S.E.	S.E.		22½
5. 8	5. 8½	S.E.	S.S.E.	22½	
6. 0	6. 0¼	S.S.E.	S.	22½	
6. 6	6. 7	S.	S.S.W.	22½	
6. 18	6. 18¾	S.S.W.	N.W.	112½	
6. 19½	6. 19¾	N.W.	W.		45
6. 22½	7. 1	W.	S.W.		45
7. 6½	7. 7	S.W.	S.S.W.		22½
7. 19	7. 20	S.S.W.	S.W.	22½	
8. 0	8. 1	S.W.	W.S.W.	22½	
8. 2¼	8. 3	W.S.W.	W.	22½	
8. 9¼	8. 10	W.	W.S.W.		22½
10. 3	10. 4	W.S.W.	S.W.		22½
10. 5¾	10. 6¼	S.W.	S.S.W.		22½
10. 7	10. 7¼	S.S.W.	S.		22½

Greenwich Civil Time. From	Greenwich Civil Time. To	Change of Direction. From	Change of Direction. To	Amount of Motion. Direct.	Amount of Motion. Retrograde.
				°	°
Dec.—*cont.*					
d h	d h				
10. 16	10. 17¼	S.	W.S.W.	67½	
11. 4	11. 4¼	W.S.W.	W.	22½	
11. 5¾	11. 6¼	W.	W.N.W.	22½	
11. 10	11. 10½	W.N.W.	W.		22½
11. 15	11. 16	W.	W.S.W.		22½
12. 1	12. 2	W.S.W.	S.W.		22½
12. 5½	12. 6	S.W.	S.S.W.		22½
12. 7¾	12. 8	S.S.W.	S.S.E.		45
12. 9¼	12. 9½	S.S.E.	E.N.E.		90
12. 12	12. 13	E.N.E.	N.N.E.		45
12. 15½	12. 15¾	N.N.E.	N.		22½
12. 18	12. 20	N.	S.W.		135
13. 0	13. 0¼	S.W.	S.S.W.		22½
13. 2½	13. 3	S.S.W.	S.		22½
13. 10½	13. 12	S.	S.S.W.	22½	
13. 14	13. 15	S.S.W.	S.W.	22½	
14. 15¼	14. 16	S.W.	S		45
14. 21½	14. 22½	S.	S.S.W.	22½	
15. 0¾	15. 1½	S.S.W.	S.W.	22½	
15. 11¾	15. 12	S.W.	W.S.W.	22½	
15. 15	15. 16	W.S.W.	S.W.		22½
15. 17	15. 17½	S.W.	S.S.W.		22½
16. 6	16. 6½	S.S.W.	S.W.	22½	
16. 11	16. 11½	S.W.	S.S.W.		22½
17. 7¼	17. 8	S.S.W.	S.W.	22½	
17. 17	17. 18	S.W.	W.S.W.	22½	
18. 12½	18. 13¼	W.S.W.	E.	202½	
18. 14	18. 15	E.	N.	270	
18. 16¾	18. 17¼	N.	E.N.E.	67½	
18. 20¾	18. 21	E.N.E.	N.E.		22½
18. 23	18. 23½	N.E.	E.N.E.	22½	
19. 4	19. 4½	E.N.E.	E.	22½	
19. 9¼	19. 10	E.	E.S.E.	22½	
19. 11½	19. 12	E.S.E.	E.		22½
19. 21	19. 22	E.	E.S.E.	22½	
20. 15	20. 16	E.S.E.	E.		22½

Greenwich Civil Time. From	Greenwich Civil Time. To	Change of Direction. From	Change of Direction. To	Amount of Motion. Direct.	Amount of Motion. Retrograde.
				°	°
Dec.—*cont.*					
d h	d h				
21. 11¾	21. 12	E.	E.S.E.	22½	
21. 14	21. 15	E.S.E.	E.		22½
21. 19	21. 20	E.	E.S.E.	22½	
22. 7	22. 8	E.S.E.	S.E.	22½	
22. 9	22. 10	S.E.	E.S.E.		22½
23. 1¼	23. 1½	E.S.E.	E.N.E.		45
23. 2	23. 2¼	E.N.E.	N.E.		22½
23. 2½	23. 2¾	N.E.	E.S.E.	67½	
23. 9	23. 9½	E.S.E.	E.		22½
23. 10	23. 10¼	E.	E.S.E.	22½	
23. 12	23. 12½	E.S.E.	E.		22½
23. 16½	23. 16¾	E.	E.S.E.	22½	
23. 23½	24. 0	E.S.E.	S.S.E.		315
24. 1	24. 3	S.S.E.	E.S.E.	315	
24. 14¾	24. 15	E.S.E.	S.E.	22½	
24. 16¾	24. 17	S.E.	S.S.E.	22½	
24. 23¼	24. 23½	S.S.E.	E.		67½
25. 0	25. 1	E.	S.S.E.	67½	
25. 2¾	25. 3¼	S.S.E.	S.E.		22½
25. 11½	25. 11¾	S.E.	S.S.E.	22½	
25. 14½	25. 15	S.S.E.	S.E.		22½
25. 23½	26. 0	S.E.	S.S.E.	22½	
26. 2¼	26. 2½	S.S.E.	N.N.W.		180
26. 3	26. 4½	N.N.W.	S.W.		112½
26. 6½	26. 7	S.W.	W.S.W.	22½	
26. 8	26. 8½	W.S.W.	S.S.W.		45
27. 23	28. 0	S.S.W.	S.W.	22½	
28. 4	28. 5	S.W.	S.S.W.		22½
28. 12	28. 12½	S.S.W.	S.W.	22½	
30. 11¾	30. 12	S.W.	S.S.W.		22½
31. 20	31. 20¾	S.S.W.	S.		22½
			Sums	2047½	2115

EXCESS of MOTION in each MONTH.

1897.	Direct.	Retrograde.	1897.	Direct.	Retrograde.
	°	°		°	°
January	337½		July	1822½	
February	1057½		August	180	
March	1282½		September	517½	
April	2047½		October	1507½	
May	855		November	2317½	
June	1395		December		67½

The whole excess of direct motion for the year was 13252½°.

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	1897.												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	11·8	12·6	14·5	11·0	11·1	8·7	8·1	8·6	11·0	7·6	8·5	14·7	10·7
2	11·3	12·0	14·3	10·1	10·3	7·6	7·6	8·9	10·5	7·6	7·7	15·4	10·3
3	12·0	11·7	14·8	10·5	10·1	7·1	7·8	9·3	9·3	8·0	9·1	14·5	10·4
4	12·7	10·9	14·7	10·7	10·7	8·1	8·0	9·2	9·2	8·2	9·9	15·3	10·6
5	12·3	11·7	14·9	10·7	11·1	8·2	8·0	8·8	9·1	7·9	10·0	14·7	10·6
6	12·4	11·5	15·2	11·6	11·6	8·6	8·8	9·5	9·5	7·8	9·7	15·3	11·0
7	12·0	11·2	15·4	12·5	11·7	9·0	9·3	9·1	9·0	7·5	9·8	14·2	10·9
8	12·2	11·1	16·7	13·8	13·4	9·8	10·6	10·5	9·9	9·0	10·8	15·1	11·9
9	12·9	12·1	17·4	14·6	14·5	10·6	11·3	12·1	10·4	9·3	11·2	14·5	12·6
10	12·8	12·6	18·6	15·8	14·5	10·9	11·5	12·6	11·0	9·4	11·6	14·5	13·0
11	13·3	12·8	19·8	16·5	15·4	11·1	12·6	13·5	12·4	10·4	12·1	15·9	13·8
Noon.	13·4	12·4	20·9	16·3	15·3	11·0	12·7	14·2	12·7	10·7	11·8	15·7	13·9
13h.	13·5	12·2	20·7	16·4	15·5	10·8	12·6	14·5	12·9	10·9	12·4	16·7	14·1
14	13·9	12·0	20·6	16·6	16·4	12·0	13·6	15·0	13·6	12·1	13·1	17·5	14·7
15	13·1	12·4	19·4	16·4	16·0	12·2	12·2	15·4	13·3	11·7	12·2	16·5	14·2
16	12·9	11·9	18·6	16·1	16·5	12·4	12·0	15·1	13·6	11·4	11·5	16·0	14·0
17	12·7	11·3	18·0	15·1	16·4	12·5	12·9	15·2	13·7	10·2	11·8	14·9	13·7
18	13·3	11·7	17·1	14·3	15·9	12·0	12·5	14·8	12·9	10·0	12·1	15·0	13·5
19	12·2	11·6	16·4	12·9	14·5	11·3	11·7	12·5	12·0	9·6	12·0	15·0	12·6
20	12·5	11·7	16·1	11·6	13·6	10·5	10·6	11·1	11·3	9·2	11·3	14·8	12·0
21	12·6	12·6	15·8	11·1	12·7	10·2	10·0	9·9	11·2	8·5	10·7	14·0	11·6
22	11·5	12·2	15·2	10·7	11·6	9·1	9·0	10·1	11·4	8·5	9·4	14·0	11·1
23	11·9	12·2	16·0	10·8	11·4	8·8	8·8	9·9	10·9	8·8	9·4	14·2	11·1
Midnight.	11·6	13·0	15·1	10·8	11·3	9·4	8·7	9·3	11·0	8·0	9·1	14·7	11·0
Means	12·5	12·0	16·9	13·2	13·4	10·1	10·5	11·6	11·3	9·3	10·7	15·1	12·2
Greatest Hourly Measures	35	34	48	38	30	36	28	28	35	25	49	48	...
Least Hourly Measures	0	0	1	0	1	0	1	1	0	1	0	1	...

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.)

1897.

Days of the Month.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
d 1	+ 857	+ 620	− 210	+ 742	+ 961	+ 240	+ 615	+ 367	+ 342	+ 425	+ 472	+ 948
2	+1592	+ 460	− 61	+ 981	+ 544	+ 777	+ 464	+ 368	...	+ 515	+ 505	+ 995
3	+ 993	+ 725	...	+ 267	+ 627	+ 643	+ 566	+ 577	...	+ 597	+ 437	+1322
4	+ 873	+ 705	+ 636	+ 738	+ 876	+ 591	+ 597	+ 409	+ 723	+ 794	+ 325	+1246
5	+ 208	− 321	+ 921	+ 880	+ 637	+ 489	+ 452	+ 367	+ 251	+ 798	+ 652	+ 829
6	+ 746	+ 950	+1005	+ 478	+ 978	+ 271	+ 498	+ 338	+ 630	+ 869	+ 393	+ 637
7	+ 48	+ 973	+ 963	+ 132	+ 876	+ 196	+ 810	+ 467	+ 644	+ 815	+ 563	+ 581
8	− 437	+1039	+ 897	+ 785	+ 531	+ 236	+ 616	+ 307	+ 365	...	+ 322	+ 488
9	+ 212	+ 488	+ 578	+ 717	+ 444	+ 310	+ 507	+ 548	+ 475	+ 821	+ 202	+ 831
10	+ 620	+ 710	+ 789	+ 765	+ 797	+ 622	+ 541	+ 592	+ 752	+ 657	+ 366	+ 595
11	+ 811	+ 708	+ 396	+ 752	+ 739	+ 508	+ 454	+ 449	+ 597	+ 761	+ 498	+ 778
12	+ 777	+ 741	+ 620	+ 339	+1066	+ 589	+ 520	+ 585	+ 662	+1065	...	+ 445
13	+ 835	+ 650	+ 988	+ 455	+ 888	+ 529	+ 327	+ 499	+ 550	+ 924	...	...
14	+ 945	+ 561	+ 509	+ 540	+ 795	+ 691	+ 488	+ 522	+ 597	+ 538	...	...
15	+1270	+ 510	+ 32	+ 785	+ 580	+ 578	+ 844	+ 382	+ 571	+ 263	+ 408	+ 386
16	+ 975	+1074	+ 315	+ 335	+ 460	+ 487	+ 739	+ 557	+ 743	+ 395	+ 538	+ 173
17	+1046	+1064	+ 378	+ 258	+ 576	+ 629	+ 717	+ 482	+ 431	+ 316	...	+ 440
18	+1307	+ 947	+ 551	+ 583	+ 423	+ 402	+ 495	+ 348	+ 418	+ 427	...	+ 679
19	+1230	+ 670	+ 600	+ 387	+ 813	+ 666	+ 377	+ 558	+ 613	+ 314	+ 587	+ 320
20	+ 653	+ 644	+ 881	+ 547	+ 870	+ 417	+ 401	+ 418	+ 773	+ 383	+ 307	+ 506
21	+ 880	+ 652	+ 615	+ 518	+ 544	+ 515	+ 581	+ 418	+ 715	+ 433	+ 371	+ 657
22	+ 711	+ 625	+ 618	+ 781	+ 857	+ 471	+ 667	+ 335	+ 688	+ 311	+ 218	+1116
23	+ 394	+ 715	+ 812	+ 813	+ 628	+ 437	+ 735	+ 517	+ 455	+ 311	+ 195	+1439
24	+1131	+ 630	+ 362	+ 786	+ 817	+ 573	+ 443	+ 436	+ 315	+ 326	+ 406	+1505
25	+ 901	+ 318	+ 765	+ 637	+ 490	+ 329	+ 292	+ 568	+ 407	+ 423	+ 418	+1141
26	+1196	+ 390	+ 304	+ 629	+ 152	+ 228	+ 293	+ 312	+ 402	+ 301	+ 799	+ 516
27	+1366	+ 821	+ 469	+ 702	+ 85	...	+ 590	+ 440	+ 421	+ 385	+ 145	+ 170
28	+1370	+ 278	+ 422	+ 548	+ 272	+ 254	+ 675	+ 472	...	+ 364	+ 316	...
29	+1142		+1174	+ 546	+ 571	+ 310	+ 471	+ 405	+ 463	+ 316	+ 908	...
30	...		+ 985	+ 229	+ 348	...	...	+ 403	+ 363	+ 408	+ 652	...
31	+ 841		+ 377		+ 660		+ 495	+ 412		+ 627		...
Means ...	+ 850	+ 655	+ 590	+ 589	+ 642	+ 464	+ 542	+ 447	+ 532	+ 529	+ 440	+ 750

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 arbitrary: the sign + indicates positive potential.)

Hour, Greenwich Civil Time.	1897. January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Yearly Means.
Midnight.	+ 879	+ 490	+ 610	+ 556	+ 749	+ 526	+ 646	+ 525	+ 501	+ 532	+ 450	+ 768	+ 603
1h.	+ 763	+ 533	+ 596	+ 666	+ 662	+ 479	+ 574	+ 475	+ 466	+ 479	+ 421	+ 716	+ 569
2	+ 736	+ 451	+ 598	+ 587	+ 602	+ 390	+ 512	+ 445	+ 427	+ 453	+ 397	+ 676	+ 523
3	+ 729	+ 517	+ 564	+ 491	+ 507	+ 405	+ 481	+ 421	+ 386	+ 447	+ 391	+ 628	+ 497
4	+ 665	+ 475	+ 556	+ 498	+ 486	+ 412	+ 452	+ 403	+ 397	+ 438	+ 379	+ 600	+ 480
5	+ 741	+ 470	+ 595	+ 509	+ 617	+ 388	+ 449	+ 406	+ 372	+ 412	+ 376	+ 601	+ 495
6	+ 692	+ 533	+ 653	+ 417	+ 696	+ 351	+ 488	+ 372	+ 353	+ 412	+ 375	+ 630	+ 498
7	+ 682	+ 544	+ 746	+ 535	+ 735	+ 460	+ 533	+ 399	+ 392	+ 464	+ 412	+ 720	+ 552
8	+ 741	+ 529	+ 741	+ 655	+ 717	+ 400	+ 492	+ 379	+ 423	+ 474	+ 450	+ 744	+ 562
9	+ 724	+ 596	+ 695	+ 538	+ 721	+ 372	+ 505	+ 380	+ 504	+ 510	+ 462	+ 760	+ 564
10	+ 884	+ 728	+ 604	+ 575	+ 644	+ 503	+ 663	+ 486	+ 634	+ 580	+ 459	+ 814	+ 631
11	+1002	+ 888	+ 553	+ 631	+ 525	+ 521	+ 609	+ 506	+ 625	+ 557	+ 424	+ 752	+ 633
Noon.	+ 910	+ 815	+ 466	+ 493	+ 469	+ 487	+ 568	+ 438	+ 589	+ 493	+ 449	+ 663	+ 570
13h.	+1018	+ 780	+ 600	+ 575	+ 543	+ 465	+ 436	+ 385	+ 611	+ 514	+ 449	+ 593	+ 581
14	+ 895	+ 825	+ 544	+ 621	+ 484	+ 468	+ 451	+ 404	+ 603	+ 533	+ 464	+ 676	+ 581
15	+ 929	+ 815	+ 656	+ 542	+ 530	+ 535	+ 462	+ 332	+ 624	+ 555	+ 493	+ 731	+ 600
16	+1006	+ 819	+ 604	+ 497	+ 620	+ 468	+ 414	+ 312	+ 654	+ 596	+ 502	+ 771	+ 605
17	+ 900	+ 793	+ 695	+ 486	+ 599	+ 485	+ 562	+ 404	+ 613	+ 644	+ 479	+ 872	+ 628
18	+1031	+ 798	+ 622	+ 593	+ 654	+ 468	+ 627	+ 479	+ 622	+ 665	+ 480	+ 932	+ 664
19	+1010	+ 837	+ 469	+ 668	+ 775	+ 495	+ 542	+ 495	+ 661	+ 640	+ 485	+ 891	+ 664
20	+ 906	+ 698	+ 475	+ 780	+ 674	+ 494	+ 516	+ 512	+ 664	+ 583	+ 472	+ 862	+ 636
21	+ 808	+ 579	+ 583	+ 678	+ 799	+ 456	+ 624	+ 582	+ 566	+ 550	+ 408	+ 903	+ 628
22	+ 843	+ 599	+ 468	+ 779	+ 796	+ 560	+ 708	+ 624	+ 568	+ 584	+ 428	+ 856	+ 651
23	+ 902	+ 612	+ 459	+ 757	+ 806	+ 547	+ 703	+ 568	+ 512	+ 590	+ 458	+ 834	+ 646
24	+ 871	+ 450	+ 522	+ 575	+ 745	+ 522	+ 637	+ 518	+ 460	+ 537	+ 440	+ 783	+ 588
Means 0h.–23h.	+ 850	+ 655	+ 590	+ 589	+ 642	+ 464	+ 542	+ 447	+ 532	+ 529	+ 440	+ 750	+ 586
Means 1h.–24h.	+ 849	+ 654	+ 586	+ 589	+ 642	+ 464	+ 542	+ 447	+ 530	+ 530	+ 440	+ 750	+ 585
Number of Days employed.	30	28	30	30	31	28	30	31	27	30	25	25	...

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.	1897. January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Yearly Means.
Midnight.	+ 764	+ 297	+ 407	+ 321	+ 604	+ 424	+ 514	+ 477	+ 395	+ 538	+ 511	+ 605	+ 488
1^h.	+ 529	+ 447	+ 445	+ 574	+ 463	+ 349	+ 454	+ 414	+ 461	+ 468	+ 464	+ 564	+ 469
2	+ 496	+ 303	+ 525	+ 476	+ 397	+ 105	+ 382	+ 409	+ 406	+ 458	+ 403	+ 486	+ 404
3	+ 515	+ 487	+ 511	+ 345	+ 41	+ 250	+ 352	+ 391	+ 314	+ 382	+ 399	+ 370	+ 363
4	+ 376	+ 373	+ 526	+ 351	− 20	+ 306	+ 354	+ 387	+ 355	+ 320	+ 395	+ 349	+ 339
5	+ 538	+ 371	+ 509	+ 400	+ 427	+ 192	+ 338	+ 400	+ 345	+ 276	+ 389	+ 399	+ 382
6	+ 376	+ 518	+ 525	+ 204	+ 489	+ 40	+ 392	+ 370	+ 328	+ 268	+ 377	+ 406	+ 358
7	+ 273	+ 487	+ 677	+ 309	+ 369	+ 405	+ 394	+ 402	+ 372	+ 426	+ 390	+ 541	+ 420
8	+ 450	+ 481	+ 681	+ 576	+ 226	+ 334	+ 356	+ 375	+ 352	+ 422	+ 385	+ 546	+ 432
9	+ 377	+ 532	+ 586	+ 464	+ 454	+ 303	+ 350	+ 381	+ 429	+ 474	+ 439	+ 570	+ 447
10	+ 554	+ 592	+ 347	+ 601	+ 51	+ 496	+ 588	+ 462	+ 586	+ 590	+ 432	+ 625	+ 494
11	+ 747	+ 917	+ 293	+ 614	− 147	+ 562	+ 518	+ 506	+ 538	+ 500	+ 426	+ 289	+ 480
Noon.	+ 572	+ 848	+ 276	+ 530	+ 123	+ 383	+ 522	+ 459	+ 468	+ 464	+ 440	+ 200	+ 440
13^h.	+ 838	+ 791	+ 503	+ 625	+ 497	+ 391	+ 40	+ 380	+ 545	+ 486	+ 430	+ 70	+ 466
14	+ 517	+ 887	+ 554	+ 682	+ 310	+ 490	+ 494	+ 477	+ 554	+ 516	+ 444	+ 318	+ 520
15	+ 504	+ 822	+ 626	+ 465	+ 559	+ 674	+ 130	+ 328	+ 575	+ 584	+ 480	+ 489	+ 520
16	+ 687	+ 816	+ 588	+ 384	+ 716	+ 444	− 288	+ 306	+ 611	+ 632	+ 499	+ 582	+ 498
17	+ 425	+ 714	+ 655	+ 314	+ 333	+ 427	+ 434	+ 385	+ 399	+ 682	+ 445	+ 728	+ 495
18	+ 802	+ 683	+ 392	+ 556	+ 549	+ 366	+ 742	+ 448	+ 396	+ 706	+ 471	+ 784	+ 575
19	+ 778	+ 780	+ 13	+ 682	+ 969	+ 496	+ 340	+ 445	+ 505	+ 638	+ 489	+ 717	+ 571
20	+ 538	+ 541	+ 10	+ 714	+ 350	+ 449	+ 104	+ 475	+ 569	+ 560	+ 473	+ 686	+ 456
21	+ 347	+ 310	+ 219	+ 545	+ 634	+ 171	+ 466	+ 559	+ 376	+ 544	+ 265	+ 681	+ 426
22	+ 455	+ 329	− 29	+ 705	+ 476	+ 391	+ 690	+ 615	+ 478	+ 568	+ 301	+ 636	+ 468
23	+ 697	+ 406	+ 27	+ 714	+ 750	+ 406	+ 710	+ 548	+ 355	+ 558	+ 402	+ 601	+ 514
24	+ 711	+ 97	+ 271	+ 412	+ 804	+ 429	+ 622	+ 474	+ 305	+ 546	+ 401	+ 556	+ 469
Means 0^h–23^h.	+ 548	+ 572	+ 411	+ 506	+ 401	+ 369	+ 391	+ 433	+ 446	+ 503	+ 423	+ 510	+ 459
Means 1^h–24^h.	+ 546	+ 564	+ 405	+ 510	+ 409	+ 369	+ 395	+ 433	+ 443	+ 503	+ 418	+ 508	+ 459
Number of Days employed.	12	12	15	14	7	8	5	15	10	5	8	8	...

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.	1897.												Yearly Means.
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
Midnight.	+ 989	+ 670	+ 839	+ 787	+ 801	+ 596	+ 696	+ 661	+ 565	+ 545	+ 417	+ 921	+ 707
1h.	+ 948	+ 629	+ 759	+ 762	+ 744	+ 559	+ 624	+ 608	+ 462	+ 502	+ 401	+ 858	+ 655
2	+ 910	+ 584	+ 671	+ 698	+ 687	+ 540	+ 574	+ 538	+ 403	+ 479	+ 399	+ 846	+ 611
3	+ 887	+ 576	+ 627	+ 637	+ 659	+ 504	+ 547	+ 506	+ 394	+ 489	+ 396	+ 841	+ 589
4	+ 872	+ 595	+ 617	+ 654	+ 657	+ 497	+ 499	+ 486	+ 393	+ 485	+ 381	+ 814	+ 579
5	+ 900	+ 597	+ 686	+ 709	+ 716	+ 519	+ 482	+ 489	+ 355	+ 460	+ 381	+ 803	+ 591
6	+ 931	+ 616	+ 779	+ 760	+ 814	+ 532	+ 515	+ 484	+ 340	+ 452	+ 382	+ 871	+ 623
7	+1010	+ 657	+ 808	+ 806	+ 905	+ 528	+ 557	+ 462	+ 395	+ 465	+ 434	+ 947	+ 664
8	+1052	+ 615	+ 780	+ 739	+ 913	+ 465	+ 512	+ 444	+ 478	+ 472	+ 498	+ 975	+ 662
9	+1061	+ 667	+ 786	+ 628	+ 840	+ 442	+ 520	+ 459	+ 557	+ 512	+ 481	+ 996	+ 662
10	+1131	+ 865	+ 850	+ 587	+ 864	+ 551	+ 653	+ 553	+ 657	+ 578	+ 470	+1055	+ 735
11	+1144	+ 914	+ 804	+ 657	+ 777	+ 546	+ 608	+ 501	+ 702	+ 552	+ 434	+1102	+ 728
Noon.	+1093	+ 801	+ 635	+ 535	+ 607	+ 539	+ 552	+ 414	+ 668	+ 479	+ 459	+1016	+ 650
13h.	+1114	+ 798	+ 689	+ 552	+ 599	+ 514	+ 500	+ 383	+ 643	+ 498	+ 464	+ 972	+ 644
14	+1147	+ 826	+ 678	+ 614	+ 573	+ 486	+ 420	+ 331	+ 616	+ 512	+ 484	+ 965	+ 638
15	+1206	+ 856	+ 654	+ 652	+ 526	+ 516	+ 514	+ 333	+ 610	+ 512	+ 518	+ 998	+ 658
16	+1207	+ 845	+ 641	+ 649	+ 638	+ 512	+ 545	+ 337	+ 638	+ 541	+ 516	+1004	+ 673
17	+1214	+ 874	+ 707	+ 671	+ 693	+ 524	+ 560	+ 388	+ 692	+ 592	+ 494	+1032	+ 703
18	+1217	+ 906	+ 830	+ 650	+ 733	+ 518	+ 567	+ 476	+ 714	+ 635	+ 472	+1082	+ 733
19	+1188	+ 906	+ 915	+ 662	+ 767	+ 511	+ 556	+ 529	+ 732	+ 647	+ 465	+1052	+ 744
20	+1160	+ 834	+ 921	+ 862	+ 836	+ 521	+ 568	+ 567	+ 709	+ 613	+ 450	+1027	+ 756
21	+1112	+ 784	+ 926	+ 808	+ 908	+ 571	+ 618	+ 632	+ 666	+ 581	+ 454	+1104	+ 764
22	+1098	+ 800	+ 944	+ 856	+ 934	+ 631	+ 674	+ 676	+ 598	+ 604	+ 476	+1049	+ 778
23	+1037	+ 775	+ 857	+ 795	+ 852	+ 600	+ 665	+ 621	+ 575	+ 607	+ 477	+1042	+ 742
24	+1007	+ 735	+ 731	+ 714	+ 736	+ 558	+ 606	+ 580	+ 511	+ 557	+ 444	+ 987	+ 680
Means 0h.–23h.	+1068	+ 750	+ 767	+ 697	+ 752	+ 530	+ 564	+ 495	+ 565	+ 534	+ 450	+ 974	+ 679
Means 1h.–24h.	+1069	+ 752	+ 762	+ 694	+ 749	+ 529	+ 560	+ 492	+ 563	+ 534	+ 451	+ 977	+ 678
Number of Days employed.	12	12	14	13	18	17	21	9	12	19	16	13	...

AMOUNT of RAIN COLLECTED in each MONTH of the YEAR 1897.

MONTH, 1897.	Number of Rainy Days.	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.		
		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	17	1·024	1·061	1·269	1·399	1·551	1·615	1·596	1·547
February	14	1·801	1·958	2·145	2·176	2·339	2·385	2·318	2·332
March	17	2·131	2·034	2·472	2·809	3·153	3·347	3·240	3·221
April	16	0·986	0·964	1·300	1·425	1·532	1·617	1·533	1·525
May	11	0·818	0·772	1·089	1·100	1·176	1·251	1·156	1·234
June	12	1·539	1·579	1·738	1·897	1·970	1·935	1·906	1·946
July	7	0·503	0·430	0·605	0·697	0·711	0·732	0·700	0·712
August	20	2·156	2·107	2·507	2·676	2·799	2·859	2·764	2·790
September	16	1·796	1·880	2·198	2·433	2·576	2·697	2·596	2·622
October	11	0·307	0·316	0·391	0·456	0·511	0·478	0·486	0·494
November	10	0·548	0·553	0·827	0·937	1·050	1·068	1·085	1·083
December	18	0·991	0·997	1·422	1·609	1·985	2·142	2·066	2·144
Sums	169	14·600	14·651	17·963	19·614	21·353	22·126	21·446	21·650
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. 0. 5
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. 155. 3	ft. in. 155. 3	ft. in. 155. 3

ROYAL OBSERVATORY, GREENWICH.

OBSERVATIONS

OF

LUMINOUS METEORS.

1897.

Month and Day, 1897.		Greenwich Civil Time.	Observer.	Apparent Size 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.	No. for Reference.
		h m s				s		°	
April	26	21. 39. 45	M.	3	Bluish-white	0·7	None	10	1
"		21. 56. 38	M.	2	Bluish-white	1·0	None	15	2
"		22. 20. 23	M.	2	Bluish-white	0·8	None	7	3
"		22. 22. 36	M.	3	Bluish-white	1·0	None	12	4
August	9	22. 47. 6	M.	1	Bluish-white	0·7	None	10	5
"		22. 55. 12	M.	2	Bluish-white	1·0	Brilliant	3	6
"		23. 0. 33	M.	3	Bluish-white	0·8	None	8	7
"		23. 4. 46	M.	2	Bluish-white	1·0	Brilliant: broken	10	8
"		23. 18. 0	M.	3	Bluish-white	0·8	None	...	9
August	12	22. 4. 4	B.	1	Bluish-white	0·8	None	15	10
"		22. 12. 59	B.	2	Bluish-white	0·3	None	3	11
"		22. 20. 52	B.	2	Bluish-white	0·5	None	5	12
"		22. 22. 46	B.	2	Bluish-white	0·5	None	8	13
"		22. 29. 34	B.	>1	Bluish-white	0·8	None	8	14
"		23. 20. 37	B.	>1	Bluish-white	1·0	Bright	5	15
November	14	0. 21. 48	D.	>1	White	1·0	None	10	16
"		0. 24. 18	D.	1	Bluish-white	2·0	None	15	17
"		1. 12. 23	D.	1	White	1·0	Slight	20	18
"		1. 25. 54	B.	1	Bluish-white	0·8	None	10	19
"		1. 29. 39	B.	1	Bluish-white	0·5	None	15	20
"		1. 35. 13	E.	2	Bluish-white	1·0	Bright	15	21
"		1. 46. 48	B.	2	Bluish-white	0·8	None	20	22
"		1. 48. 6	E.	1	Bluish-white	0·5	None	5	23
"		1. 49. 14	D.	3	White	2·0	Bright	15	24
"		2. 5. 9	B.	1	Bluish-white	1·0	None	15	25
"		2. 7. 1	D.	>1	Bluish-white	4·0	Bright	25	26
"		2. 15. 16	D.	1	Greenish-white	2·0	Slight	15	27
"		2. 22. 14	B.	1	Bluish-white	0·8	None	10	28
"		2. 24. 0	E.	2	Bluish-white	2·0	Bright: 3 to 4 seconds	15	29

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

No. for Reference.	Path of Meteor through the Stars.
1	From a point midway between α Coronæ and β Boötis towards Arcturus.
2	From β Herculis in the direction of α Serpentis.
3	From ι Draconis towards γ Ursæ Minoris.
4	From η Herculis towards β Draconis.
5	From γ Cassiopeiæ towards β Persei.
6	Appeared a little to the West of α Persei and travelled slowly in a Westerly direction.
7	From α Camelopardali towards Capella.
8	From γ Persei moved in the direction of a point a little above β Persei.
9	From a point midway between Polaris and γ Ursæ Minoris moved in a Westerly direction parallel to the horizon and disappeared behind cloud.
10	From a point midway between Polaris and β Ursæ Minoris fell vertically downwards.
11	From a point midway between σ and κ Persei towards β Persei.
12	From α Camelopardali in the direction of λ Draconis.
13	From a point midway between Polaris and δ Cassiopeiæ moved towards the latter.
14	From a point near β Camelopardali towards ο Ursæ Majoris.
15	From a point midway between τ and ι Persei towards 54 Andromedæ.
16	From β Andromedæ towards β Pegasi.
17	From a point near ζ Cephei towards α Cygni.
18	From a point near β Cassiopeiæ fell vertically downwards.
19	From a point a little above χ Draconis fell vertically downwards.
20	From κ Draconis towards ζ Ursæ Minoris.
21	From ζ Tauri moved towards Aldebaran.
22	From a point midway between λ and κ Draconis towards ζ Ursæ Majoris
23	From a point midway between τ^2 and θ Hydræ towards 12 Hydræ.
24	From a point midway between β and γ Andromedæ towards α Andromedæ
25	From 72 Leonis towards β Leonis.
26	From a point midway between γ Andromedæ and γ Cassiopeiæ towards α Cephei.
27	From a point near the Pleiades towards α Arietis.
28	From ο Hydræ towards 12 Hydræ.
29	From a point midway between 4 Argûs and γ Monocerotis to a point midway between Sirius and θ Canis Majoris.

Month and Day, 1897.		Greenwich Civil Time.	Observer.	Apparent Size 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.	No. for Reference.
		h m s				s		°	
November	25	19. 48. 47	M.	1	Bluish-white	1·0	Bright	15	1
	,,	19. 54. 11	M.	2	Bluish-white	0·6	None	15	2
	,,	20. 11. 17	M.	2	Bluish-white	1·0	Slight	10	3
	,,	20. 36. 42	M.	3	Bluish-white	0·8	None	8	4
	,,	20. 42. 55	M.	3	Bluish-white	0·6	None	15	5
	,,	21. 25. 28	M.	1	Bluish-white	1·8	None	...	6
December	11	19. 36. 50	M.	1	Bluish-white	2·0	None	30	7
	,,	21. 18. 10	B.	>1	Bluish-white	0·5	None	15	8
	,,	21. 27. 15	M.	2	Bluish-white	0·8	None	10	9
	,,	21. 32. 52	B.	1	Bluish-white	0·5	None	10	10
	,,	21. 41. 35	B.	1	Bluish-white	0·5	None	20	11
	,,	21. 55. 22	B.	2	White	0·5	None	10	12
	,,	21. 55. 50	M.	2	Bluish-white	0·8	None	5	13
	,,	22. 7. 31	B.	3	Bluish-white	0·3	None	5	14
	,,	22. 14. 36	M.	>1	Red	1·0	None	15	15
	,,	22. 17. 41	B.	1	Bluish-white	1·0	Slight	10	16
	,,	22. 26. 57	M.	1	Bluish-white	1·0	None	10	17
	,,	22. 41. 5	B.	1	Bluish-white	0·7	None	15	18
	,,	22. 42. 20	M.	2	Bluish-white	0·8	None	15	19

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

No. for Reference.	Path of Meteor through the Stars.
1	From γ Andromedæ moved slowly in the direction of β Trianguli.
2	From a point near δ Cephei towards o Andromedæ.
3	From a point near δ Arietis moved slowly in the direction of β Trianguli.
4	From a point near η Geminorum moved in a curved upward path in the direction of ϵ Geminorum.
5	From a point near α Andromedæ in the direction of γ Pegasi.
6	From a point near δ Draconis fell towards the horizon and disappeared behind cloud.
7	From a point a little above α Ursæ Majoris towards ι Draconis.
8	From γ Cassiopeiæ towards ι Andromedæ.
9	From θ Ursæ Majoris towards α Ursæ Majoris.
10	From 47 Cassiopeiæ towards o Cephei.
11	From a point between δ and o Persei towards α Arietis.
12	From β Camelopardali towards 72 Cassiopeiæ.
13	From a point a little above β Aurigæ moved towards that star.
14	From a point near γ Andromedæ towards μ Andromedæ.
15	From a point midway between γ Geminorum and α Orionis moved towards the latter.
16	From 77 Persei passed through γ Trianguli towards τ Piscium.
17	From a point midway between Capella and θ Aurigæ moved in the direction of ζ Aurigæ.
18	From a point midway between β Cassiopeiæ and ι Cygni towards π^2 Cygni.
19	From γ Orionis in the direction of ν Eridani.