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AIR MINISTRY.

METEOROLOGICAL OFFICE.

BRITISH METEOROLOGICAL AND MAGNETIC YEAR-BOOK, 1920,

PART III., SECTION 2.

GEOPHYSICAL JOURNAL, 1920,

COMPRISING

DAILY VALUES OF THE METEOROLOGICAL AND GEOPHYSICAL ELEMENTS

AT THREE OBSERVATORIES OF THE METEOROLOGICAL OFFICE;
DAILY VALUES OF SOLAR RADIATION AT SOUTH KENSINGTON;
WIND COMPONENTS AT FIXED HOURS AT FOUR ANEMOGRAPH STATIONS;
TABULATIONS OF OCCASIONAL SOUNDINGS OF THE UPPER AIR;
AND RESULTS OF OBSERVATIONS OF CLOUD AND AURORA;

TOGETHER WITH AN ANNUAL SUPPLEMENT.

Published by Authority of the Meteorological Committee.

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ANNUAL SUPPLEMENT.

METEOROLOGICAL OFFICE.

BRITISH METEOROLOGICAL AND MAGNETIC YEAR-BOOK: GEOPHYSICAL JOURNAL.

INTRODUCTION TO THE TABLES FOR 1920.

THE Geophysical Journal gives daily values for the meteorological and geophysical elements observed at the three observatories of the Meteorological Office (Kew Observatory, Richmond, Surrey ; Valencia Observatory, Cahirciveen, Co. Kerry ; and Eskdalemuir Observatory, Dumfriesshire) and at the St. Louis Observatory, Jersey. Data are given for Solar Radiation, Meteorology, Atmospheric Electricity, Terrestrial Magnetism, and Seismology. Wind components are given for four additional anemograph stations.

The results of ascents at Upper Air Stations at Aberdeen, Eskdalemuir, Cahirciveen, and South Farnborough, together with nephoscope observations made at Aberdeen, and tables showing the occurrences of Aurora, are included in the Journal.

Greenwich Mean Time is used in all cases, and the hours are counted from midnight and numbered 0 to 23 ; the second midnight of the day is referred to as 24 h.

All the units employed are based on the C.G.S. system. Data to which the letters x and n are attached represent the maximum and minimum values in the column.

The tables are as follows :—

1. **Sunshine and Solar Radiation.**—The total number of hours of bright sunshine as measured by the Campbell-Stokes Recorder is given for Westminster,* Richmond, Eskdalemuir, and Cahirciveen ; also the percentage this represents of the " possible," regarded as the number of hours from sunrise to sunset. The Campbell-Stokes instrument records only bright sunshine, no trace being obtained in thick haze or when the sun is very near the horizon. Thus the total it gives is less than the number of hours during which the position of the sun is visible to the naked eye. While the result is somewhat arbitrary, the records from different instruments of this pattern show a close agreement. The " normal " values for Westminster, Richmond and Cahirciveen are from the 35 years 1881 to 1915 ; those for Eskdalemuir from the 5 years 1911 to 1915.

Solar radiation results are given for South Kensington, Richmond (Kew Observatory), and Eskdalemuir. At the two latter stations use is made of the Ångström pyrheliometer, which gives the intensity of the radiation received from the sun by a surface which is normal to the line drawn from the instrument to the sun. At Richmond the observations are made within half an hour of noon; for this observatory the vertical component of the radiation, *i.e.* the intensity multiplied by the cosine of the zenith distance of the sun, is tabulated to faciliate comparison with the South Kensington records. The hour of observation at Eskdalemuir being more variable is given explicitly ; the value is also given of (p/p_0) sec Z, where p is the barometric pressure at the observatory in millibars at the time of the observation, p_0 is 1000 millibars, and Z is the zenith distance of the sun, so that (p/p_0) sec Z affords a measure of the mass of atmosphere through which the solar radiation

* The exposure of the recorder at South Kensington was interrupted by building operations at the end of September 1918, and the record made at the Wesleyan Training College, Westminster, has been tabulated since that date. The Westminster " normals " are for the period 1881 to 1915.

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has had to travel before reaching the earth. The entries in the columns headed "sky" at Richmond and Eskdalemuir are intended to show the presence or absence of any visible obstruction, such as haze, mist, or cloud, in the direct path of the solar radiation recorded. Observations are taken so far as possible in the absence of cloud; but upper cloud, when there is a great deal of it, cannot always be avoided, and, unless the cloud is very thin, the fall in the radiation recorded is conspicuous.

At South Kensington the radiation is measured by the Callendar Radiograph, which records the amount received on a horizontal surface from all sources. In bright sunshine the greater part of the radiation consists of the vertical component of the direct solar radiation, but even then an appreciable part comes from the general atmosphere and from clouds. Thus if a Callendar and an Ångström instrument were simultaneously recording side by side, one would naturally expect the radiation recorded by the former to exceed the vertical component of that recorded by the latter.

The intensity of radiation, whether at South Kensington, Richmond, or Eskdalemuir, is expressed in milliwatts per square centimetre. For conversion to the unit more ordinarily employed abroad, we may use

1 mw. per sq. cm. = 0·01435 gramme-calorie per sq. cm. per minute.

At South Kensington two measurements are given for the maximum radiation—the highest value shown on the trace of the Callendar instrument at whatever hour it occurs, and also the highest value recorded between 11 h. 30 m. and 12 h. 30 m. It is the latter that is most appropriate for comparison with Richmond. The daily total radiation at South Kensington, representing the integrated value of the radiation throughout the 24 hours, is also given, being expressed in joules(j) per sq. cm. A watt equals 1 joule per second, and therefore a uniform radiation at the rate of 1 milliwatt amounts in 24 hours to 86·4 joules. The daily total at South Kensington is also expressed as a percentage of the "planetary" radiation, *i.e.* the radiation that would be received if the earth's atmosphere were non-existent, assuming the average intensity of direct solar radiation in space at the earth's mean distance from the sun to be 135 milliwatts per sq. cm. This accepts Dr. Abbot's result, 1·93 gramme calories per sq. cm.; but it should be remembered that the scales of the Callendar and Ångström* instruments undoubtedly differ from that accepted at Washington.

2. **Meteorology and Magnetism:—Cahirciveen (Valencia Observatory).**—This table is in the form adopted for Part III., Section I., of the *Year-Book* (*Daily Readings at Meteorological Stations of the First and Second Orders*). Pressure, temperature, wind velocity, and rainfall are taken from the self-recording instruments at the observatory. Some account of these instruments will be found in the Introduction to *Hourly Values from Autographic Records*, Meteorological Section, 1913. It may be noted here that the temperatures refer to a large louvred screen on the north wall of the Observatory, not to the Stevenson Screen, which contains the thermometers used for the observations printed in the *Daily Weather Report*.†

Pressure is given in "millibars" (1000 millibars = one megadyne per square centimetre). One millibar is approximately equivalent to the pressure of 0·75008 mm. or 0·02953 inch of mercury under standard conditions (273a, lat. 45°). Conversion Tables will be found in *Hourly Values from Autographic Records*, 1913, and in the *Computer's Handbook*. The necessary reductions of the readings of the barometer on account of temperature and latitude have been made.

Temperatures are given in units on the Kelvin Absolute Scale, *i.e.* in centigrade degrees measured from a zero 273° below the normal Freezing Point of water.‡

* Ångström No. 24 was in use at Richmond during the year 1920. It is hoped that a discussion of a comparison between the scale of this instrument and that of an Abbot silver disc pyrheliometer will be published shortly.

† Temperatures for Richmond refer to a North Wall Screen, those for Eskdalemuir to a Louvred Hut in the open. These Screens also contain the thermometers used for the Daily Weather Service.

‡ The propriety of the definition has been discussed by F. J. W. Whipple, *Lond. Phys. Soc. Proc.*, vol. xxxi, 1919, p. 240.

Temperatures at or below 273a (0° C.) are printed in small type. The extreme temperatures refer to the calendar day.*

Vapour-Pressure, deduced from the readings of the dry and wet bulb thermometers, is given in millibars. For the computation of Vapour Pressure and of Relative Humidity tables depending on Glaisher's hypothesis, that the depression of the wet-bulb readings below the air-temperature is proportional to the depression of the dew point below the same temperature, are utilised.

Wind-Speed is expressed in metres per second. The values are estimated for periods of 60 minutes centering at the hours named. The Robinson anemograph† (9-inch cups, 24-inch arms, factor 2·2) is used for this purpose.

Wind-Direction in the present volume is given by the deviation from North, reckoned in degrees as a " veer," in the sense N, E, S, W. The general direction for the 60 minutes is estimated from the anemogram.‡ No direction is given when the anemogram shows a mean velocity for the hour smaller than 1·6 metres per second.

Precipitation is given in millimetres of equivalent rainfall. The rainfall is for the calendar day ; previous to May 1st, 1914, the period was the 24 hours beginning at 10 h. 30 m., and from that date to the end of 1917 the 24 hours beginning at 9 h.*

The " normals" for Pressure, Temperature, and Precipitation are from the 45 years 1871 to 1915 ; those for Humidity from the 30 years 1886 to 1915 ; and those for Wind from the 35 years 1881 to 1915. Except in the case of Pressure, no allowance has been made for the removal of the observatory from Valencia Island to Cahirciveen in 1892.

The estimation of **cloud** amount and the symbols for **weather** are in accordance with the conventions of the International Meteorological Committee.

A summary of the weather for each day is given in the column headed **Remarks,** the international weather symbols and the letters of the Beaufort Notation being used as far as possible. These symbols and letters are as follows :—

BEAUFORT NOTATION AND INTERNATIONAL WEATHER SYMBOLS.

b.	blue sky. (Cloud amt. 0,1,2,3	V	rime.	h.	▲ hail.
bc.	some cloud. ,, 4, 5, 6	~	glazed frost.		⟋ soft hail.
c.	cloudy. ,, 7, 8	e.	water deposited copiously on exposed surfaces, without rain falling.	t.	T thunder.
o.	overcast. ,, 9, 10)			l.	≺ lightning.
g.	gloomy, dull appearance.				⟋ thunderstorm.
u.	ugly, threatening appearance.	y.	dry air. (Relative Humidity less than 61 per cent.)		⟋ gale.
v.	visibility, unusually clear atmosphere.			q.	squally.
		p.	passing showers.		⊙ solar corona.
z.	∞ haze.	d.	drizzling rain.		⊕ solar halo.
m.	≡⁰ mist, light fog.	r.	● rain.		∪ lunar corona.
f.	≡ fog.	s.	✲ snow.		⊓ lunar halo.
fe.	≡: wet fog, *i.e.* fog which deposits water copiously on exposed surfaces.	rs.	✱ sleet.		⌒ rainbow.
			⊦ snow drift.		⩛ aurora.
w.	⊃ dew.		⊠ snow lying (more than half the surrounding country covered with snow).		⌒ zodiacal light.
x.	⌙ hoar frost.				⌒ mirage.
	← ice crystals.				

The figure ⁰ attached to a symbol indicates very slight, whilst the figure ² indicates strong or heavy : thus ●⁰=slight rain, ●²=heavy rain. When economy of space is necessary, morning, afternoon, and night are denoted by *a.*, *p.*, *n.* respectively. The gale symbol ⟋ is normally used in this publication to indicate that the wind as recorded by the anemometer averaged at least 17·2 *m/s* for one or more "centered" hours. In the Kew Observatory tabulations the symbol has been used with the word gust in brackets to indicate gusts reaching 17·2 *m/s*.

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* Extreme temperatures and rainfall for the 24 hours to 7 h. are printed in the *Daily Weather Report* and utilised in the *Weekly Weather Report*. For the *Monthly Weather Report* the figures of this Journal are used. †See below, p. viii.

‡Formerly it was the practice to take the direction at the exact hour. The present rule was adopted as from 1st May 1915. The Introductions to the *Geophysical Journal*, 1915, 1916, should be amended in this sense.

Table 2 also contains results for **Magnetic Horizontal Force, Declination,** and **Inclination** from absolute observations, usually two a month. The observations* are made at fixed hours on days not subject to abnormal magnetic disturbance, and may be regarded as referring : Horizontal Force to 11 h. 35 m., Declination to 10 h. 20 m., and Inclination to 14 h. 30 m. The unit of force employed, 1γ, represents 0·00001 C.G.S. magnetic unit. It is equal to the magnetic force due to an electrical current of 5 amperes in an infinitely long straight conductor a kilometre away. A memorandum by Dr. Chree on the probable errors in absolute observations of the magnetic elements is printed with the Introduction to the *Geophysical Journal* 1918.

Tables 3 and 4 contain corresponding observations for **Richmond (Kew Observatory)** and **Eskdalemuir, Dumfriesshire,** with the exception of the magnetic data. At Eskdalemuir the velocity of the wind is determined from the readings of a Dines Pressure-tube Anemograph. The periods from which the Richmond normal values are derived are : Pressure and Temperature 1871 to 1915, Humidity 1886 to 1915, Wind 1881 to 1915, and Rain 1871 to 1915. The " normals " for Eskdalemuir all refer to the 5 years 1911 to 1915.

5. **Geophysics, Richmond (Kew Observatory).** In addition to magnetic and electrical data, this Table contains the readings at 9 h. of thermometers placed in iron tubes in the ground with their bulbs at depths of 30 cm. and 120 cm. below the surface. The mean level of underground water is also given for each day, together with the highest and lowest levels recorded during the month. A description of the apparatus used will be found in the Annual Supplement for 1914. The variation of level through the year is shown by a graph.

Magnetic Data for Richmond (Kew Observatory). The magnetic data published in the *Geophysical Journal* up to 1915 were maxima and minima derived from measurements of the magnetograms. The adoption by the London and South-Western Railway of electric traction for the line which passes some 1000 m. from the observatory has made the records useless for the determination of extreme values. The results of absolute observations* taken usually four times a month are now given.

The magnetic character of the day is determined by examination of the magnetograms, and is given on the scale approved by the International Magnetic Commission, "0" representing quiet, "1" moderately disturbed, and "2" highly disturbed conditions.

Values of the **Electrical Potential Gradient** in the open are given for 3 h., 9 h., 15 h., and 21 h., representing means for the sixty minutes centering at the hour. A factor, whose value is given, is applied to the electrograph curve readings to deduce the corresponding potential gradient in the open, *i.e.* the potential gradient as it would be if unaffected by the presence of buildings or apparatus. The gradient is measured in volts per metre. It is positive when the potential in the atmosphere exceeds that of the earth. A negative value is indicated by the sign "-" before the number. When the fluctuations of potential are too large or to rapid to permit of a satisfactory numerical estimate of the hourly mean, "*z*" is inserted with an appropriate sign to indicate whether the gradient was on the whole positive or negative, or too oscillatory to admit of the dominant sign being determined.

The factor for reduction to the open is usually determined month by month, from a comparison of the absolute values obtained from a standardised electrometer over a flat area with the corresponding readings from the electrograms.

The electric character of the day is indicated by the figures 0, 1, or 2 according to the character of the trace of the electrograph as regards negative potential gradient : thus 0 means no negative potential ; 1, one or more excursions of limited duration to the negative side of the scale ; 2, negative potential extending in the aggregate over at least three hours.

The charges on the ions, positive and negative, are determined by measurements

* Notes on the observations are to be published in *Hourly Values from Autographic Records*, 1920.

with Ebert's Aspiration Apparatus, extending over fully half an hour between 14 h. and 16 h. The charge per cc. is multiplied by 10^{16} and given in coulombs* to facilitate comparison with the data in neighbouring columns.

In addition to all the ions with mobilities of the order of 1cm. per second, the Ebert apparatus captures, it is believed, a very appreciable number of the slow-moving or Langevin ions. If all the Langevin ions were captured the figures given in the Table would probably, in most cases, be largely increased.

The Ebert apparatus is designed to determine not merely the number but also the mobility of the more mobile ions ; the results of such determinations were given in the years 1911–1912 together with the deduced values of the conductivity and of the air-earth current. The figures were found, however, to present many inconsistencies, and the mobilities are no longer observed. The data now published for the air-earth current are derived from observations made with the apparatus designed by Mr. C. T. R. Wilson, combined with readings from the electrograms. Observations taken with the Wilson apparatus near 15 h. supply a value for the electrical conductivity, and this is combined with the mean value of the potential gradient in the open for the sixty minutes centering at 15 h., as derived from the electrograms. The observations are taken in a uniform way, and should be strictly comparable amongst themselves, but it is believed that multiplication by a factor exceeding unity would be required to give the true air-earth current.

6. **Geophysics :—Eskdalemuir.**—This table contains magnetic and electrical data of the same general character as those for Richmond in Table 5, but with modifications. The Eskdalemuir magnetographs record the three rectangular components North, West, and Vertical. The extreme daily values, and their hours of occurrence, are given for each. In view of the uniformity of the temperature to which the magnetograph is exposed, no temperature correction has been applied.

In the electrical character statistics, 0, 1, and 2 have the same significance as at Richmond, but letters *a*, *b*, *c* are attached according to the range of oscillation of the potential gradient : *a* means that for no hour of the day was there a range as large as 1000 volts ; *b* that a range of 1000 volts or more was reached in one hour at least, but in fewer than six hours ; *c* that a range of 1000 volts or more was reached in at least six hours. These specifications must not be regarded as absolutely rigid criteria. After longer experience more definite specifications may be found possible.

7. **Meteorology :—Jersey (St. Louis Observatory).**—Readings of pressure, temperature, humidity, wind direction and force, and amount of cloud, with type and direction, are given for 9 h., 14 h., and 21 h., together with the minimum temperature on grass, rainfall, and the duration of appreciable actinic strength of the sun's rays as registered by a Jordan recorder.† Remarks on the weather are also given. The first hour of observation was changed from 7 h. to 9 h. on 1st January 1919. The normals for the various elements are for different periods all ending in 1920. The number of years utilised in each case is given in the footnote.‡

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* In earlier volumes other units were used for the ionic charges.

In 1911 the number of ions was given. In computing the number the value $3{\cdot}4\times10^{-10}$ C.G.S. electrostatic unit or 11×10^{-20} coulomb was accepted as the charge upon an ion. Recent research has shown that this value was too low. Millikan's experiments (*Phil. Mag.*, Series 6, vol. xxxiv., 1917, p. 3) give $4{\cdot}77\times10^{-10}$ C.G.S. electrostatic unit, or $15{\cdot}9\times10^{-20}$ coulomb, for the ionic charge.

To reduce the 1911 entries to the form adopted in the current tables they must be multiplied by 11×10^{-4}.

For the years 1912–1915 the charge per cc. $\times10^{20}$ is given in terms of the C.G.S. electromagnetic unit, which is equal to 10 coulombs. To reduce the entries for these four years to the present form, which was adopted for the year 1916, they must be divided by 1000.

To derive the number of ions per cc. from the entries in the present volume they must, if Millikan's results be accepted, be multiplied by 629. To derive the charge in C.G.S. electrostatic units per cubic metre multiply by 0·3.

The figures published for the year 1919 were unfortunately subject to certain errors which are discussed in the Memorandum printed in the Annual Supplement for 1919.

† Allowances based on personal observations are made for the times near sunrise and sunset when the sun is shining, but the light is not strong enough to give a trace. This is an important departure from the practice adopted by the Meteorological Office.

‡ Pressure, Air Temperature, and Rainfall, 27 ; Cloud Amount, 26 ; Humidity, 25 ; Grass Minimum, 24 ; Sunshine, 23 ; Wind, 17.

This year, 1920, is the last for which the St. Louis observations are available. The Director, the Reverend M. Dechevrens, S.J., retired at the end of the year. The Observatory was organised by him in 1894. Up to 1913 the observations were published locally. The data for the years 1914–1916 were printed as a special supplement to the *Geophysical Journal*, 1916. For the years 1917–1920 they have been printed month by month.

8. **Wind Components** for four principal anemograph stations of the Meteorological Office, representing different parts of the country. As in Table 2, the wind velocities are expressed in metres per second, and represent mean values for the sixty minutes centering at the specified hours 3 h., 9 h., 15 h., and 21 h. The data at these four hours are not the resultant wind velocities, but their rectangular components in the North-South and East-West directions. North and South winds are treated separately, and so are East and West. The anemographs at Holyhead and Deerness are of the Robinson type, and of the same large size as those at Valencia and Kew Observatories, the arms being 610 mm., the diameter of the cups 230 mm., and the factor used for deriving the run of the wind from the run of the cups 2·2. The Scilly instrument is smaller, the arms being 305 mm., the diameter of the cups 127 mm., and the factor 2·8.

Recent investigations have shown that the correct factor depends on the speed. But it is not proposed to depart from the use of the constant factors until the corrections have been determined with greater certainty.* The rule is that when the tabulated wind-speed is less than 1·6 m/s, components are not shown, and the word " calm " is printed.

At Holyhead and Scilly there are also Dines pressure-tube anemographs, and the entries given under the heading " Maximum in a Gust " represent the highest speeds recorded by these instruments in the course of the day. The time of occurrence of the highest gust is also given. The velocity portion of the Scilly Robinson Anemograph went out of action on 27th April, and up to the end of July 1920, the data in Table 8 were derived by taking the velocities from the Dines Pressure-tube anemometer. This latter instrument is now known to have been defective at that time, and the figures printed for those months are therefore unreliable. From August 1920 onwards data were computed from the Robinson anemograph only. At Deerness, where there is only a Robinson cup anemograph, particulars are given as to the largest of the twenty-four mean hourly velocities, and the hour or hours of its occurrence. For Shoeburyness the hourly wind components as well as the gusts are derived from Dines records. Shoeburyness appears in the tables for 1919 and 1920 in place of Yarmouth, at which station the direction recorder of the Robinson Anemograph failed at the beginning of 1919. The instrument was not repaired because it was proposed to combine a direction recorder with the pressure-tube anemometer at Gorleston. This improvement was carried out and the recorder has been in action since May 1920.

9. **The Seismological Diary** consists in the main of results given by the **Galitzine Seismographs**† (two horizontal components and the vertical component) at **Eskdalemuir,** but includes data from a **Milne Seismograph** at **Richmond** (**Kew Observatory**). The Eskdalemuir data include (i.) particulars of the earthquakes recorded, and (ii.) the amplitude and period of the microseisms shown by the North component Galitzine instrument on each day at 0 h., 6 h., 12 h., and 18 h. Disturbances attributed directly to wind or other purely local circumstance are excluded. The notation employed is as follows :—

P is the time of arrival of the first phase (longitudinal waves). S is the time of arrival of the second phase (transverse waves). L is the time of arrival of the long waves (surface waves).

PR_1, PR_2 . . . are longitudinal waves reflected once, twice . . . at the earth's surface, prior to their arrival at the station. SR_1, SR_2 . . . similarly denote reflected transverse waves. Any times given for reflected waves refer to the beginning of the disturbance at the observatory.

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* Cf. Notes on the Robinson Anemometer, F. J. W. Whipple. *Advisory Committee for Aeronautics Reports and Memoranda*, No. 669, 1920.

† Vide *Geophysical Journal*, Annual Supplement, 1913; or G. W. Walker's *Modern Seismology*.

M_1, M_2 . . . are the times of successive maxima of the displacement of the ground, corrected, if necessary, for the lag of the instrument.

i is the sudden commencement of a phase. *i*P means a sudden commencement of the P phase. *e* means an indistinct commencement of a phase. F is the end.

T, the period in seconds, is the duration of a double oscillation (to-and-fro movement). μ represents a micron (0·001 mm.).

Δ is the distance in kilometres of the epicentre measured along the arc of the great circle passing through the station. *a* the azimuth of the epicentre (0° to 360°) measured from North through East. The distance is estimated from Klotz's Seismological Tables (*Publication of the Dominion Observatory, Ottawa*, vol. iii. No. 2), which are also used for computing the time at which the disturbance originated. The time of origination is denoted by the letter O.

A_N, A_E and A_Z are the amplitudes of the components of the true displacement of the ground from the position of rest, and are measured in microns. When the displacement shown by the North-South seismograph is to the North a + sign is shown ; for a displacement to the South a − sign is used. Similarly + is used for displacements to the East and upwards, − for displacements to the West and downwards. When the oscillations are of a simple harmonic character no sign is prefixed to the amplitude.

The suffixes N, E, Z indicate that the estimates refer to the records from the North-South, East-West and Vertical seismographs respectively.

All the microseisms recorded are believed to arise from other than local causes. Microseisms are practically always in evidence, and their period usually remains at least approximately constant during a good many minutes.

The group of waves of greatest amplitude occurring in the 30 minutes centering at the hour in question is selected, and the amplitude tabulated is the mean obtained from two or three waves in that group.

The period is derived from a measurement made on the same group.

On 16th October the clockwork of the drum recording the horizontal components showed serious defects and had to be dismantled. Repairs were not completed until the end of the year.

The data given for Richmond include the times of commencement of the disturbance and the time of the largest displacement shown on the trace. Additional information is given under the heading "Remarks." The boom of the instrument is oriented North-South, and moves when the ground is tilted East to West. It has, however, to be remembered that in reality the boom responds to ground movements of various kinds, and that the amplitude of the movement shown on the trace depends to a considerable extent on whether the oscillatory movement in the ground has a period near to or remote from the natural period of the boom. At the same time, a really large movement on the trace invariably means a large earthquake. Amplitudes, all measured on the trace in mm., are not printed unless at least 1·0 mm. Those less than 0·2 mm. are characterised as very small, those between 0·2 and 0·5 mm. as small. During the year 1920 the period of the boom was approximately 18 seconds, and a movement of 1 mm. on the trace was produced by a tilting of from 0″·40 to 0″·50.

10. **Soundings with Pilot Balloons.**—This table gives the results of **exploration of the free atmosphere** by means of pilot balloons. The soundings available are numerous ; only those at Aberdeen, Eskdalemuir, Cahirciveen, and South Farnborough are included in this table.

It should be noted that "Soundings with Pilot Balloons" and of "Upper Air Temperatures, Aeroplane Ascents" are not to be published in the *Geophysical Journal* 1921, but that the "Soundings with Registering Balloons" will be included in the Annual Supplement for that year. Observations in the Upper Air were published in the *Weekly Weather Report* from 1906 to 1911. From 1912 to 1920 they have been given in the *Geophysical Journal*. Since April 1st 1917 such observations have been given, however, in the Upper Air Supplement to the *Daily Weather Report*, and that publication now being available for reference the reproduction of the observations in this Journal has become unnecessary.

In table 10 the time which refers to the beginning of the sounding is given to the nearest five minutes. Wind directions are given in degrees from True North (through East).

The wind velocity is derived from that of the balloon itself. This may be observed with two theodolites at the ends of a known base, or with one theodolite. As a rule, only one theodolite is employed, and the velocities are then deduced in the way explained in the *Computer's Handbook*, Section II.

The vertical velocities are calculated from the formula

$$V=84\ L^{\frac{1}{2}}/(W+L)^{\frac{1}{2}},$$

in which

L is the free lift of the balloon, *i.e.* the weight in grammes which the balloon can carry without rising,
W is the weight of the balloon in grammes, and
V is the vertical velocity in metres per minute.

The value 84 was adopted for the constant of this formula in place of 81 as from 1st September 1918. (*M.O. Circular No.* 27.)

The " Geostrophic Velocity " shown for each ascent is determined from the prevailing pressure gradient by the formula $v=\gamma/2\rho\omega\sin\lambda$, in which γ is the horizontal pressure-gradient, ω the angular velocity of the earth, ρ the density of the air, λ the latitude, and v the required geostrophic velocity. The significance of geostrophic velocity is explained in the introduction to the *Geophysical Journal* for 1915. Reference may also be made to the *Meteorological Glossary* and to the *Computer's Handbook*, Section II. iii. The relation between actual winds and geostrophic winds has been discussed with reference to observations by J. S. Dines,* J. Fairgrieve,† and G. Dobson,‡ and from a theoretical standpoint by G. I. Taylor.§

The pressure gradient is derived from the charts of the *Daily Weather Report* International Section. If the hour of an ascent differs decidedly from a chart hour, results are usually calculated from each of the two charts which come nearest in time.

In the deduction of wind components, etc., the calculations are all carried out to 0·1 *m/s* (metre per second), but this degree of accuracy does not appear in the printed results except in the case of observed wind velocities under 5 *m/s*. Observed wind velocities of 5 *m/s* and over are given only to the nearest 0·5 *m/s*. Geostrophic or gradient wind velocities are given only to the nearest 1 *m/s*. Directions are given to the nearest 5° in the case of observed wind velocities, but only to the nearest 10° in the case of geostrophic or gradient wind velocities.

Details of nine soundings by registering balloons are given in the Annual Supplement, together with certain aeroplane observations.

11. **Nephoscope Observations.**—This table gives the results of observations of **Cloud Motion** at **Aberdeen** taken with Fineman's nephoscope.

The nomenclature used for clouds is in accordance with the specifications given in *The International Cloud Atlas* and in the *Observer's Handbook*. Information as to the usual heights of the several forms is given in the following table :—

Form.	Abbreviation.	Height of base (metres).
Cirrus	Ci.	mean 9000
Cirro-stratus	Ci-St.	,,
Cirro-cumulus	Ci-Cu.	3000 to 7000
Alto-stratus	A-St.	,,
Alto-cumulus	A-Cu.	,,
Strato-cumulus	St-Cu.	Below 2000
Nimbus	Nb.	,,
Cumulus	Cu.	Mean 1400
Cumulo-nimbus	Cu-Nb.	,,
Stratus	St.	Below 1000

The following abbreviations are also used : cuf.=cumuliformis, lent.=lenticularis, and fr.=fracto.

The observations give what is termed for brevity the "velocity-height-ratio," *i.e.* the true cloud velocity divided by the height of the cloud. The velocity-height-ratio is equal to the instantaneous value of the angular velocity of the cloud about a point vertically beneath it, and on the same level as the observer. It is conveniently

* " Advisory Committee for Aeronautics," *Fourth Report on Wind Structure*, 1914, p. 19.
† *Geophysical Memoir*, No. 9, 1914. ‡ *Q.J. Royal Met. Soc.*, 1914, p. 123.
§ *Phil. Trans. Roy. Soc.*, A, 1915, p. 1. *Proc. Roy. Soc.*, 1916, p. 196.

expressed in milliradians per second. For comparison with the nomenclature used in previous volumes it may be noted that for a low cloud at the height of one kilometre the velocity in metres per second is the same as the velocity-height-ratio in milliradians per second. A short discussion of the results for the five years 1912 to 1916 will be found in the Supplement to the 1916 volume.

12. **Aurora.**—This table, introduced in January 1917, gives Aurora observations at various stations, and also shows the phases of the Moon and the " magnetic character " assigned for Richmond and Eskdalemuir. As " magnetic character " refers to a period of 24 hours beginning at midnight, it is convenient to show the characters for the two calendar days which include the night of the Aurora observations.

An **Annual Supplement** gives a summary of the Observations of the Temperature of the Upper Air made at Benson, Oxon, and at South Farnborough, as well as some electrical and magnetic data from Richmond (Kew Observatory) and Eskdalemuir. Notes on the seismological work during 1920 at Eskdalemuir are also included, together with a diagram showing the variation in the level of the underground water at Richmond.

METEOROLOGICAL OFFICE OBSERVATORIES—GEOPHYSICAL JOURNAL.

DAILY VALUES.—*Solar Radiation, Meteorology, Atmospheric Electricity, Terrestrial Magnetism, and Seismology.*
Tenth YEAR.—No. 1. JANUARY, 1920.] Units based on the C.G.S. System. [*Price* 1*s.*

1. SUNSHINE AND SOLAR RADIATION.

Day.	WESTMINSTER. Bright Sunshine.* Total.	Per cent. of Possible.	SOUTH KENSINGTON.—Lat. 51° 30′ N. Long. 0° 10′ W. Radiation received on Horizontal Surface by Callendar Radiograph. Daily Total.	Per cent. of Planetary.	Maximum. For Day. Amount.	Time.	11.30 h. to 12.30 h.	RICHMOND.—Lat. 51° 28′ N. Long. 0° 19′ W. Bright Sunshine.* Total.	Per cent. of Possible.	Radiation at Noon by Angström Pyrheliometer. Intensity.	Vertical Component.	Sky.	ESKDALEMUIR.—Lat. 55° 19′ N. Long. 3° 12′ W. Bright Sunshine.* Total.	Per cent. of Possible.	Radiation by Angström Pyrheliometer. Time.	Sky.	$\frac{p}{p_0}$ sec. Z.	Intensity.	CAHIRCIVEEN. Bright Sunshine.* Total.	Per cent. of Possible.
	hr.	%	j/cm².	%	mw/cm².	h. m.	mw/cm².	hr.	%	mw/cm².	mw/cm².		hr.	%	h. m.			mw/cm².	hr.	%
1	0·0	0	109	17	6	13 25	5	0·0	0	..	..	..	6·1	86	12 17	Clear	4·82	71	3·2	42
2	2·3	30	179	26	11	12 10	11	4·5	57	33	9	Thro' Ci.S	2·3	33	..	..	..	..	0·0	0
3	0·0	0	106	16	13	10 55	11	0·0	0	..	..	..	0·0	0	..	..	..	..	0·0	0
4	0·6	8	217	32	15	12 30	15	0·0	0	..	..	..	0·0	0	..	..	..	..	3·5	45
5	0·0	0	144	21	13	11 30	13	0·0	0	..	..	..	0·1	2	..	..	..	..	x5·7	73
6	0·0	0	170	24	17	12 48	12	1·0	13	..	..	..	0·0	0	..	..	..	..	0·0	0
7	0·0	0	195	28	15	12 0	15	1·6	21	22	6	Hazy	0·0	0	..	..	..	..	0·0	0
8	2·0	25	246	34	24	12 0	24	1·3	16	44	12	do.	0·6	9	..	..	..	..	2·5	31
9	4·6	57	283	39	19	13 34	16	5·4	67	51	14	do.	0·8	11	..	..	..	..	0·2	3
10	0·2	3	124	17	21	13 2	5	0·1	1	..	..	..	0·0	0	..	..	..	..	0·3	4
11	0·0	0	40	6	5	12 30	5	0·0	0	..	..	..	0·7	10	..	..	..	..	1·7	21
12	0·0	0	149	20	16	11 20	15	0·0	0	..	..	..	0·0	0	..	..	..	..	0·0	0
13	0·4	5	221	29	20	11 50	20	0·4	5	..	..	..	0·0	0	..	..	..	..	0·4	5
14	4·4	54	244	32	16	12 30	16	5·9	72	60	18	Clear	5·0	66	12 18	Clear	4·37	71	0·0	0
15	0·0	0	81	13	8	10 35	6	0·0	0	..	..	..	1·8	24	..	..	..	..	0·2	3
16	0·3	4	160	20	13	13 35	8	0·4	5	..	..	..	0·0	0	..	..	..	..	0·0	0
17	0·7	9	151	19	22	10 15	6	0·7	9	..	..	..	0·0	0	..	..	..	..	0·0	0
18	0·0	0	74	9	6	13 15	5	0·0	0	..	..	..	0·0	0	..	..	..	..	0·0	0
19	0·0	0	93	11	10	9 5	7	0·0	0	..	..	..	2·5	33	..	..	..	..	4·1	49
20	0·0	0	120	14	11	12 5	11	0·0	0	..	..	..	3·1	40	..	..	..	..	0·0	0
21	3·5	42	255	30	21	11 35	21	4·4	52	..	..	..	x6·2	79	12 19	Hazy	3·93	57	2·2	26
22	1·8	21	278	32	23	11 50	23	2·5	30	36	11	Thro' Ci.S	0·0	0	..	..	..	..	0·0	0
23	0·0	0	106	12	10	11 40	10	0·0	0	..	..	..	0·0	0	..	..	..	..	0·0	0
24	0·1	2	122	14	25	12 20	25	0·2	3	..	..	..	0·2	3	..	..	..	..	3·8	45
25	4·5	52	386	42	26	12 20	26	6·2	72	53	17	Hazy	0·3	4	..	..	..	..	0·1	2
26	0·4	5	172	18	22	11 30	22	0·0	0	..	..	..	0·1	2	..	..	..	..	3·7	43
27	0·0	0	163	17	16	11 5	12	0·0	0	..	..	..	0·0	0	..	..	..	..	1·8	21
28	0·0	0	113	12	11	12 10	11	0·0	0	..	..	..	3·0	37	..	..	..	..	0·6	7
29	5·5	62	432	43	x30	11 15	26	6·8	77	56	19	Clear	0·2	3	..	..	..	..	0·0	0
30	x6·2	69	x457	45	28	11 48	x28	x6·9	77	60	21	Clear	3·4	41	..	..	..	..	0·0	0
31	0·0	0	104	10	11	13 40	7	0·0	0	..	..	..	0·2	3	..	..	..	..	2·9	32
Means	1·21	14	184	23	16	—	14	1·56	19	—	—	—	1·18	16	—	—	—	—	1·19	15
Normals	0·68	8	164	20	—	—	—	1·39	17	—	—	—	0·94	12	—	—	—	—	1·55	19
	←—35 years—→		←—8 years—→					←—35 years—→					←—5 years—→						←—35 years—→	

2. METEOROLOGY AND MAGNETISM:—CAHIRCIVEEN (VALENCIA OBSERVATORY).—Lat. 51° 56′ N. Long. 10° 15′ W.

Heights above M.S.L.:—H=9·1 m. H_b=13·7 m. H_a=26·4 m. Above Ground: h_t=1·3 m. h_r=0·56 m. h_s=12·8 m. h_a=13·9 m.

Day.	Air Pressure at Station Level. 9 h.	21 h.	Air Temperature in Degrees Absolute. 9 h.	21 h.	Max. 0 h. to 24 h.	Min. 0 h. to 24 h.	Humidity. Vapour Pressure. 9 h.	21 h.	Percentage. 9 h.	21 h.	Wind—Veer from North in degrees and Speed in metres per second. 9 h. °	m/s.	21 h. °	m/s.	Cloud Amount (0–10) and Weather. 9 h.	21 h.	Rain 0 h. to 24 h.	Min. Temp. on Grass. 18 h. to 9h.	REMARKS.	Magnetism. Horizontal Force, Declination West, and Inclination.
	mb.	mb.	a 200+	a 200+	a 200+	a 200+	millibar.		%	%					Tenths of Sky covered.		mm.	a 200+		
1	1000·4	1015·1	77·3	75·0	n78·2	76·4	5·4	5·6	n66	79	25	12	50	2	5	0	1·6	75	●⁰ *n.* Fair day. Fine evening.	
2	1005·3	987·6	78·7	79·9	80·9	n72·6	7·0	8·9	76	90	160	10	230	4	10	8	15·4	n70	Fine *n.* ●¹ to ●² day. Fair evening.	
3	984·0	993·5	79·4	79·1	80·0	77·5	7·6	8·5	80	90	85	6	30	5	8	10	3·5	74	Fair *n* and morning. ●⁰ to d. day.	
4	1014·1	1028·9	78·5	77·4	79·7	76·8	7·8	6·2	86	74	120	2	65	5	8	0	—	76	Fair morning and day. Fine evening.	
5	1035·8	1033·9	74·5	73·3	78·9	73·3	5·6	5·2	83	83	—	1	70	3	5	3	—	71	Fine *n.* Fair to fine day. ⋃ and ⋃	
6	1027·0	1018·6	75·8	80·4	81·1	73·5	6·5	9·8	87	96	160	2	165	8	10	10	1·1	71	Fine *n.* o day. ●⁰ evening. [evening.	
7	1010·7	1002·5	82·5	83·5	84·0	81·1	11·8	12·2	100	97	175	4	235	13	10	10	3·8	79	●⁰ *n.* d. morning. o to d. day.	17874γ
8	1002·1	1003·7	81·5	79·1	83·9	77·4	7·5	7·1	68	75	270	15	285	14	5	5	2·2	80	Fair *n* and morning. c. and p. day. p.	19° 21·6′
9	1008·9	995·6	79·3	83·6	83·8	77·0	7·1	12·5	74	98	285	9	230	14	5	10	12·5	75	p. morning. Fair a. ●¹ p. [& q. evg.	68° 7·6′
10	981·8	987·6	83·9	81·6	84·2	81·1	11·2	9·9	87	89	225	11	180	8	10	10●	8·5	80	d. to p. *n.* and *a.* o. day. ●¹ evening.	
11	976·5	989·0	81·1	81·6	83·1	79·4	9·0	7·7	84	69	235	14	255	20	10	6	8·2	79	●¹ *n.* *p.* morning ⁄ and ⊤ day. ≺*p.*	
12	997·0	1001·9	79·8	82·6	x85·9	79·6	9·0	9·5	91	80	170	5	250	14	10●	10	6·7	78	●¹ mng. and *a.* o. and damp day. ⁄*p.*	
13	1010·2	1013·0	81·4	80·4	82·5	79·4	8·7	7·6	80	74	240	7	270	13	10	2	2·4	79	p. mng. o. to c. *a.* p.*p.* Fine evening.	
14	1023·5	1018·2	79·3	83·7	83·8	75·7	6·8	12·3	71	96	135	6	180	5	10	10	12·6	74	c. to o. *a.* ●¹ *p.*	
15	1024·3	1025·1	82·9	83·4	83·6	82·2	11·2	12·1	93	97	170	4	180	6	10	10	1·0	81	Fine morning. c. to o. day. ●⁰ *p.*	
16	1026·5	1023·8	83·8	83·7	84·1	83·1	12·3	12·4	96	97	185	7	175	7	10	10	1·1	82	o. *n.* and *a.* o. and d. *p.*	—
17	1018·8	1020·4	84·3	84·2	85·4	x83·9	12·8	12·8	97	97	180	8	200	4	10	10 ≡°	1·4	83	o. *n.* o. and d. day.	—
18	1014·4	1012·1	84·2	79·5	84·6	79·3	12·7	8·7	96	90	190	5	355	2	10	10	x20·4	83	p. *n.* ●¹ morning. ●⁰ *a.* ●¹ *p.*	68° 6·4′
19	1017·5	1022·5	78·7	80·3	82·3	76·5	6·3	9·5	69	93	300	8	245	8	4	10	3·2	74	c. and h. morning. c. to b. and h⁰. day.	
20	1023·3	1020·4	83·1	83·4	83·5	82·3	11·7	12·1	95	97	285	5	235	13	10	10●	6·8	79	●⁰ *n.* Damp day.	—
21	1026·6	1023·6	82·0	82·0	83·2	80·5	8·9	9·8	78	86	285	7	180	5	7	7	0·4	79	Fair *n.* Fair to fine day.	19° 25·2′
22	1015·3	1016·5	82·3	80·0	83·4	78·0	10·7	8·5	92	85	180	7	240	7	10	2	6·5	81	o. and d. *n.* ●¹ *p.* Fine evening.	68° 5·1′
23	1008·7	1006·0	81·6	80·4	83·2	77·0	9·5	9·5	85	93	180	8	200	3	10	10●	6·3	75	Fine *n.* c. to o. *a.* ●¹ *p.*	
24	1001·0	1012·9	79·0	78·2	80·3	76·9	8·3	7·3	89	83	240	13	240	10	9	3	5·0	76	q. and p. morning. p. and h. day.	
25	1007·3	992·6	81·0	81·9	82·3	77·5	8·8	10·5	83	93	175	10	175	12	8	10●	17·1	76	p. day. ●¹ evening. [Fine evening.	
26	997·6	1001·0	77·7	77·6	82·4	77·4	6·2	7·5	72	89	245	7	200	7	5	8	5·8	75	●¹ *n.* Fair day. p⁰. evening.	
27	974·2	989·2	81·8	77·9	82·7	77·3	8·1	6·4	72	74	200	15	230	12	6	10≺	14·5	76	p. *n.* ●¹ morning. Fair day.	
28	995·7	997·9	76·4	76·2	79·4	76·0	6·1	6·4	79	84	220	4	240	7	7	9▲	2·2	75	p. *n.* Fair day. p. and h. evening.	
29	1001·8	991·7	77·0	80·3	82·7	75·5	5·9	7·6	73	74	185	5	265	16	10	8	16·0	74	Fine morning. ●¹ to ●⁰ day. Fine	17850γ
30	1008·3	1000·7	78·8	81·9	84·0	78·5	7·0	10·2	76	90	285	4	155	12	6	10	7·4	76	Fair morning. ●⁰ *p.* [evening.	—
31	1004·5	1017·5	80·5	79·3	83·9	77·3	8·6	6·5	83	n68	240	8	265	18	8	9	2·9	78	o. morning. c. *a.* o. and p. day.	—
Means	1007·8	1008·5	80·3	80·4	82·6	78·1	8·6	9·1	83	86	—	7·3	—	8·9	8·3	7·7	196·5	76·9	Monthly Totals or Means.	17862γ.
Normals	1012·6	1012·8	79·8	79·9	82·3	77·6	8·6	8·6	87	87	—	6·4	—	6·4	—	—	148·2	—	Normals.	19° 23·4′
	←——45 years——→						←——30 years——→				←——35 years——→						45 years			68° 6·4′

* By Campbell-Stokes Sunshine Recorder. *x* denotes the maximum and *n* the minimum value in the column.

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3. METEOROLOGY:—RICHMOND, SURREY (KEW OBSERVATORY).—Lat. 51° 28′ N. Long. 0° 19′ W.

Heights above Mean Sea Level:—Rain-gauge Site, H=5·5 m. Barometer, H_b=10·4 m. Cups of Anemometer, H_a=25 m.
Heights above Ground:—Thermometers, h_t=3·0 m. Rain-gauge, h_r=0·53 m. Sunshine Recorder, h_s=13·3 m. Cups of Anemometer, h_a=20 m

Day.	Air Pressure at Station Level.		Air Temperature in Degrees Absolute.				Humidity.				Wind—Veer from North in degrees and Speed in metres per second.				Cloud Amount and Weather.		Rain 0 h. to 24 h.	Min. Temp. on Grass. 18 h. to 9 h.	Remarks.
					Max.	Min.	Vapour Pressure.		Percentage.										
	9 h.	21 h.	9 h.	21 h.	0 h. to 24 h.		9 h.	21 h.	9 h.	21 h.	9 h.		21 h.		9 h.	21 h.			
			a	*a*	*a*	*a*									Tenths of Sky covered.				
	mb.	mb.	200+	200+	200+	200+	millibar.		%	%	° m/s.		° m/s.				mm.	*a* 200+	
1	990·7	1004·7	76·6	73·9	76·9	72·7	6·2	4·5	79	69	80	5	360	7	9●≡⁰	7≡⁰	1·3	69	● in *a*. Dull.
2	1012·2	1008·3	71·0	74·7	77·6	70·3	4·7	5·9	90	85	290	2	215	3	1≡⁰⌐	9≡⁰⌐	—	*n*66	⌐. Fine. ≡⁰ in *p*. ⌐ *n*.
3	1000·8	1001·2	76·8	75·9	77·3	75·0	5·9	5·4	74	71	150	5	100	6	10≡⁰	9≡⁰	—	70	Dull with ≡⁰.
4	1011·0	1021·9	74·7	75·2	76·8	74·4	5·1	5·2	74	73	50	4	30	6	6∞	10≡⁰	—	73	Cloudy to fine. ≡⁰ *n*.
5	1029·7	1033·2	75·8	75·1	76·9	73·9	6·2	5·1	84	72	30	6	40	7	9≡⁰	10≡⁰	0·1	73	Showers early. Dull. ≡⁰ *n*.
6	1026·4	1020·5	73·6	70·6	*n*73·9	69·6	5·0	4·4	78	86	50	5	5	3	10≡⁰	10	—	72	Overcast in *a*. Fine to dull *p*.
7	1016·1	1007·0	68·4	77·8	80·2	*n*67·7	4·1	7·5	95	87	240	2	210	9	9≡⁰	10≡⁰	—	68	Dull to fine. ≡⁰.
8	993·9	996·1	82·9	78·7	83·6	78·0	8·0	6·7	66	73	250	9	255	5	3	2	0·2	74	●⁰ early. Dull to fine. ⸝ (gusts) *a*.
9	1004·5	1006·3	76·2	77·7	78·9	75·7	6·0	6·6	79	77	280	3	210	5	4	10	2·7	73	Fine after 9 h., ● *n*.
10	990·8	989·0	83·1	83·1	84·7	76·8	11·3	9·4	92	76	220	9	255	9	10	10	*x*10·9	74	Dull and wet. ⸝ (gusts) 17 h.–22 h.
11	982·9	985·5	83·4	82·0	84·3	80·5	11·5	7·5	92	*n*66	215	13	250	10	10●	4	9·4	79	Dull and wet. ⸝ (gusts) 6 h.–24 h.
12	1002·2	1001·0	81·5	85·2	86·2	80·5	7·8	12·0	70	85	260	8	235	10	6	10	2·1	78	⸝ (gusts). 0 h.–20 h. Fair to dull.
13	1011·6	1008·7	82·0	81·3	*x*86·7	80·3	8·8	10·1	77	93	260	5	230	4	7	10●	4·4	80	⸝ (gusts) 1 h.–4 h. Fair to dull. ● *n*.
14	1022·5	1032·0	76·9	85·3	80·4	75·0	5·5	5·2	68	73	320	6	320	2	1	3≡⁰	—	75	⸝ (gusts) 6 h.–8 h. Fine. ∞≡⁰ *n*.
15	1029·7	1031·6	80·3	82·6	83·0	76·8	8·8	11·4	86	96	215	5	230	2	10≡⁰	10	0·1	69	Dull. Frequent ● d. ≡⁰.
16	1032·8	1030·7	82·8	82·0	85·9	81·6	11·7	10·8	97	95	230	4	225	6	10≡⁰	0⌐	0·1	82	Dull *a*. Cloudy to fine *p*.
17	1027·2	1022·8	80·6	83·4	84·2	80·1	9·6	11·9	92	95	230	6	220	7	7≡⁰	10	—	78	Mostly dull. ●⁰ d.
18	1021·6	1016·2	83·8	83·2	85·0	*x*83·1	12·3	11·4	96	92	220	4	220	4	10≡⁰	10	0·7	83	Dull with ● d. at times.
19	1008·5	1017·0	82·5	76·0	83·3	75·4	11·0	5·5	93	73	210	7	285	4	10	0	2·1	81	Dull to fair. Showers. ▲ 15 h. 15 m.
20	1019·8	1018·0	77·2	79·7	81·3	76·2	7·5	7·1	91	72	280	3	280	4	8≡⁰	0	—	72	⌐. Fine to dull.
21	1016·2	1024·7	81·5	77·1	82·4	76·0	7·0	6·6	*n*63	81	290	6	310	2	0	0	1·3	75	● early. Fine to fair.
22	1026·7	1022·5	73·9	80·3	81·2	72·9	5·9	8·3	90	81	—	1	215	5	4⌐≡	10	0·1	69	⌐. ≡ 9 h. Fine to cloudy.
23	1021·0	1017·7	81·2	79·4	82·2	79·2	10·0	8·8	93	92	210	3	200	3	8≡⁰	10≡⁰	—	78	Dull to cloudy. ● d. 13 h. and 21 h.
24	1012·6	1016·7	80·8	80·1	83·1	78·0	8·7	7·6	83	75	200	5	265	4	10	0	0·3	78	Dull most of day. ● d. at times.
25	1024·5	1017·4	73·3	79·0	81·5	73·2	6·2	8·9	100	96	—	1	175	4	1≡⁰⌐	5	—	68	⌐ and ≡⁰. Fine.
26	1007·3	1006·9	80·9	79·1	82·3	77·3	9·2	8·2	87	87	170	8	280	3	9	9	0·5	72	Dull. ● d. in *p*. [(gust)
27	1009·4	998·8	77·0	81·7	81·7	74·1	7·1	10·4	88	93	175	6	205	7	9≡⁰⌐	10	3·5	70	⌐. Overcast after 9 h. ● in *p*. and ⸝
28	1004·3	990·0	78·1	80·3	82·0	77·8	8·3	8·2	94	80	—	1	205	13	10≡⁰	9	8·0	74	Dull. ● in *p*. ⸝ (gusts) 19 h.–23 h.
29	1006·7	1008·1	76·4	79·9	80·3	76·1	6·4	7·6	82	76	230	5	190	8	10	9	1·6	74	Fine. ⸝ gust 23 h. and 20 m. ● *n*.
30	1006·2	1016·9	79·0	77·9	81·5	77·7	7·6	6·7	82	77	245	5	230	3	1	7≡⁰	5·1	76	⸝ (gusts) early. Fine.
31	1011·7	1016·9	83·2	80·2	85·2	78·1	12·0	7·8	97	77	195	7	235	6	10	10	0·6	75	Showers early. Dull to fair. ⸝ (gusts) *p*.
Means	1012·3	1012·5	78·6	79·0	81·6	76·3	7·9	7·8	85	81	—5·0		—5·5		6·8	7·2	55·1	74·1	Monthly Totals or Means.
Normal	1016·4	1016·2	76·3	76·8	79·2	74·5	6·8	7·0	86	85	—3·5		—3·6		—	—	46·7 (45 years)	—	Normals.
	45 years.						30 years.				35 years.								

4. METEOROLOGY:—ESKDALEMUIR, DUMFRIESSHIRE.—Lat. 55° 19′ N. Long. 3° 12′ W.

Heights above Mean Sea Level:—Rain-gauge Site, H=242 m. Barometer, H_b=237·3 m. Vane of Anemometer, H_a=250 m.
Heights above Ground:—Thermometers, h_t=0·9 m. Rain-gauge, h_r=0·38 m. Sunshine Recorder, h_s=1·5 m. Vane of Anemometer, h_a=15 m.

																			Remarks.
1	968·6	977·7	69·5	69·8	*n*72·4	68·0	3·0	3·0	*n*65	*n*62	340	6	210	2	5	2⌐	0·3	65	⊔ 1 h. Very fine v *a*: ⊔ 23 h. ⁎*n*.
2	979·2	975·2	69·5	72·0	74·4	68·4	3·7	5·5	79	98	—	1	—	0	1	10≡⁰	1·5	65	⁎≡⁰ till 1 h.: ⊠ b. to o. *a*: o.≡⁰ *p* and *n*.
3	969·5	976·4	73·7	74·1	74·8	72·1	5·5	5·7	85	87	130	7	110	6	10≡⁰	10●⁎	1·2	69	o. ≡⁰ at first. ⊠⁎⁰≡⁰ 10 h.–21 h.
4	990·5	1002·4	73·7	74·7	75·4	73·0	5·5	6·1	86	88	40	3	20	6	10≡⁰	5	0·5	69	o. ⊠⊕ *a*: o to c ≡⁰ *p*: bc p ⊔ *n*.
5	1008·9	1006·8	73·7	68·1	75·0	67·4	6·1	3·9	94	95	40	4	—	0	9⁎≡⁰	9	0·1	72	bc early: ⁎●p⁰ *a*: o to c *p* and *n* ⊔ *n*.
6	998·1	989·6	72·0	73·6	74·4	*n*65·7	5·2	6·1	92	96	—	1	—	1	10≡⁰⌐⁰	10≡⋮	—	*n*63	⌐⁰. o ≡⁰ *a* and *p*: g ≡⋮⁰ to d⁰≡⁰ *n*.
7	979·5	959·8	75·8	80·4	82·3	74·2	7·5	10·2	100	99	200	8	210	12	10≡⋮	10⸝≡⋮	14·6	73	●≡⋮ all day: ⸝ *p* and *n*.
8	950·2	961·6	77·3	72·2	82·3	71·6	6·3	4·4	76	76	290	17	300	9	7⸝	1	8·3	77	⸝● q till 7 h.: bq ⁎ pq *a* and *p*: b *n*.
9	970·6	968·6	70·8	74·1	74·6	70·1	4·8	6·1	93	93	280	3	230	6	2	10≡⁰	0·5	69	b. till 9 h.: c to o. ⁎⁰≡⁰ *a* and *p*: ≡⁰ *n*.
10	955·6	955·2	73·1	74·0	74·8	72·9	6·0	6·2	98	95	50	7	30	5	10⁎≡⁰	10≡⁰	6·8	73	Persistent ⁎≡⁰ all day ⊠.
11	942·7	938·1	76·0	76·1	76·8	73·3	6·7	6·8	89	89	260	6	240	9	10●≡⁰	10●	22·8	73	d ≡⁰ early: ●²≡⁰ to bc *a* and *p*: ●²q *n*.
12	962·6	960·9	77·6	73·6	78·6	73·5	6·7	6·1	80	96	270	11	—	1	9	10●≡⁰	8·9	73	●² pq early: o *a* and *p*: ●≡⁰ after 17 h.
13	974·5	973·1	75·2	74·8	77·7	73·9	6·9	6·3	97	91	200	5	230	2	10	10●	16·4	71	●≡⁰ 1 h.: bc 7 h.: ●²q *a*: ●⁰ *p*: ●² *n*.
14	990·7	996·2	73·0	73·6	75·1	70·9	5·2	5·6	85	88	300	11	190	9	0	10⁎	4·7	69	⁎²q till 2 h. ⊠ bv *a*: o *p*: ⁎≡⁰ *n*. [▲ 20 h.
15	990·4	994·9	78·6	78·0	81·2	73·0	8·9	8·6	98	99	220	10	200	8	10≡⋮	10≡⋮	3·3	70	⊠ 1 h.: ⁎≡⁰ to ●≡⋮ till 10 h.: bc *p*: ≡⋮ *n*.
16	990·6	988·0	81·4	82·1	83·1	*x*78·5	10·2	10·5	93	91	230	15	240	19	10≡⁰	7	0·8	77	⸝ 4 h.: d⁰ ≡⋮ 3 h.–6 h.: ≡⋮⁰: ⸝ 14 h.–24 h.
17	984·7	988·6	81·0	78·3	*x*84·0	75·7	10·3	7·1	97	80	230	17	250	8	10≡⁰	4	9·7	81	⸝ till 6 h.: d ⁰≡⋮ *a*: ●²≡⋮ *p*: bc *n*.
18	983·5	978·5	79·6	76·8	81·0	74·1	9·5	6·9	98	86	220	10	310	2	10●≡⁰	10●≡⁰	13·5	73	b. 1 h.: ●≡⁰ 8 h.–17 h.: ≡⋮⁰ d *n*: ● after
19	978·9	981·8	73·9	74·0	75·6	73·2	5·6	5·5	86	84	270	6	290	10	4	0	3·7	72	●≡⁰ early: bc, ⁎ pq *a* and *p*: b. *n*. [23 h.
20	986·8	985·5	73·8	76·1	79·1	73·1	6·2	6·8	96	89	180	2	170	4	10●≡⁰	10	3·9	72	b. 1 h.: ●≡⁰ to c *a*: p⁰ bc q *p*: ●² after 22 h.
21	983·3	993·9	75·5	73·4	79·9	71·7	5·9	5·1	81	81	280	11	200	3	4	3	3·3	73	●≡⁰ till 2 h.: ⸝ 4 h.: bc q. p²*a*: bq*p* & *n*.
22	988·7	981·2	77·8	76·2	79·2	71·0	8·1	6·8	94	89	200	9	300	5	10●≡⁰	10●≡⁰	18·4	68	⩊⁰ b early: Persistent ●≡⁰ 9 h.–22 h.
23	986·7	977·8	75·6	79·2	79·5	74·0	7·1	9·1	96	97	190	4	210	14	10	10●≡⁰	7·2	72	o. *a*: d ≡⁰ *p*: continuous ●≡⁰ after 17 h.
24	971·5	976·6	79·0	74·5	80·0	74·4	8·9	5·2	96	77	170	9	230	11	*10*●≡⁰	*0*	*x*24·5	75	●²≡⁰ till 15 h.: ⸝ 12 h.: c to bc *p* and *n*.
25	985·3	977·0	74·7	78·0	78·3	73·7	6·2	6·5	89	75	190	9	190	13	8	9	0·3	72	c at first: ● 13 h.: o. *p* and *n*.
26	966·6	972·7	79·4	74·4	80·1	73.6	8·5	5·8	89	85	170	12	200	3	10●	9	8·8	76	o. early. ● 8 h.–13h.: c to o. *p* and *n*.
27	969·2	958·5	74·2	77·7	78·4	73·4	5·9	6·3	89	74	160	7	200	11	10	8	5·6	72	⁎●▲q *a*: ⸝⁎⁰● q *p*: c to oq *n*.
28	967·8	969·8	74·8	73·3	77·1	72·6	6·1	5·3	88	85	220	7	—	0	9	10	1·1	73	▲ q to c *a*: bc to o. *p* and *n*: ⊔ 19 h.
29	971·1	968·4	72·4	73·2	75·1	71·0	5·4	6·1	92	98	—	1	140	8	10	10⁎≡⁰	3·9	69	o. till 20 h. then ⁎≡⁰ ⊠. [bc ⊔ *n*.
30	965·1	980·5	74·4	72·4	76·2	71·7	5·2	5·2	77	89	290	14	240	2	6	6	4·6	72	⊠⁎≡⁰ to ●⁎ till 7 h.: cq *a*: ⩓⁎p *p*:
31	972·4	973·3	75·4	75·3	79·8	72·0	7·2	5·2	99	73	—	1	220	12	10●≡⁰	10	14·1	69	d ≡⁰ early: ● ²≡⁰ *a*: c. ▲² q 16 h. *p*: b to o. ●⁰▲⁰ *n*.
Means	976·9	977·1	75·2	75·0	77·9	72·3	6·6	6·3	90	87	—7·4		—6·5		8·2	7·8	213·3	71·5	Monthly Totals or Means.
Normal 1911-1915.	983·6	983·2	74·6	75·0	77·3	72·6	6·3	6·4	89	88	—5·3		—5·8		—	—	111·0	—	Normals.

Temperatures at or below the normal freezing point of water are printed in small type. *x* denotes the maximum, and *n* the minimum, value in the column.

5. GEOPHYSICS :—RICHMOND (KEW OBSERVATORY).

Day.	Earth Temperature at 9 h.		Height above M.S.L. of Surface of Underground Water.		Terrestrial Magnetic Force.						Magnetic Character of Day.	Electric Character of Day.	Charge per cc. × 10^{16}.		Air-Earth Current. × 10^{16}.	Potential Gradient, Volts per metre. Factor 2·29.			
					Horizontal Comp't.		Declination.		Inclination.				+.	−.					
	0.3 m.	1·2 m.	Daily Mean.	Extremes.	Mean Time.		Mean Time.	West.	Mean Time.				About 15 h.		About 15 h.	3 h.	9 h.	15 h.	21 h.
	a 200+	*a* 200+	cm.	cm.	h m	γ	h m	° ′	h m	° ′			Coulomb.		Amp/cm².	v/m	v/m	v/m	v/m
1	78·4	79·9	222	221	11 10	18415	14 20	14 38·3	14 21	66 57·5	1	1	0·51	0·33	0·80	630	450	530	435
2	77·0	79·9	225	..	..	..	..	..	..	..	1	0	0·31	0·31	0·20	460	645	450	855
3	76·0	79·9	229	..	..	..	..	..	..	..	0	1	..	..	..	170	335	210	645
4	76·0	79·8	232	..	..	..	..	..	..	..	0	0	..	..	..	390	435	420	460
5	75·8	79·7	235	..	..	..	..	..	..	..	0	1	0·43	0·18	0·70	225	475	670	615
6	75·6	79·6	238	..	..	..	..	..	..	..	0	0	0·18	0·55	0·65	310	630	600	475
7	75·2	79·5	242	..	..	..	..	..	..	..	1	0	0·41	0·23	0·15	− *	− *	575	615
8	76·0	79·3	243	..	11 20	18414	14 20	14 38·0	..	..	0	0	..	..	..	110	250	225	405
9	76·3	79·2	242	..	..	..	..	..	14 6	66 57·4	1	1	0·18	0·06	0·80	140	390	390	600
10	76·6	79·2	242	..	..	..	..	..	..	..	1	2	..	..	..	140	225	*z* +	140
11	78·2	79·0	241	..	..	..	..	..	..	..	2	2	..	..	..	125	−240	*z* −	210
12	78·5	79·1	242	..	..	..	..	..	..	..	1	0	..	..	..	85	250	280	70
13	79·2	79·2	244	..	..	..	..	..	..	..	0	1	0·08	0·06	0·90	125	420	420	110
14	79·0	79·2	247	..	..	..	..	..	..	..	1	0	0·21	0·27	0·55	195	365	505	910
15	79·0	79·2	249	..	11 23	18406	14 25	14 40·7	14 13	66 57·5	1	0	..	..	..	170	310	250	265
16	79·0	79·3	250	..	..	..	..	..	..	..	0	0	0·10	0·00	0·75	180	265	335	365
17	79·5	79·5	251	..	..	..	..	..	..	..	1	0	..	..	..	170	365	295	210
18	80·2	79·5	252	252	..	..	..	..	..	..	0	?0	..	..	..	30	100	—	—
19	80·7	79·6	251	252	..	..	..	..	..	..	0	1	..	0·25	..	—	—	*z* ±	310
20	79·0	79·7	250	..	..	..	..	..	..	..	0	0	0·26	..	0·95	140	420	240	265
21	78·9	79·9	250	..	..	..	..	..	..	..	2	1	..	0·44	0·25	110	280	140	520
22	77·7	79·9	249	..	11 23	18386	14 18	14 40·0	14 27	66 59·1	1	0	0·12	..	..	435	490	225	295
23	78·1	79·9	250	..	..	..	..	..	..	..	1	0	..	0·15	0·65	100	365	350	320
24	78·7	79·8	250	..	..	..	..	..	..	..	0	1	..	..	..	210	240	350	505
25	78·3	79·8	248	..	..	..	..	..	..	..	0	0	..	..	..	280	350	310	240
26	78·2	79·7	249	..	..	..	..	..	..	..	0	1	0·18	..	..	70	180	170	600
27	78·0	79·8	248	..	..	..	..	..	..	..	0	2	..	..	..	435	645	−660	280
28	78·2	79·8	247	..	11 21	18406	14 20	14 40·8	14 21	66 57·7	1	2	..	..	..	295	880	−280	225
29	78·2	79·8	245	..	..	..	..	..	..	..	1	1	..	..	..	70	365	320	240
30	78·3	79·8	247	..	..	..	..	..	..	..	1	1	..	0·10	0·55	−365	320	265	840
31	78·2	79·7	249	..	..	..	..	..	..	..	0	0	..	..	..	140	280	140	240
M.	77·9	79·6	244	—	—	—	—	—	—	—	0·58	0·61	0·25	0·23	0·61	203†	400†	275†	423†
	76·8 — 12 years. —	79·7																	

† Mean for 26 days. * Jet frozen.

6. GEOPHYSICS :—ESKDALEMUIR, DUMFRIESSHIRE.

Day.	Terrestrial Magnetic Force.												Magnetic Character of Day.	Electric Character of Day.	Potential Gradient, Volts per metre. Factor 5·90.			
	North Component.					West Component.				Vertical Component.								
	Maximum 15000 γ +.		Minimum. 15000 γ +.		Range.	Maximum. 4000 γ +.		Minimum. 4000 γ +.		Range.	Maximum. 44000 γ +.		Minimum. 44000 γ +.		Range.			3 h.	9 h.	15 h.	21 h.
	h m	γ	γ	h m	γ	h m	γ	γ	h m	γ	h m	γ	γ	h m	γ			v/m	v/m	v/m	v/m
1	6 57 / 20 36	1018	960	20 10	58	17 33	889	803	20 25	86	20 25	*x*1121	1058	12 34	*x*63	1	1 *a*	285	180	320	355
2	6 12	1012	931	12 22	81	13 20	883	826	22 1	57	—	*	*	—	—	1	1 *b*	950	105	335	285
3	18 1	1002	974	2 44 / 10 19	28	12 51	879	836	22 17	43	20 26	1078	1070	17 30	8	0	1 *a*	255	215	240	10
4	6 45 / 7 46	1002	984	22 30	*n*18	13 2	881	835	21 31	46	—	*	*	—	—	0	1 *a*	385	425	160	90
5	22 27	1003	977	12 42	26	13 23	879	850	22 18	*n*29	14 24	1072	1065	10 45	7	0	0 *a*	75	285	110	240
6	22 28	1001	962	19 50	39	19 32	893	841	21 22	52	21 25 / 20 55	1090	1063	10 15	27	0	0 *a*	390	280	325	425
7	4 19	1005	938	13 4	67	16 45	912	842	20 3	70	17 59	1093	1055	4 23	38	1	2 *b*	425	475	125	135
8	6 44	1014	980	20 10	34	13 3	886	831	19 57	55	20 11	1072	1059	10 27	13	0	2 *c*	110	140	*z* −	185
9	19 33	1014	958	17 9	56	6 55	901	779	21 44	122	21 54	1082	1059	6 29	23	1	1 *b*	105	235	250	305
10	5 48	1036	958	12 57	78	5 36	898	790	20 14	108	20 13	1082	1042	5 55	40	1	1 *b*	210	545	390	250
11	22 42	1019	943	19 29	76	13 30	897	*n*768	21 27	*x*129	19 30	1090	1046	24 0	44	2	2 *c*	110	*z* −	§	§
12	21 12	1036	959	10 8	77	12 55	886	790	0 18	96	19 40	1070	1046	0 1	24	1	?	§	§	345	60
13	7 44	997	968	10 15	29	13 17	883	849	5 3	34	21 14	1070	1062	4 40	8	0	2 *b*	175	−100	‡	65
14	17 29	1007	969	23 3	38	13 31	892	808	21 8	84	21 20	1082	1058	13 33	24	0	1 *b*	255	210	285	*z* ±
15	23 23	1042	968	15 23	74	23 21	899	831	22 43	68	22 20	1070	1040	23 41	30	1	1 *b*	135	40	205	605
16	6 17	1013	963	12 29	50	3 28	893	841	0 25	52	15 20	1069	1042	0 1	27	0	1 *a*	250	175	120	95
17	23 38	1039	909	17 42	*x*130	13 49	898	826	19 57	72	17 45	1113	1056	24 0	57	1	2 *b*	100	40	−200	205
18	0 1	1001	947	13 12	54	13 27	878	839	21 28	39	14 15	1071	1056	0 1	15	0	2 *b*	210	20	−415	−275
19	5 48	1008	962	15 4	46	13 24	882	849	23 19	33	15 40	1070	1054	5 45	16	0	2 *b*	−140	145	*z* ±	170
20	19 25	1006	980	12 21	26	13 2	883	816	23 54	67	21 50	1066	1054	9 35	12	0	2 *c*	90	115	140	180
21	22 35	1031	*n*912	13 31	119	12 16	*x*915	792	17 18	123	17 19	1100	1040	4 58	60	1	1 *b*	45	100	150	310
22	23 45	1013	950	13 2	63	13 15	881	818	0 42	63	16 45	1094	1051	0 34	43	0	2 *b*	110	125	275	−215
23	22 0	1018	956	12 39	62	13 43	895	806	21 53	89	17 21	1074	1042	24 0	32	1	2 *b*	365	285	225	−1030
24	4 19	1009	936	9 31	73	4 3	896	843	0 35	53	15 21	1069	*n*1039	4 23	30	0	2 *c*	−45	−780	145	205
25	3 3	1008	965	12 2	43	2 24	883	848	9 10	35	*	*	1040	3 4	—	0	1 *b*	135	275	170	215
26	20 41	1005	949	12 10	56	13 17	890	826	20 34	64	16 5	1067	1054	9 43	13	0	2 *b*	140	−1155	265	465
27	19 40	1002	965	12 5	37	13 15	879	850	22 45	*n*29	10 49	1058	1053	13 30	*n* 5	0	2 *b*	215	380	*z* ±	210
28	23 25	*x*1055	947	13 8	108	13 46	914	836	20 57	78	21 2	1089	1042	23 55	47	1	1 *b*	90	45	285	570
29	17 49	1014	967	12 51	47	13 50	904	822	0 17	82	23 10	1055	1046	3 50	9	0	1 *b*	140	595	300	*z* ±
30	6 50	1020	948	12 4	72	16 14	900	813	20 46	87	20 48	1081	1042	4 56	39	1	2 *c*	*z* −	215	175	205
31	23 15	1000	960	12 54	40	13 20	894	847	9 32	47	0 1	1062	1052	5 35	10	0	2 *c*	185	*z* ±	245	45
M.	—	1015	956	—	58	—	891	824	—	67	—	†1079	†1052	—	†27	0·45	1·39‡‡	††224	††97	††172	††163

x denotes the maximum and *n* the minimum value in the column. Potential gradient is reckoned as positive if the potential increases upwards. For indeterminate potential gradient the following notation is used :—*z*+ Indeterminate, positive value ; *z*− Indeterminate, negative value ; *z*± Indeterminate in magnitude and sign.

† Mean for 28 days, * Burner sooted up. †† Mean for 21 days. ‡‡ Mean for 30 days. § Light not on paper. ‡ Instrument earthed.

7. JERSEY (ST. LOUIS OBSERVATORY).—Lat. 49° 12′ N. Long. 2° 6′ W.

Heights above M.S.L.:—H = 54 m. H_b = 55 m. Above Gound:—h_t = 1·48 m. h_r = 1·72 m. h_a = 8 m.

Day.	Air Pressure at Station Level. 9 h.	14 h.	21 h.	Mean of 3 Readings.	Air Temperature in Degrees Absolute. 9 h.	14 h.	21 h.	Max.	Min.	Mean of 5 Readings.	Min. Temp. on Grass.	Percentage of Humidity. 9 h.	14 h.	21 h.	Mean.	Rain 0 h. to 24 h.	Remarks.
	mb.	mb.	mb.	mb.	a 200+	a 200+	a 200+	a 200+	a 200+	a 200+	a 200+	%	%	%	%	mm.	
1	970·2	979·5	997·1	*982·3*	80·9	81·6	77·5	83·6	77·2	*80·2*	76·3	94	90	74	*86*	8·2	●² 3 h. to 8 h. ●² 15 h.
2	1009·7	1007·3	1002·1	*1006·4*	76·0	79·8	77·0	79·9	75·1	*77·6*	68·9	60	*n*47	68	*58*	—	
3	992·5	990·2	989·9	*990·9*	76·6	77·6	77·5	78·0	76·3	*77·2*	73·0	87	88	87	*87*	2·0	● 3 h. to 8 h.
4	999·6	1004·7	1011·1	*1005·1*	76·3	77·9	77·3	78·4	76·0	*77·2*	74·3	84	64	59	*69*	1·1	● early.
5	1018·4	1019·3	1021·0	*1019·6*	77·0	78·9	77·0	79·6	76·2	*77·7*	73·8	64	64	68	*65*	—	
6	1016·4	1013·5	1012·8	*1014·2*	76·5	77·2	76·0	*n*77·5	76·0	*76·7*	73·4	78	78	77	*78*	—	
7	1011·8	1009·8	1008·7	*1010·1*	72·9	79·0	79·2	80·2	*n*72·2	*76·7*	63·5	96	73	85	*85*	—	⌊≡° *a*.
8	999·5	999·3	999·5	*999·4*	82·5	83·0	80·9	83·4	79·0	*81·8*	74·0	96	64	77	*79*	2·2	●° frequently.
9	1004·9	1007·1	1004·7	*1005·6*	78·8	81·0	80·2	81·5	76·7	*79·6*	73·5	66	65	94	*75*	4·5	●² 6.30 and 8.30 — ▲ 10.30 — ●² *n*.
10	995·4	991·3	996·6	*994·4*	82·9	84·6	83·3	*x*85·8	80·2	*83·4*	76·0	93	79	76	*83*	2·2	● continuous to 13 h. ●² 19 h.
11	988·7	987·1	992·6	*989·5*	83·1	83·0	83·3	85·0	*x*82·6	*83·4*	76·8	88	97	89	*91*	8·6	●² from 4.30 all day.
12	1005·7	1004·5	1008·1	*1006·1*	82·8	83·5	83·7	84·2	82·1	*83·3*	80·3	87	97	98	*94*	1·9	⊟ 4 h. ●5.30. ≡ from 10 h. ● Noon.
13	1011·8	1011·5	1009·4	*1010·9*	82·9	83·3	81·8	84·4	81·5	*82·8*	82·8	100	98	100	*99*	*x*24·1	●² early. ≡ 4.30. ≡² from 16 h. to [20.30.
14	1021·2	1025·0	1027·0	*1024·4*	80·7	80·2	79·3	81·5	78·2	*80·0*	75·0	63	62	70	*65*	—	
15	1027·5	1027·4	1028·2	*1027·7*	80·2	81·3	81·4	81·9	78·7	*80·7*	71·2	89	93	95	*92*	—	●° 8 h. and 9 h.
16	1031·1	1029·8	1028·7	*1029·9*	80·3	80·9	80·6	82·2	79·0	*80·6*	78·5	98	95	70	*88*	—	●° 7 h. and 9 h.
17	1025·9	1024·7	1023·8	*1024·8*	78·6	81·3	81·5	82·7	78·2	*80·5*	73·7	95	90	87	*91*	0·3	●° 8 h. ●° 21 h.
18	1020·7	1017·5	1014·5	*1017·6*	82·4	82·9	82·0	83·1	81·8	*82·4*	80·8	97	97	98	*97*	2·3	●° 8.30. ●² 10.15 and afternoon.
19	1008·2	1011·4	1017·6	*1012·4*	81·4	79·6	79·2	81·8	77·5	*79·9*	80·0	96	78	62	*79*	3·0	●² 9 h. showers. ▲² 14 h.
20	1017·8	1015·3	1017·8	*1017·0*	80·5	82·6	82·3	83·2	79·5	*81·6*	73·2	100	100	95	*98*	6·2	●² 5.30. ≡² from 8 h. to night.
21	1017·8	1019·6	1022·2	*1019·9*	82·6	83·0	79·8	83·6	78·6	*81·5*	80·0	87	71	77	*78*	0·3	● 4.30.
22	1022·6	1021·0	1020·4	*1021·3*	78·0	81·2	79·9	81·9	76·8	*79·6*	69·2	83	71	83	*79*	—	
23	1017·5	1015·1	1012·7	*1015·1*	78·4	77·3	78·8	79·9	76·0	*78·1*	76·0	88	85	87	*87*	—	
24	1009·8	1009·0	1015·1	*1011·3*	80·0	81·9	80·7	82·6	79·6	*81·0*	71·7	86	95	89	*90*	0·6	●° 13 h. and 14 h. ≡15 h. short time.
25	1019·6	1015·3	1011·3	*1015·4*	78·2	81·6	81·0	81·8	77·4	*80·0*	70·3	97	81	95	*91*	—	⌊. ≡² 10 h. to 12.30.
26	1003·7	1000·2	1006·1	*1003·3*	80·4	83·5	79·0	84·4	79·0	*81·4*	78·5	97	86	84	*89*	4·7	●² 14 h.
27	1005·0	999·1	996·9	*1000·3*	78·8	80·6	82·0	82·4	78·2	*80·4*	73·2	82	90	98	*90*	7·4	●² 10 h.
28	998·4	991·1	992·9	*994·1*	81·3	81·5	80·5	83·1	80·0	*81·4*	78·5	94	97	70	*87*	2·8	● early to 14 h.
29	1006·3	1007·9	1006·1	*1006·8*	79·2	80·9	80·8	82·2	77·9	*80·2*	73·1	92	72	76	*80*	5·0	●² early and after 21 h.
30	1006·6	1010·7	1012·5	*1009·9*	80·3	82·9	80·4	83·0	79·0	*81·1*	74·6	86	63	87	*79*	1·1	● early to 5 h. ●² 20.15.
31	1012·7	1011·3	1018·1	*1014·0*	83·4	82·5	81·6	84·1	80·1	*82·5*	76·6	97	100	76	*91*	3·1	●² all day. ≡²14 h.
Means	*1009·5*	*1008·9*	*1010·5*	*1009·6*	*79·8*	*81·2*	*80·2*	*82·2*	*78·3*	*80·3*	*74·6*	*88*	*82*	*82*	*84*	*91·6*	
Normal	*1012·1*	*1011·2*	*1011·9*	*1011·7*	*78·9*	*79·8*	*78·9*	*80·7*	*77·2*	*79·1*	*73·9*	*84*	*77*	*82*	*81*	*68.6*	
	◄——27 years——►				◄——27 years——►						24 years	◄——25 years——►				27 years	

JERSEY (ST. LOUIS OBSERVATORY).

Day.	Wind Direction and Force (0-12 on the Beaufort Scale). 9 h.	14 h.	21 h.	Mean of Force.	Sunshine* Total.	Per cent. of Possible.	Cloud Amount (tenths of Sky covered), Type of Cloud, and Direction whence coming. Tenths.	Upper. Type.	Direction.	Lower. Type.	Direction.	Tenths.	Upper. Type.	Direction.	Lower. Type.	Direction.	Tenths.	Upper. Type.	Direction.	Lower. Type.	Direction.	Mean Amount.
	9 h.	14 h.	21 h.				9h.	9 h.	9 h.	9 h.	9 h.	14 h.	14 h.	14 h.	14 h.	14 h.	21h.	21 h.	21 h.	21 h.	21 h.	
	°(0-12)	°(0-12)	°(0-12)		hr.	%																
1	180 3	23 4	23 6	*4·3*	1·8	*22*	5	Ci.	WSW	Cu.-Nb.	SW	7	A.-Cu.	NW	Cu.-Nb.	NNE	10	.. ..	..	Cu.-Nb.	NE	*7·3*
2	— 0	225 3	202 4	*2·3*	7·6	*92*	1	A.-Cu.	..	..	..	3	Ci.	..	..	..	7	A.-Cu.	W	..	..	*3.7*
3	180 5	180 4	135 4	*4·3*	3·1	*37*	10	..	..	..	..	8	..	..	Cu.-Nb.	SSE	10	..	..	..	..	*9·3*
4	68 4	45 4	45 5	*4·3*	6·6	*80*	10	A.-Cu.	NE	..	..	6	Ci.	NE	Cu.	NE	7	A.-Cu.	NE	..	..	*7·7*
5	45 6	23 6	45 6	*6·0*	3·5	*42*	10	..	..	Cu.-Nb.	NE	6	..	..	Cu.	NE	3	..	..	Cu.	NE	*6·3*
6	45 5	45 5	45 4	*4·7*	0·1	*1*	10	..	..	Cu.-Nb.	NE	10	..	..	St.-Cu.	NE	10	..	..	..	..	*10.0*
7	360 2	202 3	225 5	*3·3*	5·4	*65*	4	Ci.	N	..	..	3	A.-Cu.-Ci.	N	..	..	10	..	..	..	..	*5·7*
8	270 5	270 6	270 5	*5·3*	1·5	*18*	8	..	..	Cu.-Nb.	..	7	..	..	Cu.-Nb.-Cu.	WNW	5	..	..	Cu.	W	*6·7*
9	315 4	270 4	242 5	*4·3*	3·8	*45*	7	..	..	Cu.-Nb.	NW	8	A.-Cu.	WNW	Cu.-Nb.	WNW	10	..	..	Nb.	..	*8·3*
10	270 6	270 7	293 6	*6·3*	0·7	*8*	10	..	..	Nb.	..	6	A.-Cu.	W	Cu.-Nb.	W	7	..	..	..	..	*7·7*
11	270 7	293 6	293 7	*6·7*	0·0	*0*	10	..	..	Nb.	WSW	10	..	..	Nb.	W	10	..	..	Nb.	..	*10·0*
12	242 4	242 5	225 6	*5·0*	0·0	*0*	10	..	..	..	..	10	..	..	≡Nb.	..	10	..	..	Nb.	..	*10·0*
13	225 5	242 2	242 3	*3·3*	0·0	*0*	10	..	..	≡Nb.	..	10	..	..	≡Nb.	..	10	..	..	..	..	*10·0*
14	315 3	315 1	180 2	*2·0*	7·5	*88*	0	..	..	..	..	2	A.-Cu.	..	..	..	7	..	..	..	..	*3·0*
15	158 3	202 3	242 4	*3·3*	0·0	*0*	10	..	..	..	..	10	..	..	..	..	0	..	..	..	..	*6·7*
16	180 3	180 2	202 2	*2·3*	0·0	*0*	10	..	..	Nb.	..	7	..	..	..	..	0	..	..	..	..	*5·7*
17	225 2	242 3	225 4	*3·0*	3·4	*40*	10	..	..	..	..	10	..	..	..	..	10	..	..	Nb.	..	*10·0*
18	202 3	202 3	202 4	*3·3*	0·0	*0*	10	..	..	..	..	10	..	..	..	..	10	..	..	..	..	*10·0*
19	225 5	293 3	315 4	*4·0*	1·0	*12*	10	..	..	Nb.	..	7	..	..	Nb.-Cu.	WNW	3	..	..	..	..	*6·7*
20	242 3	293 4	293 3	*3·3*	0·0	*0*	10	..	..	≡Nb.	..	10	..	..	≡Nb.	..	10	..	..	..	..	*10·0*
21	315 2	293 4	315 2	*2·7*	7·3	*82*	7	Ci.-Cu.-Ci.	NW	Cu.-Nb.	NW	0	..	..	..	..	2	..	..	..	..	*3·0*
22	180 2	202 4	242 4	*3·3*	6·8	*77*	2	..	..	..	..	3	Ci.	W	..	..	8	..	..	..	..	*4·3*
23	180 3	180 3	180 2	*2·7*	1·9	*22*	10	..	..	..	..	7	..	..	Cu.-Nb.	W	0	..	..	..	..	*5·7*
24	225 3	202 3	270 3	*3·0*	0·0	*0*	10	..	..	..	..	10	..	..	..	..	3	..	..	..	..	*7·3*
25	242 1	135 3	180 2	*2·0*	5·2	*57*	2	..	..	..	..	0	..	..	..	..	10	..	..	..	..	*4·0*
26	202 5	202 5	242 3	*4·3*	1·3	*15*	10	..	..	..	..	10	..	..	Nb.	SW	8	..	..	..	..	*9·3*
27	202 6	180 6	242 4	*5·3*	0·7	*8*	7	..	..	..	..	10	..	..	Nb.	SSW	10	..	..	Nb.	..	*9·0*
28	180 4	158 4	225 6	*4·7*	1·9	*21*	10	..	..	..	..	10	..	..	Nb.	SSE	7	A.-Cu.	..	Cu.-Nb.	WSW	*9·0*
29	225 4	225 5	202 5	*4·7*	5·9	*65*	6	Ci.	WSW	..	..	5	A.-Cu.	..	Cu.-Nb.	..	10	..	..	..	..	*7·0*
30	270 3	270 2	158 3	*2·7*	5·3	*58*	8	A.-Cu.	WSW	Cu.-Nb.	W	3	..	..	Cu.-Nb.	W	10	..	..	Nb.	..	*7·0*
31	242 4	225 6	242 5	*5·0*	0·0	*0*	10	..	..	..	..	10	..	..	≡Nb.	..	3	..	..	Cu.	W	*7·7*
Means	*3·6*	*4·0*	*4·1*	*3·9*	*2·7*	*31*	*8·0*	—	—	—	—	*7·0*	—	—	—	—	*7·1*	—	—	—	—	*7·4*
Normal	*3·8*	*3·9*	*3·8*	*3·8*	*2·5*	*29*	*7·6*	—	—	—	—	*7·1*	—	—	—	—	*6·9*	—	—	—	—	*7·2*
	◄——17 years——►				23 years		◄——26 years——►															

* For method of estimation see Introduction.

8. WIND COMPONENTS: Metres per second at fixed hours, together with the greatest mean hourly velocity, or the greatest velocity attained in a gust, and the time of its occurrence.

NORTH WALES:—HOLYHEAD.

Height of Head above—Roof 8·8 m., Ground 13·7 m., M.S.L. 19·2 m.
Height of Cups above—Roof 4·6 m., Ground 7·6 m., M.S.L. 15·2 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	h. m.
1	..	4·0	..	4·0	..	8·6	..	8·6	..	10·0	..	4·1	..	7·9	3·3	..	18·8	10 50
2	..	5·1	12·4	..	..	2·9	6·9	..	5·7	..	2·4	..	11·5	..	..	..	19·5	23 50
3	9·7	..	..	4·0	10·5	..	..	..	3·1	..	..	4·7	1·0	..	..	4·8	22·0	5 40
4	..	..	..	9·8	..	..	..	5·2	..	3·6	..	8·8	..	7·2	..	7·2	13·8	20 35
5	..	6·7	..	6·7	..	4·7	..	4·7	..	1·2	..	6·1	..	..	..	7·2	14·8	3 55
6	0·3	..	..	1·6	1·1	..	..	2·8	2·6	..	..	0·5	3·0	..	3·0	..	10·1	22 15
7	5·1	..	1·0	..	7·3	..	3·0	..	10·0	..	2·0	..	10·3	..	4·3	..	19·5	23 0
8	8·7	..	13·0	..	3·7	..	18·6	..	..	..	12·8	..	..	4·4	10·6	..	34·1	7 50
9	..	5·0	12·1	..	..	4·3	10·3	..	3·9	..	9·4	..	4·2	..	4·2	..	17·5	2 45
10	1·4	..	..	3·3	8·7	..	5·8	..	5·3	..	5·3	..	..	..	15·4	..	24·0	18 55
11	8·7	..	1·7	..	3·3	..	4·9	..	4·9	..	11·8	..	7·4	..	17·8	..	37·4	22 20
12	3·9	..	19·6	..	1·9	..	9·3	..	5·5	..	..	..	7·4	..	7·4	..	30·3	2 5
13	2·8	..	14·2	..	4·5	..	6·7	..	1·8	..	4·4	..	1·9	..	9·5	..	30·0	1 15
14	..	12·0	12·0	..	..	4·6	3·1	..	5·8	..	3·9	..	10·5	..	..	..	26·1	1 30
15	9·1	..	3·8	..	5·6	..	5·6	..	8·6	..	1·7	..	9·8	..	4·1	..	17·4	0 25
16	7·4	..	4·9	..	9·3	..	3·9	..	8·4	..	8·4	..	10·0	..	6·7	..	18·2	11 30
17	9·5	..	6·3	..	8·4	..	5·6	..	9·3	..	6·2	..	3·5	..	5·2	..	18·6	12 45
18	5·4	..	3·6	..	8·2	..	5·5	..	7·1	..	7·1	..	7·7	..	7·7	..	16·3	17 55
19	..	6·2	4·2	..	..	6·6	9·9	..	..	5·3	12·8	..	..	2·7	13·6	..	21·6	17 35
20	..	..	7·4	..	4·5	..	4·5	..	..	3·1	7·5	..	2·4	..	3·7	..	14·3	0 10
21	..	3·0	15·0	..	..	8·7	13·0	..	..	4·9	7·3	..	..	..	4·8	..	21·5	3 10
22	4·9	..	2·0	..	8·4	..	1·7	..	10·3	..	2·0	..	..	..	8·7	..	17·6	19 50
23	..	0·4	2·0	..	7·8	..	..	..	8·8	..	3·6	..	10·1	..	4·2	..	17·7	20 0
24	10·0	..	2·0	..	12·6	..	..	..	6·4	..	9·6	..	7·2	..	10·8	..	21·1	10 5
25	4·8	..	7·1	..	11·3	..	2·2	..	12·9	..	2·6	..	13·5	..	..	2·7	22·0	14 50
26	13·0	..	..	..	8·8	..	3·6	..	..	1·3	6·4	..	4·7	..	7·0	..	24·5	5 30
27	7·1	..	7·1	..	16·6	..	..	6·9	12·1	..	2·4	..	9·2	..	9·2	..	31·9	11 15
28	6·7	..	10·0	..	4·6	..	6·8	..	3·0	..	..	..	..	2·3	..	3·5	18·6	0 25
29	1·2	..	6·0	..	..	..	8·3	..	5·3	..	5·3	..	17·7	..	..	3·5	30·0	20 20
30	6·3	..	15·2	..	..	..	14·3	..	3·6	..	8·8	..	4·4	..	0·9	..	25·1	4 20
31	11·3	..	..	2·2	7·1	..	4·8	..	..	..	8·0	..	9·2	..	13·7	..	26·5	23 25
S+N & W+E	179·7		214·2		194·6		186·5		173·8		175·9		191·1		204·7			
S−N & W−E	94·9		151·0		113·8		130·1		115·0		127·5		142·1		146·9			

SCOTLAND N:—DEERNESS.

Height of Cups above—Roof 1·5 m., Ground 4·9 m., M.S.L. 57·3 m.

Day.	3 h.				9 h.				15 h.				21 h.				Vel. in Max. Hourly Run.	Time of Max.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	hrs.
1	..	7·8	7·8	..	..	6·6	9·8	..	..	4·1	10·0	..	..	2·8	6·7	..	15·4	6
2	..	2·1	10·6	..	..	2·2	10·9	..	..	..	5·6	..	0·4	..	..	2·3	13·1	4
3	..	Ca	lm	..	1·6	..	..	4·0	2·6	..	..	3·8	1·9	..	..	4·5	6·2	18
4	..	..	..	3·6	..	1·4	..	1·4	..	3·5	..	3·5	..	2·2	..	1·4	5·2	14, 16
5	..	Ca	lm	..	6·0	..	4·0	..	9·8	..	..	..	14·5	..	2·9	..	14·8	21,23,24
6	14·1	..	2·8	..	5·6	..	5·6	..	5·1	..	5·1	..	3·8	..	5·7	..	14·4	3
7	4·9	..	4·9	..	6·0	..	4·0	..	7·4	..	1·5	..	3·5	..	3·5	..	12·1	24
8	5·1	..	7·6	..	..	13·0	8·7	..	..	2·2	10·9	..	..	5·1	7·6	..	5·9	6
9	..	6·5	6·5	..	2·0	..	3·0	..	7·9	..	3·3	..	..	1·8	9·0	..	10·5	1
10	..	2·0	..	..	..	..	..	3·9	7·1	..	..	4·7	9·3	..	..	1·9	11·1	24
11	13·0	..	..	5·4	14·1	..	..	9·5	3·3	..	3·3	..	2·7	..	4·1	..	17·0	9
12	1·5	..	7·7	..	..	3·3	7·9	..	..	..	6·2	..	0·8	..	3·8	..	11·5	8
13	..	1·5	7·7	..	1·9	..	9·3	..	..	4·7	7·1	..	..	1·8	4·3	..	12·1	24
14	..	5·5	13·3	..	..	Ca	lm	..	..	Ca	lm	..	7·5	..	..	..	14·4	4
15	11·3	..	..	2·2	12·1	..	..	..	4·0	..	9·7	..	9·0	..	6·0	..	13·4	12, 13
16	7·3	..	10·9	..	1·6	..	..	0·3	3·0	..	2·0	..	4·4	..	6·6	..	15·1	4
17	3·8	..	9·1	..	2·9	..	14·5	..	..	2·0	10·3	..	..	..	15·7	..	16·1	20
18	1·5	..	7·7	..	12·9	..	..	2·6	4·6	..	11·2	..	4·5	..	10·9	..	15·1	20
19	4·1	..	10·0	..	..	..	8·9	..	..	2·5	6·1	..	..	4·7	7·1	..	10·8	2, 3, 4
20	..	3·3	3·3	..	2·8	..	2·8	..	..	1·8	..	2·7	..	Ca	lm	..	8·5	1
21	4·7	..	3·1	..	..	4·4	10·6	..	..	7·3	10·9	..	..	2·4	3·6	..	17·4	10
22	5·5	..	1·1	..	13·5	..	..	2·7	10·0	..	2·0	..	..	..	8·9	..	13·8	9
23	2·2	..	3·2	..	5·5	..	3·7	..	15·4	..	..	3·1	9·6	..	1·9	..	17·0	17
24	7·6	..	3·1	..	3·5	..	0·7	..	3·3	..	1·4	..	9·0	..	6·0	..	12·8	22
25	6·9	..	6·9	..	11·2	..	4·6	..	15·1	..	..	..	16·1	..	..	3·2	17·0	20
26	16·1	..	..	3·2	17·8	..	..	7·4	4·4	..	4·4	..	7·6	..	3·1	..	19·3	9
27	7·3	..	3·0	..	9·8	..	..	..	15·8	..	..	10·6	18·8	..	..	7·8	23·6	16
28	15·8	..	3·1	..	13·0	..	5·4	..	8·7	..	1·7	..	11·3	..	2·2	..	17·7	1
29	8·2	..	..	..	8·3	..	..	1·7	6·3	..	..	6·3	2·5	..	..	1·7	10·8	13
30	3·5	..	..	3·5	..	1·7	..	8·3	..	5·3	7·9	..	..	1·8	9·0	..	10·5	13
31	3·5	..	3·5	..	17·0	..	..	7·0	5·3	..	5·3	..	13·8	..	2·7	..	18·4	9
S+N & W+E	176·6		154·8		201·7		163·2		172·5		160·6		173·6		154·1			
S−N & W−E	119·2		119·0		136·5		65·6		105·7		91·2		128·4		108·5			

ENGLAND S.W.:—SCILLY.

Height of Head above—Ground 9·8 m., M.S.L. 49·7 m.
Height of Cups above—Ground 5·8 m., M.S.L. 45·7 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	h. m.
1	..	..	5·4	..	..	10·6	..	10·6	..	15·6	..	3·1	..	10·6	..	2·1	21·5	12 15
2	..	3·5	1·5	..	4·6	..	..	..	12·3	..	2·4	..	16·6	..	..	11·1	25·5	22 5
3	5·0	..	5·0	..	7·5	..	..	..	3·5	..	1·5	..	1·8	..	..	2·7	14·5	8 55
4	..	0·8	..	8·7	..	2·8	..	7·8	..	3·9	..	6·8	..	3·9	..	10·6	16·5	5 55
5	..	2·8	..	7·8	..	2·4	..	13·1	..	1·4	..	7·8	..	1·8	..	6·5	14·2	4 40
6	..	2·4	..	3·4	..	2·9	..	3·5	..	4·0	..	2·3	..	3·8	0·3	..	8·4	8 35
7	No record				No record				5·4	..	6·4	..	8·3	..	3·2	..	13·8	24 0
8	1·3	..	14·9	..	..	5·7	15·7	..	..	2·7	15·2	..	..	5·1	14·1	..	27·3	17 30
9	..	5·5	14·9	..	..	4·0	11·0	..	..	..	8·3	..	1·4	..	15·8	..	20·8	0 5
10	2·4	..	13·1	..	5·4	..	14·9	..	..	..	24·2	..	4·8	..	10·3	..	27·8	14 20
11	11·2	..	11·2	..	4·5	..	12·5	..	..	1·7	19·9	..	..	1·7	19·5	..	29·5	14 20
12	..	2·4	14·0	..	4·7	..	4·7	..	3·7	..	13·7	..	5·3	..	14·4	..	27·4	1 15
13	..	..	7·9	..	1·3	..	4·8	..	1·9	..	5·2	..	..	2·9	16·1	..	24·3	21 5
14	..	10·9	9·1	..	..	0·8	..	..	6·7	..	..	2·4	9·9	..	..	0·9	23·2	0 50
15	6·2	..	2·3	..	3·2	..	3·8	..	1·2	..	1·7	..	3·3	..	4·7	..	9·6	1 25
16	3·2	..	3·2	..	2·9	..	2·9	..	3·2	..	3·2	..	5·5	..	3·8	..	9·0	23 15
17	5·8	..	4·1	..	5·9	..	5·9	..	6·5	..	6·5	..	2·8	..	6·0	..	10·8	12 30
18	3·8	..	5·1	..	4·3	..	4·3	..	5·2	..	3·6	..	5·3	..	5·3	..	9·1	18 15
19	..	8·6	7·3	..	..	9·6	11·5	..	..	7·1	12·3	..	..	4·4	12·1	..	20·5	14 45
20	1·7	..	9·9	..	..	4·3	11·8	..	..	5·3	11·4	..	..	4·1	11·4	..	17·5	6 0
21	..	3·0	11·4	..	..	4·7	2·7	..	..	3·7	4·4	..	0·9	..	3·2	..	15·0	1 55
22	4·1	..	2·9	..	6·6	..	1·1	..	9·8	..	4·5	..	3·4	..	9·4	..	13·6	15 25
23	3·7	..	2·1	..	5·9	..	2·2	..	6·3	..	5·3	..	6·1	..	4·3	..	10·7	14 30
24	8·7	..	4·1	..	4·2	..	9·1	..	1·0	..	11·2	..	0·9	..	10·3	..	15·8	19 55
25	4·4	..	1·6	..	9·1	..	..	3·3	10·0	..	..	..	9·1	..	0·8	..	16·5	13 25
26	12·9	..	..	..	..	1·5	6·2	..	..	5·0	8·7	..	1·5	..	8·2	..	18·7	6 5
27	9·4	..	3·4	..	20·0	..	..	..	No record				No record				25·1	10 20
28	No record				No record				1·3	..	7·4	..	..	8·3	9·9	..	23·0	18 20
29	..	..	10·8	..	1·4	..	7·8	..	10·2	..	3·7	..	11·8	..	11·8	..	22·6	19 35
30	..	3·7	10·2	..	..	4·2	7·2	..	3·8	..	..	..	5·1	..	7·2	..	15·5	2 30
31	5·9	..	10·1	..	6·7	..	11·6	..	..	2·8	15·7	..	..	4·2	15·8	..	28·2	22 0
S+N & W+E	133·3		205·4		151·7		190·0		145·2		218·8		154·6		251·8			
S−N & W−E	46·1		165·6		44·7		113·4		38·8		174·0		53·0		184·0			

ENGLAND E.:—SHOEBURYNESS.

Height of Head above—Ground 27·4 m., M.S.L. 31·4 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	h. m.
1	..	Ca	lm	..	..	2·9	..	4·3	..	6·7	..	2·8	..	7·5	1·5	..	13·7	16 50
2	..	4·3	1·8	..	..	1·2	6·0	..	..	0·7	3·6	..	2·2	..	3·3	..	10·7	0 25
3	6·0	..	1·2	..	6·2	..	..	2·6	9·3	..	..	3·9	8·6	..	..	8.6	14·9	21 10
4	2·8	..	..	6·7	..	3·9	..	9·3	..	5·8	..	5·8	..	6·8	..	10·1	18·3	23 40
5	..	8·2	..	8·2	..	6·1	..	4·1	..	6·4	..	9·6	..	7·1	..	7·1	19·8	0 15
6	..	4·5	..	4·5	..	4·1	..	6·1	..	5·9	..	2·5	..	4·8	1·0	..	12·8	11 30
7	..	Ca	lm	..	0·7	..	3·3	..	4·9	..	4·9	..	4·9	..	7·3	..	15·2	23 55
8	9·9	..	9·9	..	2·3	..	11·4	..	1·8	..	9·2	..	1·6	..	4·0	..	22·3	10 20
9	..	..	9·1	..	..	1·2	6·0	..	0·7	..	3·6	..	3·1	..	4·6	..	17·7	0 10
10	8·0	..	..	1·6	5·6	..	6·4	..	5·8	..	8·6	..	1·7	..	8·6	..	19·8	23 15
11	3·9	..	5·8	..	15·5	..	10·3	..	4·3	..	10·4	..	2·1	..	10·5	..	28·3	18 15
12	..	..	13·7	..	..	..	9·1	..	1·9	..	4·5	..	4·1	..	9·9	..	27·4	1 35
13	..	..	13·4	..	..	..	7·9	..	1·0	..	4·8	..	2·9	..	7·0	..	24·1	2 40
14	..	1·8	8·9	..	..	9·3	3·9	..	..	4·0	1·6	..	1·9	..	1·9	..	21·3	6 30
15	5·6	..	2·3	..	6·2	..	6·2	..	4·5	..	4·5	..	1·4	..	3·4	..	15·5	9 30
16	6·5	..	2·7	..	2·6	..	2·6	..	3·6	..	5·3	..	2·0	..	4·8	..	12·5	3 30
17	3·2	..	4·8	..	4·1	..	6·1	..	5·2	..	5·2	..	4·6	..	6·8	..	15·2	13 45
18	3·5	..	3·5	..	6·2	..	2·6	..	5·6	..	5·6	..	4·7	..	4·7	..	11·3	18 40
19	6·2	..	6·2	..	7·4	..	7·4	..	..	2·2	5·4	..	..	..	7·3	..	17·7	17 55
20	..	..	8·2	..	1·0	..	4·8	..	1·8	..	4·3	..	..	1·0	5·1	..	12·8	2 50
21	1·9	..	4·5	..	..	5·2	7·8	..	..	9·9	9·9	..	..	2·3	5·6	..	25·9	15 10
22	..	1·0	4·8	..	2·4	..	2·4	..	6·3	..	4·2	..	7·1	..	7·1	..	15·5	22 0
23	3·9	..	3·9	..	4·3	..	4·3	..	5·8	..	..	..	3·5	..	3·5	..	11·6	0 45
24	5·5	..	..	..	7·0	..	2·9	..	4·9	..	4·9	..	1·0	..	4·8	..	15·2	10 10
25	1·5	..	3·7	..	1·3	..	1·3	..	7·9	..	..	..	9·6	..	..	1·9	13·4	19 50
26	11·3	..	..	..	12·5	..	..	..	10·2	..	2·0	..	..	..	9·1	..	18·3	21 0
27	1·9	..	4·5	..	6·9	..	..	1·4	13·7	..	2·7	..	11·0	..	4·6	..	21·3	18 35
28	3·9	..	3·9	..	2·2	..	0·9	..	3·7	..	..	5·6	12·9	..	8·6	..	21·9	20 25
29	2·4	..	12·0	..	2·7	..	6·5	..	6·2	..	6·2	..	8·9	..	1·8	..	23·8	1 0
30	17·5	..	7·2	..	1·6	..	8·0	..	..	..	7·3	..	2·6	..	3·8	..	23·5	1 0
31	7·3	..	..	..	5·3	..	3·6	..	5·6	..	8·4	..	1·5	..	7·7	..	17·1	13 10
S+N & W+E	132·5		157·0		137·9		159·5		156·3		157·3		133·4		176·0			
S−N & W−E	92·9		115·0		70·1		103·9		73·1		96·9		74·4		120·6			

9. Seismological Diary.

Earthquakes:—Eskdalemuir.

Day.	Phase.	Time. G.M.T.	Period.	Amplitudes. A_N.	Amplitudes. A_E.	Amplitudes. A_Z.	Δ.	Remarks.
		h m s	s	μ	μ	μ	km.	
4	P (?)	4 43 46	..	..	..	..	..	
	i_N	4 52 34	..	..	..	..	..	
	L	5 0 0	..	..	..	..	..	
	F	5 30 0	..	..	..	..	..	
14	L	15 44 to 16 4 0	..	..	..	..	..	Part of slight disturbance. Earlier phases very faint, and obscured by microseisms.
30	P	18 48 57	..	..	..	..	3800	
	PR	18 49 58	..	..	..	..	..	
	S (?)	18 54 32	..	..	..	..	..	
	L	18 58 0	..	..	..	..	..	
	M_E	19 7 57	22	..	13	..	..	
	F	19 20 0	..	..	..	..	..	

Microseisms of N. Component:—Eskdalemuir.

Day.	0 h. A_N.	0 h. T.	6 h. A_N.	6 h. T.	12 h. A_N.	12 h. T.	18 h. A_N.	18 h. T.
	μ	s	μ	s	μ	s	μ	s
1	1·8	5	2·5	4½	2·6	6	2·2	6
2	2·6	6	2·6	6½	4·3	6	3·9	6
3	3·8	6	4·5	6	3·7	6	2·5	6
4	3·2	8	2·4	7	2·1	8	1·8	6½
5	2·7	5	1·9	5	1·7	5	1·7	5
6	2·0	5	3·2	6	2·5	6	2·3	6
7	1·9	6	2·3	6	2·7	6½	2·2	7
8	2·2	7	4·1	7½	4·8	7½	4·0	6
9	3·4	6	3·9	6	4·3	7	5·2	6½
10	5·1	6½	4·0	6	3·2	6	3·5	6
11	2·7	6½	3·1	6	5·1	6	6·6	7
12	7·6	7	6·3	6½	5·8	6	4·0	6
13	3·7	6	4·1	5½	3·9	5	4·0	6
14	4·7	5	..	..	3·7	6	..	..
15	3·2	5	..	..	2·7	5	..	..
16	..	..	..	..	2·6	8	2·2	6½
17	2·4	7	..	..	2·0	6	..	..
18	1·7	6	..	..	2·9	6½	..	..
19	3·1	5½	..	..	3·6	6	2·3	6
20	2·7	6	2·8	6½	3·0	6½	2·7	6
21	2·3	6	2·0	7½	2·7	7	4·2	7
22	..	..	..	..	..	..	..	..
23	3·8	6½	4·3	7	3·9	7	5·3	6½
24	5·7	7	4·9	7	5·3	6½	5·1	6
25	4·2	7	6·2	4½	6·0	4½	5·2	6
26	4·2	6	5·8	4½	4·0	7	4·5	5
27	4·1	6½	4·9	5	5·6	5	6·2	4
28	4·4	6	7·3	5	3·8	6	3·4	5½
29	3·5	6	2·8	5½	2·5	6	2·8	5½
30	2·5	6	2·3	6	3·0	5	2·2	4½
31	2·5	4½	1·6	6	2·8	6	4·5	7

Means for Month $\begin{cases} A_N = 3·6\ \mu. \\ T = 6·1\ s. \end{cases}$

Normals for Month, 1911–19 $\begin{cases} A_N = 2·4\ \mu. \\ T = 6·0\ s. \end{cases}$

Earthquakes:—Richmond (Kew Observatory.)

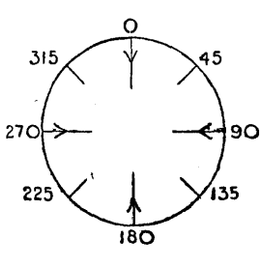
Day.	Times, G.M.T. of Commencement.	Times, G.M.T. of Max. Phase.	Remarks.
	h m	h m	
4	..	5 22	Small.
30	..	19 23	Very small.

10. Soundings with Pilot Balloons.

Day	Time of Start G.M.T.	Horizontal Velocity of Wind. Geostrophic.*		By Anemometer.		At Heights above M.S.L. 500 m.		1000 m.		2000 m.		3000 m.		4000 m.		Cloud Observations. Time, G.M.T.	Type.	Deg. from N.	mr/s	Type.	Deg. from N.	mr/s
	h. m.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	h. m.						
		ESKDALEMUIR.																				
14	8 5	315	17	290	12·0	300	16·0	305	14·5	315	14·5	..	..	..	..	.. / 13·0	.. ..	.. ..	.. ..	Cloudless Ci.	.. ..	315 6·5
		SOUTH FARNBOROUGH.																				
2	8 0	315	8	270	2·0	320	16·0	335	12·0	325	14·5	320	17·0	320	16·5	..	St.-Cu.	..	..	..	..	..
2	11 5	315	9	270	2·5	325	11·0	310	8·5	305	9·5	315	16·5	..	..	..	..	..	..	Ci.: Ci.-St. Ci.-Cu.	..	..
9	7 45	280	16	270	6·0	300	16·0	315	17·5	290	15·5	295	16·0	300	18·5	..	Fr.-Cu.	..	..	..	..	..
9	10 40	280	16	270	4·5	295	14·5	315	12·5	305	15·5	295	14·0	300	20·0	..	..	..	..	..	..	..
9	12 15	280	14	270	8·0	280	9·5	300	12·5	295	12·5	..	..	..	..	..	..	..	..	..	..	..
9	12 45	280	14	270	9·0	280	11·0	295	12·5	290	17·0	300	13·0	300	20·0	..	..	..	..	..	..	..
9	15 40	260	18	200	4·0	270	13·5	280	20·0	290	12·5	305	18·5	..	..	..	..	..	..	Ci.: Ci.-St.	..	..
14	7 55	330	24	335	10·0	340	15·0	335	18·5	335	27·0	..	..	..	..	..	Fr.-St.	..	..	..	..	..
14	8 45	330	24	335	8·0	325	11·5	345	19·5	340	19·0	330	20·5	..	..	..	Fr.-St.	..	..	..	..	..
19	9 25	270	8	270	10·0	250	17·0	265	16·0	270	17·5	265	20·0	260	15·5	..	Fr.-Nb.	..	..	Ci.	..	..
21	8 35	315	18	315	9·0	315	18·5	325	28·0	310	45·0	..	..	..	..	..	St.-Cu.	..	..	..	..	..
22	8 5	270	7	200	4·5	225	6·5	265	10·5	290	10·0	310	15·5	335	14·0	..	..	..	..	..	..	..
28	9 20	200	8	calm		265	1·0	205	4·9	220	7·5	..	..	..	..	..	A.-St.	..	..	..	..	..
29	8 15	270	24	200	8·0	270	17·5	275	20·5	270	15·5	265	17·0	..	..	..	Cu.; Cu.-Nb	..	..	..	..	..
30	7 40	270	13	245	7·5	270	17·0	290	19·0	285	19·5	..	..	..	..	..	Cu.	..	..	..	..	..
30	8 10	270	13	245	9·0	275	13·0	295	17·5	280	21·0	..	..	..	..	..	Cu.	..	..	..	..	..
30	15 55	260	9	270	7·0	265	12·5	275	14·5	295	12·5	295	22·5	..	..	..	Cu.; Fr.-Cu	..	..	A.-St., Ci.	..	..
										5000 m.		6000 m.		7000 m.								
9	7 45	(For observations at lower levels, see above.)								310	33·5	315	45·0	315	56·0	..	Fr.-Cu.	..	..	..	..	..
9	12 45									320	38·0	..	..	..	..	..	..	..	..	..	..	..
22	8 5									325	22·5	..	..	..	..	..	..	..	..	..	..	..
		CAHIRCIVEEN.																				
1	8 45	45	16	30	11·5	30	14·5	20	18·0	5	17·5	..	..	..	..	..	St.; St.-Cu.	20	..	..	..	..
5	8 20	?	?	75	2·5	90	8·0	90	9·0	60	7·5	50	13·0	..	..	8 55	A.-St.	30	..	Ci.	30	3·5
5	15 35	?	?	110	1·9	155	3·2	140	3·0	90	4·9	75	7·0	80	9·0	..	..	..	..	Ci.-St.	20	..
6	8 30	?	?	160	1·3	225	8·0	225	5·0	300	2·9	310	5·0	280	3·9	9 10	A.-St. / A.-Cu.	290 / 290	.. / 1·0	Ci.-St.	..	..
9	8 50	280	16	295	6·5	285	11·0	290	14·0	295	13·5	..	..	..	..	..	Cu.; St.-Cu.	290	..	Ci-St.	..	..
13	7 40	270	16	255	9·5	270	13·0	280	15·0	275	16·5	..	..	..	..	..	Cu.; St.	270	..	A.-St.	..	..
14	8 35	270	7	135	5·5	160	9·5	190	8·5	245	21·0	250	17·5	..	..	..	St.	225	..	A.-St.	..	..
21	11 45	300	28	280	3·9	300	7·5	300	15·5	295	20·0	..	..	..	..	..	Cu.	290	..	..	..	..
26	8 35	280	12	255	7·0	260	12·0	265	13·0	265	14·5	..	..	..	..	..	Fr.-Cu.	250	..	..	..	..
28	8 40	220	11	235	5·5	235	11·5	220	15·0	230	22·0	245	18·5	..	..	9 5	Cu.; St.	225	..	Ci.-Cu. Ci.-St.	220 ..	5·0 ..
28	12 35	?	?	190	3·6	245	7·0	250	11·0	250	11·0	240	14·0	240	17·0	..	Cu.	225	..	A.-St.	..	..
30	8 10	300	12	295	3·9	275	9·5	275	14·5	275	20·5	..	..	..	..	..	St.-Cu.	270	..	Ci.	290	..
														5000 m.								
5	15 35	(For observations at lower levels, see above.)												30	12·0	..	..	..	..	Ci.-St.	20	..

Height of Station above M.S.L. = H.
Anemometer above ground = h.

	H	h
Eskdalemuir	- 242 m.	15 m.
S. Farnborough	- 70 m.	31 m.
Cahirciveen	- 9 m.	13 m.



Wind Protractor.

Notes on Pressure Distribution.

January, 1920.

Throughout the whole month there was a persistent anticyclone over the Azores region.

1st, 7 h. Extensive Low centered over Scandinavia, Low centered off Land's End.

2nd, 7 h. Extensive Low centered over Scandinavia, Wedge over the British Isles.

13 h. Extensive Low centered over Scandinavia, Wedge over the British Isles, Low W. of Ireland.

5th, 7 h., 18 h. Ridge across the British Isles extending from the Azores to the Baltic.

6th, 7 h. Ridge across the British Isles centered over the Azores and Germany.

9th, 7 h. North Westerly gradient, straight isobars.

13 h. Westerly gradient, straight isobars.

18 h. Westerly gradient, shallow Low to the W. of Ireland.

13th, 7 h. Westerly gradient over the British Isles.

14th, 7 h. North Westerly type.

19th, 7 h. Extensive Low centered near Christiansund.

21st, 7 h., 13 h. The British Isles under the influence of Anticyclone centered W. of Spain.

22nd, 7 h. Anticyclone centered over the Bay of Biscay, Low centered over Iceland.

26th, 7 h. Deep depression centered over Iceland.

28th, 7 h. ,, ,, ,, ,, the Faröe Islands.

29th, 7 h. ,, ,, ,, ,, Iceland, secondary over the North Sea.

30th, 7 h. ,, ,, ,, ,, Scotland.

18 h. Extensive Atlantic Low covering the British Isles, Anticyclone over the Continent centered over Spain and Finland.

Notes on Ascents.

Eskdalemuir—

8 h. 5 m. Good visibility, cloudless.

South Farnborough—

2nd, 8 h. At commencement St.-Cu. on horizon, cleared during ascent.

14th, 7 h. 55 m. Low visibility.

21st, 8 h. 35 m. Thin white haze above.

28th, 9 h. 20 m. A.-St. in sheet and also detached.

Cahirciveen—

6th, 8 h. 30 m. Atmosphere clear, sky overcast. Balloon went into A.-Cu.

9th, 8 h. 50 m. Atmosphere clear, balloon eclipsed by St.

14th, 8 h. 35 m. Atmosphere clear. Balloon entered thick A.-St.

30th, 8 h. 10 m. The (white) balloon was of the same colour as the milky cirrus background and was lost prematurely in consequence.

* Measured from *Daily Weather Report* (International Section) with isobars at intervals of 4 mb.

11. NEPHOSCOPE OBSERVATIONS.

ABERDEEN.

Day and Hour. G.M.T.	Type of Cloud.	Velocity-height-ratio.				Remarks.
		Degrees from N.	Milliradians per Second.	Components.		
				W.–E.	S.–N.	
9 12	False Ci.	288	4·6	+4·4	−1·4	False Ci. in dense sheets, changing to Ci.-Cu. and flat thin A.-Cu.
9 13	False Ci.	286	4·5	+4·3	−1·4	
12 13	Ci.-St.	276	6·2	+6·2	−0·6	Ci.-St. gradually increasing to A.-St.
15 13	St.-Cu.	275	7·0	+7·0	−0·6	St.-Cu. with inclination to lenticular form.
23 13	St.-Cu.	245	6·5	+5·9	+2·7	St.-Cu. lenticularis, in fused sheets.
28 13	Fr.-Cu.	225	12·0	+8·5	+8·5	Broken small Cu.
29 13	Cu.	12	6·0	−1·2	−5·9	Ci. nebula above with ⊕

Note.—Very few observations were possible this month on account of large number of days with A.-St., fused St.-Cu., and St. clouds which showed no detail. There were also a considerable number of cloudless skies during the daytime.

12. AURORA.

Day.	a.m. or p.m.	Moon.	Magnetic Character.		Aurora Observations.	
			Eskdalemuir.	Richmond.	Station.	Remarks.
3	p.	..	0, 0	0, 0	Kirkwall	
4	p.	○	..	..	..	
4	p.	..	0, 0	0, 0	Kirkwall	
5	p.	..	0, 0	0, 0	Kirkwall	
9	p.	..	1, 1	1, 1	Deerness Gordon Castle Aberdeen Paisley	Rather faint streamers 21 h. onwards.
10	p.	..	1, 2	1, 2	Deerness	
11	p.	..	2, 1	2, 1	Kirkwall Deerness Gordon Castle Aberdeen	Rather faint arch and streamers 20 h.–24 h.
13	..	..	..	..	..	
17	p.	..	1, 0	1, 0	Baltasound Aberdeen Eskdalemuir Donaghadee	Faint glow type, 18 h.–21 h. Faint streamers, 19 h.
19	p.	..	0, 0	0, 0	Baltasound	
20	p.	..	0, 1	0, 2	Baltasound Eskdalemuir	Glow, 21 h.
21	a.	●	..	..	..	
22	a.	..	1, 0	2, 1	Eskdalemuir	Slight glow, 1 h.
23	p.	..	1, 0	1, 0	Deerness	

Note.—The two magnetic " characters " entered in each case refer to the two periods of 24 hours ending and beginning at midnight of the night in question.

METEOROLOGICAL OFFICE OBSERVATORIES.—GEOPHYSICAL JOURNAL.

DAILY VALUES.—*Solar Radiation, Meteorology, Atmospheric Electricity, Terrestrial Magnetism, and Seismology.*

Tenth YEAR.—No. 2 FEBRUARY 1920.] Units based on the C.G.S. System. [*Price* 1*s.*

1. SUNSHINE AND SOLAR RADIATION.

Day.	WESTMINSTER. Bright Sunshine.* Total.	Per cent. of Possible.	SOUTH KENSINGTON.—Lat. 51° 30′ N. Long. 0° 10′ W. Radiation received on Horizontal Surface by Callendar Radiograph. Daily Total.	Per cent. of Planetary.	Maximum. For Day. Amount.	Time.	11·30 h. to 12·30 h.	RICHMOND.—Lat. 51° 28′ N. Long. 0° 19′ W. Bright Sunshine.* Total.	Per cent. of Possible.	Radiation at Noon by Ångström Pyrheliometer. Intensity.	Vertical Component.	Sky.	ESKDALEMUIR.—Lat. 55° 19′ N. Long. 3° 12′ W. Bright Sunshine.* Total.	Per cent. of Possible.	Radiation by Ångström Pyrheliometer. Time.	Sky.	$\frac{p}{p_0}$ sec. Z.	Intensity.	CAHIRCIVEEN. Bright Sunshine.* Total.	Per cent. of Possible.
	hr.	%	j/cm².	%	mw/cm².	h. m.	mw/cm².	hr.	%	mw/cm².	mw/cm².		hr.	%	h. m.			mw/cm².	hr.	%
1	4·2	46	369	35	28	12 30	28	5·7	63	45	16	Clear	0·0	0	..	..	..	..	0·8	9
2	0·0	0	278	26	25	12 55	16	0·0	0	..	..	..	0·0	0	..	..	..	..	0·0	0
3	1·3	14	310	28	*x*37	12 0	*x*37	2·1	23	50	18	Hazy	0·0	0	..	..	..	..	0·0	0
4	0·0	0	136	12	15	12 40	8	0·0	0	..	..	..	3·7	42	..	..	..	..	6·1	66
5	0·0	0	274	24	22	13 20	21	0·0	0	..	..	..	3·4	38	..	..	..	..	2·0	27
6	3·0	32	255	22	26	11 45	26	4·2	45	29	11	Thro' cl.	0·2	2	..	..	..	..	0·1	1
7	4·1	44	414	35	25	11 50	25	6·4	68	48	19	Hazy	3·0	33	..	..	..	..	0·0	0
8	1·6	17	343	29	33	12 35	32	1·8	19	..	..	..	1·5	16	..	..	..	..	4·9	52
9	0·0	0	308	25	21	11 20	20	0·1	1	..	..	..	0·0	0	..	..	..	..	0·0	0
10	0·0	0	99	8	10	13 20	7	0·0	0	..	..	..	0·0	0	..	..	..	..	0·4	4
11	4·2	43	393	31	33	11 10	25	4·7	48	46	19	Thro' cl.	3·5	38	..	..	..	..	5·3	55
12	3·8	39	486	38	32	12 5	32	3·9	40	..	..	..	0·0	0	..	..	..	..	0·4	4
13	0·2	2	187	14	20	10 55	12	0·2	2	..	..	..	0·0	0	..	..	..	..	2·2	22
14	0·5	5	316	24	28	12 20	28	0·3	3	..	..	..	6·3	66	12 23	Clear	2·71	79	0·0	0
15	0·0	0	215	16	18	11 50	18	0·0	0	..	..	..	0·0	0	..	..	..	..	6·2	63
16	2·8	28	396	28	34	12 15	34	3·9	39	..	..	..	0·2	2	..	..	..	..	0·5	5
17	*x*7·2	72	*x*604	43	32	12 20	32	7·4	74	60	26	Hazy	0·7	7	..	..	..	..	0·0	0
18	3·8	38	466	32	27	13 20	21	4·9	49	15	6	Thro' cl.	2·8	28	..	..	..	..	0·3	3
19	2·9	29	552	38	*x*37	11 45	*x*37	3·6	35	56	25	Clear	0·0	0	..	..	..	..	0·2	2
20	0·0	0	57	4	3	15 40	2	0·0	0	..	..	..	4·2	42	..	..	..	..	5·7	56
21	0·6	6	253	17	32	13 10	20	1·6	16	..	..	..	9·2	92	12 26	Clear	2·48	77	*x*7·9	77
22	5·8	56	540	35	36	11 55	36	*x*8·0	77	..	..	..	0·0	0	..	..	..	..	0·2	2
23	1·9	18	305	19	28	12 15	28	0·0	0	..	..	..	0·0	0	..	..	..	..	7·6	73
24	0·7	6	274	17	28	13 0	21	0·5	5	..	..	..	7·1	70	12 27	Hazy	2·36	57	2·3	22
25	0·0	0	158	10	20	14 10	2	0·1	1	..	..	..	0·3	3	..	..	..	..	1·9	18
26	4·1	39	447	27	36	12 52	35	4·2	40	37	18	Thro' cl.	5·5	53	..	..	..	..	2·3	22
27	0·0	0	65	4	9	14 40	6	0·0	0	..	..	..	*x*8·7	83	12 26	Ci.	2·26	55	0·0	0
28	2·3	21	488	29	36	13 25	26	2·2	21	..	..	..	0·0	0	..	..	..	..	0·0	0
29	0·0	0	156	9	12	11 25	11	0·0	0	..	..	..	0·5	5	..	..	..	..	0·1	1
Means.	1·90	19	315	23	26	—	22	2·27	23	—	—	—	2·10	22	—	—	—	—	1·98	20
Normals.	1·35	14	325	24	—	—	—	2·13	22	—	—	—	1·56	17	—	—	—	—	2·48	25
	←35 years→		←8 years→					←35 years→					←5 years→						←35 years→	

2. METEOROLOGY AND MAGNETISM:—CAHIRCIVEEN (VALENCIA OBSERVATORY).—Lat. 51° 56′ N. Long. 10° 15′ W.

Heights above M.S.L.:—H=9·1 m. H_h=13·7 m. H_a=26·4 m. Above Ground: h_t=1·3 m. h_r=0·56 m. h_s=12·8 m. h_a=13·9 m.

Day.	Air Pressure at Station Level. 9 h.	21 h.	Air Temperature in Degrees Absolute. 9 h.	21 h.	Max. | Min. 0 h. to 24 h.		Humidity. Vapour Pressure. 9 h.	21 h.	Percentage. 9 h.	21 h.	Wind—Veer from North in degrees and Speed in metres per second. 9 h. °	m/s.	21 h. °	m/s.	Cloud Amount (0–10) and Weather. 9 h.	21 h.	Rain 0 h. to 24 h.	Min. Temp. on Grass. 18 h. to 9 h.	REMARKS.	Magnetism. Horizontal Force, Declination West, and Inclination.
	mb.	mb.	*a* 200+	*a* 200+	*a* 200+	*a* 200+	millibar.		%	%	°		°		Tenths of Sky covered.		mm.	*a* 200+		
1	1025·5	1024·6	82·1	82·7	83·3	80·0	8·5	10·3	74	86	220	8	205	9	8	10	1·1	75	o. *n.* c. to o. and p. day. o. evening.	
2	1021·0	1019·5	84·1	84·1	*x*84·7	82·5	12·7	11·4	97	87	185	9	180	10	10	10	1·0	81	o. and d. morning. Dull, damp day.	
3	1018·3	1026·2	82·3	80·7	84·5	79·8	11·0	7·5	95	72	240	9	280	6	10	8	4·7	81	o. *n.* ● to d. *a.* Fair *p.*	
4	1032·3	1034·8	77·9	77·3	81·1	75·8	7·0	6·6	81	80	265	2	175	3	7	2	—	75	Fair *n.* Fine day.	
5	1029·3	1020·0	78·3	82·4	82·5	77·5	6·4	10·7	73	91	125	6	170	9	1	10	1·8	*n*71	Fine *n.* and *a.* c. to o. *p.* p. and d.	
6	1014·6	1014·1	82·9	83·5	84·0	82·2	10·3	10·8	85	85	170	11	170	12	10	10	0·1	81	o. and ● *n.* c. to o day. [evening.	
7	1014·6	1020·0	83·5	80·4	84·2	80·2	10·9	9·5	86	93	175	11	245	2	10	10	4·7	83	o. *n.* and *a.* ●^{0} *p.*	
8	1026·0	1030·6	80·2	79·9	82·8	79·4	7·8	8·5	77	86	235	8	225	3	7	7	—	77	Fair *n* and day.	
9	1025·9	1018·5	82·3	83·4	84·0	81·1	10·8	11·6	93	93	230	8	230	12	10	10	2·2	78	o. p. and d. morning. p. and d. *p.*	
10	1009·7	1011·5	83·9	81·9	84·4	81·0	12·0	8·5	93	75	230	13	285	10	10●	8	6·9	82	●^{0} *a.* p. day. Fair evening.	17864γ. 19° 19·5′ 68° 4·7′
11	1015·4	1021·6	80·5	80·9	82·2	79·9	8·2	7·9	79	75	280	13	285	9	8	2	0·9	78	Fair day. Fine evening.	
12	1019·4	1009·8	82·2	83·3	83·5	80·5	11·1	11·5	96	93	180	7	205	9	10	10	2·1	79	Fair *n.* d. *a,* Dull day. p. evening.	
13	1008·0	1012·4	82·0	82·3	83·5	81·6	9·9	10·1	87	87	250	13	240	7	8	9	1·1	80	Fair *n.* and *a.* o. to fine *p.*	
14	1012·9	1007·1	81·6	82·9	83·6	81·5	10·4	10·4	94	86	185	5	180	8	10	10	0·5	80	Damp, dull day.	
15	997·5	1000·5	79·7	79·9	82·3	79·1	8·7	7·4	89	75	240	7	235	6	10	2	6·7	78	d. *n.* ● to ●^{0}. *a.* p. to fine *p.*	
16	1000·1	996·3	80·8	83·0	83·5	79·4	9·8	10·5	93	86	180	6	165	10	10	10	4·0	77	o. to c. day. ● *p.*	
17	996·5	1004·1	83·5	83·4	84·5	*x*83·0	11·5	11·3	91	90	155	8	155	5	10	5	*x*10·9	82	● *n.* d. to ●. *a.* d. to p. *p.*	17816γ. — —
18	1010·3	1012·8	82·8	83·0	84·3	82·5	11·2	11·1	93	91	—	1	60	3	10	10●	0·4	81	o. to c. day. d. evening.	
19	1012·0	1013·4	80·4	78·5	82·6	77·9	8·8	7·5	86	83	55	7	50	8	10	10	4·3	79	●^{0} to d. *a.* o. to c. day. o. evening.	17837γ. — — — —
20	1017·6	1025·9	76·5	78·0	*n*78·2	76·0	6·3	5·4	80	62	50	10	40	8	7	9	—	75	o. *n.* and morning. Fair to fine day.	68°12.9′†
21	1032·8	1034·5	78·5	80·6	81·6	76·7	6·9	8·9	76	85	35	4	—	1	4	5	—	74	Fair *n.* Fair to fine day.	17830γ. 19° 20·5′ 68° 4·9′
22	1034·9	1033·3	79·5	80·1	82·4	79·2	8·8	8·1	91	80	—	1	—	1	9	9	—	77	Fair *n.* o. *a.* Dull day.	
23	1029·0	1022·1	75·5	80·5	82·5	75·0	6·6	7·8	90	75	—	1	125	4	1	10	—	72	Fine and ⌙ *n.* and *a.* Fair day.	
24	1016·6	1015·2	79·5	75·8	82·1	74·7	7·5	6·3	77	85	110	4	150	2	10∞	0	—	78	o. *n.* and *a.* Fair to fine and ⩔ *p.*	
25	1014·1	1016·8	77·2	78·2	81·4	*n*73·4	7·5	7·7	92	88	—	0	—	0	10	0∞	2·1	*n*71	Fine *n.* ●^{0} to d. *a.* o. to fine *p.*	17850γ. 19° 19·1′ —
26	1022·0	1024·2	80·5	80·5	82·0	77·3	7·9	8·3	76	80	315	4	230	5	10	10	0·5	74	Fine *n.* o. and p. *a.* Fair day.	
27	1020·4	1024·4	83·4	83·1	84·2	81·5	12·0	12·2	96	99	235	9	250	2	10	10	2·5	79	o. *n.* ●^{0} o. and d. *a.* ●^{0} to d. *p.*	
28	1024·8	1023·0	83·2	83·4	83·8	*x*83·0	12·0	12·0	97	96	220	2	175	7	10	10	3·5	82	o. to d. *n.* and *a.* Damp day. ● evening.	
29	1021·2	1018·5	83·2	82·4	83·7	82·4	12·0	11·4	97	97	180	7	200	4	10	10	1·7	83	●^{0} *n.* Damp day. d. evening.	
Means.	1018·0	1018·5	81·0	81·2	83·0	79·5	9·5	9·4	87	85	—	6·6	—	6·0	8·6	7·8	63·7	78·0	Monthly Totals or Means	17839γ. 19° 19·7′ 68° 4·8′
Normals.	1011·4	1011·5	79·6	79·8	82·5	77·5	8·4	8·5	87	86	—	6·0	—	6·1	—	—	130·6	—	Normals	
	←45 years→						←30 years→				←35 years→						45 years			

* By Campbell-Stokes Sunshine Recorder. *x* denotes the maximum and *n* the minimum value in the column. † Abnormal value, omitted from mean.

(2883) Wt. 109/S.O.P. 612/773. 400. 6/21. Harrow. G.69/7.

3. METEOROLOGY:—RICHMOND, SURREY (KEW OBSERVATORY).—Lat. 51° 28′ N. Long. 0° 19′ W.

Heights above Mean Sea Level:—Rain-gauge Site, H=5·5 m. Barometer, H_b=10·4 m. Cups of Anemometer, H_a=25 m.
Heights above Ground:—Thermometers, h_t=3·0 m. Rain-gauge, h_r=0·53 m. Sunshine Recorder, h_s=13·3 m. Cups of Anemometer, h_a=20 m.

Day.	Air Pressure at Station Level.		Air Temperature in Degrees Absolute.				Humidity.				Wind—Veer from North in degrees and Speed in metres per second.				Cloud Amount and Weather.		Rain 0 h. to 24 h.	Min. Temp. on Grass 18 h. to 9 h.	Remarks.
					Max.	Min.	Vapour Pressure.		Percentage										
	9 h.	21 h.	9 h.	21 h.	0 h. to 24 h.		9 h.	21 h.	9 h.	21 h.	9 h.		21 h.		9 h.	21 h.			
	mb.	mb.	*a* 200+	*a* 200+	*a* 200+	*a* 200+	millibar.		%	%	°	m/s.	°	m/s.	Tenths of Sky covered.		mm.	*a* 200+	
1	1029·2	1033·2	78·5	81·0	82·8	77·4	6·8	8·0	75	75	255	5	220	6	1 ∞	10	—	75	Fine *a*. Fine to fair *p*.
2	1033·1	1033·0	81·9	81·6	83·2	81·0	8·6	9·0	76	81	225	6	220	6	10	10	—	78	Overcast to fair.
3	1031·0	1029·2	80·5	81·1	83·2	79·7	8·9	9·5	86	88	220	3	210	7	7 ≡⁰	9	—	77	Fine to dull.
4	1032·1	1036·8	79·0	76·6	82·1	74·3	8·7	7·3	94	93	360	3	—	1	10 ● ≡⁰	0 ≡	*x*2·2	78	Dull. ● *a*. ● d. *p*. ≡ *n*.
5	1038·1	1034·7	72·1	78·0	80·0	*n*70·5	5·6	7·2	99	83	—	1	95	3	0 ≡ ⌙	10 ≡⁰	0·2	67	≡ and ⌙ to 11 h. 30 m. Fine *a*. ◫ 23 h.
6	1032·1	1030·2	78·1	76·9	82·3	76·0	7·9	7·1	90	89	120	4	135	2	8 ≡⁰	1 ≡⁰ ⌙	—	70	Fine after 11 h. ∞ ⌙ *n*.
7	1029·4	1029·8	73·9	76·6	81·1	72·2	6·0	7·2	92	92	135	2	180	2	0 ≡ ⌙	0 ≡⁰	0·1	*n*66	≡⁰ and ⌙ early. Fine ∞.
8	1031·0	1032·4	78·4	77·1	82·3	74·7	8·1	7·9	91	97	230	2	250	2	9 ≡⁰	0 ≡⁰	0·7	68	⌙. Overcast to fine. ● 16 h.
9	1032·5	1024·6	76·2	81·3	82·2	73·5	7·4	9·1	97	84	250	3	225	9	7 ≡⁰	10	0·1	68	⌙. ≡⁰. Overcast to fair.
10	1014·9	1008·9	82·4	83·1	83·9	*x*81·5	10·1	11·4	86	93	220	9	225	7	10	10	0·7	76	Showers early and in *p*. 🌂 (gusts).
11	1008·1	1014·8	79·9	78·9	83·5	77·7	6·9	6·6	*n*69	*n*71	260	7	280	5	1	0	—	77	Fine to fair. Shower 18 h.
12	1023·9	1021·2	77·3	80·1	81·5	75·3	6·3	8·6	76	85	270	3	210	6	3 ≡⁰	4	—	71	⌙. Fine *a*. Fair to overcast *p*.
13	1010·8	1010·0	82·7	82·4	84·7	80·6	10·2	9·0	85	77	220	8	240	5	9	10	0·1	78	● 7 h. Overcast *p* cloudy. ●⁰ 15 h.
14	1014·6	1018·1	80·7	78·5	84·1	77·2	9·0	8·5	86	94	230	4	—	1	10	0 ≡	—	76	Overcast to fair. ≡ at *n*.
15	1013·3	1007·4	80·6	82·4	82·7	76·6	9·6	9·5	92	81	190	3	205	7	10 ≡⁰ d *p*	10	0·1	71	≡ and d. Dull.
16	1012·1	1012·9	75·8	81·2	84·1	74·8	7·1	9·8	95	91	—	1	170	2	0 ≡⁰ d *p* ⌙	5	0·7	70	≡ and ⌙. ● early. Fine to overcast.
17	1011·9	1012·9	81·6	80·9	87·4	78·3	9·2	8·8	83	84	150	2	155	2	3 ≡⁰ d *p* ⌙	0 ≡⁰	—	74	≡⁰ and d ⌙. Fine—warm.
18	1016·2	1016·6	75·6	80·6	*x*87·6	74·3	6·8	9·0	93	86	—	1	185	2	5 ≡ ⌙	0	0·1	71	≡ and ⌙. Fine.
19	1014·6	1011·6	78·4	80·6	87·2	73·8	8·3	9·6	93	92	—	1	—	1	8 ≡ d *p*	2 ≡⁰	0·1	71	≡ and d. Fine to cloudy.
20	1010·9	1014·5	78·8	76·1	78·8	75·3	9·0	6·9	98	90	50	3	10	4	10 ≡ d *p*	10 ≡⁰ ●	1·8	72	≡ and d. Dull. ● *p. and n.*
21	1020·7	1027·8	76·2	76·5	*n*78·5	75·2	5·9	6·1	77	78	360	7	10	5	10	9	0·4	74	● early. Dull to fine. 🌂 (gusts) *p*.
22	1032·2	1033·0	75·9	75·8	82·3	74·6	6·0	6·5	80	88	—	1	—	1	1 ≡⁰ d *p* ⌙	0 ≡⁰	—	71	⌙. Fine with ≡⁰.
23	1032·6	1027·1	73·6	77·3	80·4	71·9	6·1	7·8	96	94	—	0	90	6	*10* ≡ d *p* ⌙	0	—	68	⌙. ≡ to 15 h. Fine later.
24	1020·8	1018·9	75·9	76·5	80·9	73·0	7·3	7·5	96	95	—	1	—	1	10 ≡ d *p*	0 ≡	0·1	73	d ≡ to 11 h. Fair to fine. ≡ *n*.
25	1018·1	1015·7	75·3	81·0	83·8	72·5	6·9	9·9	97	93	—	1	200	2	10 ≡ ● d *p*	10	0·9	69	● early. ≡ to 14 h. Dull to cloudy.
26	1016·9	1022·6	80·7	78·5	83·6	76·5	9·4	6·8	90	75	260	3	290	3	10 ≡⁰ d *p*	0	0·1	77	●⁰ early. Overcast to 11 h., then fine.
27	1018·4	1025·9	80·0	78·4	83·6	75·8	8·0	7·0	80	78	240	6	—	1	10	0 ≡⁰	1·9	72	Dull. ● in *p*. ◫ 21 h.
28	1029·6	1027·3	73·9	80·8	83·1	71·0	5·4	10·1	83	96	20	2	210	3	7 ≡ ⌙	10 ≡⁰	—	67	≡. ⌙. Fine to overcast.
29	1026·1	1024·3	80·9	81·1	82·7	80·5	9·4	9·6	89	89	245	4	230	4	10	10	—	74	Overcast all day.
Means	1022·6	1022·6	78·1	79·3	82·9	75·7	7·8	8·3	88	87	—3·3		—3·6		6·9	4·8	10·3	72·4	Monthly Totals or Means.
Normal	1014·7	1014·6	76·9	77·3	80·3	74·9	6·7	6·9	84	83	—3·8		—3·7		—	—	39·6 (45 years.)	—	Normals.
	45 years.						30 years.				35 years.								

4. METEOROLOGY:—ESKDALEMUIR, DUMFRIESSHIRE.—Lat. 55° 19′ N. Long. 3° 12′ W.

Heights above Mean Sea Level:—Rain-gauge Site, H=242 m. Barometer, H_b=237·3 m. Vane of Anemometer, H_a=250 m.
Heights above Ground:—Thermometers, h_t=0·9 m. Rain-gauge, h_r=0·38 m. Sunshine Recorder, h_s=1·5 m. Vane of Anemometer, h_a=15 m.

																			REMARKS.
1	987·6	990·0	77·2	80·0	80·4	75·2	6·7	8·6	82	86	260	12	240	18	8	10	6·4	73	● ≡⁰ 🌂 till 5 h.: cq. ● ≡⁰ *a and p*.: o. 🌂 *n*.
2	992·0	990·4	79·2	80·3	81·2	77·9	9·1	10·1	97	99	210	13	210	11	10	10	4·7	78	d. ≡⁰ at first: ≡⋮⁰ *a and p*.: d ≡⋮ *n*.
3	988·1	991·4	79·6	77·4	81·0	77·1	9·4	7·6	97	91	210	16	220	7	10	10	7·5	79	≡⋮ or d⁰ early: d ≡⁰ *a*.: d.² ≡⁰ *p*.: o. *n*.
4	999·6	1006·6	73·6	72·1	77·3	70·0	5·4	5·4	85	95	220	3	—	0	4	0	—	72	b. to o. *a*.: c to d⁰ *p*: b. ⌙ *n*.
5	1008·0	1004·0	72·9	72·0	76·6	69·8	6·1	5·1	100	90	—	0	160	3	2	0	—	67	⌙² 1 h: ≡⋮ 7 h: bc. ⊕ *a*: c *p*: b. ◫ *n*.
6	998·9	997·6	75·0	75·0	78·0	72·7	6·7	6·5	95	93	160	4	180	3	10	10	—	70	⌙. Dull ≡⁰ *a and p*: c to o ≡⁰ *n*.
7	996·5	993·9	71·2	77·0	79·9	70·2	5·1	6·9	94	85	—	0	190	7	6	10	—	69	⌙⁰. bc ≡⁰ *a*: o. ∞ *p*: o. ≡⁰ *n*.
8	993·1	996·8	76·4	75·0	78·7	73·8	7·2	5·9	92	84	210	8	240	6	10 ≡⁰	3	4·0	75	● at first: o *a*: ▲ p. bc *p*: bc *n*.
9	989·0	977·8	77·8	80·3	80·6	73·9	8·1	9·9	94	97	210	13	220	18	10 ● ≡⁰	10 ● ≡⁰	23·7	72	◫ 1 h.: Persistent ● ≡⁰ after 5 h: 🌂 *a and n*.
10	968·4	969·9	81·7	77·3	82·0	76·8	10·4	6·7	93	81	210	11	230	9	10 ● ≡⁰	7	*x*33·4	79	●² ≡⁰ till 14 h.: Fair pq *p and n*.
11	966·7	979·6	74·7	75·2	77·0	74·0	5·3	5·9	77	82	270	12	310	12	1 ∞	2	9·9	73	Fine with frequent ✻ pq *a and p*: bc *n*.
12	989·9	979·3	73·7	78·6	79·3	73·2	5·7	8·8	88	97	200	3	210	14	10	10 ● ≡	10·9	71	c early: o ⊕ *a*: ●² ≡⁰ after 16 h.
13	967·3	971·4	79·9	77·0	80·8	76·1	9·0	6·3	91	78	220	17	280	13	10 ● ≡⁰	1	12·8	76	● ≡⁰ till 14 h: cq *p*: bq *n*.
14	983·9	986·4	74·0	73·7	78·0	71·4	5·1	5·5	79	86	10	2	130	4	2	10 ✻ ≡⁰	1·1	69	b *a*: c *p*: o ✻⁰ ≡⁰ after 19 h. ⊠ *n*.
15	975·3	969·6	78·4	76·6	79·3	74·0	8·0	7·3	90	93	180	12	200	8	10	4	23·9	72	●² ≡⁰ till 8 h: o ●⁰ *a*: ●² *p*: bc *n*.
16	976·0	979·9	76·5	75·4	79·6	74·8	7·0	6·3	89	87	210	9	190	2	9	3	—	74	bcq early: o *a and p*: b to o *n*.
17	981·4	983·4	80·5	79·7	*x*85·0	76·1	9·3	8·5	90	87	160	2	—	0	9 ≡⁰	7 ≡⁰	2·2	71	● ≡⁰ at first: o to c ∞ *a and p*: ≡⁰ *n*.
18	986·1	985·9	78·5	78·4	83·4	75·5	8·7	8·4	97	94	—	0	—	0	4 ≡⁰	10 ≡⁰	1·1	74	≡⋮ early: b to o ∞ *a and p*: ● ≡⁰ after 23h
19	987·2	989·2	73·2	73·9	77·0	72·6	6·0	5·8	96	88	30	8	40	10	10 ✻ ≡⁰	10 ≡⁰	15·4	72	●² ≡⁰ till 5 h, then ✻ ≡⁰ till 14 h: ⊠: o ≡⁰ *n*.
20	989·4	994·3	73·7	73·8	*n*74·7	71·9	5·1	5·3	80	83	20	10	20	5	6	6	0·6	70	Fine. ⊠ 5 cms: bc ✻ p *a and p*: bc *n*.
21	999·5	1001·4	72·2	72·7	78·0	69·6	3·8	5·1	*n*66	85	—	0	—	0	1	0	—	66	Cloudless ⊠ () *a*: ∞⁰ *p*: ⌙ *n*.
22	1002·2	1002·6	76·0	79·1	80·0	69·6	7·1	7·5	94	80	230	7	230	4	10 ≡⁰	10	—	67	⌙ b 1 h: o ≡⁰ *a*: o *p and n*.
23	1001·9	999·1	78·9	77·6	79·9	76·6	7·1	7·1	77	84	260	3	—	0	9	10	—	75	bq 1 h: overcast all day.
24	992·7	988·7	72·8	75·2	81·9	70·4	5·3	6·6	88	93	—	1	—	1	0 ∞	10 ≡⁰	—	67	o 1 h: b ∞ *a and p*: ≡⁰ *n*.
25	988·1	986·3	75·0	72·3	78·1	70·9	7·0	5·5	99	95	—	1	—	0	10 ≡⋮	0 ≡⁰	—	70	o ≡⋮ early: o to c ≡⁰ *a and p*: b ≡⋮ *n*.
26	985·2	985·1	75·2	76·6	79·0	70·9	5·8	6·8	81	86	280	8	250	11	5	6	1·2	68	≡⋮ 1 h.: ●⁰ 6 h–7 h: c *a and p*: o to c
27	985·2	996·8	76·6	69·4	79·5	67·7	5·8	3·5	74	*n*74	320	7	—	0	3 ∞	2	3·5	75	pq at first: bc ∞ *a*: cy *p*: bc *n*. ● q *n*.
28	993·8	986·9	75·9	79·9	81·4	*n*67·1	7·0	9·9	93	100	210	6	220	14	10 ≡⁰	10 ≡⋮	6·6	*n*64	◫ 1 h: ≡⁰ early: ≡ d 9 h–22 h, then ● ≡⁰
29	988·9	987·5	81·1	79·4	83·0	*x*79·4	9·8	9·5	91	99	240	15	220	9	8	10 ≡⁰	2·5	78	d ≡⁰ till 1 h: c to o ≡⁰ *a*: d ≡⋮ *p and n*.
Means	988·3	988·7	76·3	76·2	79·7	73·1	7·0	7·0	89	89	—7·0		—6·6		7·1	6·6	171·4	71·9	Monthly Totals or Means.
Normal 1911-1915	978·7	978·5	75·3	75·7	78·6	72·8	6·6	6·8	88	88	—6·1		—6·0		—	—	184·4	—	Normals.

Temperatures at or below the normal freezing point of water are printed in small type. *x* denotes the maximum, and *n* the minimum, value in the column.

5. GEOPHYSICS :—RICHMOND (KEW OBSERVATORY).

Day.	Earth Temperature at 9 h. 0·3 m.	Earth Temperature at 9 h. 1·2 m.	Height above M.S.L. of Surface of Underground Water. Daily Mean.	Height above M.S.L. of Surface of Underground Water. Extremes.	Terrestrial Magnetic Force. Horizonal Comp't. Mean Time.	Horizonal Comp't.	Declination. Mean Time.	Declination. West.	Inclination. Mean Time.	Inclination.	Magnetic Character of Day.	Electric Character of Day.	Charge per cc. × 10^{16}. +.	Charge per cc. × 10^{16}. −.	Air-Earth Current. × 10^{16}.	Potential Gradient, Volts per metre. Factor 2·29. 3 h.	9 h.	15 h.	21 h.
	0·3 m.	1·2 m.											About 15 h.		About 15 h.				
	a 200+	*a* 200+	cm.	cm.	h m	γ	h m	° ′	h m	° ′			Coulomb.		Amp/cm².	v/m.	v/m.	v/m.	v/m
1	78·6	79·7			..	..	..	..	..	..	0	0	..	..	..	100	230	215	340
2	78·6	79·7			..	..	..	..	..	..	0	0	0·39	..	1·15	115	270	285	300
3	79·0	79·7			..	..	..	..	..	..	0	0	..	0·04	0·90	145	470	330	330
4	79·4	79·7			..	..	..	..	14 39	66 57·5	0	1	..	..	..	145	470	440	515
5	78·3	79·7			11 18	18396	14 23	14 39·6	..	..	0	0	0·33	..	0·75	685	670	570	755
6	77·6	79·8			..	..	..	..	..	..	1	0	..	0·16	0·75	455	470	400	570
7	77·1	79·8			..	..	..	..	..	..	1	0	..	..	..	470	485	300	470
8	76·8	79·7			..	..	..	..	..	..	0	1	..	..	..	185	300	255	370
9	76·9	79·7			..	..	..	..	..	..	0	0	0·15	..	0·80	340	440	255	130
10	77·9	79·5			..	..	..	..	..	..	0	1	..	..	..	45	55	130	115
11	79·0	79·6			..	..	..	..	..	..	1	1	..	0·69	1·10	70	200	230	270
12	78·0	79·6			11 7	18403	14 24	14 38·0	14 32	66 57·6	1	0	0·23	..	0·90	170	525	315	430
13	78·5	79·6	Instrument		..	..	..	..	..	..	1	1	..	..	..	145	215	215	240
14	79·0	79·5	dismounted		..	..	..	..	..	..	1	0	..	..	..	170	330	155	370
15	78·8	79·6	for		..	..	..	..	..	..	1	0	..	..	..	515	170	185	155
16	79·0	79·7	repairs.		..	..	..	..	..	..	2	0	..	0·14	0·90	55	470	215	470
17	79·0	79·7			..	..	..	..	..	..	2	0	0·77	..	1·05	285	400	215	415
18	78·8	79·7			..	..	..	..	..	..	1	1	..	0·12	1·20	315	400	430	685
19	78·5	79·7			11 10	18395	14 19	14 39·0	14 37	66 58·8	0	1	0·42	..	0·75	45	455	255	515
20	79·0	79·8			..	..	..	..	..	..	0	1	..	0·31	0·45	470	430	400	−155
21	78·3	79·8			..	..	..	..	..	..	0	1	..	..	..	−145	240	270	415
22	77·6	79·8			..	..	..	..	..	..	0	1	..	..	..	230	—	355	440
23	77·0	79·8			..	..	..	..	..	..	0	1	0·60	..	0·25	525	1285	715	615
24	76·9	79·7			..	..	..	..	..	..	2	0	..	0·14	0·80	400	525	315	515
25	76·9	79·6			..	..	..	..	..	..	1	1	0·25	..	0·50	1025	315	500	515
26	77·8	79·5			11 5	18404	14 23	14 39·0	14 37	66 58·7	0	0	..	0·11	1·10	145	340	230	485
27	78·0	79·6			..	..	..	..	..	..	1	1	..	..	..	170	255	−525	770
28	77·4	79·4			..	..	..	..	..	..	1	0	..	..	..	600	600	300	315
29	78·5	79·4			..	..	..	..	..	..	0	0	..	..	..	85	170	300	315
M.	78·1	79·7	—	—	—	—	—	—	—	—	0·59	0·45	0·39	0·21	0·83	276†	399†	282†	401†
	77·1 — 12 years —	79·1 — 12 years —																	

† Mean for 28 days.

6. GEOPHYSICS :—ESKDALEMUIR, DUMFRIESSHIRE.

Day.	North Component. Maximum. 15000 γ +. h m	γ	Minimum. 15000 γ +. γ	h m	Range. γ	West Component. Maximum. 4000 γ +. h m	γ	Minimum. 4000 γ +. γ	h m	Range. γ	Vertical Component. Maximum. 44000 γ +. h m	γ	Minimum. 44000 γ +. γ	h m	Range. γ	Magnetic Character of Day.	Electric Character of Day.	Potential Gradient, Volts per metre. Factor 6·03. 3 h.	9 h.	15 h.	21 h.
1	23 46	1014	974	11 28	40	13 24	886	848	9 37	38	21 34	1063	1046	11 15	17	0	2 *b*	z+	70	−5	80
2	21 18, 21 30	1003	977	12 17	26	12 10	887	847	23 28	40	23 30	1058	1048	9 25	10	0	1 *a*	40	100	145	115
3	0 1, 23 57	1000	979	12 25	21	13 19	885	851	8 55	34	22 30	1058	1042	11 10	16	0	2 *b*	215	140	z—	215
4	0 59	1014	975	14 55	39	13 28	899	852	1 14	47	0 30	1051	1042	11 20	9	0	1 *b*	110	295	−525	1050
5	6 25, 6 42	1009	958	11 48	51	14 2	892	854	10 3	38	15 13	1051	1044	7 40	7	0	0 *a*	425	415	475	365
6	22 52	1070	978	12 41	92	14 26	887	806	23 36	81	22 36	1051	1028	23 25	23	1	0 *a*	140	320	375	625
7	19 44	1025	948	11 55	77	14 45	913	816	0 1	97	19 39	1070	1037	10 30	33	1	0 *a*	365	415	470	355
8	20 50	1020	965	1 50	55	13 37	896	*	*	?	20 40	1052	1037	10 35	15	—	2 *c*	z—	10	155	220
9	22 0	1004	965	12 20	39	14 11	891	848	22 45	43	16 15	1053	1042	11 50	11	0	2 *c*	150	z—	−110	−45
10	22 20	1008	973	13 38	35	14 8	905	846	2 31	59	20 46	1050	1038	2 10	12	0	2 *b*	−1235	−325	30	70
11	24 0	1043	983	12 30	60	15 19	891	849	23 57	42	0 1	1046	1030	10 30	16	0	2 *c*	−30	165	z ±	180
12	0 1	1043	964	13 50	79	13 17	898	801	1 0	97	21 40	1054	1015	1 10	39	1	2 *b*	115	155	215	z ±
13	23 55	1027	954	12 40	73	14 14	893	818	21 21	75	21 28	1054	1030	4 0	24	1	2 *c*	z—	110	35	100
14	24 0	1018	947	19 37	75	14 55	917	809	19 43	108	19 45	1086	1030	5 35	56	1	1 *a*	95	145	200	285
15	0 1	1018	962	19 5	56	14 15	898	824	0 1	74	19 5	1062	1030	13 5	32	0	2 *c*	−730	75	1270	115
16	8 10	1023	923	13 6	100	14 18	982	739	19 14	243	18 51	1145	1026	11 20	119	2	1 *b*	100	170	200	625
17	19 18, 19 36	1080	894	12 13	186	1 24	909	738	19 8	171	17 26	1067	1012	3 16	55	2	1 *b*	250	190	300	540
18	20 7	1024	924	12 29	100	14 46	902	827	19 52	75	16 10	1060	1012	3 12	48	1	1 *b*	355	570	345	500
19	0 16	1002	949	12 39, 13 8	53	13 27	893	840	9 54	53	18 0	1087	1034	10 41	53	0	2 *c*	z ±	720	430	305
20	22 48	1005	958	12 10	47	13 23	903	838	9 15	65	14 2	1079	1062	12 20	17	0	1 *b*	190	615	115	110
21	19 10	1010	931	12 33	79	15 16	899	834	19 3	65	16 23	1083	1066	11 35	17	1	0 *a*	360	530	255	480
22	0 37	1007	954	12 28	53	14 5	892	843	9 59	49	16 50	1081	1064	12 30	17	0	0 *a*	165	180	175	230
23	6 25	1013	963	12 20	50	14 48	893	856	9 7	37	16 35	1075	1061	11 45	14	0	0 *a*	130	150	165	210
24	19 25	1081	925	22 42	156	18 28	1022	781	22 46	241	19 34	1419	1057	11 28	362	2	0 *a*	175	230	255	385
25	2 12	1015	919	1 40	96	14 43	890	799	1 50	91	21 40	1103	1011	1 35	92	1	1 *a*	100	515	365	700
26	15 50	995	948	19 35	47	18 8	896	828	23 21	68	19 39	1110	1066	12 35	44	0	1 *b*	470	160	120	−145
27	24 0	1007	938	14 6	69	16 5	902	803	23 51	99	21 3	1093	1054	5 45	39	1	2 *b*	z—	425	205	430
28	22 30	1012	973	14 10	39	14 54	898	807	0 1	91	17 30	1082	1062	0 56	20	0	1 *a*	125	285	370	225
29	7 58	1007	973	11 36	34	13 50	897	836	0 1	61	16 4	1082	1066	4 20	16	0	1 *a*	100	245	145	115
M.	—	1021	954	—	66		†904	†823		†82	—	1084	1041	—	43	†0·54	1·14	‡87	‡264	‡263	‡348

x and *n* denote the maximum and minimum values in the columns in which they occur. The potential gradient is reckoned as positive if the potential increases upwards. For indeterminate potential gradient the following notation is used : z+ Indeterminate, positive value ; z— Indeterminate, negative value ; z± Indeterminate in magnitude and sign. † Mean for 28 days only. ‡ Mean for 20 days only. * Shutter jammed.

7. JERSEY (ST. LOUIS OBSERVATORY).—Lat. 49° 12′ N. Long. 2° 6′ W.

Heights above M.S.L.:—H = 54 m. H_b = 55 m. Above Ground:—h_t = 1·48 m. h_r = 1·72 m. h_a = 8 m.

Day.	Air Pressure at Station Level. 9 h.	14 h.	21 h.	Mean of 3 Readings.	Air Temperature in degrees Absolute. 9 h.	14 h.	21 h.	Max.	Min.	Mean of 5 Readings.	Min. Temp. on Grass.	Percentage of Humidity. 9 h.	14 h.	21 h.	Mean.	Rain 0 h. to 24 h.	Remarks.
	mb.	mb.	mb.	mb.	a 200+	a 200+	a 200+	a 200+	a 200+	a 200+	a 200+	%	%	%	%	mm.	
1	1029·3	1032·1	1032·2	1031·2	81·3	82·6	81·7	83·5	79·2	81·7	74·5	74	65	69	69	—	
2	1031·9	1030·7	1029·6	1030·7	80·6	82·1	80·6	82·9	80·0	81·2	76·1	86	84	83	84	—	
3	1027·5	1026·1	1026·0	1026·5	78·3	79·4	80·5	81·4	77·0	79·3	69·4	92	95	95	94	—	▬ ≡² 14 h. ●° 16 h.
4	1027·3	1027·3	1029·0	1027·9	81·0	81·4	80·2	82·3	79·6	80·9	75·6	*n*61	82	94	79	—	
5	1028·7	1027·1	1026·6	1027·5	79·0	79·4	79·0	80·0	79·0	79·3	75·9	91	88	97	92	—	≡° day; ◫ 20 h.
6	1023·1	1022·0	1022·0	1022·4	77·8	81·6	80·1	82·4	77·2	79·8	72·5	95	76	76	82	—	◫ to 6 h. 30 m.
7	1021·8	1021·9	1024·6	1022·8	78·4	80·2	78·3	80·9	76·8	78·9	70·8	85	76	94	85	—	
8	1026·9	1027·3	1028·5	1027·6	79·5	81·1	81·0	82·4	78·0	80·4	70·9	92	90	94	92	0·4	
9	1029·8	1027·6	1025·5	1027·6	80·5	81·6	80·9	83·0	77·6	80·7	71·3	84	76	87	82	—	
10	1019·0	1021·9	1012·7	1017·9	81·5	82·4	82·1	82·6	80·3	81·8	77·0	82	82	89	84	*x*2·5	≡° day; ●² 14 h. 30 m. and 21 h.
11	1011·0	1012·6	1016·0	1013·2	81·8	82·5	80·9	83·9	80·6	81·9	79·1	88	71	75	78	0·5	●² 6 h. 25 m. — 9 h. 25 m.
12	1022·0	1021·5	1019·4	1021·0	80·5	82·3	81·0	82·9	79·4	81·2	73·1	85	72	79	79	0·3	● 6 h. 35 m.
13	1011·9	1010·1	1011·0	1011·0	81·5	81·9	81·7	83·3	80·4	81·8	78·5	98	98	91	96	0·8	● from 8 h. frequent showers; ≡°
14	1013·9	1014·2	1013·7	1013·9	81·0	82·1	81·2	82·7	80·1	81·4	76·0	93	84	94	90	0·2	● 3 h. ≡° day. [afternoon.
15	1009·5	1005·1	1004·3	1006·3	80·4	82·5	82·0	83·6	80·0	81·7	76·2	84	77	92	84	—	
16	1007·0	1005·9	1005·0	1006·0	81·3	83·3	82·4	83·9	81·0	82·4	78·0	90	90	90	90	—	≡° afternoon.
17	1003·0	1003·0	1004·6	1003·5	82·4	85·2	83·7	86·0	81·5	83·8	78·0	75	69	75	73	—	
18	1008·6	1008·4	1009·7	1008·9	83·6	87·3	83·6	*x*87·7	81·3	84·7	77·3	69	62	81	71	—	
19	1008·6	1006·5	1005·3	1006·8	83·8	86·9	83·7	87·5	*x*81·6	84·7	76·9	70	*n*61	78	70	—	🌬 21 h.
20	1003·7	1003·6	1007·3	1004·9	83·5	84·9	79·9	86·0	78·9	82·6	74·5	78	73	92	81	—	≡° day.
21	1014·6	1016·3	1019·9	1016·9	77·5	77·6	78·5	*n*78·9	77·2	77·9	76·5	76	70	*n*62	69	—	●° 9 h.
22	1025·0	1024·1	1024·8	1024·6	77·7	80·7	78·4	81·0	77·1	79·0	75·6	66	63	77	69	—	🌬 21 h.
23	1023·5	1019·7	1018·0	1020·4	77·3	80·5	77·1	81·0	76·0	78·4	72·8	82	70	88	80	—	
24	1013·7	1012·2	1012·7	1013·2	79·6	83·7	83·0	85·5	*n*75·3	81·4	70·9	86	69	73	76	—	
25	1011·1	1010·7	1011·2	1011·0	82·3	84·6	82·7	85·9	81·6	83·4	73·2	84	78	88	83	0·2	●° 4 h. ●² noon.
26	1015·1	1017·7	1021·5	1018·4	82·4	82·8	79·7	84·6	79·6	81·8	77·9	96	70	94	87	—	≡° before noon.
27	1020·1	1019·4	1020·5	1020·0	81·3	83·4	82·1	83·6	80·0	82·1	72·1	95	77	98	90	1·3	●° 6 h., 16 h. 30 m. and 20 h.
28	1023·5	1022·7	1023·1	1023·1	81·8	81·9	82·3	82·3	80·5	81·8	80·6	100	100	100	100	1·0	≡² 5 h. 30 m. continuous.
29	1023·1	1021·6	1019·4	1021·4	81·8	82·6	80·6	83·5	79·1	81·5	80·4	100	90	98	96	0·8	≡² ●² early to 6 h.
Means	1018·4	1017·9	1018·1	1018·1	80·7	82·3	81·0	83·3	79·2	81·3	75·2	85	78	86	83	8·0	
Normal	1009·7	1009·0	1009·6	1009·4	78·5	80·1	78·7	80·9	77·0	79·0	73·6	82	75	82	80	58·2	
	←27 years→				←27 years→						←24 years→	←25 years→				←27 years→	

JERSEY (ST. LOUIS OBSERVATORY).

Day.	Wind Direction and Force (0-12 on the Beaufort Scale). 9 hr.	14 h.	21 h.	Mean of Force.	Sunshine.* Total.	Per cent. of Possible.	Cloud Amount (tenths of Sky covered), Type of Cloud, and Direction whence coming. Tenths.	Upper. Type.	Direction.	Lower. Type.	Direction.	Tenths.	Upper. Type.	Direction.	Lower. Type.	Direction.	Tenths.	Upper. Type.	Direction.	Lower. Type.	Direction.	Mean Amount.
	9 h.	14 h.	21 h.		hr.	%	9 h	9 h.	9 h.	9 h.	9 h.	14 h.	14 h.	14 h.	14 h.	14 h.	21 h.	21 h.	21 h.	21 h.	21 h.	
	°(0-12)	°(0-12)	°(0 12)																			
1	270 3	270 2	225 4	3·0	3·3	35	4	..	..	Cu.	WNW	10	..	..	..	..	3	A.-Cu.	..	Cu.	W	5·7
2	203 4	203 3	203 3	3·3	4·8	52	8	..	..	St.-Cu.	SW	7	..	..	Cu.	SW	3	Ci.	..	..	..	6·0
3	225 2	203 3	180 3	2·7	2·3	24	3	Ci.	..	..	..	10	..	..	..	..	4	A.-Cu.	W	..	..	5·7
4	203 2	203 2	203 1	1·7	0·0	0	8	..	..	St.-Cu.	..	9	..	..	St.-Cu.	S	10	..	..	..	..	9·0
5	113 3	113 2	113 2	2·3	0·0	0	10	..	..	St.-Cu.	..	10	..	..	..	..	5	Ci.-St.	..	..	..	8·3
6	90 2	90 2	113 2	2·0	8·9	90	4	Ci -Cu	W	..	..	0	..	..	..	..	0	..	..	..	..	1·3
7	157 3	180 4	225 4	3·7	3·5	37	2	..	..	Cu	SSE	3	Ci.-Cu.	SW	..	..	3	..	..	..	..	2·7
8	225 3	225 6	180 1	3·3	0·0	0	6	..	..	..	..	6	..	..	Cu.-Nb.	SW	8	..	..	..	..	6·7
9	— 0	247 4	247 4	2·7	5·7	59	4	Ci	N	..	..	8	..	..	..	..	6	..	..	..	..	6·0
10	225 5	247 5	247 5	5·0	0·0	0	10	..	..	..	..	10	..	..	..	..	10	..	..	..	..	10·0
11	270 4	270 4	293 4	4·0	4·0	41	7	Ci.-Cu.	W	Cu.-Nb.	WNW	10	..	..	..	..	3	..	..	..	..	6·7
12	247 1	225 3	225 4	2·7	1·7	17	8	A.-Cu.	WSW	Cu.-Nb.	WNW	7	Ci.	..	St.-Cu.	SW	10	..	..	..	..	8·3
13	225 5	225 5	247 4	4·7	1·6	16	10	..	..	Nb.	SW	10	..	..	Nb	..	7	..	..	..	..	9·0
14	225 4	247 3	225 2	3·0	1·2	12	3	Ci.	..	..	..	10	..	..	..	..	10	..	..	..	..	7·7
15	180 3	180 4	203 4	3·7	1·8	17	10	..	..	..	..	10	..	..	..	..	10	..	..	..	..	10·0
16	180 4	157 3	135 3	3·3	2·4	24	10	..	..	..	..	9	..	..	Cu.-Nb.	S	8	..	..	..	..	9·0
17	135 4	135 3	90 3	3·3	10·0	98	1	A.-Cu.	..	..	..	5	Ci.-Cu.	SSW	..	..	0	..	..	..	..	2·0
18	135 2	135 3	90 2	2·7	9·6	94	0	..	..	..	..	1	A.-Cu.	..	..	..	5	..	..	..	..	2·0
19	157 2	135 2	157 1	1·7	10·1	98	2	A.-Cu.	SW	..	..	0	..	..	..	..	0	..	..	..	..	0·7
20	67 1	315 3	23 4	2·7	2·0	19	4	A.-Cu.	SE	..	..	7	A.-Cu.	SW	..	..	10	..	..	..	..	7·0
21	23 5	23 5	23 6	5·3	0·0	0	10	..	..	Nb.	NNE	10	..	..	Cu.-Nb.	NE	10	..	..	..	..	10·0
22	45 4	45 5	45 4	4·3	5·1	48	7	..	..	Cu.	NE	3	..	..	Cu.	NE	1	..	..	..	..	3·7
23	90 4	67 4	90 4	4·0	10·5	99	0	..	..	..	..	0	..	..	..	..	0	..	..	..	..	0·0
24	157 2	135 3	157 3	2·7	10·3	97	1	..	..	Cu.	..	4	Ci; A.-Cu.	SSW	..	..	5	Ci.	..	..	..	3·3
25	180 3	203 3	180 2	2·7	3·3	31	7	A.-Cu.	SW	Cu.-Nb.	SW	5	Ci; A.-Cu.	SW	..	..	10	..	..	..	..	7·3
26	270 3	315 4	270 3	3·3	7·1	66	9	..	..	Cu. / Nb.	W / WNW	4	..	..	Cu.	WNW	0	..	..	..	..	4·3
27	270 4	270 5	270 4	4·3	3·0	28	8	..	..	Nb.	W	10	..	..	St.-Cu.	WSW	10	..	..	Nb.	..	9·3
28	90 2	180 3	203 1	2·0	0·0	0	10	..	..	≡²	—	10	..	..	≡²	..	10	..	..	≡²	..	10·0
29	247 1	225 1	67 2	1·3	1·4	13	7	..	..	Cu.-Nb.	NW / WSW	10	..	..	..	..	2	..	..	..	..	6·3
Means	2·9	3·4	3·1	3·1	3·9	39	6·0	—	—	—	—	6·8	—	—	—	—	5·6	—	—	—	—	6·1
Normal	3·6	4·0	3·8	3·8	3·7	36	6·9	—	—	—	—	6·7	—	—	—	—	6·3	—	—	—	—	6·6
	←17 years→				23 years		←26 years→															

* For method of estimation see Introduction.

8. WIND COMPONENTS: Metres per second at fixed hours, together with the greatest mean hourly velocity, or the greatest velocity attained in a gust, and the time of its occurrence.

NORTH WALES:—HOLYHEAD.

Height of Head above—Roof 8·8 m., Ground 13·7 m., M.S.L. 19·2 m.
Height of Cups above—Roof 4·6 m., Ground 7·6 m., M.S.L. 15·2 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	h. m.
1	..	..	18·5	..	6·5	..	6·5	..	8·5	..	8·5	..	7·6	..	7·6	..	28·8	1 35
2	7·6	..	7·6	..	9·7	..	6·5	..	10·3	..	6·9	..	10·3	..	6·9	..	19·5	6 5
3	10·1	..	4·2	..	11·5	..	4·7	..	8·7	..	5·8	..	0·7	..	3·6	..	19·3	8 10
4	..	..	6·5	..	..	..	6·8	..	1·8	..	4·3	..	..	Ca	lm	..	13·0	4 15
5	2·2	..	..	0·9	1·7	..	..	0·7	4·2	..	..	4·2	5·2	..	..	2·1	11·0	22 35
6	8·8	..	..	3·6	9·9	..	..	2·0	9·6	..	..	1·9	7·4	..	1·5	..	17·3	13 50
7	6·0	..	2·5	..	5·6	..	1·1	..	10·2	..	..	..	13·0	..	..	..	?14·1	15 30
8	14·7	..	2·9	..	4·6	..	4·6	..	5·0	..	7·5	..	3·4	..	5·1	..	?	?
9	5·0	..	5·0	..	8·1	..	8·1	..	8·3	..	8·3	..	8·1	..	8·1	..	18·7	12 50
10	10·0	..	10·0	..	7·7	..	7·7	..	8·8	..	8 8	..	..	..	12·0	..	20·9	0 35
11	5·4	..	12·9	..	3·1	..	15·5	..	..	5·9	14·3	..	..	5·0	12·0	..	23·7	8 15
12	..	2·1	10·8	..	0·9	..	4·7	..	8·3	..	3·4	..	9·5	..	6·3	..	18·4	23 25
13	7·9	..	7·9	..	7·1	..	7·1	..	6·0	..	9·0	..	2·0	..	10·3	..	18·0	2 25
14	4·2	..	6·2	..	..	Ca	lm	..	3·5	..	1·5	..	7·4	..	..	1·5	14·0	5 50
15	8·2	..	1·6	..	12·5	..	..	..	5·7	..	5·7	..	6·0	..	6·0	..	19·8	13 45
16	3·9	..	5·8	..	5·9	..	3·9	..	9·3	..	..	1·9	8·3	..	..	1·7	14·7	13 30
17	6·5	..	..	2·7	4·4	..	..	2·9	5·2	..	..	..	1·3	..	1 3	..	12·0	2 25
18	..	Ca	lm	..	..	Ca	lm	..	2·0	..	0·4	..	4·4	..	0·9	..	8·0	23 5
19	2·2	..	2·2	..	1·8	..	1·8	..	..	5·5	..	3·7	..	6·8	..	10·2	16·8	22 10
20	..	5·6	..	13·4	..	3·3	..	7·9	..	10·0	..	6·7	..	12·0	..	8·1	19·0	4 45
21	..	9·2	..	6·2	..	9·0	..	1·8	..	7·7	1·5	..	..	3·3	3·3	..	14·3	5 25
22	..	2·5	1·7	..	..	Ca	lm	..	..	0·8	3·8	..	1·6	..	1·1	..	6·4	13 50
23	..	Ca	lm	..	..	Ca	lm	..	2·3	..	1·6	..	1·5	..	..	7·4	9·8	20 5
24	..	Ca	lm	..	2 8	..	..	2·8	4·5	..	0·9	..	2·2	..	0·9	..	7·6	9 30
25	4·0	..	1·6	..	..	Ca	lm	..	..	Ca	lm	..	..	Ca	lm	..	6·0	2 35
26	..	3·1	4·7	..	..	0·7	3·5	..	..	..	8·4	..	4·1	..	10·0	..	16·0	23 0
27	4·0	..	9·7	..	4·5	..	10·8	..	..	5·6	..	1·1	..	Ca	lm	..	16·0	9 20
28	3·7	..	..	0·7	7·0	..	2·9	..	8·5	..	3·5	..	8·7	..	3·6	..	15·5	23 55
29	6·2	..	2·6	..	6·4	..	1·3	..	10·3	..	4·3	..	10·7	..	4·4	..	19·8	18 10
S+N & W+E	143·1		152·4		134·7		115·6		176·5		127·9		150·5		135·9			
S−N & W−E	98·1		97·4		108·7		79·4		105·5		88·9		96·3		73·9			

SCOTLAND N.:—DEERNESS.

Height of Cups above—Roof 1·5 m., Ground 4·9 m., M.S.L. 57·3 m.

Day.	3 h.				9 h.				15 h.				21 h.				Vel. in Max. Hourly Run.	Time of Max.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	hrs.
1	2·9	..	14·5	..	..	2·8	14·1	..	7·7	..	1·5	..	8·6	..	8·6	..	18·7	6
2	10·0	..	10·0	..	3·3	..	16·7	..	3·8	..	5·7	..	3·3	..	..	..	17·0	9
3	..	Ca	lm	..	4·2	..	..	4·2	9·5	..	9·5	..	6·4	..	9·6	..	15·1	17
4	5·3	..	12·8	..	..	..	13·8	..	..	..	9·2	..	2·5	..	6·1	..	15·7	4
5	5·2	..	3·4	..	6·7	..	2·8	..	7·9	..	3·3	..	10·8	..	..	..	11·8	23
6	13·5	..	..	2·7	12·3	..	..	2·4	11·9	..	..	2·4	15·4	..	..	3·1	15·7	21
7	9·2	..	..	..	10·9	..	..	2·2	10·3	..	..	2·0	11·9	..	2·4	..	12·5	2
8	6·4	..	2·6	..	5·6	..	5·6	..	3·5	..	3·5	..	..	1·8	9·0	..	13·8	20
9	4·9	..	4·9	..	11·4	..	..	11·4	4·6	..	11·2	..	5·8	..	5·8	..	16·1	9
10	4·6	..	6·8	..	1·7	..	8·3	..	5·5	..	13·3	..	3·6	..	18·3	..	18·7	21
11	7·5	..	6·2	..	..	2·8	14·1	..	..	12·5	12·5	..	..	10·2	10·2	..	19·7	3
12	..	6·9	6·9	..	..	3·0	3·0	..	5·1	..	1·0	..	14·9	..	..	6·2	16·1	21
13	8·7	..	1·7	..	6·0	..	4·0	..	7·1	..	10·6	..	..	8·7	13·0	..	15·7	21
14	..	13·3	5·5	..	..	9·2	6·2	..	..	3·8	2·6	..	..	..	..	3·3	15·1	4
15	10·7	..	..	10·7	13·9	..	..	9·3	12·6	..	..	2·5	7·6	..	5·1	..	17·7	5
16	11·3	..	2·2	..	8·7	..	5·8	..	4·7	..	4·7	..	8·0	..	1·6	..	13·8	5
17	7·1	..	1·4	..	7·4	..	..	1·5	4·6	..	..	..	4·5	..	0·9	..	8·9	12
18	..	10·3	..	4·3	..	8·7	..	5·8	..	10·0	..	4·1	..	8·2	..	..	12·5	12
19	..	4·9	4·9	..	..	5·1	..	7·6	..	6·4	..	9·6	..	6·9	..	6·9	12·8	10
20	..	8·1	..	5·4	..	10·1	..	6·7	..	4·3	..	2·9	..	2·6	..	..	12·1	9
21	..	0·8	4·2	..	..	1·0	5·1	..	..	1·6	8·0	..	2·1	..	10·6	..	11·5	23
22	5·4	..	8·1	..	2·7	..	13·8	..	..	..	13·1	..	..	..	14·4	..	14·8	13,14,16
23	1·4	..	2·2	..	4·3	..	10·3	1·6	1·2	..	6·1	..	1·1	..	2·8	..	11·1	9
24	6·0	..	4·0	..	4·0	..	..	1·6	1·8	..	2·7	..	0·7	..	3·5	..	4·3	9–11
25	1·3	..	1·9	..	3·3	..	3·3	..	1·1	..	1·7	..	2·5	..	1·7	..	4·6	9
26	..	1·8	2·7	..	1·5	..	7·4	..	..	..	10·5	..	..	..	9·2	..	12·5	24
27	..	5·4	13·0	..	..	10·6	7·1	..	..	8·9	..	..	..	1·3	1·9	..	18·0	5
28	10·7	..	2·2	..	1·8	..	9·0	..	9·6	..	1·9	..	4·7	..	7·1	..	19·5	24
29	3·7	..	18·6	..	3·4	..	17·1	..	8·5	..	3·5	..	2·9	..	14·5	..	22·0	2
S+N & W+E	187·5		163·8		166·4		221·8		168·5		159·6		157·0		175·8			
S−N & W−E	84·5		117·6		59·8		113·2		73·5		112·6		77·6		136·8			

ENGLAND, S.W.:—SCILLY.

Height of Head above—Ground 9·8 m., M.S.L. 49·7 m.
Height of Cups above—Ground 5·8 m., M.S.L. 45·7 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	h. m.
1	..	4·3	11·8	..	0·9	..	9·9	..	4·3	..	6·1	..	5·3	..	5·3	..	22·0	0 13
2	5·0	..	6·0	..	6·2	..	3·6	..	5·6	..	6·7	..	6·2	..	3·6	..	13·0	12 10
3	5 8	..	3·3	..	6·6	..	1·1	..	5·1	..	3·4	..	5·5	..	3·8	..	10·5	19 14
4	..	3·8	..	2·6	..	4·0	..	1·5	..	1·8	..	2·2	..	0·3	..	3·8	8·2	1 22
5	1·1	..	..	6·2	5·3	..	..	5·3	6·2	..	..	3·6	6·0	..	..	2·8	11·5	12 03
6	8·7	..	..	4·1	8·7	..	..	1·5	6·9	..	..	1·8	8·2	..	..	1·5	12·1	3 15
7	6·6	..	..	0·7	7·8	..	..	1·4	8·3	..	..	3·0	6·6	..	..	1·1	10·2	0 35
8	6·7	..	0·6	..	..	6·3	2·3	..	..	1·4	4·0	..	..	0·6	3·7	..	11·8	8 07
9	..	0·4	5·0	..	2·2	..	5·9	..	3·5	..	7·6	..	3·9	..	8·4	..	12·2	23 46
10	5·9	..	10·1	..	4·7	..	13·0	..	3·7	..	13·7	..	1·1	..	13·2	..	16·5	10 22
11	..	2·2	12·4	..	..	1·7	9·9	..	..	5·3	11·4	..	..	4·7	10·3	..	17·8	2 25
12	..	2·7	7·5	..	2·2	..	3·1	..	5·6	..	1·5	..	4·6	..	5·5	..	10·0	2 10
13	4·8	..	6·9	..	1·0	..	12·0	..	..	0·9	9·9	..	..	..	7·5	..	14·0	8 59
14	0·7	..	8·2	..	..	..	5·4	..	2·1	..	3·6	..	5·0	..	..	..	10·0	2 03
15	6·3	..	..	..	8·7	..	0·8	..	6·4	..	7·7	..	1·2	..	4·5	..	15·2	15 30
16	1·9	..	1·6	..	5·5	..	..	1·5	8·9	..	..	2·4	12·5	..	..	5·8	15·6	21 32
17	9·8	..	..	5·7	9·8	..	..	4·5	4·8	..	..	4·1	3·4	..	..	5·8	12·6	0 07
18	3·3	..	..	5·8	2·4	..	..	5·2	2·9	..	..	5·0	2·6	..	..	5·7	7·8	0 03
19	2·1	..	..	2·5	3 2	..	..	3 2	3·0	..	..	3·6	1·6	..	..	1·9	4·7	15 05
20	..	..	..	2·9	..	6·8	..	3·2	..	9·8	..	4·5	..	9·1	..	5·2	13·0	17 27
21	..	5·5	..	4·6	..	6·8	..	6·8	..	8·7	..	5·0	..	9·1	..	4·2	14·3	9 38
22	..	2·9	..	4·1	..	2·9	..	4·1	..	3·1	..	4·4	..	1·0	..	5·3	8·8	0 06
23	1·0	..	..	5·3	4·3	..	..	8·7	3·2	..	..	6·8	2·2	..	..	8·0	13·4	9·53
24	4·4	..	..	3·7	2·7	..	..	2·7	2·5	..	..	1·5	2·1	..	..	4·5	6·7	2 40
25	3·2	..	..	3·2	3·4	..	1·6	..	2·5	..	2·1	..	2·2	..	1·8	..	6·4	1 13
26	..	5·6	1·5	..	..	4·1	2·9	..	..	2·1	4·5	..	1·0	..	5·3	..	9·3	21 55
27	..	1·3	7·4	..	..	..	9·6	..	No record				No record				12·0	15 16
28	No record				No record				..	..	3·3	..	..	..	4·2	..	5·9	19 24
29	2·1	..	1·4	..	5·0	..	..	..	1·9	..	3·3	..	4·7	..	..	2·7	6·5	23 28
S+N & W+E	108·1		135·1		123·2		130·7		120·5		136·7		110·7		135·4			
S−N & W−E	50·7		32·3		58·0		31·5		54·3		40·9		61·1		18·8			

ENGLAND, E.:—SHOEBURYNESS.

Height of Head above—Ground 27·4 m., M.S.L. 31·4 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	h. m.
1	1·7	..	8·6	..	..	..	8·2	..	2·9	..	7·0	..	4·6	..	6·8	..	16·5	6 15
2	4·1	..	4·1	..	4·4	..	6·6	..	4·4	..	6·6	..	2·9	..	4·3	..	17·1	8 40
3	3·7	..	5·6	..	4·6	..	3·1	..	1·9	..	4·5	..	3·1	..	2·1	..	11·3	0 15
4	4·1	..	4·1	..	..	4·0	..	..	..	2·4	..	0·5	..	Ca	lm	..	10·4	1 40
5	..	3·3	..	2 2	..	3·9	..	3·9	1·4	..	..	6·9	3·0	..	..	7·3	10·1	9 10
6	3·9	..	..	3 9	3·6	..	..	5·3	2·1	..	..	5·1	4·4	..	..	6·6	9·8	22 0
7	4·3	..	..	2 9	3·8	..	..	2·6	5·8	..	..	..	7·6	..	..	..	11 3	22 0
8	6·3	..	1·2	..	4·8	..	3·2	..	2·9	..	4·3	..	..	0·8	4·2	..	10·4	13 30
9	0·8	..	3·9	..	2·4	..	3·6	..	6·6	..	6·6	..	5·1	..	7·6	..	18·0	23 35
10	5·6	..	8·4	..	8 0	..	8·0	..	6·3	..	9·4	..	3·6	..	8·7	..	20·7	15 50
11	1·3	..	6·6	..	1·4	..	6·9	..	..	..	11·6	..	..	2·0	9·9	..	25·3	4 25
12	..	..	6·4	..	..	..	6·4	..	0·6	..	2·9	..	7·1	..	4·7	..	13·4	0 5
13	5·6	..	5·6	..	7·4	..	7·4	..	7·8	..	7·8	..	2·9	..	7·0	..	17·4	11 30
14	..	..	6·1	..	1·9	..	4·5	..	0·8	..	4·2	..	..	..	..	2·7	13·7	10 55
15	5·2	..	..	..	6 7	..	..	..	9·2	..	1·8	..	8·6	..	1·7	..	14·0	13 10
16	4·3	..	4·3	..	..	Ca	lm	..	6·3	..	1·2	..	1·5	..	..	3·7	8·5	2 50
17	2·0	..	..	4 8	3·1	..	..	4·6	2·6	..	..	3·8	1·1	..	..	2·8	8·2	6 20
18	..	Ca	lm	..	..	Ca	lm	..	..	Ca	lm	..	..	Ca	lm	..	4·0	17 15
19	..	Ca	lm	..	3·4	..	..	..	1·5	..	2·2	..	..	Ca	lm	..	8·2	10 5
20	..	3·0	..	..	..	2·9	..	0·6	..	4·5	0·9	..	..	5·4	1·1	..	10·7	23 55
21	..	6·7	..	..	..	9·4	..	..	..	10·1	..	..	..	8·0	..	1·6	18·0	12 15
22	..	3·9	0·8	..	..	3·6	0·7	..	..	0·5	..	2·4	..	Ca	lm	..	8·2	10 45
23	..	1·7	0·7	..	..	Ca	lm	..	..	0·8	..	4·2	..	1·0	..	4·8	9·1	18 21
24	2·6	..	..	3 8	..	Ca	lm	..	1·7	..	1·2	..	..	Ca	lm	..	6·1	2 35
25	..	Ca	lm	..	..	Ca	lm	..	1·3	..	..	1·3	2·8	..	1·9	..	7·0	23 25
26	0·7	..	3·3	..	..	..	4·3	..	..	2·8	6·7	..	..	..	4·9	..	12·2	15 5
27	1·5	..	7·7	..	1·8	..	9·2	..	..	5·6	3·7	..	..	2·1	0·4	..	18·0	10 20
28	..	Ca	lm	..	3·4	..	1·4	..	5·1	..	3·4	..	3·7	..	3·7	..	11·0	18 50
29	8·1	..	5·4	..	2·1	..	5·1	..	1·6	..	4·0	..	5·6	..	3·7	..	13·1	8 5
S+N & W+E	84·4		100·4		86·6		95·6		99·5		114·2		86·9		102·2			
S−N & W−E	47·2		65·2		39·0		61·6		46·1		65·8		48·3		43·2			

9. Seismological Diary.

Earthquakes—Eskdalemuir.

Day.	Phase	Time. G.M.T.	Period.	Amplitudes. A_N.	A_E.	A_Z.	Δ.	Remarks.
		h m s	s	μ	μ	μ	km.	
2	P	11 43 29	..	..	..	..	7500	
	S	11 52 16	..	..	..	..	..	
	L	12 4 30	..	..	..	..	..	
	F	14 50 0	..	..	..	..	..	
7	P	11 52 19	..	..	..	..	1300	
	S	11 54 31	..	..	..	..	..	
	L	11 58 15	..	..	..	..	..	
	M	12 5 0	20	22	..	..	..	
	F	13 30 0	..	..	..	..	..	
7		15 53 to	..	..	..	..	..	Slight disturbance with group of long waves at 15h. 53m.
		16 6	..	..	..	..	..	
8		6 17 to	..	..	..	..	..	Slight disturbance with group of long waves at 6h. 33m.
		7 10	..	..	..	..	..	
10	L	22 25 0	20	..	..	..	..	Earlier phases masked by large microseisms.
20	L	0 19 0	..	..	..	..	..	Earlier phases too doubtful.
	M	0 23 0	19	24	..	..	..	
	F	0 40 0	..	..	..	..	..	
20	L	12 1 0	..	..	..	..	..	
	M_N	12 6 25	21	46	..	..	..	
	M_E	12 6 40	21	..	18	..	..	
	F	12 45 0	..	..	..	..	..	
22	P	17 47 1	..	..	..	..	7680	Long waves feebly developed.
	S	17 56 1	..	..	..	..	..	
	F	18 20 0	..	..	..	..	..	
25	L	18 8 to	..	..	..	..	..	
		18 12	..	..	..	..	..	
25	P	23 4 29	..	..	..	..	..	
	S	23 13 14	..	..	..	..	..	
	L	23 27 0	..	..	..	..	..	
26		2 23 to	..	..	..	..	..	Faint disturbance.
		2 42	..	..	..	..	..	
27		4 16 to	..	..	..	..	..	Slight disturbance. Phases confused by wind effects.
		4 40	..	..	..	..	..	
28	e	19 4 19	..	..	..	..	..	
	L	19 19 47	24	..	..	..	..	
	F	19 50 0	..	..	..	..	..	

Microseisms of N. Component—Eskdalemuir.

Day.	0 h.		6 h.		12 h.		18 h.	
	A_N.	T.	A_N.	T.	A_N.	T.	A_N.	T.
	μ	s	μ	s	μ	s	μ	s
1	5·2	9·0	3·6	7·0	3·1	7·0	3·2	8·0
2	3·9	6·0	3·8	7·5	..	..	3·6	7·0
3	3·0	6·5	3·2	8·0	2·5	6·0	3·1	6·0
4	3·5	6·0	2·7	6·0	2·0	7·5	2·3	6·0
5	1·9	6·0	2·2	5·5	2·1	5·5	2·3	6·5
6	2·3	6·5	3·8	6·5	3·0	6·5	3·1	6·0
7	2·6	6·5	2·7	6·0	..	..	2·0	6·0
8	1·7	5·5	2·1	5·5	1·6	6·0	1·8	5·0
9	1·8	5·0	1·1	5·0	1·9	6·0	2·3	5·0
10	2·8	6·5	3·1	6·5	4·3	6·5	4·4	6·5
11	5·2	8·0	5·8	8·0	7·9	7·5	5·8	8·0
12	7·0	7·0	4·6	6·5	3·5	7·0	3·8	6·5
13	3·9	6·0	4·5	6·0	5·6	6·5	9·4	6·0
14	8·4	6·5	8·1	6·0	7·5	6·0	4·4	6·0
15	4·8	6·5	4·7	6·0	7·8	5·5	5·2	6·0
16	5·9	6·0	4·6	6·5	3·9	6·0	3·3	7·0
17	3·2	8·0	3·2	8·0	3·5	6·0	3·0	6·5
18	2·5	7·0	2·3	6·0	1·9	6·0	1·6	6·0
19	1·6	6·0	1·1	5·0	1·1	4·0	1·0	4·5
20	1·0	4·5	0·9	5·5	..	..	1·2	5·5
21	0·8	5·0	0·7	5·0	0·9	6·0	0·8	5·5
22	0·8	5·5	1·2	6·0	1·6	6·0	..	..
23	2·0	6·0	2·6	6·0	1·5	8·0	1·8	6·0
24	1·3	8·0	1·4	6·5	1·3	6·0	1·1	6·5
25	0·8	6·0	0·8	5·5	0·8	5·5	1·0	6·0
26	..	..	0·9	5·5	1·2	6·0	1·9	6·0
27	2·4	5·0	2·3	6·0	2·3	6·0	1·8	5·0
28	1·6	5·5	1·6	5·5	1·7	4·0	1·2	6·0
29	1·6	6·0	2·5	6·0	5·2	7·5	5·1	7·5

Means for Month $\begin{cases} A_N. = 3·0\mu. \\ T = 6·3\,s. \end{cases}$

Normals for Month, 1911–19 $\begin{cases} A_N. = 2·9\mu. \\ T = 6·3\,s. \end{cases}$

Earthquakes:—Richmond (Kew Observatory).

Day.	Times, G.M.T. of Commencement.	Times, G.M.T. of Max. Phase.	Remarks.
	h m	h m	
2	11 44	12 46	Large disturbance. Amplitude on trace, 5·6 mms. Succession of waves to 14h. 29m.
7	..	12 3	Amplitude on trace, 1·1 mms. Very small waves to 12h. 16m. Commencement masked by artificial disturbance.
7	..	15 58	Succession of very small waves.
8	..	6 45	Very small.
10	22 31	22 49	Amplitude on trace, 3·6 mms. Succession of small waves to 23 h. 49m.
20	..	0 22	Very small.
20	..	12 4	Small. Succession of small waves to 12h. 20m.
25	..	23 47	Very small.
27	..	4 34	Very small.
28	19 27	19 34	

10. Soundings with Pilot Balloons.

ESKDALEMUIR.

Day	Time of Start, G.M.T.	Horizontal Velocity of Wind. Geostrophic.* Deg. from N.	m/s.	By Anemometer. Deg. from N.	m/s.	At Heights above M.S.L. 500 m. Deg. from N.	m/s.	1000 m. Deg. from N.	m/s.	2000 m. Deg. from N.	m/s.	3000 m. Deg. from N.	m/s.	4000 m Deg. from N.	m/s.	Cloud Observations. Time, G.M.T.	Type.	Deg. from N.	mr/s.	Type.	Deg. from N.	mr/s.
	h. m.															h. m.						
5	11 40	180	13	175	2·2	180	5·5	190	9·0	180	15·0	..	..	..	..	12 0	St-Cu.	200	12·0	Ci-St.	190	1·5
12	12 25	270	13	225	5·0	240	9·0	240	10·0	280	14·0	..	..	..	..	..	Nb.; Fr-Nb.	225	..	A-St.	..	..
14	7 30	?	?	290	1·5	320	3·5	345	9·0	300	10·0	300	26·0	290	25·5	..	..	..	..	Ci-St.	..	..
14	11 25	?	?	60	2·0	65	3·9	85	1·9	275	9·5	285	20·5	..	..	11 55	Fr-Cu.	45	1·5	..	..	..
20	12 35	40	13	15	8·0	25	12·0	55	17·0	45	12·0	..	..	..	..	..	St-Cu.	45	..	..	..	..
21	9 0	30	13	155	0·5	350	8·5	5	17·0	15	15·0	360	19·0	..	..	..	..	..	..	Cloud less		
21	17 10	330	8	calm		345	7·0	10	11·0	330	8·0	..	..	..	..	..	Cu.	..	..	..	..	..
24	12 35	?	?	100	2·0	95	2·4	175	4·9	190	8·0	225	9·0	..	..	..	..	..	..	Cloud less		
24	17 15	225	5	calm		250	4·0	235	3·4	245	6·5	..	..	..	..	17 30	..	..	..	Ci-St.	230	2·0
27	17 0	340	12	345	4·5	345	3·2	340	3·2	345	12·5	..	..	..	..	16 40	..	..	..	Ci-St.	345	4·5

SOUTH FARNBOROUGH.

5	8 10	?	?	90	2·7	85	9·5	115	8·0	110	3·6	110	2·5	280	5·0	..	A-St.	..	..	Ci.	..	..
6	15 0	140	9	135	6·5	145	8·0	160	13·5	165	6·5	200	3·1	280	3·0	..	A-St.	..	..	..	..	..
7	7 50	180	8	155	8·0	150	9·5	160	6·0	170	7·5	205	4·3	170	5·5	..	..	..	..	Ci.	..	..
9	7 50	260	9	245	7·0	255	9·5	260	13·0	280	12·0	290	9·0	295	11·0	..	..	..	..	Ci.	..	..
11	8 15	290	20	270	13·5	285	18·0	290	30·0	290	23·0	..	..	..	..	..	..	..	..	Ci-Cu.	..	..
16	8 45	225	9	155	5·5	190	4·4	225	7·0	235	16·0	230	15·5	230	11·0	..	..	..	..	Cloud less		
18	8 5	130	8	135	4·0	145	5·0	185	6·0	110	2·4	155	4·1	225	5·5	..	A-Cu; A-St.	..	..	..	..	..
19	8 45	?	?	190	4·0	215	6·5	245	4·8	230	8·5	210	8·0	210	7·0	..	A-Cu.	..	..	..	..	..
19	10 5	?	?	180	3·6	210	7·0	215	4·5	240	9·0	..	..	..	..	..	A-Cu; A-St.	..	..	..	..	..
19	11 10	?	?	200	4·5	210	6·0	240	4·6	240	19·0	..	..	..	..	..	A-Cu.	..	..	..	..	..

			5000 m.		6000 m.		7000 m.		8000 m.		9000 m.							
5	8 10		265	6·0	265	12·5	280	16·5	280	19·5	..	..	..	A-St.	..	..	Ci.	..
6	15 0		275	1·4	260	6·0	300	5·5	265	6·0	310	11·0	..	A-St.	..	..	..	..
7	7 50	(For observations	210	1·9	265	3·7	320	7·5	250	1·7	210	5·0	..	..	..	..	Ci.	..
9	7 50	at lower levels,	295	15·0	315	14·5	..	..	..	..	..	..	..	..	..	..	Ci.	..
16	8 45	see above.)	225	7·5	220	7·5	240	6·0	250	7·5	255	6·5	..	..	..	..	Cloud less.	

			10,000 m.		11,000 m.		12,000 m.		13,000 m.							
6	15 0		335	12·5	315	16·0	315	22·0	..	..	..	A-St.	..	..	..	..
7	7 50		285	9·0	245	10·0	215	14·5	200	33·5	..	..	..	..	Ci.	..

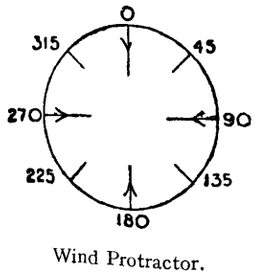
CAHIRCIVEEN.

5	8 25	180	10	125	6·5	150	10·5	170	17·0	185	15·0	190	8·0	210	11·5	9 10	Cu.	170	11·0	A-Cu.	185	5·5
21	8 10	?	?	30	4·1	15	10·0	15	13·0	25	24·5	..	..	..	..	9 5	Cu.	45	..	A-Cu.	25	6·5
21	8 35	?	?	25	4·5	15	9·5	20	15·0	30	16·0	25	15·5	..	..	9 5	Cu.	45	..	A-Cu.	25	6·5
23	8 15	?	?	30	2·0	120	7·5	120	6·5	125	12·5	135	9·5	145	11·5	..	St-Cu.	90	..	..	..	..
24	16 40	200	4	175	2·6	130	1·5	40	2·5	200	4·0	..	..	..	..	..	A-Cu.	180	..	Ci-Cu.	180	..
25	16 30	?	?	335	3·4	10	5·5	355	8·0	320	8·0	305	4·8	285	7·5	17 5	A-Cu; A-St.	290	1·5	..	..	..

			5000 m.		6000 m.											
5	8 25	(For observations at lower levels,	205	11·0	260	9·0	9 10	Cu.	170	11·0	A-Cu.	185	5·5			
23	8 15	see above.)	125	14·0	135	21·0	..	St-Cu.	90	..	..	..	..			

Height of Station above M.S.L. = H.
Anemometer above ground = h.

	H.	h.
Eskdalemuir ..	242 m.	15 m.
S. Farnborough	70 m.	31 m.
Cahirciveen ..	9 m.	13 m.



Wind Protractor.

Notes on Pressure Distribution.

February, 1920.

5th, 7 h., 13 h. Anticyclone centered over the North Sea, Low centered over Iceland.

6th, 13 h. Low centered N. of Iceland, Anticyclone centered near Denmark.

7th, 7 h. ,, ,, ,, ,, ,, over Germany.

9th, 7 h. Ridge from the Azores to Germany, Lows over Iceland and Spitzbergen.

11th, 7 h. Deep depression centered N.W. of Christiansund.

12th, 13 h. Anticyclone over the British Isles centered over the Bay of Biscay.

14th, 7 h. Deep depression from Denmark to Spitzbergen centered over Christiansund, High over Iceland.

13 h. High over Iceland and France, Low W.of Ireland and over Scandinavia.

16th, 7 h. Deep depression centered over the Faröe Islands.

18th, 7 h. } Anticyclones centered over Iceland and over Austria; Shallow trough
19th, 7 h. } over the British Isles.

13 h. Anticyclones centered over the Faröe Islands and over Austria; Shallow trough over the British Isles.

20th, 13 h. Shallow Low centered over Spain covering the British Isles. High over the Faröe Islands region.

21st, 7 h., 18 h. Anticyclone centered W. of Ireland.

23rd, 7 h. Ridge across the British Isles.

24th, 13 h., 18 h. Continental Anticyclone covering the British Isles.

25th, 18 h. Deep depression centered over Iceland, light gradient over the British Isles.

27th, 18 h. The Azores Anticyclone covering the British Isles.

Notes on Ascents.

Eskdalemuir—

5th. Solar Halo at 11 h.

12th. Solar Halo at 12 h. 15 m.

21st, 9 h. Snow lying.

21st, 17 h. 10 m. Cloudless except for a little Cu. low down on the Western horizon.

27th, 17 h. Barometer rising briskly.

South Farnborough—

16th, 8 h. 45 m. Shallow surface mist.

19th, 8 h. 45 m. Balloon entered cloud.

11 h. 10 m. Balloon entered A-Cu.

Cahirciveen—

21st, 8 h. 10 m. Balloon disappeared behind a patch of cumulus.

24th, 16 h. 40 m. Balloon lost overhead.

25th, 16 h. 30 m. Balloon went into A-Cu.

* Measured from Daily Weather Report (International Section) with isobars at intervals of 4 mb.

11. Nephoscope Observations.

Aberdeen.

Day and Hour G.M.T.	Type of Cloud.	Velocity-height-ratio.				Remarks.
		Degrees from N.	Milliradians. per Second.	Components.		
				W.-E.	S.-N.	
2 13	Fr.-Cu.	237	36·0	+31·0	+20·0	Low type of cloud. ⎫ Possibly better classified as
3 13	Fr.-Cu.	245	10·0	+ 9·1	+ 4·2	Low type of cloud. ⎭ Fr-St.-Cumuli-formis.
5 13	Ci.	268	2·0	+ 2·0	0·0	Ci. to Ci.-Cu., hazy and indefinite.
6 13	Fr.-St.	174	31·0	− 2·0	+31·0	Fr.-St. to St.-Cumuli-formis.
7 13	A.-Cu.	202	1·9	+ 0·6	+ 1·8	A.-Cu. flat and hazy.
	Fr.-St.	198	25·0	+ 9·0	+23·0	
9 13	Ci. and Ci.-Cu.	245	4·4	+ 4·0	+ 1·9	Ci. to Ci.-Cu., massed in lenticular sheets.
13 12	Ci.-Cu.	261	5·0	+ 4·9	+ 0·8	Very fine "speckle cloud," to heavy globular Ci.-Cu.
16 12	Ci.-Cu.	271	3·8	+ 3·8	0·0	Ci.-Cu. in lenticular patches (slight speckle cloud to heavy globular Ci.-Cu.).
19 13	Cu.-Nb.	30	16·0	− 8·0	−14·0	Really low type of Nb.-Cumuli-formis.
23 13	A.-Cu.	267	4·2	+ 4·2	+ 0·2	Fine high A.-Cu. in lenticular sheets.
25 13	Ci.	250	2·0	+ 1·9	+ 0·7	Hazy indefinite type of Ci.
26 13	Cu. and Fr.-Cu.	271	12·5	+12·5	− 0·2	Small Cu. and Fr.-Cu.
27 13	Cu.-Nb.	330	20·0	+10·0	−17·0	Fracto-Cu.-Nb., velocity of parts varying.

12. Aurora.

Day.	a.m. or p.m.	Moon.	Magnetic Character.		Aurora Observations.	
			Eskdalemuir.	Richmond.	Station.	Remarks.
4	a.	○	..	..	..	
13	p.	..	1, 1	1, 1	Eskdalemuir Kirkwall	Faint glow to NNW 20 h. 30 m.
14	p.	..	1, 0	1, 1	Baltasound	
15	p.	..	0, 2	1, 2	Deerness	
19	p.	●	..	..	..	
23	p.	..	0, 2	0, 2	Deerness	
24	p.	..	2, 1	2, 1	Inverness Aberdeen Braemar Durham Valencia Observatory	Faint glow, widely extended 19 h.; less extensive and brighter later; at 22 h. moderately bright arch and streamer curtain; greenish white and dull red. 20 h. 30 m. At 19 h. 40 m. arch of moderate brightness, highest point 16° towards North by West. No streamers. Arch consisted simply of colourless band 3° or 4° wide.
25	p.	..	1, 0	1, 0	Aberdeen	Faint arch glow, 19 h.
26	p.	..	0, 1	0, 1	Baltasound Deerness	
27	p.	..	1, 0	1, 1	Deerness	
29	p.	..	0, 0	0, 0	Seskin (Carrick-on-Suir)	21 h. Faint, two streamers

Note.—The two magnetic "characters" entered in each case refer to the two periods of 24 hours ending and beginning at midnight of the night in question.

METEOROLOGICAL OFFICE OBSERVATORIES—GEOPHYSICAL JOURNAL.

DAILY VALUES.—*Solar Radiation, Meteorology, Atmospheric Electricity, Terrestrial Magnetism, and Seismology.*

Tenth YEAR.—No. 3. MARCH, 1920.] Units based on the C.G.S. System. [*Price* 1*s.*

1. SUNSHINE AND SOLAR RADIATION.

Day.	WESTMINSTER. Bright Sunshine.* Total.	Per cent. of Possible.	SOUTH KENSINGTON.—Lat. 51° 30′ N. Long. 0° 10′ W. Radiation received on Horizontal Surface by Callendar Radiograph. Daily Total.	Per cent. of Planetary.	Maximum. For Day. Amount.	Time.	11.30 h. to 12.30 h.	RICHMOND.—Lat. 51° 28′ N. Long. 0° 19′ W. Bright Sunshine.* Total.	Per cent. of Possible.	Radiation at Noon by Ångström Pyrheliometer. Intensity.	Vertical Component.	Sky.	ESKDALEMUIR.—Lat. 55° 19′ N. Long. 3° 12′ W. Bright Sunshine.* Total.	Per cent. of Possible.	Radiation by Ångström Pyrheliometer. Time.	Sky.	$\frac{p}{p_0}$ sec. Z.	Intensity.	CAHIRCIVEEN. Bright Sunshine.* Total.	Per cent. of Possible.
	hr.	%	j/cm².	%	mw/cm².	h. m.	mw/cm².	hr.	%	mw/cm².	mw/cm².		hr.	%	h. m.			mw/cm².	hr.	%
1	6·1	57	617	36	35	12 25	35	5·8	54	60	31	Hazy	0·0	0	..	..	..	..	0·0	0
2	0·0	0	118	7	11	12 50	4	0·0	0	..	..	..	5·9	55	..	..	..	..	8·7	81
3	6·2	57	728	41	42	12 15	42	7·3	67	58	31	Hazy	0·0	0	..	..	..	..	4·3	39
4	6·0	55	746	41	48	11 40	48	5·2	47	61	32	Hazy	0·0	0	..	..	..	..	3·2	29
5	0·7	6	264	14	29	14 55	15	0·7	6	..	..	..	1·7	16	..	..	..	..	0·0	0
6	0·2	2	325	17	33	12 15	33	0·5	4	..	..	..	0·0	0	..	..	..	..	2·9	26
7	8·3	74	985	52	53	12 25	53	8·1	72	75	41	Clear	4·1	37	..	..	..	..	5·8	52
8	7·7	68	1024	53	50	12 20	50	7·2	64	56	31	Hazy	x8·2	74	12 6	(Slight haze)	2·00	62	1·7	15
9	2·9	26	606	31	49	11 45	49	4·7	42	56	31	Thro' Ci.	0·3	3	..	..	..	..	0·4	4
10	0·2	2	219	11	24	14 12	13	0·1	1	..	..	..	0·0	0	..	..	..	..	2·2	19
11	2·0	17	687	34	54	11 50	54	4·1	36	61	35	Thro' Ci.	7·4	65	12 30	None	1·92	93	5·5	48
12	4·2	37	701	34	53	12 58	47	4·7	41	56	32	Hazy	0·0	0	..	..	..	..	7·1	62
13	0·0	0	..	..	..	..	..	0·1	1	..	..	..	0·2	2	..	..	..	..	3·8	33
14	0·7	6	..	..	..	..	..	0·7	6	..	..	..	2·8	24	..	..	..	..	0·0	0
15	1·3	11	466	22	28	15 5	19	1·5	13	..	..	..	2·7	23	..	..	..	..	5·8	49
16	2·5	21	730	34	54	12 10	54	4·4	38	42	25	Thro' Ci.	2·7	23	..	..	..	..	0·0	0
17	2·7	23	457	21	45	13 32	21	2·8	24	..	..	..	0·0	0	..	..	..	..	3·7	31
18	3·3	27	667	30	52	12 50	50	3·9	33	70	43	Clear	7·0	59	..	..	..	..	8·2	68
19	7·9	66	1236	54	55	13 25	53	7·3	61	67	41	do.	3·3	28	..	..	..	..	1·3	11
20	6·9	57	906	39	42	12 25	42	9·7	80	62	38	Thro' Ci.	0·3	2	..	..	..	..	2·0	17
21	6·2	51	872	37	49	12 25	49	5·7	47	68	43	Hazy	0·5	4	..	..	..	..	0·9	7
22	6·0	49	741	31	37	12 5	37	4·8	39	17	11	do.	5·7	47	12 25	None	1·72	87	0·8	7
23	7·0	57	1029	43	43	11 25	42	8·3	68	47	30	do.	0·5	4	..	..	..	..	0·3	2
24	0·7	5	784	32	52	10 15	36	1·0	8	..	..	..	0·2	2	..	..	..	..	0·1	1
25	5·4	44	981	40	70	12 25	70	4·3	35	..	..	..	6·5	52	..	..	..	..	1·3	10
26	6·7	54	997	40	64	11 25	58	6·5	52	..	..	..	0·0	0	..	..	..	..	5·2	42
27	2·1	17	823	33	64	12 50	60	2·1	17	..	..	..	6·5	52	..	..	..	..	1·1	9
28	6·0	48	1092	43	64	10 50	57	4·6	37	..	..	..	1·0	8	..	..	..	..	8·6	68
29	0·0	0	445	17	27	13 10	14	0·1	1	..	..	..	0·0	0	..	..	..	..	x10·0	79
30	0·1	1	592	23	37	11 50	37	0·6	5	..	..	..	0·0	0	..	..	..	..	8·1	64
31	x11·1	87	x1437	55	x65	11 30	x65	x11·6	91	74	50	Clear	0·0	0	..	..	..	..	5·3	41
Means	3·91	33	734†	33†	46†	—	42†	4·14	35	—	—	—	2·18	19	—	—	—	—	3·49	29
Normals	2·39	20	591	27	—	—	—	3·39	29	—	—	—	3·06	26	—	—	—	—	3·97	34
	←35 years→		←8 years→					←35 years→					←5 years→						←35 years→	

2. METEOROLOGY AND MAGNETISM:—CAHIRCIVEEN (VALENCIA OBSERVATORY).—Lat. 51° 56′ N. Long. 10° 15′ W.

Heights above M.S.L.:—H=9·1 m. H_{II}=13·7 m. H_{III}=26·4 m. Above Ground: h_I=1·3 m. h_{II}=0·56 m. h_{III}=12·8 m. h_{IV}=13·9 m.

Day.	Air Pressure at Station Level. 9 h.	21 h.	Air Temperature in Degrees Absolute. 9 h.	21 h.	Max. 0 h. to 24 h.	Min. 0 h. to 24 h.	Humidity. Vapour Pressure. 9 h.	21 h.	Percentage. 9 h.	21 h.	Wind—Veer from North in degrees and Speed in metres per second. 9 h. °	m/s.	21 h. °	m/s.	Cloud Amount (0–10) and Weather. 9 h.	21 h.	Rain 0 h. to 24 h.	Min. Temp. on Grass. 18 h. to 9h.	Remarks.	Magnetism. Horizontal Force, Declination West, and Inclination.
	mb.	mb.	a 200+	a 200+	a 200+	a 200+	millibar.		%	%					Tenths of Sky covered.		mm.	a 200+		
1	1012·8	1012·1	82·0	79·9	83·0	79·3	11·1	8·5	97	86	180	5	350	10	10	10●	15·6	81	Dull, *n* and *a* ●¹, *p*.	
2	1027·7	1036·8	78·9	76·9	81·1	75·4	6·8	6·4	73	79	345	10	70	2	4	3	0·9	75	p⁰, *n*. Fair to fine, day.	
3	1035·7	1030·3	81·2	82·4	83·8	75·9	8·3	10·3	77	88	215	7	180	3	5	10	0·5	n72	Fair *n*. Fair to o. day, d. evg.	17855γ 19° 20·5′
4	1023·4	1014·0	82·2	79·8	82·7	79·7	11·2	8·5	97	86	200	3	180	2	10	9	0·7	81	d. morning. o. to fair, day.	
5	1004·8	993·5	82·0	83·2	83·4	79·4	9·9	12·0	87	97	175	6	180	7	10	10	1·9	77	Dull day. p. evening.	
6	991·3	995·1	77·9	76·7	83·2	75·2	6·9	6·0	79	75	335	11	280	11	10	8	8·0	77	●, *n*. and morning. p. to fair day.	
7	1005·3	1023·0	75·4	74·9	78·7	n74·3	5·5	6·5	76	92	15	5	350	4	5	6	9·0	72	●¹, *n*. mng. Fair day. ⊼ evg.	
8	1030·7	1033·1	74·9	75·6	79·0	74·4	6·5	5·7	92	78	150	2	40	2	10	2	1·7	73	p. morning. Fair day. Fine evening.	17818γ 19° 18·8′
9	1031·6	1027·5	79·3	81·6	84·0	75·7	8·8	10·6	93	96	185	4	170	5	10	2	3·4	n72	p. to ●⁰ mng. o. to fair day. Fine evg.	08° 0·2′
10	1015·5	1023·1	82·7	80·2	83·6	79·0	11·3	6·9	94	68	180	11	300	4	10●	2	12·2	79	●¹ morning. Fair day. Fine evening.	
11	1023·0	996·0	76·3	81·6	82·3	74·5	7·1	9·8	92	88	—	1	145	17	1	10●	11·4	72	Fine, *n*. and *a*. o. to ●¹, *p*.	
12	1008·1	1005·9	80·4	80·8	82·2	78·9	6·7	8·8	65	84	280	16	175	7	7	4	4·0	77	●¹ to p. morning. Fair to fine day.	
13	998·2	990·8	77·7	78·0	81·6	76·1	7·3	6·6	85	76	265	11	265	9	8	6	12·5	75	⊼ mng. Fair p. h. day.	
14	982·5	979·7	77·2	76·6	n78·2	75·5	6·2	6·2	76	78	110	4	320	5	10	10	3·5	74	●⁰, a. o. day. ●⁰ to p. evening.	
15	988·9	1004·9	78·0	77·1	80·2	74·7	5·4	6·3	62	77	320	11	340	15	7	9	2·9	73	p. morning. Fair and p. day.	— —
16	1006·9	1010·0	79·3	82·6	83·3	78·4	8·8	11·5	93	97	185	5	255	8	10●	10	4·0	75	●⁰ morning and *a*. Damp day	19° 19·0′
17	1013·9	1015·0	83·9	83·5	85·5	x82·9	11·7	11·6	91	92	240	11	230	10	10	10	0·5	81	o. *n*. and *a*. o. to c. day. d. evening.	— —
18	1020·8	1027·6	82·0	80·2	84·0	79·5	10·2	9·1	89	90	245	7	—	1	6	7	0·9	80	d. *n*. Fair to fine day.	
19	1029·8	1031·1	83·0	82·6	x85·6	80·0	11·6	11·4	95	96	165	3	180	3	10	10	1·0	80	o. *n*. o. to c. *a*. d. *p*.	
20	1029·6	1028·1	82·0	81·6	84·8	81·3	10·5	9·9	92	89	165	4	170	7	10	10	1·0	80	d. *n*. and mng. o. to c. day. o. evg.	
21	1025·3	1024·0	82·0	82·8	85·5	81·7	9·9	10·8	87	89	145	5	165	3	10	7	—	80	o. n. c. to o. and ∞⁰ day.	
22	1022·1	1014·3	82·4	82·3	84·5	81·4	9·6	10·4	82	89	150	4	160	8	10	7	0·5	79	o. to c. *a*. c. to o. *p*. c. evening.	
23	1013·0	1013·4	81·9	82·1	84·0	81·8	10·1	10·9	89	95	230	4	—	1	7	10	6·4	80	Fair *n*. c. to. o. *a*. ●⁰ *p*.	
24	1011·4	1005·7	82·1	80·7	83·7	78·9	10·9	8·4	95	80	170	4	270	11	10	7	3·8	76	Fair, morning. o. and p. day.	
25	996·6	996·3	80·3	78·5	81·5	77·8	8·3	7·0	81	78	155	12	225	10	6	5	9·4	76	p. morning. q. p. h. day. ⊼ evg.	17823γ — 68° 5·6′
26	989·3	990·3	78·5	76·0	81·4	76·0	7·6	6·7	84	89	240	8	225	7	7	2	10·6	75	Fair *a*. p. h. *p*. Fine and < evg.	
27	983·4	980·9	80·3	79·5	82·8	76·8	9·5	8·8	93	91	170	8	190	2	10●	10	x22·6	75	p² morning. ●¹ *a*. ●¹ to ●⁰ *p*.	
28	985·7	990·6	81·6	81·0	84·0	77·3	8·6	8·2	77	77	180	6	130	6	7	3	1·4	75	●⁰ *n*. Fair day. Fine evening.	
29	998·8	1005·3	79·8	80·4	83·0	75·0	8·4	8·3	85	81	—	1	360	5	0	2	—	72	Fine *n*. and day.	
30	1006·5	1002·4	81·0	81·7	82·8	79·8	8·9	9·4	84	84	345	5	175	4	6	10	3·8	78	Fine to fair day. ⊕ *p*. p. to ●¹ evg.	
31	997·4	994·7	80·3	78·6	81·4	78·1	8·3	8·2	81	90	235	2	—	1	7	7	7·0	77	●¹ *n*. Fair and p. day and evening.	
Means	1010·0	1009·5	80·2	80·0	82·7	77·9	8·8	8·7	85	86	—	6·2	—	6·1	7·8	7·0	161·1	76	Monthly Totals or Means.	17832γ 19° 19·4′ 68° 5·9′
Normals	1011·4	1011·7	80·0	80·1	83·2	77·5	8·5	8·5	85	85	—	5·6	—	5·7	—	—	111·7	—	Normals.	
	←45 years→						←30 years→				←35 years→						45 years			

* By Campbell-Stokes Sunshine Recorder. † Mean for 29 days only. x denotes the maximum and n the minimum value in the column.

(3125) Wt. 109 S.O.P. 612 773 400 5/21 Harrow G.69 7

3. METEOROLOGY:—RICHMOND, SURREY (KEW OBSERVATORY).—Lat. 51° 28′ N. Long. 0° 19′ W.

Heights above Mean Sea Level:—Rain-gauge Site, H=5·5 m. Barometer, H_b=10·4 m. Cups of Anemometer, H_a=25 m.
Heights above Ground:—Thermometers, h_t=3·0 m. Rain-gauge, h_r=0·53 m. Sunshine Recorder, h_s=13·3 m. Cups of Anemometer, h_a=20 m.

Day.	Air Pressure at Station Level. 9 h.	21 h.	Air Temperature in Degrees Absolute. 9 h.	21 h.	Max. 0 h. to 24 h.	Min. 0 h. to 24 h.	Humidity. Vapour Pressure. 9 h.	21 h.	Percentage. 9 h.	21 h.	Wind—Veer from North in degrees and Speed in metres per second. 9 h.		21 h.		Cloud Amount and Weather. 9 h.	21 h.	Rain 0 h. to 24 h.	Min. Temp. on Grass. 18 h. to 9 h.	Remarks.
			a 200+	*a* 200+	*a* 200+	*a* 200+	millibar.		%	%	°	m/s.	°	m/s.	Tenths of Sky covered.		mm.	*a* 200+	
	mb.	mb.																	
1	1019·6	1013·2	79·3	79·7	86·6	79·0	8·8	8·0	93	82	185	2	—	1	10 ≡0 ☂	2 ≡0	—	78	Fine after 10 h., ≡0 *n*. ☂ 21 h.
2	1018·3	1033·9	82·9	78·6	83·4	76·4	10·6	7·9	88	87	220	3	5	2	10 ≡0	0 ∞	1·4	74	Dull. Showery. ≡0.
3	1038·7	1031·8	73·0	77·9	83·5	72·7	5·5	6·0	91	69	—	1	250	3	10 ≡	1	0·1	68	⌐. ≡ to 9 h. 30 m. Fine later.
4	1027·0	1017·1	73·8	77·7	85·2	72·7	6·2	7·5	96	88	250	3	—	1	10 ≡	3 ≡0	—	68	⌐. ≡ to 11 h., then fine.
5	1011·5	1007·3	80·7	82·2	85·2	76·6	10·0	10·6	96	92	230	3	140	2	10 ≡0	10 ≡0	2·7	71	≡ early. Dull to fine. ● *n*.
6	998·5	989·6	83·5	84·0	86·2	79·0	11·4	11·7	90	90	200	7	210	8	10 ●	10 ●	3·8	76	Dull to cloudy. ● *p*. and *n*.
7	1000·5	1012·7	76·9	74·8	80·6	73·4	6·3	5·5	78	79	245	4	25	3	1 ☂ ∞	0	0·1	70	⌐. Fine. ✻0 *p*.
8	1022·3	1028·5	73·5	74·3	*n*77·4	71·4	4·0	4·2	63	62	360	5	350	3	0 ☂	0	0·1	*n*65	⌐. Fine. ∞0 in *p*.
9	1032·5	1031·7	73·6	76·8	79·3	*n*71·3	5·1	5·9	80	74	—	1	—	1	7 ≡0 ☂	10	—	*n*65	⌐. Fine to cloudy to 15 h., then o.
10	1028·1	1022·9	77·8	80·0	82·4	76·3	7·9	8·9	92	89	220	2	200	4	10 ≡0	9	—	74	●0 d. 8 h. 45 m. Overcast to cloudy.
11	1022·0	1018·6	79·9	78·5	82·4	76·5	7·6	7·5	76	83	350	3	65	2	10	0	0·9	76	● early. Overcast to fine.
12	1007·0	1012·8	78·8	79·3	84·0	76·5	8·3	7·1	90	74	200	4	250	5	9	3	1·8	70	● early. Overcast early. Fine later.
13	1008·6	1001·8	79·0	77·2	82·3	73·7	8·7	7·5	94	91	195	4	195	3	10	2	0·9	67	⌐. Fine early. Dull later. ● *p*.
14	991·6	972·4	76·2	81·7	81·8	75·7	7·1	10·4	92	93	—	1	180	5	7	10 ●	*x*6·9	72	Dull to fair. ● early. ● *p*. and *n*.
15	972·5	987·9	75·2	77·1	81·2	75·0	6·4	7·0	90	85	240	7	250	4	10 ●✻	3	3·5	75	Dull. ● and ● ✻ *a*. ⁄ (gusts) early.
16	1003·8	1008·9	77·4	79·9	80·6	75·4	5·4	7·1	64	71	290	6	210	7	9	10	—	71	Fine to overcast ≡0 *n*.
17	1011·2	1016·1	84·5	84·4	88·1	80·2	11·5	10·3	85	77	240	5	250	6	10	3	—	77	Overcast to 13 h. Fine later.
18	1018·7	1025·2	83·8	81·1	87·2	78·5	11·1	7·2	86	67	240	5	275	2	10	0	—	79	Dull to cloudy *a*. Fine *p*.
19	1030·6	1032·4	79·0	78·7	84·9	74·7	7·7	7·6	83	83	275	2	—	1	1 ≡0 ☂	0	—	67	⌐. Fine.
20	1033·1	1032·0	79·6	81·9	89·2	75·5	8·1	10·1	83	89	—	1	—	0	5 ≡0 ☂ ☂	0 ≡0	0·1	69	⌐. ≡0 *a*. Very fine and warm.
21	1032·1	1027·4	77·9	83·0	89·7	75·5	8·6	9·6	100	79	—	0	175	2	*10* ≡ ☂	3	0·1	72	≡ to 9 h. 30 m. Fine to overcast. ∞
22	1025·0	1021·5	79·0	83·3	90·9	75·7	8·6	10·0	93	80	—	0	95	2	0 ≡0 ☂	0 ≡0	—	71	≡ and ☂ early. Fine to overcast. ∞ *p*.
23	1017·4	1016·5	81·8	82·0	91·0	77·8	9·4	9·6	83	84	95	2	—	1	*10* ≡ ☂ ☂	0 ≡0	0·1	70	≡ and ☂ to 9 h. Fine.
24	1018·0	1012·7	82·4	83·7	86·2	78·4	9·7	10·2	83	80	190	3	195	7	8 ☂	10 ●	1·5	71	≡0 and ☂. Fine to overcast. ● *n*.
25	1012·7	1006·0	83·6	83·5	86·3	80·8	9·4	9·6	74	76	215	6	210	10	7	10 ●	0·3	77	Fine to fair. ◐ *p*. ⁄ (gust) 21 h.
26	1009·1	999·7	82·6	82·9	85·6	77·1	8·2	9·9	69	82	185	9	190	9	8	10 ●	1·7	71	Fine to fair. ⁄ (gusts). ● *n*.
27	1002·1	1000·5	82·9	84·9	86·1	81·1	9·5	10·2	79	74	200	4	195	9	6	9	0·2	79	Fine to overcast. ●0 *p*. ☂ 23 h.
28	997·3	998·2	86·3	86·0	89·3	*x*83·3	11·1	11·0	73	74	185	9	145	4	8	4	—	80	Fine to 14 h. o. later. ☂ 21 h.
29	997·4	998·4	85·4	86·2	88·8	83·1	13·0	11·3	91	75	—	1	90	3	9 ≡0	7 ≡0	2·1	80	Dull to cloudy. Showers *a*.
30	1000·0	1003·6	87·5	83·3	*x*91·8	82·3	12·1	10·4	74	84	90	5	210	2	8 ≡	10	1·4	80	≡0. Mostly dull to cloudy.
31	1002·5	997·9	83·5	80·7	88·6	76·8	10·4	7·9	82	75	200	4	—	1	0 ☂	3	—	71	⌐ and ☂. Fine. ◐ *p*.
Means	1013·2	1012·2	80·0	80·8	85·3	76·9	8·6	8·3	84	80	—3·6		—3·6		7·5	4·6	29·7	73	Monthly Totals or Means.
Normal	1012·8	1012·8	78·2	78·5	82·4	75·4	7·3	7·4	81	81	—4·3		—3·6		—	—	40·9 (45 years)	—	Normals.
	45 years.						30 years.				35 years.								

4. METEOROLOGY:—ESKDALEMUIR, DUMFRIESSHIRE.—Lat. 55° 19′ N. Long. 3° 12′ W.

Heights above Mean Sea Level:—Rain-gauge Site, H=242 m. Barometer, H_b=237·3 m. Vane of Anemometer, H_a=250 m.
Heights above Ground:—Thermometers, h_t=0·9 m. Rain-gauge, h_r=0·38 m. Sunshine Recorder, h_s=1·5 m. Vane of Anemometer, h_a=15 m.

																			Remarks.
1	987·0	981·8	79·0	78·6	80·3	78·4	9·2	8·6	99	95	160	3	190	5	10	10	9·0	78	≡⁝ or d. *a* and *p*.: ●0≡0 after 17 h.
2	989·8	1003·2	77·3	72·9	80·4	71·8	7·1	4·9	85	80	310	4	230	4	10	0	2·7	75	●≡0 till 6 h. then o to b ∞ *a*.: by *p*: b *n*.
3	998·9	993·9	76·9	80·9	81·4	72·6	6·8	10·3	85	98	210	11	210	8	10	10	3·8	69	☂ b, ⌐ h.; occasional d0 till 16 h. then d≡0
4	991·8	985·4	80·6	78·6	81·2	78·0	10·2	8·9	98	98	210	½	190	7	10 ≡⁝	10 ≡⁝	3·4	78	d≡0 till 5 h.: ≡⁝ (5fe) 5 h.–21 h. then d≡0.
5	977·6	971·1	77·8	79·1	80·1	77·3	7·5	9·3	88	99	210	8	210	11	10	10 ≡⁝	2·6	77	d≡0 till 4 h.: ≡⁝0 to 8 h; o to c *a* & *p*.: ≡⁝*n*.
6	959·9	956·9	80·4	74·5	80·8	73·8	9·9	6·0	97	88	200	14	300	5	10	7	18·4	78	●≡0 till 16 h. d till 19 h.: c to o *n*.
7	967·3	983·8	74·1	70·2	*n*76·0	68·0	5·2	3·8	80	75	330	7	310	4	9	5✻0	—	71	o to c ✻0 p *a*.: bcy *p*.: b, ✻0 *n*.
8	994·1	999·7	72·7	69·9	76·9	67·9	3·4	3·8	57	77	310	8	300	3	0	2	Trace	*64*	Cloudless till 10 h.: bcy *p*.: b to o *n*.
9	1000·2	999·1	72·9	75·0	76·9	69·6	5·5	7·0	90	100	170	2	—	2	10	7	1·0	*n*64	o *a*.: ●0≡0 *p*.: o to b ≡⁝ *n*.
10	993·8	986·0	75·5	79·7	79·3	73·8	7·0	6·7	95	82	180	4	320	11	10	0	2·6	72	≡⁝ early: o≡0 *a*.: ●0≡0 15 h.–19 h. then b.
11	993·9	988·2	76·9	73·3	81·0	71·4	5·9	4·4	73	71	—	1	—	1	3	0	—	68	⌐0 at first.: bcy *a* and *p*.: b ∞ *n*.
12	965·9	973·5	74·8	74·9	78·5	72·9	5·9	5·6	86	79	130	12	280	9	10	5	9·5	68	b≡0 1 h.: ●≡0 *a*.: ✻●≡0⁄ *p*.: ✻≡0 to b *n*.
13	969·9	967·0	74·4	74·0	77·4	69·8	6·0	6·1	89	93	160	8	190	2	10	10	2·3	66	●≡0 8 h.–13 h.: o, ● 16 h. *p*.: c, ☤0 *n*. [*n*.
14	957·5	950·1	73·9	72·7	76·5	71·1	6·2	5·0	94	84	170	6	20	3	10	10	5·2	71	✻≡0 5 h.–8 h.: ⊠: ✻2▲p *a*.: ⊕ 17 h.: c to o
15	945·9	957·0	73·5	75·0	77·7	72·4	5·1	5·6	80	79	360	9	310	9	10	10✻0	0·3	69	✻0 1 h.: o to cq ⊕ *a* and *p*.: o, ✻0 *n*.
16	970·1	971·7	75·2	76·0	77·6	73·5	4·6	7·6	64	100	300	12	250	8	6	10	4·9	71	bcq early: o *a*: ✻≡0 14 h.–19 h. then ≡⁝0
17	973·0	971·8	82·4	81·0	84·0	77·0	10·9	10·1	93	95	250	11	220	17	10	10	10·0	72	d≡0: ●0q *a* and *p*.: ●2≡0⁄ 18 h.–22 h.
18	981·8	991·2	77·3	76·2	80·2	75·3	6·5	6·1	78	80	250	12	230	7	10	6	2·6	73	c with frequent pq: ▲0q 14 h.: ☤0 *n*.
19	997·6	999·7	79·5	79·8	82·6	76·0	7·8	9·3	81	94	240	5	170	4	10	10d0	0·3	73	●0 early: o to c, ⊕ *a*: o *p*: d0≡0 *n*.
20	1001·0	1001·6	81·2	79·3	83·3	77·9	8·9	9·1	83	96	260	6	210	4	10	10	—	77	●0 at first: o all day: ≡⁝0 after 22 h.
21	1000·5	997·8	77·0	74·8	80·2	73·1	8·0	6·5	99	94	200	6	—	0	10 ≡⁝	0	0·1	76	●0 5 h.: ≡⁝ till 10 h.: o *p*: c to b *n*.
22	997·4	992·1	76·2	77·6	*x*85·7	73·5	7·6	7·4	99	87	—	0	140	2	10 ≡⁝	0	Trace	69	≡⁝ till 12 h.: by *p*: b ≡0☤2 *n*.
23	987·1	984·5	78·6	79·4	80·0	73·6	8·8	8·9	97	93	210	5	190	8	10 ≡⁝	10	—	69	☤2 b ≡0⌐ early: ≡⁝ *a*: o ≡0☤0 *n*.
24	986·3	975·3	78·7	78·3	81·5	76·2	8·2	8·1	90	91	160	2	80	4	9	10 ●	17·6	*73*	●2≡0 o h.–4 h.: bc to o *a*: ● after 14 h.
25	976·7	963·8	77·7	77·3	80·7	75·7	6·8	7·0	79	84	220	9	230	14	6	4	7·0	73	● at first: bc ∞⊕ *a*.: o *p*.: ●▲q *n*.
26	965·2	961·7	75·3	79·2	77·0	73·5	6·7	6·8	93	89	160	12	170	7	10 ●✻	10	*x*24·1	72	cpq early: ●2✻≡0 to ✻2≡0 7 h.–17 h.: ●q*n*
27	965·5	959·0	77·3	80·2	82·5	73·9	6·6	9·5	80	94	200	11	190	14	7	10 ●2	15·6	71	q at first: bc *a*.: cy *p*.: ●2≡0 after 16 h.
28	956·7	970·8	79·7	75·9	81·0	75·4	8·7	7·0	89	93	200	12	—	0	10	10	19·1	77	●2≡0 till 7 h.: ⁄ 7 h.: o to c, ●0 *a* & *p*: o *n*.
29	971·8	979·8	75·4	77·2	78·0	74·8	6·7	8·1	92	99	30	7	350	3	10	10 ≡⁝	11·6	72	●2 1 h.–8 h.: og ● 10 h.–14 h. then ≡⁝
30	977·5	974·7	78·8	79·6	81·9	77·6	8·7	9·5	95	98	20	5	10	3	10	10 ≡⁝0	1·4	76	≡⁝0 early: ●0≡0 *a*.: ≡0d0T *p*.: ≡⁝ *n*.
31	970·7	971·2	81·8	79·9	83·7	*x*78·6	10·6	8·4	94	85	—	1	120	10	10 ≡⁝0	1	9·2	77	●2≡0 at first: ≡⁝0 *a*.: oug ●2 15 h.: o to b ≡0 *n*.
Means	979·7	979·4	77·2	76·6	80·1	74·0	7·3	7·3	87	89	—7·0		—6·0		9·0	7·0	184·3	72·2	Monthly Totals or Means.
Normal 1913-1915	978·4	978·7	76·1	75·5	79·5	73·0	6·6	6·6	86	87	—6·6		—5·6		—	—	137·5	—	Normals.

Temperatures at or below the normal freezing point of water are printed in small type. *x* denotes the maximum, and *n* the minimum, value in the column.

5. GEOPHYSICS :—RICHMOND (KEW OBSERVATORY).

Day.	Earth Temperature at 9 h. 0.3 m.	Earth Temperature at 9 h. 1·2 m.	Height above M.S.L. of Surface of Underground Water. Daily Mean.	Height above M.S.L. of Surface of Underground Water. Extremes.	Terrestrial Magnetic Force. Horizontal Comp't. Mean Time.	Horizontal Comp't.	Declination. Mean Time.	Declination. West.	Inclination. Mean Time.	Inclination.	Magnetic Character of Day.	Electric Character of Day.	Charge per cc. $\times 10^{16}$. +	Charge per cc. $\times 10^{16}$. −	Air-Earth Current. $\times 10^{16}$.	Potential Gradient, Volts per metre. Factor 2·25. 3 h.	9 h.	15 h.	21 h.
	a 200+	*a* 200+	cm.	cm.	h m	γ	h m	° ′	h m	° ′			About 15 h. Coulomb.		About 15 h. Amp/cm².	v/m	v/m	v/m	v/m
1	79·1	79·4			..	..	..	..	..	..	0	0	0·40	..	1·35	110	430	315	550
2	79·7	79·4			..	..	..	..	..	..	0	1	..	..	..	125	180	165	565
3	79·0	79·5			..	..	..	..	..	..	0	0	..	0·13	1·25	315	925	360	745
4	78·1	79·6			11 6	18422	14 20	14 44·5	14 42	66 55·4	2	0	0·27	..	0·25	495	675	360	345
5	78·7	79·7			..	..	..	..	..	..	2	1	..	0·03	0·65	195	180	205	*z* ±
6	79·4	79·7	Instrument		..	..	..	..	..	..	1	1	..	..	..	260	220	165	−110
7	79·9	79·9	under	repair.	..	..	..	..	..	..	0	1	..	..	..	250	345	150	305
8	78·6	79·9			..	..	..	..	..	..	1	0	0·19	..	0·60	330	525	290	305
9	77·4	79·9			..	..	..	..	..	..	0	0	..	0·54	0·70	250	595	235	385
10	77·7	79·8			11 10	18399	..	..	14 38	66 56·9	1	0	0·32	..	0·65	55	290	205	260
11	78·6	79·8			..	..	..	..	..	..	0	1	..	0·12	0·95	140	485	385	540
12	78·8	79·7			..	..	14 26	14 42·8	..	..	1	1	0·91	..	0·65	290	260	165	290
13	78·3	79·8			..	..	..	..	..	..	0	2	..	..	..	—	250	150	290
14	78·2	79·8			..	..	..	..	..	..	2	2	..	..	..	220	−15	95	−40
15	78·8	79·8			..	..	..	..	..	..	1	2	..	0·44	0·50	70	*z* ±	180	400
16	78·2	79·7			..	..	..	..	..	..	1	0	0·67	..	0·45	110	260	220	220
17	78·9	79·7			..	..	..	..	..	..	0	0	..	0·25	0·50	125	385	220	290
18	80·3	79·7			11 16	18393	14 23	14 39·1	14 33	66 59·5	0	0	0·56	..	..	95	95	220	540
19	79·7	79·8			..	..	..	..	..	..	0	0	..	0·65	0·75	400	550	205	330
20	79·5	79·9			..	..	..	..	..	..	0	1	..	..	..	375	525	250	180
21	80·2	79·9			..	..	..	..	..	..	1	0	..	..	..	275	400	250	550
22	80·6	79·9			..	..	14 30	14 46·6	..	..	2	1	0·11	..	..	220	260	220	440
23	80·3	80·0			11 6	18344	14 27	14 40·8	..	..	2	0	..	0·12	0·50	275	385	140	305
24	80·6	80·1			..	..	..	..	..	..	2	1	0·31	..	0·80	140	415	260	140
25	81·3	80·2			..	..	14 24	14 36·7	..	..	1	1	..	0·64	1·20	140	315	220	165
26	81·0	80·4			..	..	..	..	14 16	66 59·8	1	1	..	..	..	250	250	165	−110
27	81·2	80·6			..	..	..	..	..	..	1	1	..	..	..	15	330	150	150
28	81·8	80·5			..	..	..	..	..	..	0	1	..	..	..	125	150	150	305
29	82·4	80·5			..	..	..	..	..	..	0	2	0·53	..	1·45	70	605	250	635
30	82·7	80·6			..	..	..	..	..	..	0	1	..	0·42	0·50	220	605	150	330
31	82·7	80·8			10 56	18363	14 17	14 40·2	..	..	0	0	1·12	..	0·20	195	305	140	485
M.	79·7	79·9			—	—	—	—	—	—	0·71	0·71	0·49	0·33	0·73	210†	384†	218†	325†
	78·4 — 12 years. —	79·5																	

† Mean for 28 days.

6. GEOPHYSICS :—ESKDALEMUIR, DUMFRIESSHIRE.

Day.	Terrestrial Magnetic Force. North Component. Maximum 15000 γ +. h m	γ	Minimum. 15000 γ +. γ	h m	Range. γ	West Component. Maximum. 4000 γ +. h m	γ	Minimum. 4000 γ +. γ	h m	Range. γ	Vertical Component. Maximum. 44000 γ +. h m	γ	Minimum. 44000 γ −. γ	h m	Range. γ	Magnetic Character of Day.	Electric Character of Day.	Potential Gradient, Volts per metre. Factor 8·05. 3 h.	9 h.	15 h.	21 h.
1	6 0	1003	961	12 45	42	14 9	899	823	23 43	76	20 20	1081	1062	11 59	19	0	*2 a*	70	290	300	−30
2	6 9 / 6 19	1007	965	13 15	42	12 42 / 12 47	899	834	0 1	65	17 46	1074	1058	11 35	16	0	*2 b*	*z* —	225	185	300
3	22 35	1007	979	11 40	*n*28	13 32	893	851	10 12	*n*42	16 25	1074	1061	12 15	*n*13	0	*2 a*	175	60	50	30
4	22 8	1193	692	23 59	501	22 18	1005	<558	22 37 / 22 58	>447	20 22	1286	934	23 35	352	2	*0 a*	110	220	175	250
5	18 36	1051	<693	0 3	>358	7 24	968	<558	1 44 / 2 22	>410	18 25	1130	<914	1 57 / 2 28	>216	2	*1 b*	225	215	100	180
6	23 5	1061	938	0 51	123	0 46	924	811	22 59	113	18 50 / 19 0	1102	1029	1 45	73	1	*2 c*	*z* ±	*z* —	−235	250
7	7 9	1000	951	11 37	49	12 58	898	840	0 33	58	19 50	1081	1042	0 1	39	1	*1 b*	145	295	165	275
8	1 37	1031	938	10 17	93	12 39	897	819	20 23	78	20 40	1087	1035	2 5	52	1	*0 a*	195	265	180	575
9	22 45	1011	939	12 30	72	13 26	883	834	8 59	49	16 35	1079	1056	0 7	23	0	*1 b*	250	295	−515	470
10	21 16	1049	959	11 39	90	14 47	908	787	19 42 / 19 45	121	19 46	1099	1057	12 19	42	1	*1 b*	335	295	220	155
11	23 5	1031	958	11 21	73	14 0	898	823	19 18	75	19 32	1077	1053	12 45	24	1	*0 a*	175	210	150	435
12	18 20	1033	954	16 53	79	14 25	920	810	18 9	110	18 10	1114	1047	12 10	67	1	*2 c*	110	−105	−230	470
13	0 51	1012	967	13 30	45	14 12	898	855	4 46	43	17 0	1072	1053	10 5	19	0	*1 b*	180	110	180	250
14	15 34	1092	919	15 24	173	14 22	*x*1027	834	23 10	193	18 27	1276	1046	13 0	230	2	*1 b*	250	205	95	130
15	22 16	1010	924	10 7	86	10 40	908	823	21 19	85	21 32	1084	1064	10 30	20	1	*1 a*	35	575	495	445
16	20 23	1060	918	12 11	142	22 20	946	787	20 14	159	19 54	1094	996	22 38	98	2	*1 a*	85	170	365	250
17	22 16	1009	944	12 11	65	13 33	898	820	0 1	78	16 47	1081	1048	0 1	33	1	*2 b*	185	10	45	−430
18	23 14	1020	955	11 40	65	12 56	897	846	20 4	51	2 0 / 16 0	1079	1053	10 47	26	0	*1 b*	70	50	165	145
19	20 28	1001	919	11 45	82	14 0	901	834	8 52	67	16 55	1083	1048	12 25	35	0	*1 a*	150	110	70	210
20	19 20	1014	948	12 32	66	13 45	897	832	9 18	65	18 0	1083	1044	11 40	39	0	*0 a*	105	110	140	365
21	23 2	1024	940	11 17	84	14 13	910	813	23 20	97	19 50	1083	1048	12 20	35	1	*0 a*	290	240	265	635
22	15 50 / 20 10	*x*>1236	674	23 14	*x*>562	14 0 / 20 0	>979	620	23 12	>359	17 29	*x*1361	*n*<835	19 1 / 19 6	*x*>526	2	*0 a*	405	465	245	330
23	19 27	1082	*n*<528	0 20 / 2 0	>554	5 0 / 7 0	>935	*n*>363	0 40 / 3 0	>572	1 4	1199	*n*<835	2 0 / 4 0	>364	2	*1 a*	320	395	210	365
24	10 43	1191	828	2 2	363	16 8	941	755	0 27	186	16 40	1227	<911	1 20 / 4 0	>316	2	*2 c*	−355	175	185	*z* —
25	18 31	1049	815	2 0	234	4 0	883	803	2 26	80	17 32	1095	948	3 13	147	2	*2 c*	80	145	250	110
26	0 1	996	939	11 37	57	13 38	889	824	8 46	65	8 30	1075	1041	0 52	34	0	*2 c*	175	−1010	−145	260
27	19 31	1042	919	12 3	123	14 2	879	801	19 24	78	18 24 / 18 44	1101	1039	23 59	62	1	*2 c*	120	140	225	−920
28	0 15	996	943	10 22	53	14 17	889	840	1 8	49	17 45	1082	1038	0 3	44	1	*2 c*	−755	145	120	195
29	17 28	996	929	10 48	67	12 43	894	832	8 40	62	21 39	1068	1045	12 24	23	0	*2 c*	*z* ±	25	50	375
30	5 53	995	939	12 24	56	13 30	883	834	8 47	49	17 25	1070	1050	10 55	20	0	*1 b*	365	460	185	445
31	23 18	1000	957	12 27	43	13 53	889	831	8 54	58	8 2	1066	1050	12 12	16	0	*2 b*	*z* ±	205	−30	330
M.	—	§1033	§926	—	§107	—	*905	*822	—	*83	—	*1098	*1039	—	*59	0·87	1·23	‡148	‡168	‡134	‡215

Note.—*Components of Magnetic Force.* Such an entry as $\left.\begin{matrix}15\cdot50\\20\cdot10\end{matrix}\right\}$ >1236 means that the maximum was greater than 1236γ and occurred sometime between 15 h. 50 m. and 20 h. 10 m.

‡ Mean for 26 days. * Mean for 27 days. § Mean for 28 days.

7. JERSEY (ST. LOUIS OBSERVATORY).—Lat. 49° 12′ N. Long. 2° 6′ W.

Heights above M.S.L.:—H = 54 m. H_b = 55 m. Above Ground:—h_t = 1·48 m. h_r = 1·72 m. h_a = 8 m.

Day.	Air Pressure at Station Level. 9 h.	14 h.	21 h.	Mean of 3 Readings.	Air Temperature in Degrees Absolute. 9 h.	14 h.	21 h.	Max.	Min.	Mean of 5 Readings.	Min. Temp. on Grass.	Percentage of Humidity. 9 h.	14 h.	21 h.	Mean.	Rain 0 h. to 24 h.	Remarks.
	mb.	mb.	mb.	mb.	a 200+	a 200+	a 200+	a 200+	a 200+	a 200+	a 200+	%	%	%	%	mm.	
1	1013·5	1010·2	1008·9	1010·9	81·7	85·9	83·2	87·0	x83·0	84·2	76·9	70	64	93	76	—	
2	1013·7	1017·4	1027·3	1019·5	82·4	83·9	81·5	85·2	80·5	82·7	78·3	91	93	85	90	0·2	● 13 h. 30 m.
3	1032·2	1030·5	1027·5	1030·1	81·0	82·6	79·5	82·8	79·0	81·0	74·7	90	81	94	88	—	
4	1020·6	1015·5	1011·9	1016·0	83·5	84·3	82·2	85·7	78·0	82·7	77·8	100	83	87	90	—	≡² early to 9 h.
5	1010·2	1007·5	1001·9	1006·5	82·5	85·6	84·7	85·6	81·4	84·0	74·5	92	81	84	86	0·4	● 16 h. 30 m.
6	995·8	990·4	989·7	992·0	83·5	85·4	81·5	85·9	79·0	83·1	78·0	90	83	87	87	2·2	● frequent showers from 6 h. 5 m. to 19 h.
7	997·7	1000·1	1006·8	1001·5	77·5	80·2	77·0	81·6	76·0	78·5	72·2	98	59	63	73	4·3	● frequent showers from 3 h. to 10 h.
8	1016·0	1018·5	1023·7	1019·4	77·1	76·9	77·5	n77·5	n75·0	76·8	70·3	70	44	40	51	0·3	✻ 10 h. 15 m.
9	1028·2	1027·9	1027·7	1027·9	78·3	78·5	78·1	79·6	75·8	78·1	70·1	50	55	66	57	—	
10	1023·8	1023·5	1020·1	1021·8	80·1	81·1	80·4	81·1	77·5	80·0	73·5	81	76	80	79	0·7	● from 3 h. 40 m. to 9 h.
11	1016·7	1014·9	1013·1	1014·9	83·8	81·5	77·1	82·4	77·0	80·6	72·0	100	89	93	94	1·5	● 4 h. ≡² from 7 h. to noon
12	1006·9	1010·1	1012·1	1009·7	82·5	83·3	80·6	83·9	77·3	81·5	n69·7	69	63	78	70	2·6	● 2 h. 30 m. to 5 h. 21 h.
13	1002·9	999·3	998·6	1000·3	79·2	79·0	79·3	81·0	78·5	79·4	74·4	80	85	70	78	3·4	● 8 h. 45 m. and several showers.
14	989·7	980·1	970·7	980·2	79·8	81·2	82·5	83·2	77·9	80·9	72·8	81	97	80	86	6·0	●² 4 h. 45 m. continuous. 21 h.
15	975·8	981·3	989·4	982·2	78·9	79·1	79·2	80·9	77·6	79·1	73·4	64	56	70	63	0·6	● early. ✻ in grains. < 20 h. 30 m.
16	1004·3	1007·1	1004·5	1006·6	79·3	81·2	80·5	82·4	77·8	80·2	73·5	49	48	83	60	0·2	● early.
17	1013·1	1015·2	1017·1	1015·1	82·6	84·7	82·4	85·0	79·9	82·9	77·6	100	89	97	95	0·3	● early to 9 h. ≡² 16 h. 40 m.-transient.
18	1020·2	1020·9	1023·0	1021·4	82·5	84·6	82·6	85·1	82·0	83·4	79·6	87	85	98	90	0·1	● 19 h. 30 m.
19	1026·6	1027·0	1028·1	1027·2	82·6	84·8	79·0	85·4	78·5	82·1	73·8	86	72	86	81	—	21 h.
20	1028·2	1027·1	1026·6	1027·3	82·5	80·5	81·5	87·1	77·4	83·0	69·8	65	62	76	68	—	21 h.
21	1024·9	1024·9	1021·4	1023·7	84·6	89·5	83·7	90·6	79·4	85·6	74·4	64	49	78	64	—	21 h.
22	1019·4	1017·1	1014·3	1016·9	85·6	90·0	85·5	x91·4	81·1	86·7	71·0	71	50	62	61	—	21 h. Aurora. About 19 h. 30 m.
23	1012·2	1012·5	1013·4	1012·7	82·6	85·0	81·6	86·0	80·4	83·1	73·5	93	67	94	85	—	≡² from 3 h. 30 m. to 4 h. 5 m.
24	1014·7	1012·7	1011·0	1012·8	82·6	85·6	82·3	85·9	80·9	83·5	75·8	88	69	92	83	0·6	● 19 h. 30 m.
25	1009·7	1005·7	1005·5	1007·0	83·4	86·9	82·0	87·2	81·0	84·1	76·3	83	65	80	76	0·7	● 19 h.
26	1005·1	1000·9	997·9	1001·3	82·5	85·5	83·0	85·9	80·3	83·4	76·0	82	60	90	77	4·5	● 20 h. 30 m.
27	998·8	998·1	997·7	998·2	83·3	85·5	83·9	86·0	80·9	83·9	80·7	86	77	84	82	2·1	●° 4 h. ●² 11 h. 30 m. ⊕ 16 h. 15 m.
28	993·3	992·6	991·3	992·4	84·6	86·6	85·0	87·8	82·8	85·4	79·9	75	78	78	77	—	⊍ 21 h.
29	989·5	989·4	989·8	989·6	84·3	85·6	83·6	87·1	x83·0	84·7	80·9	91	91	96	93	x9·2	●² 4 h. 30 m. frequent showers.
30	989·9	993·9	998·0	993·9	85·4	84·7	82·8	86·9	81·8	84·3	80·9	87	80	83	83	—	
31	997·4	994·9	992·5	994·9	82·5	86·5	80·2	86·7	78·8	82·9	70·9	83	63	91	79	2·1	●² began 19 h. 40 m.
Means	1009·4	1008·6	1008·6	1008·9	82·0	83·9	80·8	84·8	79·4	82·2	74·9	81	71	82	78	42·0	
Normal	1006·9	1006·5	1007·0	1006·8	79·8	81·7	79·6	82·6	77·8	80·3	74·0	?	72	82	?	63·0	
	◄ 27 years ►				◄ 27 years ►						24 years	◄ 25 years ►				27 years	

JERSEY (ST. LOUIS OBSERVATORY).

Day.	Wind Direction and Force (0-12 on the Beaufort Scale). 9 h.	14 h.	21 h.	Mean of Force.	Sunshine* Total.	Per cent. of Possible.	Cloud Amount (tenths of Sky covered), Type of Cloud, and Direction whence coming. Tenths. 9h.	Upper Type. 9 h.	Upper Direction. 9 h.	Lower Type. 9 h.	Lower Direction. 9 h.	Tenths. 14 h.	Upper Type. 14 h.	Upper Direction. 14 h.	Lower Type. 14 h.	Lower Direction. 14 h.	Tenths. 21h.	Upper Type. 21 h.	Upper Direction. 21 h.	Lower Type. 21 h.	Lower Direction. 21 h.	Mean Amount.
	(Dir. 0-12)	(Dir. 0-12)	(Dir. 0-12)		hr.	%																
1	135 2	180 3	225 5	3·3	10·8	90	0	..	..	..	..	0	..	..	..	..	10	..	..	Cu.-Nb.	SW	3·3
2	180 2	247 1	360 3	2·0	0·0	0	8	A.-Cu.	WSW	..	..	10	..	..	Nb.	..	9	..	..	..	..	9·0
3	45 2	23 3	45 3	2·7	0·6	4	10	..	..	..	..	9	..	..	Cu.-Nb.	E	10	..	..	..	..	9·7
4	67 3	90 3	135 2	2·7	4·6	41	10	..	..	≡	..	5	A.-Cu.	SW	..	..	1	..	..	..	..	5·3
5	225 4	157 3	157 2	3·0	2·9	26	10	..	..	..	..	5	A.-Cu.	SW	..	..	5	Ci.-A.-Cu.	..	..	..	6·7
6	203 5	180 5	247 6	5·3	2·2	19	8	..	..	Cu.-Nb.	SW	10	..	..	Nb.	..	10	..	..	Nb.	..	9·3
7	270 3	293 3	23 4	3·3	6·4	57	6	Ci.-Ci.-Cu.	..	..	..	3	..	..	..	..	10	..	..	..	..	6·3
8	23 5	360 5	360 4	4·7	7·5	66	7	..	..	Cu.-Nb.	NNW	5	..	..	Cu.	N	4	..	..	Cu.	..	5·3
9	337 3	337 2	315 1	2·0	3·2	29	6	..	..	Cu.	N	10	..	..	Cu.-Nb.	N	10	..	..	..	..	8·7
10	270 3	247 4	203 2	3·0	0·2	1	10	..	..	Nb.	WNW	7	..	..	..	..	8	..	..	..	..	8·3
11	360 2	360 4	Calm	2·0	2·3	20	10	..	..	Nb.	..	8	..	..	Cu.-Nb.	N	0	..	..	..	..	6·0
12	293 5	270 6	247 2	4·3	9·9	86	8	..	..	Nb.	NW	6	..	..	Cu.-Nb.	WNW	0	..	..	..	..	4·7
13	180 3	180 3	247 3	3·0	1·3	12	10	..	..	Nb.	S	10	..	..	Nb.	S	2	..	..	..	..	7·3
14	225 4	180 4	225 5	4·3	0·8	7	10	..	..	Nb.	..	10	..	..	Nb.	..	7	..	..	Nb.	..	9·0
15	270 3	293 5	315 5	4·3	7·2	61	8	Ci.	W	Cu.-Nb.	WNW	8	..	..	Nb.	WNW	4	..	..	..	..	6·7
16	315 5	315 4	225 4	4·3	7·9	67	6	..	..	Cu.	NNW	7	Ci.	..	Cu.	NNW	10	..	..	..	..	7·7
17	270 4	270 4	247 4	4·0	0·4	4	10	..	..	Nb.	..	8	..	..	Cu.-Nb.	WNW	10	..	..	..	..	9·3
18	247 4	247 5	293 3	4·0	2·3	18	8	..	..	..	..	6	..	..	Cu. / Cu.-Nb.	NW / W	10	..	..	Nb.	..	8·0
19	315 1	337 2	360 1	1·3	11·0	92	5	..	..	Cu.	N	2	..	..	Cu.	..	0	..	..	..	..	2·3
20	90 2	67 3	67 3	2·7	12·1	100	0	..	..	..	..	0	..	..	..	..	0	..	..	..	..	0·0
21	135 2	157 1	67 3	2·0	11·0	91	0	..	..	..	..	6	Ci.	WSW	..	..	2	..	..	..	..	2·7
22	135 1	157 1	67 3	1·7	12·2	100	0	..	..	..	..	0	..	..	..	..	0	..	..	..	..	0·0
23	293 3	247 4	270 3	3·3	2·2	26	10	..	..	..	..	7	..	..	Cu.	NW	10	..	..	..	..	9·0
24	225 3	180 4	225 4	3·7	7·0	57	7	Ci.	WNW	Cu.-Nb.	SW	5	A.-Cu.	SW	..	..	10	..	..	Nb.	..	7·3
25	203 3	203 4	225 5	4·0	10·5	85	0	..	..	..	..	4	A.-Cu.	SSW	Cu.	SSW	0	..	..	..	..	1·3
26	203 4	203 5	203 5	4·7	7·3	59	3	Ci.	..	..	..	4	A.-Cu.	SW	..	..	10	..	..	Nb.	..	5·7
27	203 5	203 5	203 5	5·0	3·8	30	8	..	..	Cu.-Nb.	SW	5	Ci. / A.-Cu.	— / WSW	..	..	4	Ci.-St.	..	..	..	5·7
28	180 4	180 4	180 3	3·7	6·0	48	4	Ci.	..	..	..	7	..	..	..	..	9	A.-Cu.	SSW	..	..	6·7
29	135 3	113 3	337 1	2·3	0·6	5	10	..	..	St.-Cu.	S	10	..	..	St.-Cu.	SSW	10	..	..	Nb.	..	10·0
30	90 4	135 2	90 2	2·7	4·8	38	8	..	..	Cu.-Nb.	ESR	7	A.-Cu.	S	Cu.-Nb.	S	6	A.-Cu.	SW	Cu.-Nb.	S	7·0
31	225 2	203 3	270 4	3·0	10·0	79	5	Ci.	..	..	..	1	A.-Cu.	..	..	..	10	..	..	Nb.	..	5·3
Means	3·2	3·5	3·2	3·3	5·5	40	6·6	—	—	—	—	6·0	—	—	—	—	6·2	—	—	—	—	6·2
Normal	3·8	4·1	3·8	3·9	4·9	42	7·1	—	—	—	—	6·2	—	—	—	—	5·8	—	—	—	—	6·4
	◄ 17 years ►				23 years		◄ 26 years ►															

* For method of estimation see Introduction.

8. WIND COMPONENTS: Metres per second at fixed hours, together with the greatest mean hourly velocity, or the greatest velocity attained in a gust, and the time of its occurrence.

NORTH WALES:—HOLYHEAD.

Height of Head above—Roof 8·8 m., Ground 13·7 m., M.S.L. 19·2 m.
Height of Cups above—Roof 4·6 m., Ground 7·6 m., M.S.L. 15·2 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust. ★	Time of Gust.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	h. m.
1	9·0	..	3·7	..	7·8	..	1·6	..	6·3	..	4·2	..	3·0	..	2·0	..	16·0	0 10
2	..	10·0	4·1	..	..	9·3	3·9	..	..	6·0	2·5	..	..	Ca	lm	..	17·0	7 30
3	2·2	..	5·3	..	8·5	..	8·5	..	8·8	..	5·9	..	6·6	..	4·4	..	18·0	11 25
4	6·0	..	1·2	..	6·5	..	1·3	..	6·9	..	2·9	..	5·7	..	3·8	..	11·0	11 50
5	5·2	..	2·1	..	6·5	..	4·3	..	6·9	..	2·9	..	8·2	..	..	..	14·0	23 35
6	8·5	..	1·7	..	10·3	..	2·0	..	..	7·8	7·8	..	..	4·7	11·4	..	16·0	11 30
7	..	1·8	8·8	..	..	3·6	5·4	..	..	13·9	2·8	..	..	6·6	9·8	..	21·0	21 55
8	..	11·7	..	..	..	8·4	3·5	..	..	6·2	6·2	..	..	3·9	3·9	..	18·0	2 15
9	..	3·6	5·3	..	..	..	4·3	..	4·9	..	4·9	..	1·8	..	1·8	..	13·0	12 50
10	3·0	..	3·0	..	7·6	..	1·5	..	8·4	..	5·6	..	..	4·2	4·2	..	16·0	17 30
11	..	5·4	5·4	..	..	3·4	3·4	..	..	1·7	..	..	1·4	..	..	3·4	16·0	23 45
12	16·0	..	..	6·6	10·7	..	16·0	..	..	..	15·0	..	..	..	7·5	..	30·0	10 50
13	7·6	..	1·5	..	11·6	..	2·3	..	7·0	..	2·9	..	5·1	..	5·1	..	22·0	10 10
14	8·1	..	..	..	4·6	..	4·6	..	1·6	..	0·7	..	..	5·7	..	8·6	19·0	1 35
15	..	12·4	..	2·5	..	12·5	8·3	..	..	11·9	11·9	..	..	13·2	13·2	..	29·0	16 0
16	..	12·9	12·9	..	..	4·2	10·2	..	10·7	..	7·2	..	4·4	..	6·6	..	26·0	2 55
17	3·3	..	8·0	..	3·7	..	8·9	..	7·4	..	7·4	..	8·3	..	8·3	..	19·0	18 40
18	..	..	10·0	..	3·8	..	9·1	..	..	..	8·3	..	..	1·5	7·5	..	15·0	13 0
19	..	1·3	6·7	..	2·5	..	6·0	..	3·7	..	5·5	..	6·9	..	2·9	..	11·0	23 55
20	5·6	..	3·7	..	5·8	..	3·9	..	7·1	..	4·7	..	7·2	..	4·8	..	12·0	17 10
21	5·0	..	3·3	..	4·2	..	0·8	..	1·1	..	..	1·7	1·6	..	..	..	11·0	1 25
22	..	Ca	lm	..	..	Ca	lm	..	..	Ca	lm	..	..	Ca	lm	..	3·0	18 20
23	..	Ca	lm	..	6·3	..	..	..	6·6	..	2·7	..	7·5	..	3·1	..	12·0	22 10
24	..	3·7	2·5	..	4·4	..	..	1·8	3·2	..	..	..	2·4	..	2·4	..	14·0	22 45
25	3·8	..	5·7	..	4·5	..	4·5	..	11·6	..	..	2·3	6·1	..	9·1	..	21·0	16 55
26	9·0	..	3·7	..	11·4	..	2·3	..	8·3	..	1·7	..	7·4	..	7·4	..	22·0	6 35
27	7·1	..	7·1	..	10·0	..	..	..	11·5	..	..	2·3	10·8	..	4·5	..	19·0	15 55
28	15·3	..	..	3·0	4·0	..	4·0	..	7·0	..	2·9	..	..	Ca	lm	..	25·0	4 40
29	..	5·8	..	5·8	..	6·1	..	4·1	..	4·8	..	2·0	..	5·4	..	2·2	11·0	2 50
30	..	4·9	..	2·0	..	5·0	..	2·1	..	3·1	..	1·3	..	Ca	lm	..	9·0	9 45
31	..	Ca	lm	..	5·9	..	..	..	..	Ca	lm	..	..	Ca	lm	..	10·0	9 45
S+N & W+E	188·2		125·6		193·1		128·6		184·4		126·2		139·6		137·9			
S−N & W−E	41·2		85·8		88·1		112·6		73·6		107·0		49·2		109·5			

SCOTLAND N:—DEERNESS.

Height of Cups above—Roof 1·5 m., Ground 4·9 m., M.S.L. 57·3 m.

Day.	3 h.				9 h.				15 h.				21 h.				Vel. in Max. Hourly Run.	Time of Max.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	hrs.
1	..	..	13·1	..	3·8	..	5·7	..	6·1	..	2·5	..	3·6	..	2·4	..	13·1	3
2	..	1·1	2·8	..	..	2·6	6·4	..	..	2·1	10·6	..	1·5	..	7·7	..	11·8	24
3	13·7	..	5·7	..	7·3	..	10·9	..	3·6	..	18·3	..	..	..	15·4	..	20·7	16
4	..	2·0	10·3	..	1·8	..	4·3	..	3·5	..	0·7	..	6·8	..	1·3	..	14·1	1
5	8·5	..	3·5	..	7·1	..	4·7	..	5·7	..	3·8	..	5·7	..	2·4	..	9·2	3
6	6·4	..	2·6	..	4·8	..	1·0	..	..	2·9	6·9	..	..	1·2	5·8	..	9·5	12
7	4·9	..	4·9	..	..	8·3	12·2	..	..	10·9	10·9	..	..	7·3	10·9	..	23·3	6
8	..	13·6	13·6	..	..	12·0	8·0	..	..	6·2	4·2	..	..	1·1	1·1	..	22·3	4
9	1·4	..	2·2	..	8·8	..	3·6	..	2·8	..	6·7	..	..	..	2·6	..	10·8	13
10	4·5	..	1·9	..	11·5	..	..	..	11·5	..	..	..	..	2·7	4·1	..	13·1	13
11	..	2·4	3·6	..	..	..	4·3	..	1·4	..	3·3	..	7·6	..	..	3·1	11·1	24
12	11·6	..	..	4·8	13·0	..	..	13·0	10·5	..	..	10·5	4·0	..	4·0	..	18·4	9
13	..	2·9	4·3	..	8·2	..	..	..	11·6	..	..	4·8	6·6	..	4·4	..	16·1	13
14	7·9	..	..	..	14·0	..	..	5·8	14·8	..	..	2·9	9·5	..	..	..	20·0	11
15	2·0	..	..	3·0	..	1·4	..	3·3	..	5·6	..	..	..	2·9	0·6	..	5·6	15, 17
16	..	7·4	7·4	..	..	6·7	10·1	..	..	3·7	3·7	..	7·3	..	..	3·0	12·1	6, 9
17	4·0	..	4·0	..	4·0	..	6·0	..	1·3	..	6·8	..	..	3·6	18·1	..	18·4	21
18	..	3·0	15·1	..	..	..	17·4	..	..	..	12·1	..	..	2·4	12·3	..	17·4	9
19	..	4·8	11·6	..	..	4·0	9·7	..	1·9	..	9·3	..	2·8	..	14·1	..	15·1	23
20	1·5	..	7·7	..	4·4	..	10·6	..	3·5	..	8·5	..	3·3	..	7·9	..	15·4	2
21	1·4	..	2·2	..	4·5	..	0·9	..	4·1	..	2·7	..	4·8	..	2·0	..	5·2	21
22	5·5	..	2·3	..	3·6	..	1·5	..	..	0·8	3·8	..	2·3	..	..	0·4	5·9	3
23	7·1	..	..	1·4	6·5	..	..	1·3	6·9	..	..	..	7·6	..	3·1	..	10·5	22
24	2·3	..	2·3	..	2·9	..	4·3	..	3·8	..	..	0·8	5·2	..	..	3·4	8·5	7
25	4·0	..	..	1·6	4·4	..	6·6	..	3·3	..	1·4	..	9·0	..	..	6·0	15·1	23
26	3·6	...	8·8	..	10·6	..	4·4	..	12·5	..	..	..	2·0	..	3·0	..	16·4	13
27	10·3	..	..	4·3	6·9	..	6·9	..	7·9	..	..	..	12·5	..	..	8·4	15·1	21
28	8·0	..	..	1·6	..	5·5	3·7	..	1·3	..	6·8	..	1·6	..	1·6	..	13·1	1
29	..	Ca	lm	..	..	1·1	..	5·5	..	..	..	5·2	..	4·4	..	4·4	6·9	20
30	..	1·1	1·7	..	..	..	1·6	..	4·1	..	..	2·7	9·8	..	..	6·6	14·4	23
31	11·1	..	..	7·5	9·0	..	..	9·0	9·1	..	..	13·6	8·0	..	..	12·0	16·7	18
S+N & W+E	158·0		155·8		178·7		182·7		163·4		163·5		147·1		172·1			
S−N & W−E	81·4		107·4		95·5		106·9		99·0		82·5		95·9		77·5			

ENGLAND S.W.:—SCILLY.

Height of Head above—Ground 9·8 m., M.S.L. 49·7 m.
Height of Cups above—Ground 5·8 m., M.S.L. 45·7 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	h. m.
1	2·9	..	..	..	2·7	..	..	2·7	1·1	..	..	1·8	3·0	..	1·4	..	7·5	0 5
2	0·6	..	3·3	..	..	11·7	..	..	..	8·9	..	2·4	..	6·0	..	5·0	16·6	10 20
3	..	1·6	..	1·9	..	..	..	0·8	..	..	..	1·7	..	1·7	..	..	4·8	1 45
4	..	1·7	..	..	0·6	..	..	3·3	3·2	..	..	5·5	3·7	..	..	0·7	8·3	14 20
5	2·1	..	2·5	..	4·6	..	5·5	..	7·9	..	..	..	7·1	..	2·6	..	9·8	21 45
6	8·0	..	4·6	..	8·7	..	0·8	..	..	13·4	7·7	..	..	6·3	10·8	..	21·7	15 10
7	..	4·3	11·8	..	..	5·9	5·9	..	..	9·3	2·5	..	..	9·1	..	1·6	18·0	3 0
8	..	12·0	1·0	..	..	8·2	..	0·7	..	6·6	..	1·1	..	3·8	..	..	17·7	4 25
9	..	1·7	..	..	1·0	..	5·7	..	..	..	5·0	..	1·1	..	6·6	..	8·3	17 35
10	1·5	..	5·6	..	3·2	..	5·5	..	9·4	..	3·4	..	..	4·8	3·4	..	12·1	15 5
11	..	4·2	..	..	..	2·3	..	1·1	4·4	..	..	1·6	13·8	..	..	5·0	18·9	22 25
12	..	3·1	17·6	..	..	7·1	15·1	..	..	3·5	12·9	..	2·8	..	6·0	..	24·8	8 0
13	6·7	..	..	..	..	2·6	7·1	..	..	1·5	8·2	..	6·7	..	5·6	..	24·3	7 50
14	..	3·8	14·1	..	7·6	..	..	2·1	5·3	..	11·4	..	..	13·8	13·8	..	26·3	20 10
15	..	8·0	8·0	..	..	11·0	2·9	..	..	11·8	11·8	..	..	13·4	10·1	..	23·0	15 55
16	..	11·4	4·1	..	..	5·0	5·0	..	5·0	..	8·7	..	..	3·9	10·6	..	18·0	1 25
17	..	4·9	10·7	..	..	1·6	9·1	..	..	1·0	11·2	..	..	1·9	10·7	..	15·8	2 55
18	..	..	8·8	..	..	..	8·8	..	..	0·7	8·2	..	..	2·1	4·5	..	13·0	1 40
19	..	1·7	2·9	..	..	1·1	1·8	..	..	0·8	1·3	..	..	..	0·4	..	2·9	1 30
20	0·1	..	1·3	..	2·5	..	..	2·1	2·1	..	..	2·5	1·7	..	..	2·4	4·1	6 0
21	1·0	..	..	3·7	3·3	..	..	4·8	4·1	..	..	0·7	1·3	..	0·1	..	6·9	12 20
22	0·8	..	0·1	..	1·7	..	..	2·9	2·6	..	..	1·2	1·6	..	1·4	..	3·0	18 25
23	..	..	5·0	..	..	1·9	6·2	..	..	..	5·4	..	3·5	..	4·1	..	9·4	15 15
24	4·3	..	2·5	..	6·4	..	3·0	..	6·7	..	..	..	2·9	..	11·0	..	20·5	18 40
25	2·1	..	4·5	..	6·6	..	..	1·2	3·3	..	12·1	..	3·0	..	11·4	..	20·8	17 25
26	11·4	..	3·0	..	13·7	..	3·7	..	6·8	..	6·8	..	..	..	9·6	..	18·0	8 45
27	4·5	..	3·1	..	7·8	..	1·4	..	12·5	..	3·4	..	13·2	..	1·1	..	16·6	23 55
28	11·4	..	7·4	..	3·1	..	2·2	..	2·2	..	..	3·1	1·6	..	..	1·4	24·8	1 25
29	..	2·4	..	1·7	..	1·8	..	1·8	..	4·8	..	1·3	..	7·2	..	0·7	11·6	23 35
30	..	10·0	..	..	..	9·6	..	..	..	10·4	..	..	..	3·6	..	1·3	15·0	10 20
31	..	1·3	0·3	..	2·4	..	3·4	..	..	3·5	7·6	..	..	3·8	6·5	..	11·0	15 45
S+N & W+E	129·5		129·5		145·7		116·6		152·8		150·5		148·4		149·8			
S−N & W−E	−14·7		114·9		6·1		69·6		0·4		104·7		−14·4		113·6			

ENGLAND E.:—SHOEBURYNESS.

Height of Head above—Ground 27·4 m., M.S.L. 31·4 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust. ★	Time of Gust.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	h. m.
1	2·9	..	4·3	..	1·9	..	0·8	..	..	Ca	lm	..	4·0	..	..	..	13·0	21 40
2	3·2	..	4·8	..	3·9	..	3·9	..	..	2·8	2·8	..	..	4·9	..	..	13·0	1 25
3	..	2·8	1·9	..	..	Ca	lm	..	4·3	..	4·3	..	2·2	..	3·3	..	8·0	15 50
4	2·1	..	5·1	..	1·2	..	1·7	..	..	Ca	lm	..	1·8	..	..	..	10·0	2 25
5	1·7	..	1·7	..	1·9	..	4·5	..	3·1	..	4·6	..	3·3	..	3·3	..	14·0	12 45
6	8·9	..	1·8	..	6·2	..	6·2	..	10·4	..	4·3	..	9·9	..	6·6	..	19·0	22 45
7	..	1·4	7·2	..	..	..	6·1	..	..	3·4	5·1	..	..	4·8	..	1·0	17·0	1 5
8	..	4·1	2·7	..	..	6·2	2·6	..	..	6·6	1·3	..	..	4·3	4·3	..	12·0	16 5
9	..	3·5	3·5	..	..	1·9	2·8	..	..	4·5	1·9	..	..	Ca	lm	..	9·0	15 40
10	3·1	..	2·1	..	6·6	..	1·3	..	6·2	..	2·6	..	9·6	..	1·9	..	12·0	21 25
11	3·9	..	3·9	..	..	3·4	1·4	..	..	2·8	..	1·1	..	1·0	..	5·1	10·0	0 5
12	6·3	..	..	4·2	7·6	..	3·1	..	..	..	9·8	..	1·3	..	6·6	..	17·0	15 40
13	1·7	..	1·7	..	5·4	..	1·1	..	8·0	..	1·6	..	6·0	..	1·2	..	12·0	12 30
14	6·4	..	..	..	7·1	..	..	4·7	6·6	..	4·4	..	10·7	..	..	..	16·0	23 10
15	10·8	..	2·1	..	7·6	..	11·4	..	..	..	10·4	..	3·1	..	7·6	..	22·0	10 15
16	..	3·1	7·6	..	..	3·8	9·1	..	..	1·8	9·2	..	7·1	..	4·7	..	17·0	10 5
17	2·9	..	4·3	..	1·2	..	6·0	..	..	..	7·3	..	2·5	..	5·9	..	17·0	13 20
18	2·1	..	5·1	..	4·9	..	4·9	..	..	1·9	4·5	..	..	1·8	4·3	..	19·0	2 5
19	..	0·7	3·3	..	..	0·7	3·3	..	..	2·5	1·7	..	..	Ca	lm	..	9·0	10 25
20	1·3	..	3·1	..	0·6	..	2·9	..	1·8	..	..	..	1·5	..	..	2·2	8·0	18 20
21	..	Ca	lm	..	..	Ca	lm	..	2·6	..	..	2·6	2·2	..	1·5	..	9·0	16 50
22	..	Ca	lm	..	..	Ca	lm	..	0·9	..	..	4·5	5·8	..	..	5·8	10·0	17 5
23	1·1	..	..	2·8	3·0	..	..	3·0	..	..	..	7·0	1·3	..	..	1·8	9·0	15 5
24	3·0	..	3·0	..	0·5	..	2·6	..	4·9	..	4·9	..	7·0	..	2·9	..	14·0	22 55
25	5·4	..	5·4	..	2·7	..	4·1	..	8·7	..	3·6	..	11·0	..	4·6	..	17·0	21 45
26	3·1	..	4·6	..	10·2	..	2·0	..	13·5	..	5·6	..	13·8	..	5·7	..	21·0	16 10
27	5·6	..	5·6	..	4·6	..	3·1	..	8·4	..	3·5	..	12·7	..	5·2	..	17·0	21 10
28	12·8	..	..	..	12·6	..	2·5	..	8·9	..	1·8	..	5·4	..	..	5·4	21·0	6 10
29	4·5	..	..	4·5	1·3	..	..	1·3	..	..	..	4·3	..	2·4	..	3·6	10·0	6 0
30	..	..	..	6·7	..	1·1	..	2·8	..	Ca	lm	..	3·7	..	1·5	..	11·0	6 35
31	..	Ca	lm	..	..	Ca	lm	..	..	..	..	6·7	2·6	..	..	6·2	12·0	5 15
S+N & W+E	108·4		103·0		108·1		99·2		114·6		121·4		147·7		101·7			
S−N & W−E	77·2		66·6		73·9		75·6		62·0		69·0		109·3		40·5			

★ Tabulated to nearest 1 m/s.

9. SEISMOLOGICAL DIARY.

EARTHQUAKES:—ESKDALEMUIR.

Day.	Phase.	Time. G.M.T.	Period.	Amplitudes. A_N.	Amplitudes. A_E.	Amplitudes. A_Z.	△.	Remarks.
		h m s	s	μ	μ	μ	km.	
15	..	12 0 to	..	..	..	..	..	Moderate earthquake, but trace difficult to read owing to large wind effects and microseisms.
		13 0 0	..	..	..	..	..	
20	L	18 19 to	..	..	..	..	..	End merges in next disturbance.
		18 27 0	..	..	..	..	..	
20	e_E	18 49 52	..	..	..	..	..	Preliminary phases affected by previous disturbance.
	i_E	18 59 30	..	..	..	..	..	
	i	19 2 35	..	..	..	..	..	
	L	19 9 42	..	..	..	..	..	
	F	22 0 0	..	..	..	..	..	
22	e	20 37 58	..	..	..	..	..	
	e	20 42 32	..	..	..	..	..	
	L	21 9 0	22	..	..	..	..	
	F	22 30 0	..	..	..	..	..	
23	O	15 21 58	..	..	..	..	8500	
	P	15 33 45	..	..	..	..	..	
	S	15 43 29	..	..	..	..	..	
	L	15 58 43	..	..	..	..	..	
	F	16 25 0	..	..	..	..	..	
29	i_N	5 27 9	..	..	..	..	..	
	i_E	5 27 11	..	..	..	..	..	
	L	5 36 19	..	..	..	..	..	
	M_N	5 40 14	28	·19	..	..	..	
	F	6 30 0	..	..	..	..	..	

MICROSEISMS OF N. COMPONENT:—ESKDALEMUIR.

Day.	0 h. A_N.	0 h. T.	6 h. A_N.	6 h. T.	12 h. A_N.	12 h. T.	18 h. A_N.	18 h. T.
	μ	s	μ	s	μ	s	μ	s
1	4·2	7	3·8	6·5	4·2	7	4·1	7·5
2	3·5	7	3·5	7	2·3	7	2·3	7
3	2·3	7·5	3·9	6	3·5	7	3·9	7
4	3·9	7	5·6	7	5·4	7·5	6·3	7
5	3·5	7	3·2	7	2·1	7	2·0	5·5
6	2·2	6	1·8	5·5	0·8	5·5	2·2	6
7	3·1	6	4·0	6	4·9	6·5	3·8	6·5
8	4·0	6·5	4·6	6	4·0	6	2·8	7
9	2·3	6	2·3	6	2·9	6	4·5	7
10	6·3	7	4·3	8	4·2	7	4·4	6
11	2·9	7	2·7	7·5	3·2	7	2·7	7
12	2·8	7	3·1	6·5	3·9	6	3·1	6
13	3·5	6	4·1	6	3·6	6	2·3	6
14	2·7	6	2·7	5	..	..	2·8	6
15	2·5	6	3·2	5	3·9	6	..	..
16	3·7	5·5	2·3	6	2·7	5	2·0	5
17	1·6	6	..	..	0·8	6	1·7	5·5
18	2·0	5	2·7	6	2·9	8	3·1	6
19	..	..	..	..	2·3	6	1·8	6
20	1·6	5	1·1	5·5	0·8	6	0·8	5·5
21	0·8	5·5	0·9	5	0·8	5·5	0·9	5
22	0·7	5·5	0·9	5	0·8	5·5	0·9	6
23	0·9	6	0·8	5·5	0·8	7	1·0	6
24	1·9	5	1·6	6	1·7	7	2·1	7
25	2·1	7	2·3	6	1·8	7·5	2·7	6
26	2·7	6·5	3·4	6·5	2·7	6	2·8	6·5
27	2·3	6·5	3·1	6	2·3	6	1·7	7
28	..	..	1·8	6	1·8	6·5	1·9	6
29	1·9	5·5	2·1	5·5	1·7	5·5	1·6	6
30	1·0	5·5	0·9	5	1·8	5	1·6	5·5
31	0·9	5	1·8	5	2·4	5·5	2·8	5

Means for Month $\begin{cases} A_N = 2·6\ \mu. \\ T = 6·2\ s. \end{cases}$

Normals for Month, 1911–19 $\begin{cases} A_N = 1·8\ \mu. \\ T = 5·6\ s. \end{cases}$

EARTHQUAKES:—RICHMOND (KEW OBSERVATORY).

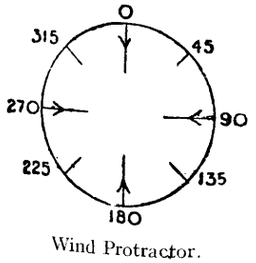
Day.	Times, G.M.T. of Commencement.	Times, G.M.T. of Max. Phase.	Remarks.
	h m	h m	
15	..	13 39	Small.
20	..	19 19	Small.
20	..	19 46	Succession of small waves to 20 h. 55 m.
22	..	21 26	Small.
23	..	16 17	Small.
29	..	5 51	Small. Succession of very small waves to 6 h. 30 m.

10. SOUNDINGS WITH PILOT BALLOONS.

Day	Time of Start, G.M.T.	Horizontal Velocity of Wind. Geostrophic *		By Anemometer.		At Heights above M.S.L. 500 m.		1000 m.		2000 m.		3000 m.		4000 m.		Cloud Observations. Time, G.M.T.	Type.	Deg. from N.	mr/s	Type.	Deg. from N.	mr/s
	h. m.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	h. m.						
									ESKDALEMUIR.													
2	12 20	310	8	315	7·5	315	10·5	325	9·5	320	12·0	..	..	..	..	12 35	Cu.; Fr.-Cu	320	7·5	A.-Cu.	225	5·5
2	17 5	300	10	290	7·5	300	8·0	310	11·5	300	12·0	..	..	..	..	..	Cu.; Fr.-Cu	295	..	..	..	..
8	7 10	330	19	295	8·0	330	11·5	350	17·5	340	11·0	..	..	..	..	..	..	..	..	Cloud less		
11	7 35	310	7	calm		335	6·5	360	6·0	335	8·5	..	..	..	..	7 55	..	..	..	Ci.; Ci.-St.	225	3·0
11	11 55	?	?	90	1·5	105	3·7	25	1·5	345	3·0	305	6·0	..	..	..	Cu.	..	..	..	..	..
15	12 0	360	33	345	12·0	345	13·5	350	17·5	355	10·0	..	..	..	..	11 0	A.-St.-Lent	..	..	Ci.-St.	25	1·5
16	9 5	310	27	300	11·0	310	11·5	310	13·5	280	5·0	..	..	..	..	9 0	Cu.; St.-Cu.	315	..	Ci.-St.	315	8·5
16	12 10	290	12	280	7·5	290	10·5	290	6·0	295	18·0	..	..	..	..	..	Fr.-Nb.	290	..	A.-St.	300	10·0
22	12 25	?	?	110	1·5	105	3·6	90	1·3	240	3·4	255	7·0	..	..	13 0	Cu.	..	..	Ci.	255	1·8
24	7 25	240	8	140	0·5	255	4·0	270	6·0	245	6·0	245	14·5	..	..	..	A.-Cu.	225	..	..	..	..
24	11 55	210	9	180	3·6	195	3·6	190	6·0	195	10·0	..	..	..	..	..	St.	195	..	A.-St.	200	..
27	7 35	220	19	190	6·0	215	14·0	220	15·5	230	21·0	..	..	..	..	7 55	Cu.	220	..	A.-Cu.	225	11·5
									SOUTH FARNBOROUGH.													
3	9 25	?	?	260	2·0	235	4·8	275	5·5	275	10·5	..	..	..	..	..	..	..	..	..	..	..
4	11 25	?	?	270	3·0	225	7·5	255	7·0	235	7·0	220	10·0	225	13·0	..	..	..	..	..	..	..
12	14 50	270	18	275	14·5	280	6·0	285	18·5	290	16·5	..	..	..	..	..	Cu.; Fr.-Cu.	..	..	..	..	..
16	14 55	300	15	285	8·0	295	9·0	305	8·0	300	9·5	305	24·5	..	..	..	St.-Cu.	..	..	A.-Cu.	..	..
19	9 45	300	7	290	4·0	335	5·0	305	5·5	330	13·0	330	13·5	315	14·5	..	Ci.; Ci.-St.	..	..	..	..	..
20	8 0	?	?	270	6·0	270	8·0	295	4·0	340	8·0	330	9·0	330	11·5	..	..	..	..	Ci.	..	..
23	9 30	180	5	110	4·0	145	5·5	170	5·5	165	8·0	170	10·0	165	15·0	..	..	..	..	Cloud less		
24	7 55	230	8	230	5·5	260	5·5	235	4·6	230	7·5	210	12·0	215	9·0	..	A.-St.	..	..	Ci.-St.	..	..
								5000 m.		6000 m.		7000 m.		8000 m.								
19	9 45	(For observations at lower levels, see above.)						330	20·0	..	..	..	..	..	..	..	Ci.; Ci.-St.	..	..	..	..	..
20	8 0							335	16·5	330	12·0	320	16·0	320	13·0	..	..	..	..	Ci.	..	..
									CAHIRCIVEEN.													
2	8 15	350	9	355	9·0	345	13·5	345	16·0	340	14·0	..	..	..	..	8 40	St.-Cu. / Cu.	360 / 340	.. / 3·5	A.-Cu.	220	4·0
2	16 25	330	5	335	4·3	340	7·5	340	11·5	330	3·7	10	11·0	10	27·0?	..	Cu.	340	..	..	..	..
7	8 35	320	15	10	5·5	355	8·5	350	12·0	335	17·0	335	24·0	..	..	..	St.-Cu.	340	..	A.-Cu.	315	..
11	7 40	270	5	25	2·5	150	3·3	160	2·1	285	2·8	310	12·0	305	20·0	9 10	St.	..	..	Ci.-Cu. / Ci.	305	3·0
13	12 35	260	9	260	6·0	260	13·5	260	16·0	245	14·0	..	..	..	..	..	St.; St.-Cu.	250	..	..	..	..
14	8 15	270	9	130	3·2	175	5·5	170	8·0	240	8·0	..	..	..	..	8 45	St.-Cu.	245	4·0	A.-St.	..	..
18	16 50	?	?	280	3·5	285	6·5	290	11·0	290	23·5	290	26·0	..	..	17 15	St.-Cu.; Fr.-Cu.	280	..	Ci.	280	4·0
24	7 55	230	10	175	4·0	205	7·0	215	9·5	230	11·5	..	..	..	..	..	St.	180	..	A.-St.	225	..
25	7 50	230	20	160	9·0	170	20·0	180	30·5	190	16·5	..	..	..	..	..	Cu.	160	..	A.-St.;A.-Cu	180	..
28	8 20	260	14	200	6·0	205	9·0	210	12·0	220	15·0	220	18·5	235	13·0	..	Cu.; St.-Cu.	200	..	..	..	..
29	7 20	?	?	55	1·0	5	4·1	345	3·5	50	5·5	15	4·7	355	4·2	..	Cu.	..	..	Ci.	..	..
30	16 15	230	13	275	2·5	275	4·0	265	4·8	310	8·0	310	8·0	305	7·0	16 50	A.-Cu. / A.-St.	270 2·5 / 270 ..		Ci.-St.; Ci.-Cu.	260	1·5
31	7 20	?	?	260	4·4	300	6·0	295	7·5	295	9·0	250	8·5	..	..	..	Cu.; Fr.-Cu. / St.-Cu.	290 .. / 290 ..		..	..	..
						5000 m.		6000 m.		7000 m.		8000 m.		9000 m.								
11	7 40	(For observations at lower levels, see above.)				290	32·0	295	31·0	305	30·1	..	..	..	..	9 10	St.	..	..	Ci.-Cu / Ci.	305	3·0
29	7 20					280	3·1	10	2·9	60	4·1	185	6·5	190	6·0	..	Cu.	..	..	Ci.	..	..

Height of Station above M.S.L. = H.
Anemometer above ground = h.

	H	h
Eskdalemuir	242 m.	15 m.
S. Farnborough	70 m.	31 m.
Cahirciveen	9 m.	13 m.



Wind Protractor.

March, 1920. *Notes on Pressure Distribution.*

2nd, 7 h. Anticyclone centered over the Azores and over North Italy, **V** over the British Isles.
13 h., 18 h. The Azores Anticyclone covering the British Isles.
3rd, 7 h. Ridge from the Azores to Germany across England.
4th, 13 h. High over France, straight isobars across Ireland and Scotland.
7th, 7 h. Extensive deep depression centered near Christiansund.
8th, 7 h. High over the British Isles centered west of Ireland, deep depression over North Scandinavia
11th, 7 h. **V** over the British Isles. } Ridge over Central Europe centered W. of Spain and over the Baltic.
13 h. Low over Iceland. }
12th, 13 h. Deep depression centered over Scotland west.
13th, 13 h. Low over the Hebrides covering the British Isles.
14th, 7 h. ,, ,, ,, ,, , ,, ,, secondary developing near Cahirciveen.
15th, 13 h. Extensive deep depression centered over the North Sea.
16th, 7 h., 13 h. The Azores anticyclone covering the British Isles.
18th, 18 h. Anticyclone centered over the Bay of Biscay, deep depression over Gulf of Bothnia.
19th, 7 h. Anticyclone centered over the Bay of Biscay, deep depression over Lapland.
20th, 7 h. Anticylone over the British Isles centered over the Channel.
22nd, 13 h. High over the British Isles, light gradient.
23rd, 7 h
24th, 7 h., 13 h. } Low over Iceland region, high from the Azores to the Baltic across France.
25th, 7 h.
27th, 7 h. Extensive Low centered S. of Iceland.
28th, 7 h. Low centered over the Faröe region.
29th, 7 h. }
30th, 18 h. } Low centered over Western France. } High over Scandinavia and the Azores.
31st, 7 h. Low centered W. of Scotland. }

Notes on Ascent.

Eskdalemuir—

15th, Solar halo at 11 h.
16th, Snow commenced at 14 h.
24th, Low St.-Cu. formed during ascent, and by 8 h. completely covered the sky.

Cahirciveen—

2nd, 8 h. 15 m. Sky clouded over during ascent.
2nd, 16 h. 25 m. The balloon was patched in two places. Reading at 4000 m. doubtful.
7th, 8 h. 30 m. Balloon released in the rear of extensive snow shower.
11th, 7 h. 40 m. Balloon shivering very much at the end.
18th, 16 h. 15 m. Ci. radiating W. N.W.
30th, 16 h. 15 m. Ci. radiating S. Trace of Solar halo.

* Measured from *Daily Weather Report* (International Section) with isobars at intervals of 4 mb.

11. Nephoscope Observations.

Aberdeen.

Day and Hour. G.M.T.	Type of Cloud.	Velocity-height-ratio.				Remarks.
		Degrees from N.	Milliradians per Second.	Components. W.–E.	Components. S.–N.	
2 13	A.-Cu.	225	7·1	+5·0	+5·0	Finely banded A.-Cu. Radiant pt. 225°.
	Cu.	325	8·6	+4·9	−7·0	Cu. and Fr.-Cu. mixed.
3 13	St.-Cu.	274	8·0	+8·0	−0·6	St.-Cu. inclined to lenticular form.
4 13	Ci.-Cu.	264	3·3	+3·3	+0·3	Ci.-St. to Ci.-Cu. in fine bands. Radiant pt. 270°.
	Cu.	265	15·0	+15·0	+1·3	
5 13	A.-Cu.	210	4·9	+2·4	+4·2	Typical A.-Cu. massing into sheets.
6 13	Fr.-St.	222	20·0	+13·0	+15·0	Broken "Scud" cloud; St.-Cu. sheet above.
13 13	False Ci.	210	2·0	+1·0	+1·7	False Ci. in hazy patches.
20 13	Ci.-Cu.	285	6·0	+5·8	−1·6	Bands of Ci. to Ci.-Cu.
22 13	False Ci.	271	2·1	+2·1	0·0	False Ci. in heavy masses.
25 7	False Ci.	225	5·2	+3·7	+3·7	Slight False Ci., becoming Ci.-Cu.
25 13	Cu.	238	8·3	+7·0	+4·4	Cu. to Fr.-Cu.
27 12	Ci.-Cu.	249	4·2	+3·9	+1·5	Ci.-Cu. fusing into flat sheets.

12. Aurora.

Day.	a.m. or p.m.	Moon.	Magnetic Character. Eskdalemuir.	Magnetic Character. Richmond.	Aurora Observations. Station.	Aurora Observations. Remarks.
3	p.	..	0, 2	0, 2	Baltasound	
4	p.	○	..	..	..	
4	a.	..	0, 2	0, 2	Aberdeen	Streamer type, 1 h.–2 h.; not bright.
5	p.	..	2, 1	2, 1	Gordon Castle	
8	a.	..	1, 1	0, 1	Nairn	
10	p.	..	1, 1	1, 0	Dublin (City)	Faint 21 h.
13	p.	..	0, 2	0, 2	Baltasound	
					Eskdalemuir	Glow to N.
14	p.	..	2, 1	2, 1	Deerness	
					Wick	
16	p.	..	2, 1	1, 0	Baltasound	
18	p.	..	0, 0	0, 0	Eskdalemuir	Faint glow 21 h.
20	a.	●	..	..	..	
20	p.	..	0, 1	0, 1	Dublin (City)	Faint 21 h.
21	p.	..	1, 2	1, 2	Wick	
					Gordon Castle	
					Inverness	
					Aberdeen	Moderately bright and very widely extended. Visible after 19 h. as crimson to white streamers, changing to greenish-white glow after 20 h.
					Eskdalemuir	Glow 21 h.–22 h.; 1 h., curtain extending to within 30° of S. horizon.
					Other Scottish stations	Bright.
					Holyhead	
					Worksop	21 h. but not very conspicuous till after 24 h. At 1 h. on 23rd it was very bright and streamers reached nearly to Zenith. White.
					Geldeston	
					Raunds	Magnificent from 20 h. 30 m.
22	p.	..	2, 2	2, 2	Bonnington	19½ h., red, the coloration gone by 20½ h. White arch in N which at times spread all over sky.
23	a.	..	2, 2	2, 2	Hitchin	20 h.–24 h.
					Haverfordwest	Unusually light night; objects visible as by pale moonlight 23 h. 30 m.
					Shoeburyness	
					Greenwich	
					Lympne	
					Rousdon	20 h.–21 h.
					Sheepstor	Brilliant white light only.
					Jersey (St. Louis Obs.)	19 h. 30 m.
					Bidston	
					Calshot	0 h. 50 m.–1 h. 30 m. NNW–NNE ever-changing streamers of a pale light colour and almost parallel, 20° to 30° elevation. Arc 10° elevation.
					Charmouth	Observed for about 20 minutes in N to NNW. Two of the streamers nearly reached overhead, others alternated in length.
					Tavistock	23 h.–24 h. [For notes on the magnetic storm of 22nd–23rd *see* "Nature," April 1st, 1920.]
23	p.	..	2, 2	2, 2	Eskdalemuir	21 h. flickering light.
24	p.	..	2, 2	2, 1	Deerness	
25	p.	..	2, 0	1, 1	Dublin (City)	Faint 21 h.

Note.—The two magnetic "characters" entered in each case refer to the two periods of 24 hours ending and beginning at midnight of the night in question.

METEOROLOGICAL OFFICE OBSERVATORIES.—GEOPHYSICAL JOURNAL.

DAILY VALUES.—*Solar Radiation, Meteorology, Atmospheric Electricity, Terrestrial Magnetism, and Seismology.*
Tenth YEAR.—No. 4 APRIL, 1920.] Units based on the C.G.S. System. [*Price* 1s.

1. SUNSHINE AND SOLAR RADIATION.

Day.	WESTMINSTER. Bright Sunshine.* Total.	Per cent. of Possible.	SOUTH KENSINGTON.—Lat. 51° 30′ N. Long. 0° 10′ W. Radiation received on Horizontal Surface by Callendar Radiograph. Daily Total.	Per cent. of Planetary.	Maximum. For Day. Amount.	Time.	11·30 h. to 12·30 h.	RICHMOND.—Lat. 51° 28′ N. Long. 0° 19′ W. Bright Sunshine.* Total.	Per cent. of Possible.	Radiation at Noon by Ångström Pyrheliometer. Intensity.	Vertical Component.	Sky.	ESKDALEMUIR.—Lat. 55° 19′ N. Long. 3° 12′ W. Bright Sunshine.* Total.	Per cent. of Possible.	Radiation by Ångström Pyrheliometer. Time.	Sky.	$\frac{p}{p_0}$ sec. Z.	Intensity.	CAHIRCIVEEN. Bright Sunshine.* Total.	Per cent. of Possible.
	hr.	%	j/cm².	%	mw/cm².	h. m.	mw/cm².	hr.	%	mw/cm².	mw/cm².		hr.	%	h. m.			mw/cm².	hr.	%
1	0·0	0	172	6	16	10 35	4	0·0	0	..	..	..	0·0	0	..	..	..	..	3·4	26
2	1·1	9	573	21	48	13 20	30	0·3	2	..	..	..	0·6	5	..	..	..	..	7·4	57
3	0·3	2	515	19	62	12 24	62	0·7	5	..	..	..	0·0	0	..	..	..	..	8·4	65
4	0·2	2	495	18	55	10 48	24	0·8	6	..	..	..	0·0	0	..	..	..	..	11·2	86
5	1·1	8	565	20	52	14 40	18	1·7	13	..	..	..	0·4	3	..	..	..	..	11·0	84
6	1·8	14	647	23	57	12 20	57	2·0	15	..	..	..	1·5	11	..	..	..	..	0·0	0
7	2·4	18	854	30	61	10 0	40	2·1	16	..	..	..	5·2	39	..	..	..	..	3·1	23
8	0·0	0	252	9	26	14 30	22	0·0	0	..	..	..	7·4	55	12 15	Clear	1·47	95	0·0	0
9	0·0	0	326	11	30	11 15	19	0·0	0	..	..	..	7·8	57	12 15	Ci. haze	1·45	34	0·0	0
10	2·6	19	897	31	69	10 5	39	3·2	24	..	..	..	0·0	0	..	..	..	..	0·3	2
11	0·0	0	434	15	64	12 45	21	0·2	1	..	..	..	0·0	0	..	..	..	..	1·4	10
12	0·7	5	463	15	44	15 25	10	1·2	9	..	..	..	0·0	0	..	..	..	..	0·0	0
13	2·4	18	705	23	69	12 0	69	2·7	20	78	58	Clear	1·7	12	..	..	..	..	0·0	0
14	7·1	52	1177	39	74	10 30	67	6·6	48	..	..	..	0·0	0	..	..	..	..	1·4	10
15	1·5	11	818	27	52	12 0	52	0·4	3	..	..	..	0·0	0	..	..	..	..	1·2	9
16	4·9	36	970	31	70	11 35	70	5·0	36	79	59	Clear	0·4	2	..	..	..	..	9·8	71
17	0·2	1	608	19	37	13 20	25	0·2	1	..	..	..	x12·9	91	12 22	Clear	1·39	90	7·6	55
18	0·0	0	221	7	16	8 15	4	0·0	0	..	..	..	4·7	33	..	..	..	..	2·7	19
19	1·6	11	800	25	53	10 30	40	1·4	10	..	..	..	1·0	7	..	..	..	..	3·4	24
20	5·9	42	1151	36	69	11 15	48	5·2	37	..	..	..	8·8	61	..	..	..	..	5·6	40
21	3·5	25	1039	32	74	13 25	33	3·7	26	..	..	..	6·5	45	12 14	Fr.-Cu.	1·36	70	6·3	44
22	2·9	20	929	28	63	10 30	40	2·8	20	..	..	..	0·0	0	..	..	..	..	2·0	14
23	1·0	7	751	23	54	14 40	21	6·4	45	..	..	..	5·2	36	..	..	..	..	0·0	0
24	1·6	11	1193	36	61	9 20	35	0·9	6	..	..	..	4·3	29	..	..	..	..	0·4	3
25	6·7	47	1247	37	82	12 20	82	5·4	37	..	..	..	6·1	41	..	..	..	..	8·7	60
26	2·2	15	845	25	80	11 20	66	2·8	19	..	..	..	6·3	43	..	..	..	..	0·2	1
27	0·0	0	346	10	18	13 10	12	0·0	0	..	..	..	7·4	50	..	..	..	..	1·0	7
28	7·7	53	1306	38	86	11 55	86	7·1	49	79	63	Clear	6·8	45	..	..	..	..	10·5	72
29	5·8	40	x1397	41	84	13 15	68	7·5	51	..	..	..	11·4	76	12 11	Clear	1·29	88	x11·8	80
30	x8·5	58	1388	40	x89	11 40	x89	x8·6	59	78	63	Clear	11·2	74	..	..	..	..	3·1	21
Means.	2·46	17	769	25	57	—	42	2·63	19	—	—	—	3·92	27	—	—	—	—	4·06	29
Normals.	4·30	31	986	31	—	—	—	5·23	38	—	—	—	4·70	34	—	—	—	—	5·33	39
	←3 years→		←8 years→					←35 years→					←5 years→						←35 years→	

2. METEOROLOGY AND MAGNETISM:—CAHIRCIVEEN (VALENCIA OBSERVATORY).—Lat. 51° 56′ N. Long. 10° 15′ W.

Heights above M.S.L.:—H=9·1 m. H_b=13·7 m. H_a=26·4 m. Above Ground: h_t=1·3 m. h_r=0·56 m. h_s=12·8 m. h_a=13·9 m.

Day.	Air Pressure at Station Level. 9 h.	21 h.	Air Temperature in Degrees Absolute. 9 h.	21 h.	Max. 0 h. to 24 h.	Min. 0 h. to 24 h.	Humidity. Vapour Pressure. 9 h.	21 h.	Percentage. 9 h.	21 h.	Wind—Veer from North in degrees and Speed in metres per second. 9 h. °	m/s.	21 h. °	m/s.	Cloud Amount (0–10) and Weather. 9 h.	21 h.	Rain 0 h. to 24 h.	Min. Temp. on Grass. 18 h. to 9 h.	REMARKS.	Magnetism. Horizontal Force, Declination West, and Inclination.
	mb.	mb.	a 200+	a 200+	a 200+	a 200+	millibar.		%	%					Tenths of Sky covered.		mm.	a 200+		
1	997·1	1005·8	78·2	81·0	82·4	77·4	7·9	8·3	90	78	30	4	25	4	10	7	3·1	75	Fair, c. to o. and p, *a* ∞ and fair, *p*.	
2	1008·3	1008·9	81·0	81·1	83·0	77·4	9·1	8·8	85	82	330	6	330	4	4	6	0·3	73	Fine ⌓, *n*. Fine to fair, day.	
3	1010·3	1012·2	80·6	81·6	83·6	80·0	8·6	9·0	83	81	30	5	360	7	9	3	0·6	78	Fair, *n*. p., *a*. Fair to fine, ∞, *p*.	
4	1012·7	1013·0	81·8	80·2	84·4	77·3	8·9	8·9	79	88	355	2	—	1	2	1	—	77	Fine, *n*. Fine ∞, *a*. and *p*.	
5	1013·2	1013·6	80·4	80·3	84·2	75·0	9·1	9·1	89	89	—	1	—	1	1	1	—	73	Fine ⌓ *n*. Fine day.	
6	1011·4	1006·0	82·1	81·6	83·5	78·4	8·9	10·4	77	94	150	6	240	8	10	10	14·8	77	Fine *n*. ● to ●⁰, day.	
7	1006·4	1006·0	82·3	79·6	84·3	79·2	10·1	7·9	87	81	—	1	55	5	7	10	—	76	o. Fair *a*. c. to o., *p*.	
8	1001·9	997·3	79·2	80·2	81·1	78·7	7·3	9·0	77	89	60	8	70	8	10	10●	8·5	78	o., *n*. ●⁰, *a*. ●⁰ to d. *p*.	
9	995·3	997·9	79·0	78·5	n80·5	77·6	8·4	7·9	90	87	65	11	65	10	10●	10●	22·8	78	●⁰ *n*. ● day. ●⁰ evg.	
10	1000·4	995·5	77·8	79·4	81·4	76·4	6·6	8·6	77	90	55	9	75	4	10∞	10	1·8	76	●⁰ *n*. o. ∞, day. ● evg.	
11	982·7	976·8	83·0	82·3	84·1	81.1	9·8	9·0	80	77	95	6	125	8	10	10	6·6	79	● *n*, o. to c. day. ● evg.	
12	963·0	965·4	82·3	82·2	83·3	x82·0	9·4	10·7	81	93	135	16	155	10	10	10	x23·8	80	●⁰ to p., *n*. and mng. ● to ●⁰, day	
13	974·7	987·6	81·9	81·4	82·5	81·2	9·8	9·8	87	89	255	19	245	16	10	10	10·4	81	● *n*. p. mng. and day.	
14	990·7	979·1	82·2	81·4	83·1	80·7	8·7	9·2	75	84	210	5	105	5	8	10	6·8	79	p. *n*. c. to o. and p., day. ● evg.	
15	971·8	979·9	83·7	81·2	85·2	81·1	11·4	9·8	89	91	90	4	320	8	9 ()	10	5·9	80	● *n*. p. to ●⁰ *a*.	
16	993·5	1005·9	82·1	79·0	82·9	76·8	9·3	7·6	81	82	345	7	15	2	6	2	2·1	80	o. to c. mng. Fine, evg.	
17	1009·7	1010·5	80·0	79·0	83·5	n74·4	8·4	7·2	84	78	300	2	180	3	9	1	—	n72	Fine ⌓, *n*. Fair to fine, day.	
18	1002·0	1004·4	82·1	81·1	x85·0	79·1	9·7	9·0	84	84	165	12	260	3	10●	2	11·7	75	●⁰ to ●, *a*. Fair *p*. Fine evg.	17814γ. 19° 17·5′ 68° 6·1′
19	993·5	993·9	82·2	78·7	84·2	77·2	11·0	7·6	95	83	175	7	235	16	7	10	13·7	75	● mng. p. day, ● evg.	
20	1003·3	1015·9	80·4	81·0	82.6	78·8	7·6	7·9	74	74	310	16	290	12	9	7	7·9	76	⸝ and ●, *n*. and mng. p. q. h. day.	17807γ.
21	1021·1	1014·1	82·6	81·5	84·6	79·6	8·1	10·2	68	92	290	8	165	10	5	10●⁰	6·3	**77**	p *n* Fair day. o. to ● evg.	19° 18·5′
22	1010·9	1019·0	83·2	81·5	84·5	80·1	11·2	9·2	91	83	255	7	345	4	10	5	1·1	80	●⁰ *n*. o. *a*. Fair *p*.	17828γ. 68° 6·9′
23	1021·7	1022·5	81·7	83·7	84·5	78·2	10·1	12·3	90	96	160	3	205	4	10	10	1·0	75	●⁰ *n*. o. *a*. Fair *p*.	19° 23·0′
24	1020·7	1020·5	83·8	82·9	x85·0	x82·0	12·3	9·8	96	81	220	6	270	5	10	9	0·6	83	o. *n*. o. and d., *a*. o. *p*.	
25	1021·0	1022·7	82·4	81·6	83·8	81·0	8·5	8·6	73	77	290	12	310	10		7	0·8	79	p. *a*. Fair day.	
26	1024·9	1021·8	82·4	82·2	83·3	80·9	8·2	8·7	70	75	320	8	285	9	8	10	0·5	—	p⁰ *n*. Fair *a*. o. *p*.	
27	1011·2	1009·4	84·0	80·5	84·5	79·2	11·6	8·0	89	77	255	11	340	7	10	6	1·5	81	o. and p⁰, *a*. o. *p*. Fair *n*.	
28	1009·9	1012·3	80·7	80·0	82·2	78·2	7·7	6·8	73	68	345	7	320	8	5	3	1·5	76	Fine p⁰. *a*. Fine ▲⁰ *p*.	
29	1012·4	1012·7	82·1	79·6	83·1	76·7	8·3	7·5	72	77	265	5	275	2	2	7	1·2	74	Fine *n*. p, *a*. Fine *p*.	
30	1010·8	1009·3	82·0	81·0	83·6	75·5	8·4	9·1	74	85	—	1	170	4	8	10	0·8	73	Fine and p⁰., *a*. Fair ⊕ *p*. ● *n*.	17816γ. 19° 19·7′ 68° 6·5′
Means.	1003·6	1004·7	81·6	80·8	83·5	78·7	9·1	8·9	82	84	—	7·1	—	6·5	7·8	7·2	156·1	74·5†	Monthly Totals or Means	
Normals.	1011·6	1011·8	82·1	81·6	85·0	79·1	9·5	9·4	82	84	—	5·4	—	4·9	—	—	96·9	—	Normals	
	←45 years→						←30 years→				←35 years→						45 years			

* By Campbell-Stokes Sunshine Recorder. *x* denotes the maximum and *n* the minimum value in the column. † Mean for 30 days.

(3658) Wt. 109/ 612/773 400 7/21 Harrow G.69/7.

3. METEOROLOGY:—RICHMOND, SURREY (KEW OBSERVATORY).—Lat. 51° 28′ N. Long. 0° 19′ W.

Heights above Mean Sea Level:—Rain-gauge Site, H=5·5 m. Barometer, H_b=10·4 m. Cups of Anemometer, H_a=25 m.
Heights above Ground:—Thermometers, h_t=3·0 m. Rain-gauge, h_r=0·53 m. Sunshine Recorder, h_s=13·3 m. Cups of Anemometer, h_a=20 m.

Day.	Air Pressure at Station Level.		Air Temperature in Degrees Absolute.				Humidity.				Wind—Veer from North in degrees and Speed in metres per second.				Cloud Amount and Weather.		Rain 0 h. to 24 h.	Min. Temp. on Grass.	Remarks.
					Max.	Min.	Vapour Pressure.		Percentage										
	9 h.	21 h.	9 h.	21 h.	0 h. to 24 h.		9 h.	21 h.	9 h.	21 h.	9 h.		21 h.		9 h.	21 h.		18 h. to 9 h.	
	mb.	mb.	*a* 200+	*a* 200+	*a* 200+	*a* 200+	millibar.		%	%	°	m/s.	°	m/s.	Tenths of Sky covered.		mm.	*a* 200+	
1	994·7	995·1	80·5	79·2	*n*82·2	78·7	9·2	8·8	89	94	—	1	—	1	10	10	6·3	73	☂. ≡ early. Dull ● *p*.
2	999·7	1004·2	79·9	79·2	82·5	78·6	8·6	8·8	87	94	—	1	—	1	10	5	—	77	≡⁰ *a*. Dull to cloudy.
3	1004·9	1004·3	79·0	79·9	83·6	77·4	8·6	9·3	93	94	—	1	—	–	10	10	0·8	72	Overcast to cloudy ▲⁰ 13h. 10m. ● *p*.
4	1004·7	1008·3	79·9	79·9	83·1	78·9	8·2	8·8	83	89	360	5	350	3	10	10	0·9	77	Mostly dull, ● 20h.—22h.
5	1010·3	1013·0	80·2	80·5	83·5	79·1	8·9	9·3	88	90	300	3	—	1	10	10	0·9	78	Dull. ●*a*.
6	1015·1	1014·8	79·0	81·6	84·6	75·6	8·9	9·5	96	85	—	–	235	3	8	7	—	*n*70	≡ to 9 h. Fine *a*—dull late.
7	1009·9	1006·9	83·8	82·5	86·0	78·8	9·5	11·0	74	93	210	7	220	3	7	10	1·4	75	Dull. Showery *p*.
8	1005·3	1001·7	84·8	84·1	86·4	82·9	12·3	11·8	90	90	215	3	—	1	10	10	4·3	81	Dull. ● *a and n*.
9	997·2	996·9	85·5	85·0	88·6	82·2	13·0	13·1	90	94	100	4	205	4	10	10	2·1	80	Dull with frequent showers.
10	1001·1	1001·6	85·9	84·6	89·0	82·6	11·8	11·0	80	81	220	6	200	2	7	5	0·1	80	Fair to fine. () *p*.
11	995·5	994·7	84·8	82·6	88·1	81·7	11·8	10·4	86	88	100	5	190	5	9	9	1·2	79	≡⁰. Dull. Showers.
12	988·8	986·6	82·1	81·9	86·2	80·1	9·9	9·4	86	83	140	6	185	4	10	6	3·6	76	Dull to fine. ● at times.
13	986·8	996·3	84·2	81·4	87·3	80·0	11·1	9·5	84	88	185	6	230	4	10	6	3·9	76	Dull to fine. Showery.
14	1000·1	994·4	83·4	82·0	86·4	79·6	8·5	10·4	68	91	215	8	155	6	7	10	2·0	76	Fine to 14 h. then dull. ▲ 10 h. 40 m.
15	989·9	991·2	84·8	84·7	87·4	*x*83·6	11·5	10·2	84	75	200	10	205	11	10	9	7·0	81	Mostly dull. Frequent showers. ⸝.
16	994·8	1005·3	84·0	82·4	86·7	81·6	10·7	9·8	82	84	210	9	210	4	9	0	*x*8·7	80	⸝ (gusts) *a*. Dull to fine. Showers.
17	1010·0	1009·8	83·1	83·3	85·6	79·7	10·0	10·4	81	84	—	1	80	4	10	10	—	75	☂. Dull to cloudy.
18	1011·4	1013·0	82·2	82·3	84·7	79·1	9·9	9·4	86	81	40	2	30	3	10	1	—	79	Dull. ● d. at times.
19	1011·5	1004·8	85·2	83·0	86·7	77·5	10·5	10·5	75	86	180	7	200	6	8	7	3·4	72	Fine to overcast. Showery *p*.
20	1001·2	1000·0	81·7	80·1	84·2	77·5	8·5	7·7	76	76	200	7	260	8	3	10	5·7	72	Fair to fine. Showers. ⸝ (gusts).
21	1011·8	1020·1	80·9	80·8	85·2	78·4	7·6	8·5	71	81	280	6	—	1	10	1	1·0	77	Dull to fine. Showers.
22	1019·4	1015·6	83·3	82·0	85·3	75·7	9·0	10·6	72	93	190	5	180	3	7	10	7·6	71	☂. Fine to dull. ● *p*.
23	1019·4	1022·8	84·9	83·7	89·6	81·0	11·4	11·1	83	87	180	2	—	1	8	1	—	80	☂. ≡⁰. Dull to fine. ∞ *p*.
24	1022·2	1019·0	85·4	84·6	*x*90·2	80·4	10·6	12·1	74	89	230	6	235	5	9	8	—	75	☂. ≡⁰. Dull to fine.
25	1015·9	1013·9	84·3	82·5	87·0	80·7	7·9	9·0	59	76	280	7	270	4	8	7	—	82	Fair to fine.
26	1012·9	1015·7	83·0	82·6	86·4	80·7	8·5	8·2	70	69	315	6	310	2	8	10	—	77	Dull to fine. ⊔ 22 h. 30 m.
27	1006·1	1001·6	82·9	81·4	84·0	79·0	9·3	8·3	77	76	250	6	270	4	10	9	5·8	79	Dull. ● *a and p*.
28	1002·0	1004·7	81·0	79·4	84·2	76·4	6·4	6·4	60	67	280	4	300	3	7	1	0·8	72	Dull to fine. ▲● showers. ⸜ *p*.
29	1009·0	1013·1	81·1	79·5	85·0	75·8	6·8	7·4	63	76	280	5	255	2	6	1	0·2	72	☂. Fine to cloudy. ● 17 h. 5 m.
30	1013·7	1014·0	81·7	82·5	86.6	*n*74·5	8·0	9·6	71	81	245	5	230	3	8	9	0·1	*n*70	☂. Fine to cloudy. () *p*. ⊔ 21 h.
Means	1005·5	1006·1	82·8	82·0	85·9	79·3	9·6	9·7	79	85	—4·7		—3·5		8·6	7·1	67·8	76·1	Monthly Totals or Means.
Normal	1013·1	1013·1	81·4	80·9	85·8	77·3	8·2	8·2	75	77	—4·3		—3·3		—	—	40·8 (45 years.)	—	Normals.
	45 years.						30 years.				35 years.								

4. METEOROLOGY:—ESKDALEMUIR, DUMFRIESSHIRE.—Lat. 55° 19′ N.. Long. 3° 12′ W.

Heights above Mean Sea Level:—Rain-gauge Site, H=242 m. Barometer, H_b=237·3 m. Vane of Anemometer, H_a=250 m.
Heights above Ground:—Thermometers, h_t=0·9 m. Rain-gauge, h_r=0·38 m. Sunshine Recorder, h_s=1·5 m. Vane of Anemometer, h_a=15 m.

1	975·0	973·8	77·3	76·4	78·7	76·0	7·6	7·2	92	92	60	10	30	9	10	10	2·5	75	c early: d⁰≡⁰ *a*: ● ≡⁰ after 13h.
2	972·8	980·9	77·3	77·6	81·1	75·9	7·6	7·5	91	89	50	9	40	7	10	9	5·4	74	● ≡⁰ till 9h: c to o rest of day.
3	981·6	982·7	78·1	77·6	79·9	76·9	8·3	7·7	94	91	30	8	30	7	10	10	2·2	76	o. ≡⁰ with ●⁰ most of time.
4	982·9	982·5	77·7	77·4	80·6	76·7	7·3	7·4	85	89	20	4	30	2	10	10●	1·9	75	o. all day with occasional ●⁰.
5	983·1	984·3	79·1	78·3	81·2	76·9	7·7	8·0	82	90	—	–	—	–	10	10	0·6	75	o. early: c. to op. *a* & *p*: ≡⁰ *n*.
6	984·9	982·6	78·6	77·9	81·1	76·8	6·8	7·9	75	91	260	3	200	4	10	10	—	73	o ≡⁰ at first: o to c *a and p*: o ≡⁰ *n*.
7	970·7	976·5	79·0	72·7	81·0	71·1	8·9	4·9	96	82	200	9	—	1	10	3	13·1	75	●²≡⁰ till 7 h: ●⁰ to c *a*: c () *p*: b *n*.
8	978·6	976·0	76·7	75·9	81·0	*n*67·5	4·4	5·9	56	78	—	1	60	2	1	10∞	—	*n*63	⌊ b⊕ *a*: oyv⊕ *p*: o∞ *n*.
9	973·8	973·4	76·0	75·0	81·7	70·6	6·2	6·4	83	91	70	3	80	2	7	9	—	66	b ≡⁰⌊ early: o.∞⊕ *a* and *p*: o. ≡⁰*n*.
10	974·4	976·4	75·2	74·8	*n*77·3	73·8	6·5	6·1	91	88	50	5	70	8	10	10	0·9	70	✻⁰●⁰≡⁰ till 6 h: o *a*: ●⁰ *p*: o *n*.
11	971·8	968·2	75·0	76·9	78·2	73·6	6·7	7·7	95	96	50	8	70	10	10	10●	1·3	72	✻● ≡⁰ at first: o. d⁰ *a and p*: ●⁰ q *n*.
12	963·4	958·9	78·2	77·1	80·0	77·0	7·9	7·7	90	94	80	9	50	6	10	10●	6·8	75	●⁰ q early: o.≡⁰ q *a*: ● ≡⁰ after 16½ h.
13	957·0	959·7	81·5	79·8	83·0	76·4	8·4	9·4	76	95	100	8	170	6	9	10	4·3	71	o≡⁰1h: b ≡⁰ 7h: ●⁰≡⁰ *a*: o. ●² q 17h. *p*:
14	961·3	962·8	79·6	77·6	80·9	76·0	9·4	7·5	97	89	180	8	—	2	10≡⁝⁰	7	9·1	76	● ≡⁰ or ≡⁝⁰ 6h.-20h. then o to c. [●⁰≡⁰*n*.
15	954·0	953·0	80·6	80·9	82·7	77·6	9·8	10·1	94	96	150	3	190	2	10●	10●	*x*21·6	73	o with nearly continuous ● ≡⁰.
16	955·5	971·5	81·4	76·8	82·7	75·5	9·8	6·2	89	78	190	4	280	8	10	4	2·6	78	● ≡⁰ till 1 h: ≡⁝⁰ then ● ≡⁰ *a*: op *p*: bc *n*
17	982·6	984·6	79·1	76·7	82·3	71·2	6·3	6·8	67	85	120	3	—	1	6	7	—	67	b. ⌊⊕ early: bcy *a and p*: c. *n*.
18	983·3	980·9	80·6	78·9	84·5	75·2	6·3	7·7	61	83	150	5	190	2	5	7	0·9	71	bc to o. *a and p*: p² 17 h: c to o. ●⁰ *n*.
19	978·0	969·4	81·7	79·7	83·3	77·4	8·8	8·8	79	90	150	5	160	5	9	10●	5·3	71	● ≡⁰ early: ⊕ 8½h: o. ●⁰ *a and p*: ● ≡⁰ *n*.
20	968·8	974·4	79·0	76·4	81·8	74·6	6·5	6·8	70	87	100	6	360	3	8∞	3	—	71	o≡⁰ at first: c ∞ *a*: bc ∞ *p*: b *n*.
21	981·3	937·7	80·2	76·1	85·2	74·0	7·3	6·2	72	82	320	8	300	3	9	2	—	67	b. ⌊ early: cy ∞ *a*: op to bvq *p*: b *n*.
22	985·5	986·8	77·8	77·0	80·3	72·2	7·6	7·1	89	88	170	3	10	3	10●⁰	0	3·5	*70*	● ≡⁰ 8 h.-13 h: o ≡⁰ *p*: b ≡⁰ ☂ *n*.
23	992·2	991·2	82·6	79·2	84·8	72·2	8·1	7·3	68	77	—	1	220	6	6	10	—	68	b ≡⁰⌊ at first: o. ∞ y *p*: o. p⁰ *n*.
24	985·5	982·6	82·5	81·5	*x*86·9	*x*78·9	11·0	7·3	93	66	200	8	260	10	10	4	5·2	77	● ≡⁰ 2 h.-9 h: o *a*: c *p*: bcq *n*.
25	979·1	978·0	80·0	79·4	82·0	77·0	7·1	7·9	71	83	270	13	290	9	9	9	7·3	74	cq ▲ p *a*: opq. *p and n*.
26	985·5	981·4	82·2	77·4	84·1	76·9	6·9	7·2	60	87	320	5	270	4	8	10	2·7	75	bv to oq ⊕ *a*: pq *p*: ●⁰≡⁰ after 20 h.
27	970·4	970·4	79·0	74·4	82·8	73·6	6·2	6·2	67	91	290	11	310	3	5	1	9·3	74	● ≡⁰ till 5h: bc ▲ pq *a and p*: ●✻ ≡⁰ to b *n*.
28	971·4	974·8	79·1	76·6	83·2	72·7	7·0	6·4	74	81	360	4	360	2	5	10	1·2	68	Fine, ☒ on hills *a*: ⊕ 14 h: ●▲ pq *p and n*.
29	976·9	980·3	78·7	75·6	83·3	72·9	6·0	5·5	66	76	300	3	280	5	5	1	—	70	o to c: ⊕ 7h: bcyq *a*: ▲⁰ p 14h: cy *p*: b *n*.
30	980·6	983·1	78·0	74·1	82·5	70·1	5·9	5·2	68	79	280	6	260	2	6	1	—	66	b ⌊ early: bc to cqy, p⁰ *a and p*: b *n*.
Means	975·4	976·3	79·1	77·2	81·9	74·6	7·5	7·6	80	86	—5·7		—4·5		8·3	7·2	107·7	70·9	Monthly Totals or Means.
Normal 1911-1915	988·5	988·7	79·9	77·8	83·3	74·2	7·8	7·4	78	84	—6·4		—5·1		—	—	107·2	—	Normals.

Temperatures at or below the normal freezing point of water are printed in small type. *x* denotes the maximum, and *n* the minimum, value in the column.

5. GEOPHYSICS :—RICHMOND (KEW OBSERVATORY).

Day.	Earth Temperature at 9 h. 0·3 m.	Earth Temperature at 9 h. 1·2 m.	Height above M.S.L. of Surface of Underground Water. Daily Mean.	Height above M.S.L. of Surface of Underground Water. Extremes.	Terrestrial Magnetic Force. Horizonal Comp't. Mean Time.	Horizonal Comp't.	Declination. Mean Time.	Declination. West.	Inclination. Mean Time.	Inclination.	Magnetic Character of Day.	Electric Character of Day.	Charge per cc. × 10^{16}. +. About 15 h.	Charge per cc. × 10^{16}. −. About 15 h.	Air-Earth Current. × 10^{16}. About 15 h.	Potential Gradient, Volts per metre. Factor 2.48. 3 h.	9 h.	15 h.	21 h.
	a 200+	*a* 200+	cm.	cm.	h m	γ	h m	° ′	h m	° ′			Coulomb.		Amp/cm².	v/m.	v/m.	v/m.	v/m
1	82·6	80·9	..	..	..	..	..	..	14 35	66 58·4	0	2	..	..	..	245	275	z —	515
2	81·8	81·0	223	222	..	..	..	..	..	..	0	1	..	..	..	45	150	180	335
3	81·5	81·1	224	..	..	..	..	..	..	..	0	1	..	..	..	150	245	−245	595
4	81·6	81·1	227	..	..	..	..	..	..	..	1	1	..	..	..	365	105	165	895
5	81·5	81·1	231	..	..	..	..	..	..	..	1	1	..	..	..	120	230	200	515
6	81·4	81·2	235	..	..	..	..	..	..	..	1	0	..	..	0·50	365	530	260	365
7	81·6	81·2	237	..	..	..	..	..	..	..	1	1	..	..	..	350	350	230	275
8	82·2	81·2	237	..	10 55	18368	14 13	14 42·0	13 27	66 58·5	1	1	..	..	..	105	320	305	395
9	82·7	81·2	238	..	..	..	..	..	..	..	0	1	..	..	..	60	215	90	45
10	83·1	81·2	238	..	..	..	..	..	..	..	1	0	..	..	..	30	245	215	500
11	83·0	81·4	238	..	..	..	..	..	..	..	0	1	..	..	..	120	60	−60	290
12	83·1	81·5	239	..	..	..	..	..	..	..	0	1	..	..	..	215	90	150	560
13	82·8	81·6	239	..	..	..	..	..	..	..	0	1	..	1·03	..	135	215	380	470
14	82·7	81·8	241	..	..	..	..	..	..	..	0	1	0·71	..	0·70	150	275	245	120
15	83·0	81·9	243	..	10 53	18337	14 18	14 45·5	14 43	67 1·9	2	1	..	..	..	120	200	z+	215
16	83·0	*82·0*	245	..	..	..	..	..	..	..	1	2	..	..	..	60	−120	− 120	515
17	82·7	*82·0*	249	..	..	..	..	..	..	..	2	1	..	..	..	455	485	545	395
18	82·9	*82·1*	255	..	..	..	..	..	..	..	2	1	..	..	..	60	290	120	380
19	82·4	*82·1*	261	..	..	..	..	..	..	..	1	1	..	..	..	290	305	z±	230
20	82·4	82·2	265	..	..	..	..	..	..	..	1	2	..	..	..	260	350	−135	− 30
21	82·0	82·2	268	..	..	..	..	..	..	..	1	1	..	..	..	− 60	215	z+	290
22	81·8	82·3	271	..	..	..	..	..	14 50	66 57·1	0	1	..	..	..	335	305	90	245
23	82·2	82·3	273	..	10 54	18372	14 18	14 39·3	..	..	1	0	..	0·11	1·30	245	425	290	455
24	83·7	82·2	274	..	..	..	..	..	..	..	2	0	..	..	..	275	335	275	320
25	84·1	82·4	276	..	..	..	..	..	..	..	0	0	..	..	..	90	180	165	230
26	83·6	82·3	276	277	..	..	..	..	..	..	0	1	..	..	..	120	135	245	380
27	83·3	82·4	276	..	..	..	..	..	..	..	0	1	..	..	..	105	120	−200	320
28	82·4	82·6	273	..	..	..	..	..	..	..	0	2	0·59	..	..	290	230	z ±	395
29	82·0	82·5	271	..	10 59	18381	14 17	14 37·5	14 37	66 56·9	1	1	..	0·71	1·70	245	245	165	365
30	82·0	82·5	268	..	..	..	..	..	..	..	1	0	0·58	..	0·70	335	215	150	335
M.	82·5	81·8	251‡	—	—	—	—	—	—	—	0·70	0·93	0·63	0·62	0·98	192†	240†	148†	371†
	81·1	80·8	— 12 years —																

† Mean for 25 days. ‡ Mean of 29 days.

6. GEOPHYSICS :—ESKDALEMUIR, DUMFRIESSHIRE.

Day.	Terrestrial Magnetic Force. North Component. Maximum. 15000 γ +. h m	γ	Minimum. 15000 γ +. γ	h m	Range. γ	West Component. Maximum. 4000 γ +. h m	γ	Minimum. 4000 γ +. γ	h m	Range. γ	Vertical Component. Maximum. 44000 γ +. h m	γ	Minimum. 44000 γ +. γ	h m	Range. γ	Magnetic Character of Day.	Electric Character of Day.	Potential Gradient, Volts per metre. Factor 6·14. 3 h.	9 h.	15 h.	21 h.
1	17 53	1004	948	12 18	56	13 33	885	830	9 5	55	7 26	1063	1042	12 40	21	0	2 *c*	165	75	z —	−365
2	20 55	1046	933	13 5	113	14 10	891	820	8 52	71	20 38	1061	*x*1045	13 20	*n*16	1	2 *c*	−655	− 20	90	220
3	21 32	1034	935	12 8	99	13 35	906	806	22 9	100	20 15	.063	1032	12 15	31	1	2 *b*	z+	90	−70	100
4	17 41	1024	918	13 26	106	14 16	947	807	20 46	140	21 12	1077	1028	12 20	49	1	1 *b*	110	20	140	35
5	18 22	1032	922	14 16	110	24 0	914	797	18 8	117	18 11	1125	1026	24 0	99	2	†	70	135	†	†
6	21 24	1064	894	13 15	170	0 1	914	821	10 5	93	16 38	1080	*x*1045	3 17	35	1	†	†	†	†	†
7	18 17	1023	918	11 30	105	15 17	898	799	18 10	99	18 10	1084	1041	12 25	43	1	†	†	†	†	†
8	23 36	1004	926	12 39	78	13 54	903	823	8 35	80	7 5	1058	1025	12 0	33	0	†	†	†	†	†
9	20 20	999	910	11 44	89	14 26	904	831	9 51	73	16 30	1070	1036	10 22	34	0	†	†	†	235	440
10	0 59	1037	934	11 26	103	0 54	902	827	7 46	75	18 32	1054	1018	2 5	36	1	2 *b*	45	110	70	40
11	1 33	1006	943	12 5	63	14 21	903	832	8 43	71	19 0	1053	1027	12 55	26	0	2 *b*	−80	−35	75	†
12	0 48	1003	951	12 16	*n*52	14 15	888	*x*833	9 7	55	18 40	1050	1028	13 0	22	0	2 *c*	405	265	210	z —
13	17 44	1010	*x*953	12 25	57	17 18	880	827	9 1	53	20 3	1055	1027	13 10	28	0	1 *b*	145	330	110	45
14	1 28	1016	949	12 52	67	14 54	886	*x*833	8 23	53	21 0	1048	1027	12 35	21	0	2 *c*	120	75	115	515
15	17 6	*x*1109	*n*864	10 38	*x*245	13 38	*x*965	806	22 4	159	17 4	*x*1225	957	3 29	*x*268	2	2 *c*	−1680	− 185	195	z —
16	18 53	1002	912	1 24	90	13 43	888	812	0 38, 9 31	76	19 46	1076	1015	0 50	61	1	1 *b*	285	250	185	220
17	20 40	1067	884	11 15	183	12 54	911	762	20 32	149	19 34	1099	921	23 49	178	2	0 *a*	230	225	185	345
18	20 50	1063	899	11 14	164	15 6	896	*n*739	1 28	157	17 23	1077	*n*918	3 27	159	2	0 *a*	155	125	140	185
19	0 1	1029	925	10 3	104	16 11	880	774	1 32	106	17 30	1068	979	2 7	89	1	2 *b*	110	330	265	−265
20	4 7	1009	895	11 0	114	14 40	928	742	20 14	*x*186	15 19	1098	968	5 32	130	2	1 *b*	115	175	415	270
21	23 42	1029	920	11 11	109	13 35	903	785	2 28	118	16 10	1048	988	23 49	60	1	0 *a*	455	190	115	225
22	21 25	1000	935	11 8	65	14 35	887	823	0 30	64	17 0	1028	991	0 1	37	0	2 *b*	180	25	−185	400
23	21 40	1023	934	11 15	89	15 6	904	827	9 2	77	21 25	1041	1001	12 35	40	1	1 *a*	425	135	185	185
24	0 16	1036	895	10 38	141	10 56	879	742	1 53	137	17 25	1026	920	2 0	106	2	1 *a*	395	−45	190	155
25	19 40	*n*992	934	11 30	58	13 45	*n*864	827	8 38	*n*37	6 10	1018	995	12 6	23	0	2 *b*	− 105	75	75	75
26	19 26	1010	944	14 38	66	14 3	885	828	8 0	57	6 20	1016	996	0 25	20	0	2 *c*	145	130	40	−625
27	22 10	1042	939	11 20, 12 55	103	12 22	891	827	8 10	64	21 8	1015	990	11 49	25	0	2 *c*	−1520	170	290	480
28	16 17	1009	943	10 51	66	12 35	886	824	7 29	62	6 10	*n*1009	988	12 15	21	0	1 *c*	435	230	z —	185
29	1 33	1017	948	22 58	69	14 30	886	818	6 37	68	22 0	*n*1009	972	23 30	37	1	0 *a*	185	225	240	225
30	22 0	1059	944	10 31	115	17 45	888	763	2 24	125	19 38	1041	965	2 20	76	1	0 *b*	265	155	185	285
M.	—	1027	925	—	102	—	899	806	—	93	—	1061	1000	—	61	0·80	*1·58	*57	*141	*150	*158

x and *n* denote the maximum and minimum values in the columns in which they occur. z+ Indeterminate, positive value ; z— Indeterminate, negative value ;
* Mean for 19 days only. † Insulation faulty.

7. JERSEY (ST. LOUIS OBSERVATORY).—Lat. 49° 12′ N. Long. 2° 6′ W.

Heights above M.S.L.:—H = 54 m. H_b = 55 m. Above Ground:—h_t = 1·48 m. h_r = 1·72 m. h_a = 8 m.

Day.	Air Pressure at Station Level. 9 h.	14 h.	21 h.	Mean of 3 Readings.	Air Temperature in degrees Absolute. 9 h.	14 h.	21 h.	Max.	Min.	Mean of 5 Readings.	Min. Temp. on Grass.	Percentage of Humidity. 9 h.	14 h.	21 h.	Mean.	Rain 0 h. to 24 h.	Remarks.
	mb.	mb.	mb.	mb.	a 200+	a 200+	a 200+	a 200+	a 200+	a 200+	a 200+	%	%	%	%	mm.	
1	991·1	989·4	990·2	990·2	81·0	82·5	79·0	83·4	n78·0	80·8	72·2	68	79	95	81	4.0	● early, 8h. and 18h.
2	996·3	1000·6	1002·6	999·8	81·0	82·8	80·2	84·4	79·3	81·5	73·3	79	75	76	77	2.8	● 6h. 14m. to 17h. 21m.
3	1001·4	1001·0	999·4	1000·6	81·7	81·8	80·0	n82·9	79·4	81·2	76·2	82	82	88	84	4.4	● 8h. 50m.; ▲ 9h. 40m.; ● continuous
4	999·8	1002·2	1005·1	1002·4	81·0	81·5	81·2	83·2	78·8	81·1	73·1	81	77	82	80	4·9	● night; ▲ 11h. 20m.; ● 14h.
5	1007·8	1008·4	1009·0	1008·4	82·6	82·6	80·7	84·9	80·3	82·2	77·8	74	74	91	80	—	●⁰ 4h. 45m.
6	1010·6	1010·7	1010·7	1010·7	82·8	85·0	80·7	86·0	78·7	82·6	71·6	73	59	77	70	—	7h. 15m. fog in the harbour.
7	1007·1	1005·1	1004·1	1005·4	83·7	84·0	83·6	85·7	80·8	83·6	73·0	76	82	93	84	1.8	●⁰ 12h. 30m.; ● 20h.
8	1001·6	998·3	995·1	998·3	83·7	87·0	87·7	x88·9	82·8	86·0	81·9	97	81	78	85	0·2	● night.
9	990·1	991·7	995·5	992·4	85·4	86·0	83·1	87·2	82·6	84·9	80·3	88	82	93	88	0.9	●⁰ 13h.; ●² 15h. · 21h.
10	997·4	996·2	995·2	996·3	84·3	84·9	83·6	87·4	82·6	84·6	78·3	96	94	95	95	5.6	●² 4h. 5m.; frequent showers.
11	989·0	989·0	991·6	989·9	81·0	84·8	82·6	86·1	80·5	83·0	80·9	100	73	83	85	9.2	≡² early to 7h. 45m.; ●² 13h.; 16h.;
12	981·3	980·7	980·2	980·7	82·5	84·6	82·9	86·3	81·9	83·6	79·7	94	67	86	82	0·9	●² 10h.; ●⁰ frequently. [20h. 45m.
13	984·4	990·2	996·0	990·2	84·0	83·3	82·4	84·7	82·0	83·3	80·0	82	71	75	76	1·4	● 7h. 40m.-16h. 20m.; 21.
14	997·2	994·9	990·0	994·0	83·0	84·0	84·1	85·4	81·0	83·5	78·2	80	78	93	84	6·3	●⁰frequently before noon; ●² 14h.30m.
15	988·1	988·7	990·4	989·1	85·2	87·5	83·8	86·3	x83·6	85·3	81·0	77	62	76	72	0·1	● 6h.; 21h.
16	995·0	999·7	1002·7	999·1	83·4	85·6	84·1	86·8	82·5	84·5	79·8	72	75	79	75	2.0	●² frequent showers.
17	1001·7	1000·3	1001·2	1001·1	82·6	82·6	82·8	84·6	80·7	82·7	75·5	91	96	93	93	x10·0	●² 10h. 50m.
18	1007·4	1008·6	1009·4	1008·5	82·4	85·5	81·0	86·4	81·0	83·3	81·4	87	57	84	76	3.1	● night – ●⁰ frequently to noon.
19	1007·0	1005·1	1003·8	1005·3	83·5	85·5	82·5	86·7	82·0	84·0	72·9	91	74	90	85	6.3	●² 18h.; 21h. splendid.
20	1001·1	1002·3	1006·8	1003·4	82·3	83·0	81·5	84·8	78·9	82·1	76·6	59	70	71	67	1.4	●² frequent showers.
21	1012·9	1014·5	1018·3	1015·2	82·8	83·6	80·6	84·8	79·1	82·2	80·1	62	66	81	70	0.9	●⁰ 4h. 10m.
22	1014·7	1013·1	1010·6	1012·8	81·7	82·3	82·9	83·4	79·6	82·0	72·7	90	95	100	95	2.3	●² 8h. 30m. to 15h.; ≡² 17h. transient.
23	1014·7	1016·8	1018·9	1016·8	84·0	85·8	81·7	88·0	80·7	84·0	80·5	91	73	97	87	—	
24	1020·2	1019·5	1018·7	1019·5	83·0	85·1	81·9	86·3	79·5	83·2	74·9	96	81	98	92	—	≡² early to 8h.
25	1015·5	1014·8	1013·8	1014·7	83·6	85·6	82·5	86·4	81·0	83·8	82·0	96	66	87	83	0.2	● 8h. – 10h.
26	1012·5	1014·0	1014·7	1013·7	83·0	84·6	81·8	86·0	81·0	83·3	77·3	74	61	83	73	0·1	● 4h.; ●⁰ frequent before noon.
27	1009·0	1006·8	1001·4	1005·7	82·6	83·2	83·1	83·9	81·2	82·8	76.8	78	81	92	84	1·1	●16h.
28	1000·9	1002·0	1004·3	1002·4	82·3	83·4	80·0	84·8	79·8	82·1	80·3	65	60	69	65	1·9	● night.
29	1006·4	1009·9	1010·6	1009·0	81·4	84·4	80·2	85·0	79·0	82·0	73·4	74	57	72	68	0·1	
30	1011.0	1011.1	1010.2	1010·8	83.7	86.1	80.9	87.2	79·7	83·5	73·6	73	61	83	72	—	
Means	1002·4	1002·9	1003·4	1002·9	82·8	84·3	82·1	85·6	80·6	83·1	77·2	82	74	85	80	71·9	
Normal	1008·8	1008·6	1008·9	1008.8	82·2	84·1	81·3	85·1	79·5	82·2	75·6	—	67	81	—	46·4	
	←27 years→				←27 years→						←24 years→	←25 years→				←27 years→	

JERSEY (ST. LOUIS OBSERVATORY).

Day.	Wind Direction and Force (0-12 on the Beaufort Scale). 9 h.	14 h.	21 h.	Mean of Force.	Sunshine.* Total.	Per cent. of Possible.	Cloud Amount (tenths of Sky covered), Type of Cloud, and Direction whence coming. Tenths.	Upper. Type.	Direction.	Lower. Type.	Direction.	Tenths.	Upper. Type.	Direction.	Lower. Type.	Direction.	Tenths.	Upper. Type.	Direction.	Lower. Type.	Direction.	Mean Amount.
	9 h.	14 h.	21 h.				9 h	9 h.	9 h.	9 h.	9 h.	14 h.	14 h.	14 h.	14 h.	14 h.	21 h.	21 h.	21 h.	21 h.	21 h.	
	c(0-12)	c(0-12)	c(0 12)		hr.	%																
1	180 2	225 4	337 1	2·3	5·5	43	6	..	..	Cu.	W	7	Ci.	W	Cu.-Nb.	W	6	..	..	Cu.-Nb.	WNW	6·3
2	315 3	270 4	270 4	3·7	1·8	14	8	A.-Cu.	NW	Nb.	..	8	A.-Cu.	NW	Cu.-Nb.	WNW	10	..	..	Cu.-Nb.	..	8·7
3	225 4	247 2	315 2	2·7	0·7	5	9	..	..	Cu.-Nb.	W	10	..	..	Cu.-Nb.	..	10	..	..	Nb.	..	9·7
4	247 3	360 4	315 1	2·7	3·1	24	10	..	..	..	..	10	..	..	Cu.-Nb.	NNW	10	..	..	..	..	10·0
5	315 3	315 4	293 2	3·0	8·2	63	4	..	..	Cu.	NW	7	..	..	Cu. / Cu.-Nb.	WNW	0	..	..	..	..	3·7
6	247 2	225 3	45 2	2·3	11·7	90	3	..	..	Cu	NNW	1	..	..	..	..	5	..	..	..	..	3·0
7	225 3	180 3	225 3	3·0	4·3	32	3	Ci-Cu.A-Cu.	..	..	..	10	..	..	..	..	10	..	..	Nb.	..	7·7
8	180 2	157 2	157 2	2·0	0·4	3	10	..	..	..	..	10	..	..	St.-Cu.	W	2	..	..	..	..	7·3
9	157 3	225 4	225 1	2·7	0·1	1	10	..	..	..	..	10	..	..	St.-Cu.	SW	3	..	..	..	..	7·7
10	180 4	180 1	23 3	2·7	4·2	32	8	A.-Cu.	SW	Nb.	SW	10	..	..	Nb	S	10	..	..	Nb.	..	9·3
11	180 4	225 5	203 4	4·3	1·2	9	10	..	..	..	..	6	A.-Cu.	SW	Cu.-Nb.	SW	5	..	..	..	..	7·0
12	180 4	225 5	180 5	4·7	5·8	43	10	..	..	Nb.	S	4	..	..	Cu.	SW	4	..	..	..	..	6·0
13	247 5	247 4	225 4	4·3	4·9	36	8	..	..	Cu.-Nb.	WSW	9	..	..	..	..	1	..	..	..	..	6·0
14	203 4	180 4	203 5	4·3	3·3	23	8	..	..	..	..	10	..	..	..	..	3	..	..	..	..	7·0
15	203 6	203 6	203 6	6·0	7·6	56	4	A.-Cu.	WSW	Cu.-Nb.	SW	5	A.-Cu.	SW	..	..	0	..	..	..	..	3·0
16	225 6	247 4	225 5	5·0	5·9	43	4	..	..	Cu.	SW	5	A.-Cu.	..	Cu. Nb.	WSW	8	..	..	..	..	5·7
17	67 4	45 4	45 4	4·0	0·8	6	10	A.-Cu.	SW	..	..	10	..	..	Nb.	E	8	..	..	..	..	9·3
18	293 3	270 2	180 2	2·3	3·2	23	10	..	..	Nb.	WNW	5	A.-Cu.	SW	..	..	2	..	..	..	..	5·7
19	180 4	203 5	247 4	4·3	1·8	13	10	..	..	..	..	7	Ci.-Cu. / A.-Cu.	SW	..	..	2	..	..	..	..	6·3
20	225 6	247 6	247 5	5·7	7·0	50	6	..	..	Cu.-Nb.	W	9	..	..	St-Cu.Nb.	W	8	..	..	..	..	7·7
21	293 5	293 4	270 2	3·7	10·5	75	4	..	..	Cu.	NW	2	..	..	Cu.	WNW	2	..	..	..	..	2·7
22	180 4	180 4	270 2	3·3	0·2	1	10	..	..	Nb.	..	10	..	..	Nb.	..	8	..	..	..	..	9·3
23	337 2	315 3	calm 0	1·7	7·6	54	7	..	..	Cu.-Nb.	N	7	..	..	Cu. / Cu.-Nb.	NNW	5	A.-Cu.	N	..	..	6·3
24	203 2	225 3	247 3	2·7	3·3	23	10	..	..	..	..	6	..	..	Cu.	W	10	..	..	Nb.	W	8·7
25	247 4	270 4	293 3	3·7	5·4	38	10	..	..	..	..	6	Ci.-Cu. / A.-Cu.	W	Cu.	NW	0	..	..	..	..	5·3
26	315 5	315 4	293 3	4·0	7·4	52	10	..	..	Nb.	..	4	..	..	Cu.	NW	3	..	..	..	..	5·7
27	247 4	247 5	247 5	4·7	0·1	1	10	..	..	Cu.-Nb.	WSW	10	..	..	Cu.-Nb.	W	10	..	..	..	..	10·0
28	270 4	293 4	293 3	3·7	9·2	64	6	Ci.-Cu.	WSW	Cu.	WNW	4	..	..	Cu.	NW	2	..	..	Cu.	..	4·0
29	293 4	270 4	270 3	3·7	10·7	75	6	..	..	Cu.	NW	7	..	..	Cu.-Nb.	WNW	3	..	..	..	..	6·3
30	225 4	203 3	225 1	2.2	11·3	78	4	Ci.-Cu.	..	Cu.	SW	3	Ci.-Cu.	SW	..	..	4	Ci.	..	..	..	3·7
Means	3·8	3·8	3·0	3·5	4·9	36	7·6	—	—	—	—	7·1	—	—	—	—	5·1	—	—	—	—	6·6
Normal	3·6	4·0	3·5	3·7	7·2	52	6·1	—	—	—	—	5·1	—	—	—	—	5·1	—	—	—	—	5·4
	←17 years→				23 years		←26 years→															

* For method of estimation see Introduction.

8. WIND COMPONENTS: Metres per second at fixed hours, together with the greatest mean hourly velocity, or the greatest velocity attained in a gust, and the time of its occurrence.

NORTH WALES:—HOLYHEAD.

Height of Head above—Roof 8·8 m., Ground 13·7 m., M.S.L. 19·2 m.
Height of Cups above—Roof 4·6 m., Ground 7·6 m., M.S.L. 15·2 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	h. m.
1	1·0	..	..	1·5	..	..	..	10·0	..	5·9	..	8·8	..	10·9	..	7·3	17	10 10
2	..	11·3	2·2	..	..	11·0	4·6	..	..	4·6	0·9	..	..	4·4	..	4·4	16	7 45
3	..	5·4	..	5·4	..	4·4	..	4·4	..	5·4	..	5·4	..	6·9	..	4·6	13	17 35
4	..	5·3	..	5·3	..	4·0	..	4·0	..	4·2	..	1·7	..	1·8	0·8	..	12	5 55
5	..	1·3	3·0	..	..	3·3	2·2	..	..	3·3	2·2	..	..	1·3	1·3	..	6	11 3
6	2·5	..	2·5	..	5·1	..	2·1	..	5·4	..	3·6	..	6·0	..	2·5	..	13	24 0
7	10·6	..	2·1	..	2·0	..	10·0	..	1·5	..	3·7	..	..	..	3·1	..	19	6 35
8	..	4·3	0·9	..	..	3·7	..	3·7	..	3·4	..	8·3	..	3·3	..	8·0	12	23 50
9	..	3·3	..	7·9	..	7·1	..	7·1	..	7·1	..	7·1	..	5·0	..	7·5	13	5
10	..	2·7	..	6·5	..	5·0	..	7·5	..	5·1	..	3·4	..	Ca	lm	..	13	6 50
11	..	1·7	..	4·2	..	1·6	..	8·1	..	..	..	10·9	5·5	..	..	5·5	14	15 10
12	3·3	..	..	7·9	3·8	..	..	9·1	4·6	..	..	3·1	1·2	..	..	5·9	14	5 55
13	1·6	..	..	7·8	6·3	..	..	6·3	10·2	..	4·2	..	10·3	..	4·3	..	18	17 25
14	6·3	..	6·3	..	7·1	..	7·1	..	8·3	..	3·4	..	..	..	..	6·0	17	13 35
15	7·2	..	..	..	8·1	..	..	..	7·8	..	..	..	6·9	..	..	..	13	13 35
16	6·8	..	4·6	..	..	2·0	10·0	..	..	..	8·2	..	..	..	2·6	..	13	11 45
17	..	2·9	2·9	..	..	Ca	lm	..	..	4·8	1·0	..	..	1·4	..	0·9	7	0 25
18	..	1·5	..	3·5	1·6	..	..	0·3	7·7	..	1·5	..	10·4	..	..	2·1	15	21 45
19	5·9	..	..	..	6·7	..	..	..	11·7	..	..	..	8·1	..	8·1	..	21	16 20
20	9·2	..	3·8	..	13·1	..	..	8·8	..	12·0	5·0	..	..	9·0	9·0	..	22	8 35
21	..	9·2	9·2	..	..	7·3	10·9	..	..	2·6	6·2	..	3·7	..	3·7	..	20	5 5
22	5·5	..	2·3	..	10·6	..	..	2·1	3·9	..	3·9	..	..	2·9	4·4	..	18	6 45
23	..	5·9	2·5	..	..	3·7	..	..	..	3·3	2·2	..	6·3	..	2·6	..	12	23 55
24	7·0	..	2·9	..	7·1	..	4·7	..	5·9	..	5·9	..	5·0	..	7·5	..	16	22 25
25	4·0	..	9·6	..	..	..	10·9	..	1·7	..	8 7	..	..	..	13·7	..	20	21 30
26	..	4·6	11·0	..	..	9·5	6·3	..	..	2·2	5·4	..	..	2·0	9·8	..	18	0 5
27	2·2	..	11·2	..	..	7·2	3·0	..	..	3·4	8·3	..	..	4·3	10·4	..	18	8 15
28	..	6·2	9·3	..	..	5·8	8·6	..	..	3·9	9·5	..	..	5·1	7·6	..	14	9 35
29	..	7·7	7·7	..	..	4·4	6·6	..	2·4	..	5·8	..	2·0	..	4·7	..	14	2 30
30	..	1·2	6·1	..	..	1·1	5·5	..	3·2	..	3·2	..	2·5	..	1·7	..	7	3 10
S+N & W+E	147·6		150·1		152·6		163·9		145·5		141·5		126·2		150·0			
S−N & W−E	−1·4		50·1		−9·6		21·1		3·1		44·1		9·6		45·6			

SCOTLAND N.:—DEERNESS.

Height of Cups above—Roof 1·5 m., Ground 4·9 m., M.S.L. 57·3 m.

Day.	3 h.				9 h.				15 h.				21 h.				Vel. in Max. Hourly Run.	Time of Max.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	hrs.
1	4·9	..	..	7·4	..	1·6	..	8·0	..	6·7	..	6·7	..	5·6	..	5·6	10·8	1
2	..	3·4	..	5·2	..	1·9	..	9·6	..	..	..	5·2	..	..	..	4·6	11·1	7
3	..	2·4	..	3·6	..	2·7	..	1·8	..	2·2	..	1·4	..	2·7	..	1·8	6·2	2
4	..	Ca	lm	..	..	2·9	0·6	..	..	1·9	..	1·3	..	2·3	..	2·3	4·3	14, 24
5	..	Ca	lm	..	..	Ca	lm	..	2·3	..	0·4	..	1·7	..	2·5	..	3·9	1, 24
6	2·6	..	3·8	..	3·7	..	5·5	..	1·6	..	8·0	..	3·5	..	3·5	..	9·8	14
7	2·1	..	2·1	..	..	5·2	..	..	..	4·9	4·9	..	..	4·6	6·8	..	9·8	12
8	..	2·7	4·1	..	..	4·4	4·4	..	..	1·7	2·5	..	2·8	..	1·1	..	8·5	1
9	3·5	..	3·5	..	..	..	9·5	..	..	6·8	4·6	..	..	Ca	lm	..	11·5	10
10	..	Ca	lm	..	..	Ca	lm	..	..	2·6	..	..	..	Ca	lm	..	?	..
11	1·0	..	..	2·4	1·7	..	..	8·3	3·4	..	..	8·2	1·9	..	..	9·3	10·5	23
12	1·8	..	..	9·0	1·8	..	..	9·0	..	1·8	..	9·0	..	..	..	6·9	10·5	5
13	..	1·8	..	9·0	..	..	..	8·9	1·3	..	..	6·8	1·3	..	..	6·8	9·8	2,4
14	1·4	..	..	7·1	2·8	..	..	6·7	4·6	..	..	6·8	4·6	..	..	6·8	10·5	14
15	1·6	..	..	1·6	6·7	..	..	2·8	0·8	..	..	3·8	..	Ca	lm	..	8·2	10, 11
16	..	..	..	1·6	..	2·4	3·6	..	..	3·1	4·7	..	..	8·3	8·3	..	11·8	21
17	..	6·7	6·7	..	..	2·5	2·5	..	6·8	..	..	1·3	7·4	..	..	4·9	10.5	22, 24
18	7·4	..	..	1·5	7·9	..	..	5·3	10·4	..	..	7·0	12·0	..	..	8·0	15·4	22
19	10·1	..	..	6·7	11·7	..	..	7·8	8·6	..	..	8·6	7·8	..	..	11·7	15·7	7
20	4·9	..	..	11·8	3·9	..	..	9·4	3·0	..	..	7·3	2·8	..	..	2·8	14·8	2
21	1·1	..	..	1·1	1·1	..	..	1·1	4·7	..	..	3·1	..	Ca	lm	..	6·9	11, 12
22	4·7	..	3·1	..	4·2	..	6·2	..	1·1	..	5·5	..	..	..	2·3	..	7·5	9, 10
23	..	..	2·0	..	..	..	3·9	..	3·6	..	..	..	7·3	..	..	3·0	9·2	22
24	5·6	..	..	..	7·1	..	4·7	..	3·3	..	7·9	..	4·2	..	6·2	..	9·2	14
25	5·5	..	3·7	..	2·2	..	10·9	..	..	4·9	7·4	..	..	6·8	1·3	..	12·1	8, 10
26	..	8·1	5·4	..	..	4·9	4·9	..	..	..	9·8	..	..	..	6·9	..	12·8	2
27	..	1·4	1·4	..	..	6·6	..	..	..	10·6	2·1	..	..	6.1	..	2·5	13·8	18
28	..	7·5	..	..	..	14·1	..	..	..	11·9	2·4	..	..	8·7	5·8	..	14·1	9
29	..	8·2	3·4	..	..	10·3	4·3	..	..	8·1	5·4	..	..	6·0	4·0	..	13·1	8
30	..	4·7	3·1	..	..	5·1	5·1	..	..	5·5	3·7	..	..	2·6	3·8	..	11·1	1
S+N & W+E	105·1		110·3		119·4		144·8		128·2		145·8		110·0		129·5			
S−N & W−E	11·3		−25·7		−9·8		−12·6		−17·2		−7·2		3·6		−24·5			

ENGLAND, S.W.:—SCILLY.

Height of Head above—Ground 9·8 m., M.S.L. 49·7 m.
Height of Cups above—Ground 5·8 m., M.S.L. 45·7 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	h. m.
1	..	2·5	4·3	..	..	0·2	0·3	..	..	4·7	..	1·0	..	9·5	4·4	..	13	19 50
2	..	9·1	1·6	..	..	10·5	2·8	..	..	4·8	7·9	..	..	4·8	8·3	..	14	5 30
3	..	4·3	6·2	..	..	6·8	4·8	..	..	5·1	1·9	..	..	7·8	1·4	..	13	22 45
4	..	6·4	1 3	..	No	r	eco	rd	..	5·4	..	..	..	2·3	0·3	..	13	5 05
5	..	1·0	2·7	..	..	0·7	4·1	..	..	0·7	3·7	..	..	0·3	0·8	..	5	8 25
6	..	Ca	lm	..	4·0	..	1·5	..	3·5	..	..	0·8	6·3	..	..	..	7	22 45
7	5·0	..	0·4	..	2·7	..	1·0	..	2·9	..	3·5	..	3·0	..	3·0	..	6	3 20
8	3·0	..	2·5	..	5·0	..	..	..	6·3	..	..	0·5	2·5	..	..	1·5	10	13 00
9	0·6	..	..	3·2	0·5	..	..	2·0	3·1	..	2·2	..	3·1	..	2·2	..	5	17 05
10	3·0	..	2·5	..	2·5	..	0·4	..	3·1	..	..	1·1	3·1	..	..	1·1	5	0 35
11	7·9	..	..	5·4	9·0	..	..	7·5	4·9	..	10·7	..	8·9	..	..	6·2	19	23 00
12	10·5	..	..	2·8	11·4	..	..	3·0	9·2	..	..	..	5·4	..	2·0	..	9	10 25
13	2·1	..	11·9	..	..	3·1	17·2	..	..	..	15·4	..	2·7	..	15·1	..	22	7 10
14	2·2	..	8·0	..	4·1	..	0·7	..	12·3	..	..	8·6	7·5	..	..	..	16	15 10
15	10·7	..	1·0	..	10·4	..	..	..	13·9	..	8·0	..	10·6	..	8·1	..	17	16 45
16	5·0	..	8·7	..	1·6	..	9·1	..	1·1	..	6·6	..	..	2·1	2·5	..	14	6 15
17	..	2·4	0·9	..	0·2	..	..	2·1	..	3·3	..	0·3	..	3·8	..	..	7	18 15
18	..	1·1	3·1	..	3·8	..	3·2	..	7·5	..	..	..	7·0	..	1·2	..	10	15 35
19	3·8	..	3·2	..	7·1	..	0·6	..	0·7	..	8·2	..	2·8	..	7·8	..	16	22 50
20	1·5	..	16·2	..	..	7·9	21·5	..	No	r	eco	rd	..	8·9	12·7	..	28	10 50
21	..	8·1	9·6	..	..	8·3	8·3	..	..	5·3	6·3	..	2·4	..	3·4	..	18	0 55
22	7·2	..	..	0·7	..	0·5	5·8	..	..	0·6	7·1	..	..	4·6	6·5	..	14	19 30
23	..	4·3	2·5	..	..	2·9	..	0·5	..	1·7	2·9	..	..	1·9	4·2	..	8	0 15 0 45
24	..	2·1	4·5	..	..	..	5·0	..	0·8	..	3·5	..	0·5	..	5·8	..	8	10 00
25	..	1·1	6·6	..	..	3·8	5·4	..	..	5·5	7·9	..	..	7·7	6·4	..	14	7 45
26	..	9·6	6·6	..	..	10·1	3·7	..	..	5·6	5·6	..	..	4·1	7·2	..	16	8 10
27	..	4·1	8·7	..	..	1·9	10·8	..	..	2·7	10·2	..	..	6·4	5·4	..	16	13 25
28	..	5·2	3·7	..	..	5·7	3·3	..	..	4·1	4·8	..	..	3·7	5·4	..	16	18 45
29	..	0·9	4·9	..	..	2·5	3·6	..	..	..	1·4	..	..	0·8	4·4	..	17	0 05
30	..	..	4·5	..	1·6	..	2·8	..	2·7	..	1·9	..	2·1	..	..	0·2	7	3 55
S+N & W+E	214·5		138·2		128·8		131·0		121·3		132·0		136·6		127·5			
S−N & W−E	0·3		114·0		−1·0‡		100·8		22·7‡		107·4		−0·8		109·5			

ENGLAND, E.:—SHOEBURYNESS.

Height of Head above—Ground 27·4 m., M.S.L. 31·4 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	h. m.
1	..	1·9	..	2·8	..	0·9	..	2·2	..	Ca	lm	..	1·7	..	1·7	..	14	12 5
2	..	Ca	lm	..	..	Ca	lm	..	2·9	..	0·6	..	..	1·7	1·2	..	9	16 25
3	..	..	3·4	..	0·4	..	1·8	..	1·8	..	..	0·4	1·0	..	1·5	..	7	24 45
4	*	*	*	*	..	4·2	..	0·8	..	2·4	..	3·4	..	2·0	..	3·5	10	14 10
5	*	*	*	*	1·5	..	4·3	..	..	..	5·5	..	*	*	*	*	11	13 30
6	*	*	*	*	..	Ca	lm	..	1·6	..	3·0	..	1·0	..	5·7	..	8	23 50
7	*	*	*	*	..	..	9·1	..	1·8	..	10·3	..	0·6	..	3·6	..	15	11 45
8	..	..	3·4	..	3·5	..	3·0	..	3·6	..	3·2	..	..	Ca	lm	..	9	16 30
9	..	Ca	lm	..	..	1·5	..	1·8	2·3	..	6·3	..	*	*	*	*	10	23 45
10	*	*	*	*	4·2	..	5·0	..	2·5	..	1·0	..	1·2	..	2·1	..	10	5 50
11	..	Ca	lm	..	*	*	*	*	2·4	..	..	6·7	*	*	*	*	12	22 05
12	*	*	*	*	10·7	..	..	..	6·7	..	..	2·4	5·6	..	3·4	..	15	10 35
13	9·5	..	3·5	..	..	..	3·4	10·3	..	..	3·7	4·0	..	..	4·6	..	14	13 25
14	5·6	..	4·8	..	7·2	..	6·0	..	8·3	..	9·7	..	11·2	..	2·0	..	18	22 55
15	10·3	..	3·7	..	12·0	..	10·0	..	14·0	..	11·7	..	10·5	..	12·5	..	27	16 20
16	12·4	..	10·4	..	8·8	..	10·5	..	8·2	..	9·7	..	9·3	..	7·7	..	24	12 35
17	*	*	*	*	..	1·3	..	1·6	..	..	..	7·3	..	..	..	6·1	11	17 50
18	..	2·1	..	1·7	..	3·2	..	1·2	..	Ca	lm	..	*	*	*	*	8	23 50
19	*	*	*	*	6·9	..	1·2	..	10·8	..	1·8	..	6·0	..	7·3	..	17	22 15
20	5·0	..	3·0	..	5·8	..	3·4	..	17·9	..	6·5	..	7·4	..	8·7	..	25	12 00
21	*	*	*	*	..	1·4	8·6	..	..	..	8·2	..	..	Ca	lm	..	20	2 30
22	*	*	*	*	5·5	..	1·0	..	10·0	..	3·6	..	7·4	..	6·3	..	13	14 45
23	*	*	*	*	..	Ca	lm	..	*	*	*	*	*	*	*	*	10	00 40
24	*	*	*	*	6·1	..	..	..	5·1	..	4·4	..	4·2	..	5·0	..	13	13 50
25	5·5	..	4·6	..	5·2	..	6·2	..	3·7	..	6·6	..	4·4	..	5·3	..	17	16 55
26	*	*	*	*	..	5·5	6·6	..	..	6·4	..	..	..	..	6·1	..	15	11 50
27	..	..	6·1	..	..	..	10·4	..	4·2	..	11·5	..	..	2·3	6·3	..	21	15 5
28	..	1·8	5·2	..	..	2·6	7·4	..	..	..	7·3	..	..	..	6·7	..	18	17 40
29	*	*	*	*	..	5·6	3·4	..	..	2·4	6·5	..	1·8	..	5·2	..	16	18 35
30	*	*	*	*	7·2	..	2·6	..	..	2·4	6·7	..	4·6	..	5·5	..	13	14 15
S+N & W+E	54·1†		52·6		111·2‡		121·8‡		121·4‡		152·0‡		83·9§		118·0§			
S−N & W−E	42·5		43·6		58·8		86·0		94·2		103·6		71·9		98·8			

* Record not available. † 15 days only. ‡ 29 days. § 25 days.

9. SEISMOLOGICAL DIARY.

EARTHQUAKES—ESKDALEMUIR.

Day.	Phase	Time. G.M.T.	Period.	Amplitudes. A_N.	Amplitudes. A_E.	Amplitudes. A_Z.	Δ.	Remarks.
		h m s	s	μ	μ	μ	km.	
2	..	15 49 to	..	..	..	..	..	Slight disturbance.
		16 32	..	..	..	..	..	
5	..	16 22 to	..	..	..	..	..	Slight disturbance.
		17 20	..	..	..	..	..	
11	i	23 24 48	..	..	..	..	..	S possibly at 23h. 30m. 17s.
	L	23 41	..	..	..	..	..	
	F	24 15	..	..	..	..	..	
16	i	22 48 9	..	..	..	..	..	—
	L	23 8	25	..	..	..	..	
	L	23 14	20	..	..	..	..	
	F	23 40	..	..	..	..	..	
19	P_E	21 18 27	..	..	..	..	..	L doubtful owing to irregular form of waves, and presence of microseisms.
	S_E	21 28 12	..	..	..	..	..	
	L_E	21 44	28	..	..	..	..	
	F	22 10	..	..	..	..	..	

MICROSEISMS OF N. COMPONENT—ESKDALEMUIR.

Day.	0 h. A_N.	0 h. T.	6 h. A_N.	6 h. T.	12 h. A_N.	12 h. T.	18 h. A_N.	18 h. T.
	μ	s	μ	s	μ	s	μ	s
1	..	..	..	..	..	..	..	..
2	..	..	..	..	0·6	4	0·2	4
3	0·8	3·5	0·2	4	0·2	4	0·2	4
4	0·1	4	0·0	0	0·0	0	0·0	0
5	0·0	0	0·0	0	0·0	0	0.1	4·5
6	0·3	6	0·4	6	0·5	6	0·8	6
7	0·7	7	1·1	6	0·8	7	1·0	7·5
8	1·4	7	1·4	6	1·4	6	1·5	6
9	1·6	6	1·4	8	2·3	6	1·6	6
10	1·8	6	1·6	6·5	1·4	7	2·1	7
11	2·0	7·5	2·1	7	2·1	8	2·8	7
12	2·7	7	3·9	6	3·2	7	2·9	5·5
13	2·2	7	..	..	2·2	6	2·1	5
14	..	..	..	..	1·8	5	1·6	6
15	1·6	4	1·6	6	2·0	6	1·0	6
16	2·4	6	2·3	6	..	..	..	..
17	..	..	..	..	1·6	4	..	..
18	..	..	..	..	..	..	1·7	6
19	2·5	5·5	2·1	6·5	2·5	5·5	1·6	6
20	1·6	6	1·8	5	1·7	5·5	1·7	5·5
21	1·6	6	1·8	5	1·5	5	1·4	5·5
22	1·6	5	1·1	4·5	1·1	4	0·3	4·5
23	0·7	4	0·2	4	0·3	4	0·2	4·5
24	0·2	4	0·2	4	0·1	5	0·5	5
25	0·7	6·5	1·5	7	2·5	7	2·0	5·5
26	2·1	7	1·4	6	0·9	6	0·9	5
27	0·8	6	0·9	5	1·2	5·5	1·4	5·5
28	0·8	5·5	1·0	5·5	1·5	5	1·2	5·5
29	1·2	5	1·1	5·5	1·1	5·5	1·8	5·5
30	1·4	5·5	1·1	5	0·8	6	1·1	4·5

Means for Month $\begin{cases} A_N. = 1·3\mu. \\ T = 5·3s. \end{cases}$

Normals for Month, 1911–19 $\begin{cases} A_N. = 1·2\mu. \\ T = 5·3s. \end{cases}$

EARTHQUAKES:—RICHMOND (KEW OBSERVATORY).

Day.	Times, G.M.T. of Commencement.	Times, G.M.T. of Max. Phase.	Remarks.
	h m	h m	
2	..	16 17	Very small.
11	..	23 54	Small.
16	..	23 27	Very small.
19	..	21 30	Small.

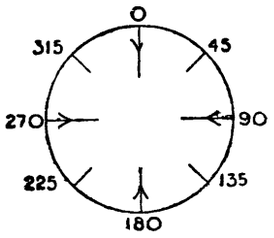
10. Soundings with Pilot Balloons.

Day	Time of Start, G.M.T.	Horizontal Velocity of Wind. Geostrophic.* Deg. from N.	m/s.	By Anemometer. Deg. from N.	m/s.	At Heights above M.S.L. 500 m. Deg. from N.	m/s.	1000 m. Deg. from N.	m/s.	2000 m. Deg. from N.	m/s.	3000 m. Deg. from N.	m/s.	4000 m Deg. from N.	m/s.	Cloud Observations. Time, G.M.T.	Type.	Deg. from N.	mr/s.	Type.	Deg. from N.	mr/s.
	h. m.															h. m.						
									ABERDEEN.													
20	12 15	140	11	135	4·5	130	6·5	150	7·5	155	7·0	..	..	..	..	..	Cu.	135	..	..	..	..
																15 0	..	..	..	Ci.	125	3·0
									ESKDALEMUIR.													
7	17 25	270	7	280	10·0	280	9·0	270	12·0	275	16·5	..	..	..	..	15 15	Cu.	285	12·0	Ci.	250	3·5
8	7 30	?	?	calm		325	2·0	335	2·3	305	3·6	275	8·5	..	..	..	..	..	..	Ci.-St.	..	..
8	11 45	?	?	calm		175	1·2	230	1·3	285	2·1	270	13·5	265	24·5	11 25	Cu.	..	..	Ci.	260	6·5
8	17 10	?	?	155	1·8	135	1·8	115	2·8	190	3·5	..	..	..	..	17 30	Cu.	..	..	Ci. haze	..	..
																	A.-Cu.	230	8·5			
9	7 30	?	?	5	3·0	40	5·0	50	4·0	270	4·9	260	11·5	255	14·0	8 0	..	..	..	Ci.	260	4·5
9	11 35	?	?	55	3·2	30	2·4	20	3·2	250	7·5	255	10·5	..	..	12 0	Cu.;-Fr.-Cu.	5	2·5	Ci.-St.	260	..
9	17 10	110	9	80	4·0	80	3·2	55	4·2	130	1·2	245	8·0	250	10·0	17 5	..	..	..	Ci.-St.	250	3·5
13	7 30	130	15	85	7·0	130	8·5	140	9·5	150	20·0	145	14·0	..	..	7 0	A.-Cu.	145	8·0	Ci.	225	4·0
17	7 20	?	?	calm		125	2·2	90	3·5	325	3·8	295	10·5	295	16·5	7 0	..	..	..	Ci.	125	3·0
17	11 50	?	?	165	3·5	165	4·0	165	3·6	180.	4·3	220	8·0	..	..	12 15	Cu.	190	2·7	..	240	4·5
18	7 25	?	?	calm		145	3·6	180	9·5	195	12·0	..	..	..	..	7 0	A.-Cu.	205	6·0	..	..	..
21	7 30	340	10	315	7·5	325	13·0	345	7·5	345	9·5	..	..	..	..	..	Cu. ; St.	315	..	A.-St.	..	..
																	Fr.-Cu.	295	9·0	Ci.	315	5·0
21	17 10	280	7	285	10·0	300	8·0	305	11·5	285	6·5	305	8·5	..	..	17 35	St.-Cu.	300	..			
23	7 35	?	?	calm		50	3·2	320	2·8	290	8·0	..	..	..	..	7 20	Cu.	335	..	Ci.	325	3·0
23	17 35	240	5	220	5·5	215	6·5	210	8·0	230	11·0	..	..	..	..	..	St.; A.-St.	..	..	..	..	..
26	7 20	330	15	360	5·0	350	6·5	335	15·0	340	11·5	320	10·0	340	17·5	8 30	Cu.	315	12·5	Ci.	350	4·0
27	7 35	310	15	285	10·0	305	11·5	290	8·5	300	13·5	..	..	..	..	7 55	Fr.-Nb.	315	..	Ci.-St.	275	10·0
28	17 25	350	8	350	1·9	345	5·5	355	8·5	345	7·5	..	..	..	..	17 20	Cu.	360	..	Ci.; Ci.-St.	350	2·5
29	7 25	310	11	270	5·5	310	5·5	310	11·0	330	6·5	315	18·0	300	17·0	7 0	Fr.-Cu.	310	14·0	Ci.; Ci.-St.	305	3·5
30	17 20	270	7	280	5·5	285	8·5	275	9·5	265	8·5	..	..	..	..	..	Cu.	270	..	..	..	..
														5000 m.								
8	11 45													255	36·0	11 25	Cu.	..	..	Ci.	260	6·5
17	7 20						(For observations at lower levels, see above).							290	18·0	7 0	..	..	..	Ci.	240	4·5
26	7 20													350	20·0	8 30	Cu.	315	12·5	Ci.	350	4·0
29	7 25													300	19·5	7 0	Fr.-Cu.	310	14·0	Ci.; Ci.-St.	305	3·5
									SOUTH FARNBOROUGH.													
6	7 45	?	?	245	2·6	250	2·1	175	1·4	300	1·6	..	..	..	..	..	St.-Cu.	..	..	A.-Cu.	..	..
14	6 35	240	12	210	14·5	225	15·0	235	14·5	245	17·5	..	..	..	..	..	Cu.	..	..	..	..	..
22	6 40	230	10	210	8·0	200	8·0	210	9·5	235	9·5	235	9·0	240	8·5	..	..	..	..	Ci.; Ci.-Cu.	..	..
28	6 55	290	10	280	8·5	305	11·0	305	12·0	295	7·5	290	8·5	265	26·0	..	Cu.; Fr.-Cu	..	..	..	..	..
29	6 35	300	12	280	8·5	295	10·0	285	11·5	285	11·0	285	9·0	280	8·0	..	A.-Cu.	..	..	..	..	..
30	6 40	250	10	240	6·0	250	8·0	250	10·0	255	14·0	260	19·5	265	24·5	..	..	..	..	Ci.; Ci.-St.	..	..
												5000 m.		6000 m.								
22	6 40						(For observations at lower levels, see above.)					295	7·0	295	12·5	..	..	..	..	Ci.; Ci.-Cu.	..	..
28	6 55											270	37·0	..	..	..	Cu.; Fr.-Cu	..	..	..	..	..
									CAHIRCIVEEN.													
1	7 30	30	5	310	1·0	360	7·0	5	12·0	10	7·5	20	9·5	..	..	8 5	Cu.; St.-Cu. A. Cu.	20 ..	..	Ci.-Cu.	20	1·5
4	7 20	?	?	45	1·6	360	4·9	345	5·5	340	7·0	360	9·5	345	8·0	..	Cu.; St.-Cu.	340	..	..	..	..
																	Cu.-lent	315	..			
5	7 20	?	?	50	1·4	15	4·0	310	1·1	325	1·1	340	3·9	305	7·0	..	Cu.	..	..	..	..	..
6	7 15	200	7	145	5·0	160	7·5	165	12·0	185	8·0	..	..	..	..	..	Fr.-Cu.	135	..	..	..	..
																	St.; A. St.	..	..			
14	7 10	240	11	230	6·0	245	10·5	250	9·0	240	7·0	235	6·5	..	..	..	Cu.; St.-Cu.	225	..	..	..	..
																	St.	250	..			
17	16 30	?	?	245	4·6	230	2·8	240	3·0	275	7·0	270	7·5	280	9·0	..	Cu.	..	..	Ci.-St.	..	..
21	12 35	285	12	?	3·1	270	7·0	280	12·0	280	9·5	300	9·5	315	13·5	13 0	Cu.	290	..	A.-Cu.	340	5·0
28	6 55	320	12	25	4·2	350	10·5	345	11·5	335	13·0	..	..	..	..	..	Cu.	340	..	..	..	..
29	7 25	295	9	270	5·0	300	4·8	300	6·0	290	8·0	285	10·0	280	12·0	..	Cu.	290	..	..	..	..
30	6 35	230	6	35	3·3	170	3·6	230	3·9	270	7·0	270	13·0	265	24·0	7 30	Cu.	270	..	Ci.	265	5·5
																				Ci.-Cu.	255	4·5
						5000 m.		6000 m.		7000 m.		8000 m.		9000 m.								
4	7 20	(For observations at lower				315	8·0	305	8·5	330	13·0	330	16·5	325	15·5	..	Cu.; St.-Cu.	340	..	..	..	..
																	Cu.-lent	315	..			
5	7 20	levels, see above).				315	6·5	315	10·5	310	20·0	310	16·0	320	21·5	..	Cu.	..	..	..	..	..
17	16 30					305	9·5	310	17·5	310	22·0	305	28·5	..	..	..	Cu.	..	..	Ci.-St.	..	..
29	7 25					290	25·5	..	..	..	..	..	..	..	..	..	Cu.	290	..	..	..	..
30	6 35					260	38·0	260	44·5	..	..	..	..	..	..	7 30	Cu.	270	..	Ci.	265	5·5
																				Ci.-Cu.	255	4·5

10. Soundings with Pilot Balloons—*cont.*

Height of Station above M.S.L. = H.
Anemometer above ground = h.

	H.	h.
Aberdeen	14 m.	23 m.
Eskdalemuir	242 m.	15 m.
S. Farnborough	70 m.	31 m.
Cahirciveen	9 m.	13 m.



Wind Protractor.

Notes on Ascents.

Aberdeen—
20th, 12 h. 15 m., slight haze, fine weather, barometer rising.

Eskdalemuir—
7th, 17 h. 25 m. Barometer rising unsteadily, good visibility, Solar Halo at 13 h. 15 m.
8th, 7 h. 30 m. Hoar frost, atmosphere very clear.

Notes on Pressure Distribution.

April, 1920.
1st, 7 h. Shallow Low over the British Isles with three secondaries, one over Land's End, one over the Channel, and one over Holland.
4th, 7 h. Low over the British Isles centred over the Channel.
5th, 7 h. Wedge extending from Spain to Cahirciveen with Lows over the Azores and Germany.
6th, 7 h. High over the British Isles centred over France.
7th, 18 h. Extensive Low centred near Christiansund; Low over the Azores.
8th, 7 h. 13 h. 18 h. Extensive trough from the Azores to the North Cape, with Lows centred S.W. of Ireland and over Scandinavia.
9th, 7 h. 13 h. Shallow Low centred S. of Ireland } Low over Scandi-
— 18 h. ,, ,, ,, over the Bristol Channel } navia.
13th, 7 h. Deep Depression centred N. of Cahirciveen.
14th, 7 h. ,, ,, ,, N. of Ireland, another Low appearing S.W. of Ireland.
17th, 7 h. Continental High covering the British Isles, Shallow Low over the Bay of Biscay.
— 13 h, 18 h. Continental High covering the British Isles, Shallow Low over France.
18th, 7 h. Shallow Low S.W. of Iceland protruding a neck of low pressure over Germany.
20th, 13 h. Deep depression centred near Holyhead.
21st, 7 h. ,, ,, ,, over the North Sea.
— 13 h. 18 h. V. over the British Isles, Anticyclones over the Bay of Biscay and the Gulf of Bothnia.
22nd, 7 h. Low centred west of the Hebrides; Ridge from Spain to Scandinavia.
23rd, 7 h. 18 h. Ridge from the Azores to Scandinavia across the British Isles.
26th, 7 h. North Westerly Type.
27th, 7 h. Extensive depression centred over Southern Scandinavia.
28th, 7 h. 18 h. } Deep depression centred near Christiania.
29th, 7 h. }
30th, 7 h. 18 h. Shallow trough from the Azores to the North Cape with Low centred over the Azores and Scandinavia.

Notes on Ascents—cont.

8th, 11 h. 45 m. Good visibility. Cumulus forming and dissolving. Solar Halo at 13h.
8th, 17 h. 10 m. Solar Halo since 13 h. Cumulus forming and dissolving.
9th, 7 h. 30 m. Frosty; Solar Halo.
9th, 11 h. 35 m. Solar Halo since 7 h.
9th, 17 h. 10 m. Solar Halo all day.
17th, 7 h. 20 m. Solar Halo at 7 h.
21st, 7 h. 30 m. A-St. degrading rapidly.
28th, 17 h. 25 m. Rain Storm developed to N. during ascent.
29th, Solar Halo at 7 h.

South Farnborough—
29th, 6 h. 35 m. Balloon frequently invisible against bright A-Cu. near sun. Light filter used.
30th, 6 h. 40 m. Solar Halo.

Cahirciveen—
6th, 7 h. 15 m. Balloon went into High St.
29th, 7 h. 25 m. Wind seems too high at the top.
30th, 6 h. 35 m. Balloon near the sun and well illuminated. It is probable that high speeds found are genuine.

11. Nephoscope Observations.

Aberdeen.

Day and Hour G.M.T.	Type of Cloud.	Velocity-height-ratio. Degrees from N.	Milliradians. per Second.	Components. W.-E.	Components. S.-N.	Remarks.
6 13	St.-Cu.	292	4·1	+ 3·8	— 1·5	
	Ci. and Ci.-Cu.	235	6·2	+ 5·1	+ 3·6	Ci. to Ci.-Cu., in long bands. Radiant pt. 225°. A sky much stratified. A line squall had passed over at 11 h. 30 m., the cloud between then and 14 h. showing much variation in direction and velocity.
7 16	St.-Cu.	278	4·2	+ 4·2	— 0·6	Thin sheets of St-Cu.
	Cu.-Nb.	305	23·0	+19·0	—13·0	Fracto-base of cloud measured.
8 13	Cu.	296	2·5	+ 2·2	— 1·1	Cu. which had been eddying earlier in the forenoon, under the influence of a small local coastal circulation.
9 7	Ci.	250	5·2	+ 4·9	+ 1·8	Well defined band of Ci. Radiant pt. about 250°.
13	Cu.	286	4·6	+ 4·4	— 1·3	Some "eddying" visible in places.
10 13	St.-Cu.	190	1·2	+ 0·2	+ 1·2	Approximate direction; some slight variation visible.
17 13	Cu.	280	1·9	+ 1·9	— 0·3	Small detached Cu.
18	Ci.	229	3·4	+ 2·6	+ 2·2	Ci. of rather coarse type. Radiant pt. 225° approximately.
20 15	Ci.	127	3·1	— 2·5	+ 1·9	Ci. diffuse type to faint "speckle cloud" form. Radiant pt. about 110° not well marked.
22 13	A.-Cu.	239	2·8	+ 2·4	+ 1·4	Fused heavy A.-Cu. lenticularis.
23 13	Ci. and Ci.-Cu.	307	3·5	+ 2·8	— 2·1	Ci. to fine small "speckle cloud" Ci.-Cu.
24 13	Cu.	263	10·0	+ 9·9	+ 1·2	Cu. and Fracto-Cu.
27 13	Cu.-Nb.	323	8·7	+ 6·9	— 5·2	Base of cloud measured.
29 13	Cu.-Nb.	315	20·0	+14·0	—14·0	Base of cloud measured.
30 13	Cu.-Nb.	305	11·0	+ 9·0	— 6·3	Base of cloud measured.

12. Aurora.

Day.	a.m. or p.m.	Moon.	Magnetic Character. Eskdalemuir.	Magnetic Character. Richmond.	Aurora Observations. Station.	Aurora Observations. Remarks.
3	a.	○	..	..	..	
4	p.	..	1, 2	1, 1	Baltasound	
9	p.	..	0, 1	0, 1	Deerness	
16	p.	..	1, 2	1, 2	Glasgow Observatory	
17	p.	..	2, 2	2, 2	Baltasound, Deerness, Castlebay	
18	p.	●	..	..	..	
21	p.	..	1, 0	1, 0	Kirkwall	
29	p.	..	1, 1	1, 1	Arbroath	

Note.—The two magnetic "characters" entered in each case refer to the two periods of 24 hours ending and beginning at midnight of the night in question

METEOROLOGICAL OFFICE OBSERVATORIES—GEOPHYSICAL JOURNAL.

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1. SUNSHINE AND SOLAR RADIATION.

Day.	WESTMINSTER. Bright Sunshine.* Total.	Bright Sunshine.* Per cent. of Possible.	SOUTH KENSINGTON.—Lat. 51° 30′ N. Long. 0° 10′ W. Radiation received on Horizontal Surface by Callendar Radiograph. Daily Total.	Per cent. of Planetary.	Maximum. For Day. Amount.	Maximum. For Day. Time. h.	Maximum. For Day. Time. m.	Maximum. 11.30 h. to 12.30 h.	RICHMOND.—Lat. 51° 28′ N. Long. 0° 19′ W. Bright Sunshine.* Total.	Bright Sunshine.* Per cent. of Possible.	Radiation at Noon by Ångström Pyrheliometer. Intensity.	Vertical Component.	Sky.	ESKDALEMUIR.—Lat. 55° 19′ N. Long. 3° 12′ W. Bright Sunshine.* Total.	Bright Sunshine.* Per cent. of Possible.	Radiation by Ångström Pyrheliometer. Time.	Sky.	$\frac{p}{p_0}$ sec. Z.	Intensity.	CAHIRCIVEEN. Bright Sunshine.* Total.	Bright Sunshine.* Per cent. of Possible
	hr.	%	j/cm².	%	mw/cm².	h.	m.	mw/cm².	hr.	%	mw/cm².	mw/cm².		hr.	%	h. m.			mw/cm².	hr.	%
1	0·7	5	1092	31	67	12	35	56	0·6	4	..	..	..	3·9	26	..	..	..	..	0·0	0
2	2·3	8	898	26	64	11	30	64	2·9	9	..	..	..	3·7	24	..	..	..	..	3·3	22
3	11·1	75	1892	54	87	10	5	85	11·8	79	80	65	Clear	0·0	0	..	..	..	..	10·2	68
4	8·5	57	1668	47	91	12	0	91	8·7	59	79	64	Clear	10·7	69	..	..	..	..	6·6	44
5	2·0	8	1092	31	64	9	30	7	1·4	7	..	..	..	0·0	0	..	..	..	..	0·0	0
6	0·0	0	502	14	27	10	25	14	0·0	0	..	..	..	4·3	28	..	..	..	..	7·8	52
7	8·9	59	1700	47	84	12	30	84	8·9	59	73	60	Clear	9·5	61	12 12	Clear	1·26	90	9·1	60
8	0·1	1	834	23	45	14	15	34	0·7	5	..	..	..	7·2	46	..	..	..	..	3·2	21
9	8·4	55	1865	51	83	11	18	80	9·1	60	..	..	..	11·9	76	..	..	..	..	11·4	75
10	6·6	43	1404	39	65	13	48	38	7·8	51	..	..	..	6·6	42	..	..	..	..	2·1	14
11	6·1	40	1625	44	74	12	25	74	5·6	37	..	..	..	1·2	6	..	..	..	..	0·0	0
12	7·0	46	1311	35	77	11	42	77	6·4	42	73	61	Clear	0·1	1	..	..	..	..	6·9	45
13	11·9	77	1853	50	86	11	50	86	12·1	79	61	51	Thro' Cl.	9·0	56	..	..	..	..	11·8	76
14	11·5	74	1851	49	82	13	8	80	10·8	70	..	..	..	3·4	21	..	..	..	..	12·6	81
15	10·8	70	2117	56	78	13	20	71	10·1	65	62	52	Hazy	6·2	38	..	..	..	..	9·7	62
16	6·1	39	1492	39	83	11	20	76	4·3	28	..	..	..	2·1	13	..	..	..	..	3·5	22
17	0·9	6	513	13	56	9	30	26	0·4	3	..	..	..	0·0	0	..	..	..	..	4·4	28
18	6·3	40	1259	33	83	12	35	63	6·6	42	..	..	..	2·3	14	..	..	..	..	1·4	7
19	14·0	89	2227	58	85	10	0	84	13·6	87	64	54	Clear	2·5	15	..	..	..	..	7·7	49
20	3·2	20	1555	40	70	9	5	66	4·1	26	..	..	..	10·0	61	..	..	..	..	5·1	32
21	9·1	58	1923	49	81	12	35	77	11·6	73	..	..	..	0·7	4	..	..	..	..	2·6	16
22	13·5	85	2520	65	79	11	5	78	13·1	83	..	..	..	0·0	0	..	..	..	..	0·0	0
23	14·0	88	2138	55	75	12	30	75	13·6	85	52	44	Hazy	7·1	43	..	..	..	..	8·3	52
24	14·0	88	2443	62	74	11	50	74	13·9	87	68	58	Hazy	13·4	81	12 9	Hazy	1·20	81	12·4	78
25	8·4	53	1643	42	70	12	45	69	7·7	48	..	..	..	7·4	45	..	..	..	..	3·2	20
26	1·9	7	922	23	78	14	10	58	2·0	8	..	..	..	1·2	6	..	..	..	..	0·0	0
27	3·7	23	1180	30	80	12	25	80	3·7	23	65	56	Thro' Cl.	1·4	6	..	..	..	..	0·0	0
28	4·1	25	1378	35	79	10	10	63	4·5	28	..	..	..	3·6	21	..	..	..	..	5·9	37
29	4·8	30	1128	28	77	12	55	46	4·6	29	..	..	..	4·8	29	..	..	..	..	1·5	6
30	4·6	28	1274	32	86	13	50	59	4·2	26	..	..	..	2·0	12	..	..	..	..	5·9	36
31	7·0	43	1831	46	97	12	15	97	7·1	44	..	..	..	0·4	2	..	..	..	..	0·1	1
Means	6·82	43	1520	40	75	—		66	6·84	43	—	—	—	4·41	27	—	—	—	—	5·05	32
Normals	5·61	36	1487	39	—	—		—	6·48	42	—	—	—	5·23	33	—	—	—	—	6·55	42
	◄—35 years—►		◄—8 years—►						◄—35 years—►					◄—5 years—►						◄—35 years—►	

2. METEOROLOGY AND MAGNETISM:—CAHIRCIVEEN (VALENCIA OBSERVATORY).—Lat. 51° 56′ N. Long. 10° 15′ W.

Heights above M.S.L.:—H=9·1 m. H_b=13·7 m. H_a=26·4 m. Above Ground: h_t=1·3 m. h_r=0·56 m. h_s=12·8 m. h_a=13·9 m.

Day.	Air Pressure at Station Level. 9 h.	21 h.	Air Temperature in Degrees Absolute. 9 h.	21 h.	Max. 0 h. to 24 h.	Min. 0 h. to 24 h.	Humidity. Vapour Pressure. 9 h.	21 h.	Percentage. 9 h.	21 h.	Wind—Veer from North in degrees and Speed in metres per second. 9 h. °	9 h. m/s.	21 h. °	21 h. m/s.	Cloud Amount (0–10) and Weather. 9 h.	21 h.	Rain 0 h. to 24 h.	Min. Temp. on Grass. 18 h. to 9h.	REMARKS.	Magnetism. Horizontal Force, Declination West, and Inclination.
	mb.	mb.	a 200+	a 200+	a 200+	a 200+	millibar.		%	%	°	m/s.	°	m/s.	Tenths of Sky covered.		mm.	a 200+		
1	1001·0	982·8	81·5	83·9	83·9	79·1	9·6	12·0	87	93	110	5	155	5	10●	10●	21·9	77	●⁰ to ●, *n* and day.	
2	981·4	999·7	81·5	81·6	83·7	81·0	9·4	8·2	85	74	200	12	260	17	9	6	2·8	79	●⁰, *n*. Fair p⁰, *a*. p, day.	
3	1011·6	1023·2	82·3	80·5	*n*83·4	79·9	8·5	7·8	73	75	265	12	300	6	6	3	0·9	77	Fair p⁰, h, mng. Fair, day. Fine, evg.	19° 17′·5
4	1029·4	1027·3	84·0	83·4	85·0	*n*78·4	9·0	11·6	69	93	155	2	165	8	2	10●	3·3	*n*75	Fine *n*. and *a*. o to ●⁰, *p*.	68° 5′·8
5	1024·0	1018·2	84·2	84·4	85·0	83·9	12·6	12·6	95	94	185	9	190	9	10●	10	*x*33·7	81	● *a*., and day.	68° 5′·1
6	1013·2	1015·6	84·7	83·5	86·3	82·3	13·1	10·9	96	86	240	9	240	10	10	8	9·0	83	● *a*. Fair, day. p, *n*.	17849γ
7	1020·0	1021·3	81·6	82·0	84·5	80·7	9·2	8·4	83	74	280	8	255	6	8	10	0·9	79	p, *a*. ⊕, Fair to fine, day.	19° 16′·1
8	1015·6	1018·2	82·1	81·4	84·6	80·4	10·9	7·9	95	72	180	5	340	4	10●	2	5·3	78	●⁰ mng. o and d⁰, *a*. Fine, *n*.	
9	1022·5	1024·3	84·1	81·6	85·1	79·7	9·3	8·8	71	79	290	3	—	—	7	6	—	75	Fine, *n*. Fair, day.	
10	1023·1	1018·9	83·3	84·3	86·6	80·5	9·1	8·1	73	61	160	3	140	3	10	10	—	77	o, *a*. Fair, day. o, *n*.	
11	1009·7	999·3	86·1	85·3	88·3	82·8	11·1	12·6	74	89	95	7	165	6	10	10	2·9	81	o, *n*. ●, *a*. o and ∞, day.	
12	1003·3	1007·7	83·6	82·9	85·0	81·9	11·0	9·7	87	80	270	8	240	16	10	10	1·7	82	o, *a*. Fair to fine, day. p. *n*.	
13	1019·9	1024·6	83·9	83·3	85·5	81·4	8·7	10·0	67	80	290	8	245	5	2	9	0·2	80	p⁰, *a*. Fine day.	17823γ
14	1025·6	1024·0	87·0	82·7	87·3	81·4	11·3	10·4	71	87	225	3	—	—	6	2	—	80	Fair, *a*. Fine day.	19° 20′·1
15	1019·6	1014·2	87·4	87·0	90·6	79·1	11·9	10·9	73	69	155	2	145	2	8	10	—	76	Fine and ⊃, early. Fair and ∞, day.	
16	1010·1	1006·8	84·1	83·7	87·3	83·1	11·6	11·5	88	90	345	2	—	—	10	9	0·6	83	o & ●⁰ early o & ∞, *a*. Fair & ∞, p.	
17	993·5	995·4	85·0	82·8	86·0	80·6	12·2	9·2	88	76	195	10	235	11	8	7	12·0	81	●, *a*. Fair to o and p, day.	
18	992·2	1001·2	81·7	82·7	83·9	80·3	9·2	9·2	82	77	235	12	250	15	8	7	5·9	79	p² early p, *a and p*.	
19	1008·3	1016·2	82·2	82·4	85·0	81·4	10·0	9·6	87	82	290	9	260	5	10	7	6·2	80	p, *n*. ●, p⁰ and ◭⁰, *a* Fair, day.	
20	1019·4	1020·4	83·5	83·3	86·5	80·8	10·4	10·8	82	87	255	3	190	4	3	10	0·3	79	Fair, early. Fine to fair, day. p⁰, *n*.	
21	1020·0	1022·0	85·3	84·7	86·3	81·8	11·9	12·0	84	88	200	6	195	4	8	10	1·2	81	p, *a*. c to o, day.	19° 17′·7
22	1024·1	1025·7	84·9	83·6	86·6	83·4	12·8	12·2	93	96	195	5	175	5	10	10	—	83	Dull, day.	68° 4′·4
23	1023·6	1019·0	85·5	84·0	89·1	81·9	13·3	11·6	92	89	170	4	—	1	10	3	—	83	o, early. Fair to fine, day.	
24	1013·4	1009·8	87·2	87·2	*x*93·1	80·7	13·2	14·3	82	89	—	1	—	—	2	5	—	79	Fine and ⊃, *n*. Fair to fine and ∞, day	
25	1008·2	1011·3	89·8	85·3	90·0	83·0	15·5	13·4	82	94	—	—	260	3	7	8	2·8	81	Fine and ⊃, *n*. ⊼, a. Fair and ∞ day	
26	1015·4	1016·7	84·2	84·5	85·5	*x*84·0	12·2	11·9	92	88	340	7	—	1	10	10	0·5	84	o and d⁰ *a*. o and ∞, *p*. ●⁰, *n*.	17863γ
27	1014·5	1013·8	84·5	84·5	85·5	82·9	12·4	11·6	92	86	345	2	355	3	10	10	5·3	82	●¹, early. Dull day.	68° 4′·7
28	1013·5	1012·7	84·6	85·5	89·7	83·4	12·1	11·9	89	83	310	3	—	1	10	9	2·5	83	o, early. Fair, day. ●, *n*.	
29	1011·4	1014·5	86·4	83·7	89·0	83·4	13·8	10·7	90	84	—	1	290	5	10	2	1·5	83	p, early. o, day. Fine, *n*.	
30	1016·1	1021·3	86·3	83·9	86·9	83·3	11·6	9·7	77	75	255	8	285	6	9	8	0·2	81	Fine, *n*. o to c, day.	
31	1024·0	1027·6	86·0	86·0	87·5	83·4	12·9	13·5	87	91	220	6	245	3	10	10	—	82	Dull, day.	
Means	1013·8	1014·6	84·5	83·7	86·5	81·6	11·3	10·7	83	83	—	5·5	—	5·3	8·2	7·8	121·6	80·1	Monthly Totals or Means.	17845γ
Normals	1013·9	1014·3	84·8	83·8	87·5	81·0	11·0	10·9	79	84	—	5·0	—	4·3	—	—	79·3	—	Normals.	19°17′·8
	◄—45 years—►						◄—30 years—►				◄—35 years—►						45 years			68° 5′·0

* By Campbell-Stokes Sunshine Recorder. † Mean for 29 days only. *x* denotes the maximum and *n* the minimum value in the column.

(3825) Wt.109/S.O.P.612/773 400 8/21 Harrow G.69/7

3. METEOROLOGY:—RICHMOND, SURREY (KEW OBSERVATORY).—Lat. 51° 28′ N. Long. 0° 19′ W.

Heights above Mean Sea Level:—Rain-gauge Site, H=5·5 m. Barometer, H_b=10·4 m. Cups of Anemometer, H_a=25 m.
Heights above Ground:—Thermometers, h_t=3·0 m. Rain-gauge, h_r=0·53 m. Sunshine Recorder, h_s=13·3 m. Cups of Anemometer, h_a=20 m.

Day.	Air Pressure at Station Level.		Air Temperature in Degrees Absolute.				Humidity.				Wind—Veer from North in degrees and Speed in metres per second.				Cloud Amount and Weather.		Rain 0 h. to 24 h.	Min. Temp. on Grass.	Remarks.
					Max.	Min.	Vapour Pressure.		Percentage.										
	9 h.	21 h.	9 h.	21 h.	0 h. to 24 h.		9 h.	21 h.	9 h.	21 h.	9 h.		21 h.		9 h.	21 h.		18 h. to 9 h.	
	mb.	mb.	*a* 200+	*a* 200+	*a* 200+	*a* 200+	millibar.		%	%	° m/s.		° m/s.		Tenths of Sky covered.		mm.	*a* 200+	
1	1011·7	1002·0	85·2	85·0	89·6	79·3	9·3	11·8	66	85	160	3	105	3	9	10	0·4	75	☾. Overcast to cloudy. ● *p*.
2	997·0	1003·1	87·3	83·9	89·8	82·8	13·6	9·4	84	73	200	7	225	7	10	5	0·6	83	● early *a*. Dull to fine. ⸝ (gust) *p*.
3	1012·8	1019·0	85·1	82·0	87·8	80·0	8·7	7·0	62	61	230	9	270	3	4	1	—	78	Fine. ☾ *p*.
4	1026·1	1033·4	82·2	80·0	85·2	77·0	6·8	7·6	59	76	305	4	—	1	7	1	—	72	☾. Fine to cloudy.
5	1035·8	1030·8	83·6	83·9	87·6	*n*75·4	7·7	9·0	61	70	230	5	220	5	10	10	—	*n*70	☾ and ≡⁰. Fine to dull.
6	1023·0	1015·4	84·3	83·3	85·6	82·3	8·8	11·8	66	95	225	6	220	4	10	10	3·2	80	Dull and wet.
7	1015·7	1020·3	84·9	82·4	87·6	80·4	9·4	8·8	68	75	270	4	275	3	8	1	0·6	77	☾. Fine to fair. Showery. ▲⁰ *p*.
8	1020·5	1018·2	84·1	82·9	*n*85·0	78·2	10·1	9·9	77	82	245	3	235	4	10	10	2·0	74	☾. Dull to fair. Showers *p*.
9	1019·7	1022·9	83·8	82·4	89·3	79·1	9·9	8·9	77	76	260	2	—	1	6	0	2·1	78	● early. Mostly fine. ☾ *n*.
10	1025·6	1023·5	84·5	83·4	89·3	76·9	8·2	8·4	61	67	50	4	100	5	0	3	—	72	☰. Overcast to fine. ∞.
11	1019·7	1009·9	86·8	86·3	91·0	80·7	8·8	11·2	56	74	100	7	90	5	7	10	0·4	77	☾. Fair to fine. ● 23 h.
12	1007·0	1011·7	90·3	87·2	93·4	83·1	16·2	13·0	83	81	220	4	275	2	8	10	0·2	80	≡. Fine to cloudy.
13	1017·6	1023·0	85·4	84·3	89·5	81·7	8·8	9·4	62	71	260	6	270	2	9	1	—	78	Fine.
14	1025·1	1024·8	84·9	85·7	90·9	78·6	8·4	10·8	61	74	265	3	—	1	5	1	—	73	☾. Fine to cloudy.
15	1023·0	1016·7	87·1	83·7	89·2	80·0	9·5	8·9	59	70	90	7	85	10	2	10	—	75	Fine to overcast.
16	1010·5	1007·0	85·8	84·7	88·4	83·0	10·0	10·4	68	76	75	11	75	5	9	6	—	81	Fine to overcast. ∞.
17	1004·0	1003·8	88·1	84·8	88·8	83·6	12·8	12·7	75	93	225	3	210	6	10	10	3·3	81	Dull to cloudy. ● *n*.
18	1001·4	1004·9	86·3	82·5	89·3	82·0	12·4	9·3	82	79	195	8	215	8	10	8	0·1	80	Dull to fine. ⸝ (gusts) ● *p*.
19	1011·8	1018·7	85·5	83·4	89·7	81·3	8·2	9·1	57	73	230	8	215	5	5	1	—	79	Fine. ⸝ (gust) 12 h. ☾ *p*.
20	1022·0	1021·9	86·3	86·2	89·6	79·0	9·7	11·1	64	74	—	1	230	2	9	10	—	75	☾. Fine to overcast. ⊕ *a* and *p*,
21	1024·1	1027·5	86·6	86·1	91·1	80·6	10·8	9·6	70	64	—	1	285	2	1	1	—	77	☾. Fine.
22	1029·8	1028·3	86·7	88·6	93·2	79·3	10·9	12·5	70	71	235	5	—	—	6	1	—	73	☾. Fine. ☾ *p*.
23	1026·7	1021·1	90·5	89·0	94·6	80·5	11·5	9·9	58	55	140	2	90	6	0	0	—	76	≡. ☾. Very fine. ∞⁰.
24	1014·2	1010·1	91·1	91·5	95·8	85·4	13·6	14·6	66	69	75	6	90	4	0	1	—	81	Very fine.
25	1010·7	1012·6	93·1	92·7	*x*99·2	86·2	15·6	16·8	67	74	—	1	170	2	1	7	—	80	☾. Fine to overcast.
26	1014·4	1015·6	91·2	88·6	94·9	*x*87·1	15·7	15·8	76	90	220	2	130	2	10	3	*x*5·0	82	Overcast to fine. ☾ ◹ ●² *p*.
27	1016·1	1015·3	87·9	89·4	94·8	86·5	14·4	14·8	86	80	220	2	240	3	10	10	—	84	Overcast to fine.
28	1015·6	1014·8	90·2	91·1	95·5	86·1	14·6	15·6	75	76	230	2	—	1	6	10	0·7	83	Fine to overcast. p⁰.
29	1012·2	1011·7	92·7	88·4	94·7	85·0	16·6	12·7	73	73	120	2	220	4	10	1	—	85	Overcast to fine. ☾ *p*.
30	1013·9	1017·4	88·5	86·5	91·3	83·7	12·2	13·9	70	90	250	5	230	4	10	10	2·8	81	Dull to fine. Showers *p*.
31	1021·9	1025·8	85·9	86·9	90·2	82·0	9·9	11·2	67	71	300	4	280	3	7	10	0·1	77	Fine to overcast. ☾ *p*.
Means	1017·1	1017·1	87·0	85·7	90·7	81·5	11·1	11·2	69	75	4·4		3·6		6·7	5·5	21·5	78·0	Monthly Totals or Means.
Normal	1015·0	1015·0	85·0	84·2	89·3	80·1	10·1	10·3	71	75	4·2		2·9		—	—	43·8 (45 years)	—	Normals.
			45 years.				30 years.				35 years.								

4. METEOROLOGY:—ESKDALEMUIR, DUMFRIESSHIRE.—Lat. 55° 19′ N. Long. 3° 12′ W.

Heights above Mean Sea Level:—Rain-gauge Site, H=242 m. Barometer, H_b=237·3 m. Vane of Anemometer, H_a=250 m.
Heights above Ground:—Thermometers, h_t=0·9 m. Rain-gauge, h_r=0·38 m. Sunshine Recorder, h_s=1·5 m. Vane of Anemometer, h_a=15 m.

																			Remarks.
1	983·0	976·2	79·7	77·0	82·6	*n*67·2	6·3	7·7	64	95	—	1	70	8	10	10●	5·4	*n*62	☾² till 7 h.: ⊕ o. *a*: ●≡⁰ after 16h.
2	961·3	959·0	82·3	80·1	83·4	78·7	10·8	8·9	93	88	290	13	190	15	10	10	12·9	75	●≡⁰ till 7 h.: o. d⁰ *a*: c ⸝ *p*: ●≡⁰q ⸝ *n*.
3	964·5	981·4	78·7	76·5	*n*79·8	76·4	8·2	6·7	90	85	210	15	280	10	10●	9	18·4	76	●≡⁰ ⸝ until 16 h.: ●⁰ to cq *n*.
4	994·2	1002·6	80·3	76·1	82·9	71·5	6·4	5·7	63	75	300	7	—	0	8	8	0·2	72	c. ▲ pq *a*: op to cy *p*: c *n*.
5	998·4	992·4	78·1	80·6	81·6	71·0	8·2	10·2	93	98	170	6	200	7	10●	10≡⁝	15·0	66	o. at first: ●²≡⁰ 6 h.-17 h. then ≡⁝².
6	982·5	979·4	82·7	80·4	85·1	79·7	10·5	9·0	88	88	220	11	210	4	8	8	21·1	78	●²≡⁰ till 7h.: ≡⁝ 8h.: c●²p *a*: ▲pq 17h.: c.
7	980·1	987·2	82·0	76·7	83·3	74·2	8·3	6·0	73	75	270	9	270	4	8	8	4·8	76	●²pq till 8 h.: b to o. p⁰q *a*&*p*.: bc *n*. [pq *n*.
8	987·9	981·8	79·7	77·6	82·8	72·0	6·7	6·7	68	80	210	6	290	8	6	1	9·5	67	☾ early: bc *a*: ▲p 13h.: o *p*: ●²≡⁰▲ to b *n*.
9	989·6	994·2	78·2	76·6	84·4	74·8	7·0	6·4	80	81	240	6	270	4	8	1	0·2	70	b at first: bc ▲⁰q *a*: bcy *p*: b *n*.
10	996·7	996·1	81·5	75·6	83·2	72·8	7·2	6·1	65	84	270	2	—	—	4	0	—	69	☾ early: bc *a*: o *p*: b *n*.
11	992·5	984·1	81·7	81·7	87·6	72·4	8·4	9·3	75	83	—	1	130	3	10	10	0·5	67	b. ☾ at first: oy ∞⊕ *a* and *p*: ●⁰≡⁰ *n*.
12	972·8	975·9	83·2	81·0	83·3	78·2	11·9	9·8	96	92	190	9	210	10	10	7	9·5	78	●≡⁰ till 10 h.: ≡⁝ *a*: d⁰≡⁰ *p*: ●⁰ to c *n*
13	977·1	988·0	79·2	78·0	83·0	76·8	7·8	6·9	83	79	240	18	260	10	9●	2	7·1	73	●²q till 9 h.: o ⸝ pq *a*: c *p*: b. pq *n*.
14	993·3	996·9	82·9	82·3	87·0	77·1	7·0	10·6	57	91	280	7	200	2	6	8	—	74	bc at first: c to o after 9 h.: y *a*. and *p*.
15	996·4	991·3	83·7	83·8	91·8	78·5	10·0	10·1	78	78	210	2	10	2	10	6∞	—	74	≡⁝ early: ⊕⁰, by after 10 h.: bc ∞ *n*.
16	986·5	982·2	84·9	80·1	87·0	78·9	8·1	8·6	58	85	120	6	—	1	10	9	—	75	o. to c.: ⊕ *a*.: ∞ y *a*. and *p*.
17	975·0	964·5	79·9	80·9	82·0	78·9	9·3	9·4	94	89	60	2	200	11	10	10	8·2	77	o ≡⁰ till 8 h.: d⁰≡⁰ or ≡⁝ *a* &*p*: ●² pq *n*.
18	962·7	957·5	80·8	80·0	83·0	79·1	9·0	9·0	85	90	180	14	220	13	10	10●	12·8	76	oq early: ●²q *a*: oq *p*: ●²q≡⁰ after 17 h.
19	968·2	982·3	81·0	78·9	84·5	76·2	8·8	7·5	83	81	260	12	230	5	10	2	10·0	77	●²≡⁰ till 7 h.: o. ●⁰ *a*: o *p* pq 17 h: bc *n*.
20	989·3	993·1	82·0	79·5	84·5	74·6	7·5	8·8	66	91	230	8	190	4	10	8	7·4	71	o. early: ●²▲q 10 h. then fair or fine.
21	993·0	991·4	82·3	81·5	84·0	78·0	8·9	10·3	76	93	190	9	200	10	9	10	4·2	74	o *a*: o. ●⁰ *p*: ●²≡⁰ after 22 h.
22	990·8	997·2	82·9	82·4	85·1	81·5	10·8	11·4	89	97	230	15	220	8	10●	10≡⁝	16·1	80	●²≡⁰ till 10 h.: o ≡⁰ *a* and *p*: ≡⁝ *n*.
23	998·3	995·2	82·0	83·1	90·2	80·8	11·4	10·5	100	85	200	6	320	2	10	0	0·6	80	d ≡⁝ till 6 h.: o *a*: b. after 14 h.
24	992·0	988·5	91·6	86·1	*x*94·6	81·4	10·0	10·5	47	70	120	4	30	4	1	0	—	75	Cloudless: ☾ early: y *a* and *p*.
25	988·0	988·0	85·6	84·6	*x*94·6	80·5	12·7	12·2	88	90	30	6	30	3	10	4	—	77	b. 1 h.: ≡⁝⁰ *a*: b. ∞ after 11 h.
26	988·5	988·0	86·2	86·8	91·4	82·4	13·6	14·4	90	92	30	6	30	4	9	9	—	82	≡⁝⁰ at first: o ≡⁰ *a*: o ∞⁰ *p*: ≡⁰ *n*.
27	987·0	985·9	85·9	85·7	89·5	*x*84·9	14·2	13·7	96	94	—	1	210	4	10●	10	3·3	84	●≡⁰ 6½h.–9 h.: ≡⁝⁰ *a*: d ≡⁰ to c *p*: ≡⁰ *n*.
28	984·9	987·1	84·8	81·0	88·6	78·5	13·3	9·2	97	86	190	4	280	2	10	1	4·4	84	●≡⁰ till 5 h.: ≡⁝⁰ *a*: c *p*: b *n*.
29	987·1	982·4	86·2	82·0	87·9	75·4	10·5	10·8	70	95	60	3	30	7	4	10	2·1	72	b. ☾ early: c *a*: ●⁰≡⁰ *p*; ≡⁰ to ● *n*.
30	980·3	983·7	83·1	81·6	86·5	80·1	10·5	8·8	85	79	290	6	250	5	10	6	*x*25·1	80	●²≡⁰ till 8 h.: o to c: ●²q *p*: bcpq *n*.
31	989·8	991·7	83·2	84·3	84·9	80·0	9·5	11·8	77	89	260	6	260	7	10	10	1·4	78	o. with d ≡⁰ 13½ h.–20½ h.
Means	984·9	985·3	82·5	80·7	85·8	77·2	·9·4	9·3	80	86	—7·1		—5·6		8·7	6·7	200·2	74·8	Monthly Totals or Means.
Normal 1911-1915.	987·4	987·6	82·5	80·4	86·2	76·6	9·3	8·9	78	85	—5·5		—3·5		—	—	69·5	—	Normals.

Temperatures at or below the normal freezing point of water are printed in small type. *x* denotes the maximum, and *n* the minimum, value in the column.

5. GEOPHYSICS :—RICHMOND (KEW OBSERVATORY).

Day.	Earth Temperature at 9 h. 0.3 m.	Earth Temperature at 9 h. 1·2 m.	Height above M.S.L. of Surface of Underground Water. Daily Mean.	Height above M.S.L. of Surface of Underground Water. Extremes.	Terrestrial Magnetic Force. Horizontal Comp't. Mean Time.	Horizontal Comp't.	Declination. Mean Time.	Declination. West.	Inclination. Mean Time.	Inclination.	Magnetic Character of Day.	Electric Character of Day.	Charge per cc. × 10^{16}. +. About 15 h.	Charge per cc. × 10^{16}. −. About 15 h.	Air-Earth Current. × 10^{16}. About 15 h.	Potential Gradient, Volts per metre. Factor 2·18* 3 h.	9 h.	15 h.	21 h.
	a 200+	*a* 200+	cm.	cm.	h m	γ	h m	° ′	h m	° ′			Coulomb.		Amp/cm².	v/m	v/m	v/m	v/m
1	82·7	82·5	267	267	..	..	..	..	..	..	2	1	..	..	..	215	305	−215	345
2	83·8	82·4	265	..	..	..	..	..	..	..	1	0	..	..	..	120	—	135	175
3	83·8	82·5	263	..	..	..	..	..	..	..	1	0	0·89	..	0·95	120	145	185	305
4	83·4	82·6	260	..	..	..	..	..	..	..	0	0	0·57	..	0·85	135	—	215	175
5	82·7	82·7	258	..	..	..	..	..	14 34	66 58·0	0	0	..	0·51	0·60	265	255	215	335
6	83·0	82·7	257	..	11 9	18388	14 20	14 37·4	..	..	0	1	..	..	..	105	185	95	80
7	82·8	82·8	255	..	..	..	..	..	..	..	0	1	0·61	..	0·65	90	180	155	270
8	83·0	82·7	253	..	..	..	..	..	..	..	0	1	..	..	..	180	270	−200	310
9	83·2	82·7	252	..	..	..	..	..	..	..	1	1	..	..	..	180	180	90	155
10	83·9	82·8	250	..	..	..	..	..	..	..	0	0	..	0·16	0·40	180	670	225	490
11	84·0	82·8	248	..	..	..	..	..	..	..	0	1	0·37	..	0·90	270	515	625	470
12	85·0	82·9	246	..	..	..	..	..	..	..	0	1	..	..	0·90	135	225	180	180
13	85·6	83·0	244	..	11 5	18425	14 18	14 37·0	14 36	66 52·4	2	0	..	..	0.60	65	180	135	225
14	85·0	83·1	241	..	..	..	..	..	..	..	1	0	..	..	0·60	245	290	110	110
15	85·7	83·2	239	..	..	..	..	..	..	..	2	0	..	..	..	110	515	465	370
16	85·8	83·3	237	..	..	..	..	..	..	..	1	0	..	..	..	160	305	370	305
17	85·9	83·4	236	..	..	..	..	..	..	..	0	1	0·31	..	0·50	120	175	80	−105
18	85·2	83·5	235	..	..	..	..	..	..	..	0	1	..	..	..	135	105	55	215
19	84·9	83·7	233	..	..	..	..	..	..	..	0	0	..	0·86	0·20	135	145	135	240
20	84·9	83·7	232	..	11 2	18397	14 24	14 37·0	14 30	66 56·8	0	0?	0·74	..	0·75	—	240	135	185
21	85·6	83·9	231	..	..	..	..	..	..	..	0	0	..	..	..	185	265	135	185
22	85·9	83·9	233	..	..	..	..	..	..	..	0	0	..	..	..	225	200	160	175
23	86·7	84·0	237	..	..	..	..	..	..	..	0	0	..	..	..	305	280	305	320
24	87·2	84·1	238	..	..	..	..	..	..	..	0	0	..	..	..	215	385	280	305
25	88·0	84·2	237	..	..	..	..	..	..	..	0	0	..	0·40	1·30	295	440	185	215
26	89·0	84·2	235	..	..	..	..	..	..	..	0	2	0·72	..	0·95	265	320	160	265
27	88·7	84·4	233	..	11 3	18399	14 15	14 36·5	14 33	66 57·8	1	0	..	0·22	0·45	175	240	160	255
28	88·9	84·7	231	..	..	..	..	..	..	..	1	1	0·42	..	1·05	185	280	160	145
29	89·5	84·9	230	..	..	..	..	..	..	..	1	1	..	..	..	215	215	145	265
30	88·8	85·1	229	..	..	..	..	..	..	..	0	1	..	..	..	185	80	145	65
31	88.0	85·2	227	226	..	..	..	..	..	..	0	0	..	0·59	0·75	120	265	145	200
M.	85·5	83·4	242	—	—	—	—	—	—	—	0·45	0·45	0·58	0·46	0·73	181†	272†	167†	239†
	85·1	83·0	— 12 years. —																

* Factor 3·63 from 12h. on 7th. to 12h. on 15th. † Mean for 28 days.

6. GEOPHYSICS :—ESKDALEMUIR, DUMFRIESSHIRE.

Day.	Terrestrial Magnetic Force. North Component. Maximum 15000 γ +. h m	γ	Minimum. 15000 γ +. γ	h m	Range. γ	West Component. Maximum. 4000 γ +. h m	γ	Minimum. 4000 γ +. γ	h m	Range. γ	Vertical Component. Maximum. 44000 γ +. h m	γ	Minimum. 44000 γ +. γ	h m	Range. γ	Magnetic Character of Day.	Electric Character of Day.	Potential Gradient, Volts per metre. Factor 6·18. 3 h.	9 h.	15 h.	21 h.
1	3 47	1021	*n*874	11 9	147	13 13	910	781	5 1	129	19 30	1049	*n*880	3 50	*x*169	2	2 *c*	190	135	145	*z* —
2	18 43	1034	910	11 8	124	0 52	919	817	6 38	102	18 17	1024	966	1 23	58	1	2 *c*	*z* —	145	280	65
3	20 17	1068	895	10 26	173	13 7	895	795	20 7	100	17 40	1026	984	1 35	42	1	2 *c*	*z* —	*z* —	−555	35
4	0 16	999	933	12 25	66	13 26	902	812	8 39	90	17 15	1030	989	11 38	41	0	1 *b*	150	175	200	290
5	20 15	1003	939	12 11	64	13 30	881	821	8 47	60	16 50	1028	1002	11 57	26	0	2 *b*	115	70	−440	190
6	18 18	1011	952	11 16	59	13 42	881	833	9 2	48	21 50	1026	1003	12 30	23	0	2 *c*	−305	150	−165	220
7	19 20	1003	958	11 22	*n*45	13 41	869	831	7 13	*n*38	4 45	1027	1004	12 20	23	0	2 *c*	0	165	115	195
8	20 10	1047	958	13 20	89	14 28	891	831	8 0	60	5 20	1024	996	12 25	28	0	1 *b*	180	190	180	140
9	17 36	1062	*x*934	10 12	128	12 8	902	803	7 6	99	18 18	1087	990	4 23	97	1	1 *b*	180	−150	165	165
10	18 52	1000	939	10 42	61	13 58	875	821	7 27	54	0 1	1032	1001	11 40	31	0	0 *a*	160	110	195	275
11	18 43	1008	961	12 7	47	13 30	874	822	8 14	52	5 21	1026	1003	11 54	23	0	0 *a*	120	120	150	345
12	18 41	1012	950	10 43	62	14 0	875	826	7 9	49	20 40	1027	994	12 10	33	0	2 *c*	−1375	0	55	105
13	20 35	*x*1117	908	16 30	*x*209	18 4	*x*934	*n*779	21 43	*x*155	19 9	1072	976	24 0	96	2	2 *c*	−295	−80	165	180
14	19 53	1049	901	9 51	148	0 35	890	793	2 26	97	16 52	1040	917	1 10	123	2	0 *a*	70	220	265	220
15	17 12	1090	920	12 55	170	14 41	911	784	23 12	127	17 8	1071	969	24 0	102	2	0 *a*	200	180	150	335
16	19 16	1043	933	1 16	110	12 49	878	790	0 11	82	19 9	1045	957	1 21	88	1	0 *a*	290	180	310	270
17	19 15	1009	936	12 10	73	12 55	880	816	6 9	64	17 25	1032	1000	10 40	32	0	2 *c*	135	35	115	185
18	18 3 / 18 54	1005	946	10 56	59	15 25	884	809	0 42	75	19 15	1036	1009	1 30	27	0	2 *c*	100	155	145	−1405
19	18 53	1024	959	12 29	65	14 10	893	823	8 36	70	4 20	1027	1008	12 16	*n*19	0	2 *c*	−1190	−5	45	110
20	19 24	1035	950	10 31	85	13 55	900	818	7 18	82	21 5	1034	1008	10 0	26	0	*	*	*	180	250
21	19 27	1032	951	11 50	81	12 24	885	813	6 46	72	18 50 / 19 10	1044	1006	11 28	38	1	2 *b*	170	190	75	150
22	18 46	1017	943	11 40	74	13 35	880	827	7 52	53	18 22	1033	1002	12 30	31	0	2 *c*	−520	−520	65	560
23	17 23	1028	966	11 48	62	17 21	887	823	7 31	64	18 17	1041	1006	12 30	35	0	0 *a*	305	335	515	275
24	17 42	1027	968	10 0	59	17 41	887	817	6 59	70	20 30	1038	1013	13 30	25	0	0 *a*	115	180	220	265
25	17 47	1040	968	10 13	72	17 49	881	807	7 47	74	18 10	1041	1011	11 48 / 12 8	30	1	0 *a*	‡‡	505	235	415
26	15 2	1025	964	9 29	61	15 3	885	817	6 48	68	21 20	1034	1008	10 50	26	0	0 *a*	600	365	220	405
27	2 33	1026	944	12 8	82	13 35	882	822	5 51	60	16 51	1034	994	4 13	40	1	1 *b*	220	−5	340	370
28	14 46	1073	898	11 13	175	14 42	*x*934	805	6 20	129	17 45	*x*1119	1006	11 43	113	2	1 *a*	5	445	150	375
29	21 16	1058	915	11 13	143	13 26	884	814	6 7	70	18 33	1052	997	0 1	55	1	1 *a*	235	140	45	145
30	19 21	1020	943	11 33	77	14 22	877	806	8 13	71	17 15	1042	1017	11 23	25	0	2 *c*	*z* ±	300	*z* —	180
31	18 31	1017	942	10 50	75	13 24	867	820	9 11	47	17 6	1040	1017	12 10	23	0	1 *a*	160	80	145	145
M.	—	1032	937	—	95	—	890	812	—	78	—	1041	991	—	54	0·58	1·13	†−7	†109	†137	†180

x denotes the maximum and *n* the minimum value in the column. Potential gradient is reckoned as positive if the potential increases upwards. For indeterminate potential gradient the following notation is used :—*z*+ Indeterminate, positive value ; *z*— Indeterminate, negative value ; *z*± Indeterminate in magnitude and sign.
† Mean for 25 days, * Light failed. ‡‡ Water failed.

7. JERSEY (ST. LOUIS OBSERVATORY).—Lat. 49° 12′ N. Long. 2° 6′ W.

Heights above M.S.L.:—H = 54 m. H = 55 m. Above Ground:—$h_t = 1{\cdot}48$ m. $h_r = 1{\cdot}72$ m. $h_a = 8$ m.

Day.	Air Pressure at Station Level. 9 h.	14 h.	21 h.	Mean of 3 Readings.	Air Temperature in Degrees Absolute. 9 h.	14 h.	21 h.	Max.	Min.	Mean of 5 Readings.	Min. Temp. on Grass.	Percentage of Humidity. 9 h.	14 h.	21 h.	Mean.	Rain 0 h. to 24 h.	Remarks.
	mb.	mb.	mb.	mb.	a 200+	a 200+	a 200+	a 200+	a 200+	a 200+	a 200+	%	%	%	%	mm.	
1	1003·4	1000·3	995·9	999·9	84·3	87·4	85·9	88·8	79·7	85·2	74·3	72	67	87	75	2·9	●° afternoon, ●² 20 h.
2	994·1	997·0	1004·4	998·5	86·1	84·0	83·5	87·0	83·5	84·8	83·5	93	97	74	88	4·2	●² began 4 h.
3	1013·5	1015·1	1017·8	1015·5	84·9	85·4	81·8	86·8	80·8	83·9	78·1	76	67	76	73	0·7	●°before 4 h. ●²9 h. 40 m.; 11 h. 30 m.
4	1023·7	1026·9	1030·0	1026·9	82·9	83·4	81·0	85·2	79·9	82·5	83·6	58	56	70	61	—	●° and ◠ 4 h.
5	1032·5	1031·0	1027·4	1030·3	84·2	86·7	83·6	88·2	*n*78·1	84·2	*n*71·4	70	35	71	59	—	
6	1021·2	1018·0	1015·3	1018·2	84·9	89·4	85·5	90·5	82·2	86·5	76·6	75	58	70	66	—	
7	1016·3	1017·8	1018·5	1017·5	84·7	86·5	82·0	87·1	81·0	84·3	78·6	78	70	85	78	—	
8	1017·6	1015·3	1014·6	1015·8	83·6	86·0	82·6	86·9	81·1	84·0	75·9	73	76	85	78	—	●° 13 h.
9	1015·7	1016·9	1017·2	1016·6	85·8	85·2	83·7	88·0	82·0	84·9	76·3	62	83	92	79	—	
10	1017·0	1015·9	1014·3	1015·7	85·9	90·7	84·7	91·2	82·5	87·0	79·8	79	63	76	73	—	
11	1009·5	1005·0	1002·3	1005·6	90·0	93·6	89·7	93·6	83·9	90·2	81·3	60	60	86	69	0.2	● 17 h. 30 m.
12	1002·9	1006·6	1009·4	1006·3	89·3	88·5	85·1	90·4	84·0	87·5	81·6	86	83	89	86	0·8	●² 4 h. 30 m. ●° 17 h.
13	1016·2	1017·4	1019·4	1017·7	84·5	86·1	82·9	88·8	81·9	84·8	74·6	68	63	86	72	—	
14	1019·9	1018·2	1017·2	1018·4	85·0	89·0	84·3	89·7	81·0	85·8	74·0	72	52	61	62	—	
15	1011·8	1010·0	1005·3	1009·0	85·7	84·2	85·0	87·0	83·8	85·1	80·0	68	85	80	78	5·4	●² 0 h. 40 m.; 11 h. 45 m.; 14 h.
16	1001·1	1000·5	1001·0	1000·9	87·9	91·0	85·9	93·1	84·2	88·4	81·7	79	70	87	79	—	
17	1003·4	1003·8	1002·7	1003·3	84·7	87·0	85·5	88·3	83·6	85·8	82·9	83	72	91	82	0·3	≡° 4 h. ● 17 h. 30 m.
18	1000·7	1004·1	1006·4	1003·7	85·7	85·8	84·0	87·4	83·0	85·2	84·6	87	62	70	73	2·9	●² early to 7 h. 30 m.
19	1011·4	1013·0	1015·8	1013·4	85·2	86·5	83·2	87·9	82·7	85·1	79·6	73	56	76	68	—	
20	1016·8	1010·5	1017·7	1017·0	85·9	85·6	82·3	87·2	79·0	84·0	73·9	63	55	87	68	—	
21	1021·1	1022·8	1024·6	1022·8	85·8	88·0	81·9	88·5	79·8	84·8	72·6	58	53	89	67	—	
22	1025·8	1024·8	1023·1	1024·6	86·4	89·0	83·5	89·9	79·9	85·7	72·8	73	58	85	72	—	
23	1018·3	1014·2	1007·8	1013·4	88·5	93·0	87·0	93·2	82·1	88·8	78·0	69	56	81	69	—	Cloudless sky.
24	1009·9	1002·7	1002·3	1005·0	91·0	94·8	90·2	95·4	85·3	91·3	82·5	68	59	79	69	—	Cloudless sky until 16 h.
25	1013·4	1006·0	1007·9	1005·8	90·5	97·2	87·9	*x*98·2	86·8	92·1	82·5	82	63	98	81	11·3	┳ 14 h. ◹ 16 h. towards S. and S.W.
26	1010·6	1011·5	1012·5	1011·5	86·8	88·9	86·5	90·2	84·5	87·4	85·3	95	89	98	94	—	≡² 0 h. to 6 h. 30 m. [●² 17 h. [(heavy shower)
27	1012·7	1012·7	1012·0	1012·5	87·7	89·9	87·4	91·8	86·0	88·6	84·4	87	74	84	82	—	
28	1009·7	1008·6	1007·9	1008·7	88·9	92·0	89·0	93·5	85·9	89·6	83·7	86	78	95	86	*x*13·4	●² 4 h. 50 m. ┳ 16 h. in W. ●² ┳18 h.
29	1008·7	1007·8	1008·7	1008·4	86·4	91·3	86·9	92·0	84·1	88·1	85·4	94	74	80	83	1·1	≡² 5 h. to 8 h. ●² 9 h. 15 m.
30	1014·6	1016·9	1017·4	1016·3	86·0	87·8	85·6	88·8	85·3	86·7	82·6	88	71	87	82	0·5	●² 8 h.
31	1020·3	1022·5	1023·5	1022·1	86·3	87·0	84·1	88·4	83·3	85·8	79·9	74	60	89	74	—	
Means	1013·0	1012·9	1012·9	1012·9	86·3	88·4	84·9	89·8	82·6	86·4	79·4	76	67	83	75	43·7	
Normal	1010·2	1009·9	1010·2	1010·1	85·6	87·6	83·9	88·8	82·0	85·6	79·0	?	66	82	?	41·4	
	◄——27 years——►				◄——27 years——►						24 years	◄——25 years——►				27 years	

JERSEY (ST. LOUIS OBSERVATORY).

Day.	Wind Direction and Force (0-12 on the Beaufort Scale). 9 h.	14 h.	21 h.	Mean of Force.	Sunshine* Total.	Per cent. of Possible.	Cloud Amount (tenths of Sky covered), Type of Cloud, and Direction whence coming. Tenths.	Upper. Type.	Direction.	Lower. Type.	Direction.	Tenths.	Upper. Type.	Direction.	Lower. Type.	Direction.	Tenths.	Upper Type.	Direction.	Lower. Type.	Direction.	Mean Amount.
	9 h.	14 h.	21 h.		hr.	%	9h.	9 h.	9 h.	9 h.	9 h.	14 h.	14 h.	14 h.	14 h.	14 h.	21h.	21 h.	21 h.	21 h.	21 h.	
1	(Dir. 0-12) 180 3	(Dir. 0-12) 180 1	(Dir. 0-12) 180 4	2·7	1·3	9	10	A.-Cu.	SW	..	..	10	A.-Cu.	SSW	..	..	10	..	..	Nb.	..	10·0
2	203 4	293 4	247 5	4·3	3·9	27	10	..	..	..	..	10	..	..	Nb.	WNW	8	..	..	Cu.-Nb.	W	9·3
3	247 4	247 5	270 2	3·7	12·9	88	4	Ci.	SW	Cu.	WNW	6	..	..	Cu.	W	2	..	..	Cu.	..	4·0
4	315 4	337 3	315 3	3·3	11·3	77	4	..	..	Cu.	NW	6	..	..	Cu.	NW	0	..	..	..	..	3·3
5	225 3	225 3	157 1	2·3	12·4	84	5	Ci.	WNW	..	..	5	Ci.	WNW	..	..	2	..	..	..	..	4·0
6	203 4	203 4	247 5	4·3	5·4	37	8	A.-Cu.	..	..	..	6	A.-Cu.	W	..	..	10	..	..	..	..	8·0
7	247 4	247 5	293 2	3·7	10·8	73	8	Ci.	..	Cu.-Nb.	..	6	..	..	{ Cu. Cu.-Nb.	W	4	Ci.	..	..	..	6·0
8	Calm	203 3	203 1	1·3	2·6	17	10	..	..	Cu.-Nb.	SW	7	A.-Cu.	WSW	..	..	6	A.-Cu.	..	..	..	7·7
9	247 1	203 2	360 3	2·0	0·6	4	8	A.-Cu.	W	..	..	10	..	..	..	..	7	A.-Cu.	..	..	..	8·3
10	67 4	45 4	67 5	4·3	9·7	65	8	A.-Cu.	WSW	Cu.-Nb.	WNW	0	..	..	..	..		A.-Cu.	SW	..	..	4·7
11	67 4	67 4	180 1	3·0	8·0	53	6	A.-Cu.	SW	..	..	6	{ Ci. A-Cu.	SW WSW }	..	..	8	..	..	..	..	6·7
12	225 3	247 3	293 3	3·0	2·1	14	6	A.-Cu.	SW	..	..	7	..	..	St.-Cu.	WSW	10	..	..	..	..	7·7
13	293 3	315 3	315 2	2·7	10·3	68	9	..	..	..	..	6	A.-Cu.	SW	Cu.	NNW	3	Ci.	..	..	..	6·0
14	45 3	23 3	45 4	3·3	14·6	96	4	Ci.	W	..	..	3	Ci.	..	..	..	5	Ci.	..	..	..	4·0
15	67 4	45 5	67 5	4·7	2·1	14	10	..	..	St.-Cu.	E	10	..	..	Nb.	E	4	..	..	..	..	8·0
16	90 3	180 2	270 2	2·3	9·7	63	7	..	..	Cu,	SW	4	..	..	..	..	10	..	..	..	..	7·0
17	225 4	203 5	203 5	4·7	0·3	2	10	..	..	St.-Cu.; Nb	WSW	7	..	..	St.-Cu.	..	10	..	..	..	..	9·0
18	225 5	247 5	225 5	5·0	7·0	46	10	..	..	Nb.	W	7	..	..	Cu.	WSW	6	..	..	Cu.-Nb.	W	7·7
19	247 4	225 4	247 1	3·0	12·0	78	2	..	..	Cu.	..	3	A.-Cu.	..	..	..	4	..	..	Cu.	SW	3·0
20	337 1	315 2	360 1	1·3	7·3	47	9	..	..	..	..	8	..	..	..	..	7	..	..	..	..	8·0
21	315 3	247 3	Calm	2·0	13·6	88	3	..	..	Cu.	NW	2	..	..	Cu.	NW	1	..	..	..	..	2·0
22	225 2	360 2	45 3	2·3	13·4	87	2	..	..	Cu.	..	1	..	..	Cu.	..	0	..	..	..	..	1·0
23	67 3	45 5	67 4	4·0	15·6	100	0	..	..	..	..	0	..	..	..	..	0	..	..	..	..	0·0
24	45 3	67 4	67 3	3·3	15·6	100	0	..	..	..	..	0	..	..	..	..	3	A.Cu.	..	..	..	1·0
25	157 2	23 2	135 1	1·7	5·6	36	8	A.-Cu.	SE	..	..	4	A.-Cu.	..	Cu.	SSW	10	..	..	..	..	7·3
26	203 3	203 3	225 1	2·3	0·7	4	10	A.-Cu.	..	Nb.	SSW	10	..	..	..	..	10	..	..	..	..	10·0
27	225 3	225 3	247 1	2·3	6·9	44	10	..	..	..	..	4	Ci.-Cu.	NW	Cu.	..	10	A.-Cu.	..	..	..	8·0
28	45 3	113 2	67 2	2·3	2·5	16	10	..	..	..	..	10	A.-Cu.	S	..	..	9	Ci.-Cu.	S	..	..	9·7
29	225 3	180 4	203 4	3·7	7·2	46	10	..	..	..	..	3	..	..	Cu.	..	7	..	..	Cu.-Nb.	WSW	6·7
30	247 4	247 4	247 4	4·0	5·7	36	10	..	..	Cu.-Nb.	W	7	..	..	Cu.	WNW	10	..	..	..	..	9·0
31	315 4	293 3	270 3	3·3	10·5	66	7	..	..	Cu.; Cu.-Nb	NW	6	..	..	Cu.	NW	4	A.-Cu.	..	..	..	5·7
Means	3·2	3·4	2·8	3·1	7·8	51	7·0	—	—	—	—	5·6	—	—	—	—	6·0	—	—	—	—	6·2
Normal	3·5	4·0	3·3	3·6	8·3	54	6·0	—	—	—	—	5·1	—	—	—	—	5·1	—	—	—	—	5·4
	◄——17 years——►				23 years		◄——26 years——►															

*For method of estimation see Introduction.

8. WIND COMPONENTS: Metres per second at fixed hours, together with the greatest mean hourly velocity, or the greatest velocity attained in a gust, and the time of its occurrence.

NORTH WALES:—HOLYHEAD.

Height of Head above—Roof 8·8 m., Ground 13·7 m., M.S.L. 19·2 m.
Height of Cups above—Roof 4·6 m., Ground 7·6 m., M.S.L. 15·2 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m	m/s.	m/s.	m/s.	m/s.	m/s.	h. m.
1	..	Ca	lm	..	1·5	..	..	7·7	1·8	..	..	1·8	1·2	..	..	6·2	12	23 30
2	9·6	..	..	1·9	9·2	..	3·8	..	13·3	..	2·7	..	11·1	..	11·1	..	26	21 40
3	6·7	..	16·2	..	6·3	..	15·2	..	4·0	..	9·6	..	1·7	..	8·6	..	28	4 15
4	2·3	..	11·5	..	..	..	10·2	..	..	1·9	4·6	..	3·8	..	3·8	..	16	3 30
5	8·7	..	..	1·7	..	..	..	10·0	9·1	..	6·1	..	10·8	..	2·1	..	20	23 15
6	..	..	..	11·7	..	..	..	9·8	4·7	..	7·0	..	..	..	8·9	..	20	1 10
7	..	..	10·2	..	..	2·1	10·8	..	..	..	9·4	..	..	..	6·2	..	17	7 20
8	..	1·3	6·5	..	2·5	..	6·9	..	6·3	..	6·3	..	..	3·3	8·0	..	16	20 15
9	..	5·1	5·1	..	..	4·5	4·5	..	..	..	5·1	..	..	..	3·7	..	11	0 30
10	..	..	2·3	..	..	3·8	..	..	..	2·4	1·0	..	..	4·3	..	6·5	11	23 25
11	..	0·4	..	2·0	..	..	..	5·3	2·5	..	..	5·9	2·5	..	..	6·1	9	21 5
12	6·2	..	..	4·2	7·9	..	3·3	..	8·8	..	3·6	..	6·1	..	6·1	..	19	23 5
13	8·9	..	8·9	..	4·2	..	10·2	..	3·3	..	7·9	..	..	..	8·0	..	19	2 55
14	3·8	..	9·1	..	1·2	..	6·3	..	..	..	3·9	..	4·3	..	1·8	..	13	2 35
15	2·6	..	..	0·5	5·8	..	..	1·2	..	4·4	..	2·9	..	2·4	..	5·8	?	..
16	1·1	..	..	5·4	1·4	..	..	7·1	..	..	..	5·3	..	Ca	lm	..	11	6 40
17	..	Ca	lm	..	4·8	..	2·0	..	10·8	..	..	2·1	8·4	..	8·4	..	19	17 55
18	9·2	..	6·2	..	10·1	..	6·7	..	13·2	..	5·5	..	9·0	..	9·0	..	24	18 5
19	8·3	..	12·5	..	6·8	..	10·2	..	2·9	..	6·9	..	1·1	..	5·4	..	23	3 40
20	1·0	..	4·9	..	5·7	..	5·7	..	5·9	..	5·9	..	5·2	..	3·5	..	13	9 25
21	5·0	..	2·1	..	7·1	..	4·8	..	8·7	..	5·8	..	7·4	..	7·4	..	16	14 50
22	9·7	..	4·0	..	8·8	..	8·8	..	8·8	..	5·9	..	9·3	..	3·9	..	19	12 10
23	7·4	..	3·1	..	5·1	..	2·1	..	..	1·4	3·3	..	..	Ca	lm	..	12	1 25
24	..	Ca	lm	..	..	..	..	1·6	..	1·7	..	8·7	1·1	..	..	2·8	12	12 10
25	0·7	..	..	3·4	0·4	..	..	2·0	..	1·8	1·8	..	..	Ca	lm	..	11	4 45
26	3·9	..	1·6	..	2·8	..	1·9	..	3·0	..	2·0	..	4·2	..	4·2	..	9	1 45
27	2·3	..	2·3	..	..	Ca	lm	..	1·9	..	2·8	..	3·2	..	3·2	..	9	15 40
28	5·0	..	3·3	..	2·6	..	1·7	..	2·5	..	2·5	..	..	Ca	lm	..	8	2 55
29	..	Ca	lm	..	..	3·3	..	7·9	..	5·5	2·3	..	..	3·7	0·7	..	12	6 0
30	..	4·3	6·4	..	..	3·7	9·0	..	4·1	..	6·1	..	..	1·6	8·2	..	14	6 55
31	..	2·0	9·8	..	..	1·4	7·1	..	7·3	..	4·9	..	2·9	..	6·9	..	14	2 35
S+N & W+E	115·5		156·8		113·0		182·9		141·0		149·6		108·6		156·5			
S−N & W−E	89·3		95·2		75·4		77·7		101·8		96·2		78·0		101·7			

SCOTLAND N:—DEERNESS.

Height of Cups above—Roof 1·5 m., Ground 4·9 m., M.S.L. 57·3 m.

Day.	3 h.				9 h.				15 h.				21 h.				Vel. in Max. Hourly Run.	Time of Max.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	hrs.
1	..	1·0	5·1	..	..	4·2	0·8	..	..	..	..	2·6	..	..	..	4·3	5·9	4
2	1·4	..	..	7·1	..	..	..	12·8	..	2·8	..	14·1	3·3	..	..	4·9	16·7	12
3	5·3	..	..	7·9	8·8	..	..	3·6	3·8	..	5·7	..	..	2·3	5·5	..	?16·1	?24
4	..	8·4	12·5	..	..	10·9	10·9	..	..	8·1	8·1	..	..	Ca	lm	..	18·7	2
5	8·5	..	..	3·5	10·3	..	..	4·3	10·9	..	..	2·2	2·3	..	0·4	..	12·8	7
6	4·8	..	..	1·0	4·5	..	..	0·9	..	..	..	3·6	2·0	..	..	0·4	5·6	7, 14
7	3·6	..	1·5	..	4·3	..	10·3	..	..	2·3	11·6	..	..	1·4	7·1	..	12·5	16
8	..	..	8·2	..	2·6	..	6·4	..	5·5	..	..	1·1	7·1	..	..	1·4	10·8	16,17,19
9	..	4·6	6·8	..	1·6	..	8·0	..	..	..	9·8	..	..	..	3·3	..	9·8	15
10	1·6	..	4·0	..	3·4	..	5·2	..	2·3	..	2·3	..	2·6	..	0·5	..	7·2	7
11	1·6	..	0·3	..	4·2	..	0·8	..	2·0	..	..	4·8	4·0	..	..	6·0	8·9	22
12	6·7	..	..	10·1	7·0	..	..	10·4	8·1	..	..	8·1	1·1	..	1·1	..	14·1	7
13	5·1	..	1·0	..	11·9	..	..	2·4	..	..	11·8	..	..	..	8·5	..	13·8	17
14	..	..	13·4	..	..	5·9	14·2	..	..	3·3	7·9	..	..	Ca	lm	..	15·7	7
15	4·5	..	..	0·9	3·6	..	..	1·5	4·3	..	..	2·9	3·1	..	..	4·7	6·9	17
16	6·3	..	..	6·3	5·1	..	..	5·1	5·4	..	..	8·1	6·9	..	..	6·9	10·2	16
17	9·2	..	..	6·2	6·7	..	..	6·7	5·7	..	..	8·5	3·5	..	..	8·5	11·5	23
18	5·8	..	..	5·8	8·9	..	..	..	9·4	..	..	3·9	6·9	..	..	2·9	12·5	12
19	3·6	..	..	2·4	1·2	..	6·1	..	4·4	..	10·6	..	5·8	..	8·7	..	12·8	16
20	4·4	..	4·4	..	6·0	..	6·0	..	3·8	..	..	2·6	3·3	..	..	1·4	8·5	1, 7, 9
21	6·5	..	1·3	..	7·2	..	..	..	5·8	..	..	1·2	5·8	..	..	1·2	8·5	13
22	2·8	..	2·8	..	3·8	..	0·8	..	2·9	..	0·6	..	..	Ca	lm	..	4·9	24
23	3·8	..	0·8	..	5·5	..	2·3	..	3·5	..	..	0·7	..	Ca	lm	..	7·5	5, 6
24	..	Ca	lm	..	1·9	..	..	1·3	0·7	..	..	3·5	0·9	..	..	4·5	4·6	21, 24
25	1·4	..	..	2·2	..	1·2	..	5·8	..	3·1	..	7·6	..	2·9	..	6·9	8·2	15
26	..	2·5	..	6·1	..	2·9	..	6·9	..	1·1	..	5·5	1·6	..	..	4·0	8·5	11
27	1·9	..	..	4·5	4·2	..	..	6·2	5·7	..	..	8·5	4·7	..	..	7·1	10·2	15
28	5·1	..	..	5·1	1·9	..	..	1·3	..	3·1	4·7	..	..	2·1	5·2	..	7·9	1, 2
29	..	0·6	2·9	..	..	Ca	lm	..	0·6	..	..	3·2	0·7	..	..	3·5	4·6	24
30	..	1·0	..	4·8	..	3·8	..	2·6	..	6·0	6·0	..	..	1·9	9·6	..	9·8	21
31	..	1·7	8·7	..	1·5	..	7·4	..	5·9	..	..	..	..	..	7·2	..	11·1	19
S+N & W+E	113·7		147·6		145·0		151·0		120·5		171·8		76·2		125·3			
S−N & W−E	74·1		−0·2		87·2		7·4		60·9		−13·6		55·0		−11·1			

ENGLAND S.W.:—SCILLY.

Height of Head above—Ground 9·8 m., M.S.L. 49·7 m.
Height of Cups above—Ground 5·8 m., M.S.L. 45·7 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	h. m.
1	2·2	..	..	0·4	5·4	..	..	3·8	7·4	..	..	5·2	10·3	..	..	3·8	16	21 25
2	3·8	..	3·8	..	No	R	eco	rd	No	R	eco	rd	No	R	eco	rd	19	20 35
3	No	R	eco	rd	No	R	eco	rd	..	1·2	6·6	..	..	4·1	5·9	..	16	1 30
4	..	5·7	4·0	..	..	1·4	0·5	..	..	0·6	0·3	..	0·2	..	0·6	..	14	0 45
5	4·1	..	1·9	..	No	R	eco	rd	4·7	..	2·2	..	4·7	..	1·7	..	10	12 55
6	4·9	..	2·8	..	6·3	..	2·9	..	2·6	..	5·5	..	0·5	..	5·8	..	13	10 30
7	..	0·7	7·6	..	..	0·5	5·6	..	..	1·2	4·4	..	..	0·8	3·0	..	11	0 15
8	..	0·4	1·6	..	2·1	..	1·2	..	1·6	..	0·6	..	1·9	..	0·9	..	5	9 05
9	0·1	..	0·1	..	..	3·2	..	1·2	..	1·2	..	0·6	..	0·7	..	0·5	7	5 40
10	..	0·7	..	0·7	..	0·1	..	1·6	..	..	..	2·0	0·9	..	..	3·3	8	23 55
11	1·5	..	..	5·4	1·9	..	..	7·0	3·7	..	..	5·3	2·2	..	1·3	..	13	12 05
12	2·3	..	0·6	..	0·4	..	2·2	..	0·3	..	3·1	..	..	0·5	5·6	..	11	23 20
13	..	0·7	8·0	..	..	1·9	4·2	..	..	1·6	3·4	..	..	1·5	1·8	..	12	1 35
14	..	0·5	0·6	..	..	Ca	lm	..	No	R	eco	rd	..	0·7	..	1·5	5	17 35
15	..	0·8	..	3·0	..	0·3	..	3·9	2·1	..	..	7·8	0·5	..	..	2·9	13	15 35
16	0·3	..	..	1·7	0·1	..	..	0·6	..	0·4	..	0·9	..	0·8	1·4	..	7	1 20
17	..	..	1·6	..	4·0	..	..	..	1·2	..	6·5	..	3·2	..	3·2	..	13	13 10
18	4·9	..	0·9	..	1·8	..	9·3	..	3·8	..	10·3	..	..	..	9·8	..	19	12 05
19	0·8	..	9·1	..	0·6	..	6·8	..	0·7	..	4·1	..	..	0·9	3·5	..	15	0 55
20	..	0·7	2·0	..	..	Ca	lm	..	..	0·1	0·3	..	..	0·1	0·2	..	4	0 30
21	..	Ca	lm	..	..	0·2	1·0	..	1·5	..	2·1	..	0·6	..	1·0	..	5	16 35
22	1·0	..	1·2	..	0·9	..	1·6	..	0·5	..	0·7	..	..	Ca	lm	..	4	7 55
23	..	Ca	lm	..	..	..	..	2·4	..	0·3	..	1·5	..	0·6	..	1·5	8	11 40
24	..	..	..	3·5	0·6	..	..	3·5	0·8	..	..	2·9	..	Ca	lm	..	8	10 25
25	0·3	..	..	1·9	0·0	..	..	0·1	0·3	..	0·5	..	0·2	..	0·1	..	5	12 35
26	..	Ca	lm	..	..	Ca	lm	..	..	Ca	lm	..	..	Ca	lm	..	..	..
27	..	Ca	lm	..	0·2	..	0·2	..	0·2	..	0·2	..	..	Ca	lm	..	3	11 20
28	..	Ca	lm	..	..	Ca	lm	..	..	Ca	lm	..	..	0·0	..	0·1	2	21 55
29	..	Ca	lm	..	0·1	..	..	0·2	0·8	..	1·2	..	..	1·7	2·9	..	11	24 00
30	..	4·6	7·9	..	..	1·4	3·9	..	..	1·0	5·6	..	..	2·6	5·5	..	14	2 10
31	..	3·9	4·6	..	..	2·0	2·4	..	..	1·7	2·3	..	..	1·7	2·9	..	10	2 05
S+N & W+E	‡44·9		74·9		‖35·4		66·1		†41·4		86·1		‡41·9		70·7			
S−N & W−E	7·5		41·7		13·4		17·5		23·0		33·7		8·5		43·5			

‡ 30 days only. ‖ 28 days only.

ENGLAND E.:—SHOEBURYNESS.

Height of Head above—Ground 27·4 m., M.S.L. 31·4 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	h. m.
1	No	R	eco	rd	3·7	..	..	..	3·1	..	..	8·5	4·4	..	..	3·7	13	14 30
2	8·0	..	..	3·0	11·0	..	..	..	5·5	..	6·5	..	6·1	..	7·2	..	16	23 50
3	5·5	..	9·5	..	5·5	..	9·5	..	6·4	..	11·1	..	1·7	..	4·6	..	23	15 00
4	1·0	..	5·7	..	..	4·9	4·2	..	..	9·1	..	..	..	2·3	2·3	..	17	14 25
5	No	R	eco	rd	4·0	..	2·3	..	5·1	..	6·1	..	5·1	..	6·1	..	12	22 05
6	4·6	..	5·4	..	8·0	..	6·7	..	8·4	..	7·1	..	6·9	..	8·2	..	20	17 10
7	1·3	..	7·5	..	..	1·5	8·4	..	..	..	8·5	..	..	1·4	4·0	..	17	13 30
8	0·4	..	2·6	..	1·8	..	3·2	..	..	Ca	lm	..	3·8	..	3·1	..	12	12 55
9	2·2	..	3·3	..	0·6	..	3·3	..	3·3	..	..	2·2	..	Ca	lm	..	7	9 35
10	..	3·3	0·7	..	..	0·7	..	3·6	1·1	..	..	5·7	..	1·5	..	7·7	11	23 45
11	1·5	..	..	7·7	..	..	..	6·4	..	..	..	10·1	1·1	..	..	5·7	14	12 20
12	2·4	..	..	..	3·6	..	2·4	..	5·6	..	5·6	..	3·4	..	5·1	..	13	16 40
13	2·6	..	2·6	..	2·3	..	5·6	..	..	1·2	6·3	..	..	1·7	1·2	..	13	9 35
14	..	..	2·4	..	0·6	..	2·9	..	..	1·9	0·8	..	..	Ca	lm	..	8	9 45
15	0·6	..	..	2·9	..	..	..	8·5	..	2·1	..	10·5	..	4·7	..	11·3	17	23 45
16	..	2·1	..	10·8	..	4·0	..	9·6	..	3·5	..	8·4	..	4·3	..	4·3	15	9 25
17	..	2·8	..	2·8	2·2	..	3·3	..	8·2	..	8·2	..	9·1	..	6·1	..	17	15 40
18	6·0	..	6·0	..	10·4	..	..	..	10·1	..	10·1	..	9·0	..	9·0	..	23	13 40
19	7·1	..	7·1	..	6·1	..	9·1	..	8·8	..	8·8	..	6·3	..	4·2	..	20	1 10
20	3·7	..	3·7	..	1·1	..	2·8	..	5·1	..	..	3·4	..	Ca	lm	..	10	0 15
21	..	Ca	lm	..	..	Ca	lm	..	3·6	..	..	0·7	1·7	..	2·5	..	9	17 45
22	0·5	..	2·4	..	3·3	..	3·3	..	3·1	..	1·3	..	4·1	..	2·7	..	8	10 30
23	..	Ca	lm	..	0·6	..	..	2·9	..	3·6	..	8·7	..	5·4	..	5·4	12	15 25
24	..	3·3	..	7·9	..	1·4	..	6·9	..	3·0	..	7·3	..	2·4	..	2·4	12	12 40
25	..	1·4	..	0·6	..	Ca	lm	..	0·7	..	..	3·3	..	Ca	lm	..	10	13 05
26	0·8	..	1·9	..	..	0·3	1·5	..	2·4	..	3·6	..	3·0	..	3·0	..	9	14 00
27	1·3	..	2·0	..	2·5	..	1·7	..	3·8	..	2·6	..	2·6	..	3·8	..	9	18 15
28	2·8	..	2·8	..	1·7	..	1·7	..	1·5	..	1·0	..	2·0	..	..	1·3	7	2 05
29	1·7	..	..	1·7	0·5	..	..	1·1	4·0	..	..	1·6	4·7	..	4·7	..	14	16 45
30	7·9	..	3·3	..	5·4	..	5·4	..	1·5	..	7·7	..	3·2	..	4·8	..	16	23 00
31	..	..	5·2	..	..	3·4	5·1	..	..	2·0	4·8	..	..	Ca	lm	..	13	1 50
S+N & W+E	74·8†		111·5†		91·1		121·4		117·7		170·5		101·9		124·4			
S−N & W−E	49·0		36·7		58·7		43·4		64·9		29·7		54·5		40·8			

† 29 days only.

9. SEISMOLOGICAL DIARY.

The notation used is explained in the Introduction.

EARTHQUAKES:—ESKDALEMUIR.

Day.	Phase.	Time. G.M.T.	Period.	Amplitudes. A_N.	Amplitudes. A_E.	Amplitudes. A_Z.	△.	Remarks.
		h m s	s	μ	μ	μ	km.	
1	L	23 48 0	18	..	..	..	..	
2	L	9 1 0	..	..	..	..	..	
	L	9 6 0	24	..	..	..	..	
-	L	15 21 0	25	..	..	..	..	Earlier phases masked by large microseisms and wind effects.
7	i	5 59 26	..	..	..	..	..	
	i	6 8 27	..	..	..	..	..	
	i	6 15 44	..	..	..	..	..	
	L	6 28 0	..	..	..	..	..	
	L_N	6 31 0	38	..	..	..	..	
	L_N	6 37 0	32	..	..	..	..	
	L_N	6 47 0	22	..	..	..	..	
	F	7 20 0	..	..	..	..	..	
7	P	22 52 48	..	..	..	..	..	Times are from vertical seismogram. Horizontal instruments under adjustment at the time.
	F	23 50 0	..	..	..	..	..	
9		18 2 to	..	..	..	..	..	Slight disturbance with group of long waves of 24 sec. period at 18h. 5m.
		18 30 0	..	..	..	..	..	
10	P	19 9 54	..	..	..	..	..	Very distant earthquake. Time of L phase difficult to determine owing to low amplitude and absence of apparent periodicity in displacements. Some evidence for L being at 19h. 47m, and for interference of L with L rep.
	i	19 16 41	..	..	..	..	..	
	i_E	19 18 25	..	..	..	..	..	
	F	21 30 0	..	..	..	..	..	
12	P	22 16 29	..	..	..	..	..	
	L	22 34 30	..	..	..	..	..	
	F	23 5 0	..	..	..	..	..	
13	e_E	2 3 25	..	..	..	..	..	
	e	2 12 49	..	..	..	..	..	
	L(?)	2 26 0	..	..	..	..	..	
	L_E	2 47 0	39	..	..	..	..	
	F	4 30 0	..	..	..	..	..	
14	L	18 3 0	19	..	..	..	..	
	F	18 27 0	..	..	..	..	..	
19	L	13 38 0	21	..	..	..	..	
	F	14 10 0	..	..	..	..	..	
20	L	6 36 0	..	..	..	..	..	
20	i_N	7 47 56	..	..	..	..	..	
	L	8 19 0	..	..	..	..	..	
	F	10 0 0	..	..	..	..	..	
25	L	12 2 0	..	..	..	..	..	
26	P	12 41 24	..	..	..	..	..	L phase very indistinct. Group of very regular sinusoidol waves of 19s. period from 13h. 35m. to 13h. 50m.
	PR(?)	12 45 3	..	..	..	...	..	
	F	14 50 0	..	..	..	..	..	
27	P	6 6 27	..	..	..	..	4700	
	S	6 13 5	..	..	..	..	..	
	L	6 18 53	..	..	..	..	..	
	F	7 5 0	..	..	..	..	..	

MICROSEISMS OF N. COMPONENT:—ESKDALEMUIR.

Day.	0 h. A_N.	0 h. T.	6 h. A_N.	6 h. T.	12 h. A_N.	12 h. T.	18 h. A_N.	18 h. T.
	μ	s	μ	s	μ	s	μ	s
1	0·8	6	0·8	6	0·8	6	0·9	5
2	1·0	6	1·4	5	1·6	6	2·9	5
3	3·5	5·5	3·3	5·5	3·5	5	2·7	5
4	2·8	6	2·1	5·5	3·0	4·5	2·2	5
5	2·3	5	3·3	5·5	4·2	5	2·5	5·5
6	2·8	5	2·2	5·5	1·4	6	1·2	6
7	1·6	6	..	..	0·8	5·5	1·3	6
8	..	..	..	..	1·0	5	1·0	5.
9	1·1	4	0·3	4	0·4	4·5	0·7	4
10	0·6	5	0·6	4	0·5	5	0·3	5
11	0·3	4	0·1	4	0·1	4	0·1	3·5
12	0·1	3·5	0·1	4	0·9	5	1·1	4
13	2·1	4	1·0	6	1·9	4	1·1	4
14	0·9	6	0·9	5	1·0	4·5	0·9	5
15	1·1	4	1·1	4	1·2	4	1·0	4·5
16	1·0	5	1·3	4·5	1·1	5	1·1	4·5
17	0·6	6	0·7	5·5	0·6	5·5	0·7	4·5
18	0·5	5	0·6	4	0·7	4	0·8	5
19	0·7	5·5	0·8	6	0·8	6	0·9	6
20	0·9	5	1·2	4·5	1·2	5	0·8	5
21	0·9	5	0·7	5	..	..	..	..
22	..	..	..	..	1·0	6	0·8	5·5
23	1·0	5	0·6	5	0·5	4·5	0·5	4
24	0·3	4	0·5	4	0·5	4·5	0·3	4
25	0·2	4·5	0·1	4	0·3	4	0·1	4
26	0·0	0	0·0	0	0·0	0	0·0	0
27	0·1	4	0·1	4	0·1	3·5	0·1	4
28	0·1	4	0·0	0	0·0	0	0·0	0
29	0·0	0	0·0	0	0·0	0	0·0	0
30	0·0	0	0·0	0	0·0	0	0·3	2
31	0·2	4	0·3	3	0·3	3	0·6	4

Means for Month $\begin{cases} A_N = 0·9\ \mu. \\ T = 4·2\ s. \end{cases}$

Normals for Month, 1911–19 $\begin{cases} A_N = 0·6\ \mu. \\ T = 4·7\ s. \end{cases}$

EARTHQUAKES:—RICHMOND (KEW OBSERVATORY).

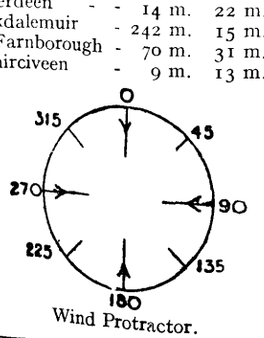
Day.	Times, G.M.T. of Commencement.	Times, G.M.T. of Max. Phase.	Remarks.
	h m	h m	
1	..	23 49	Very small.
2	..	9 09	Small.
2	..	13 18	Small. Succession of small waves to 14h. 25 m.
2	..	15 27	Small. Succession of very small waves to 15 h. 45 m.
7	6 09	6 51	Amplitude on trace 1.3 mm. Succession of small waves to 7 h. 15 m.
7	22 12	22 46	Amplitude on trace 1.1 mm.
10	..	19 56	Small. Very small waves to 20 h. 20 m.
12	..	22 53	Very small.
13	2 15	3 07	Amplitude on trace 1·4 mm.
14	..	18 09	Small.
19	..	13 38	Very small.
20	..	6 35	Very small.
20	..	8 55	Small. Succession of small waves to 9 h. 50 m.
26	..	13 45	Small. Very small waves to 14 h. 30 m.

10. SOUNDINGS WITH PILOT BALLOONS.

Day	Time of Start, G.M.T.	Horizontal Velocity of Wind. Geostrophic *		By Anemometer.		At Heights above M.S.L. 500 m.		1000 m.		2000 m.		3000 m.		4000 m.		Cloud Observations. Time, G.M.T.	Type.	Deg. from N.	mr/s	Type.	Deg. from N.	mr/s
	h. m.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	h. m.						
									ABERDEEN.													
8	12 30	250	7	145	3.0	220	6.5	250	11·0	265	11·0	265	17·5	..	..	13 0	St.-Cu.	265	4·0	..	..	..
14	18 30	285	10	Calm		320	2·0	275	6·5	295	13·0	..	..	..	..	..	A.-Cu.	315	..	..	..	..
15	12 30	180	7	125	4·0	200	6·0	230	4·0	255	3·5	230	4·0	..	..	..	..	..	..	Cloud less		
24	12 30	140	6	160	4·5	170	12·0	150	14·0	155	12·0	..	..	..	..	..	..	..	..	Cloud less		
									ESKDALEMUIR.													
4	7 25	310	15	300	7·5	295	7·5	305	13·0	325	10·0	..	..	..	..	..	Cu.	315	..	..	..	..
10	17 0	?	?	235	3·0	235	4·6	235	5·0	205	4·4	..	..	..	..	..	St.-Cu.	205		..	..	..
11	11 35	150	13	160	5·0	165	3·7	165	6·5	225	5·5	..	..	..	..	..	..	..	..	Ci.-St.	..	..
14	11 45	320	11	290	7·5	300	6·5	285	6·5	305	17·0	..	..	..	..	12 0	A-Cu. / A St.-Lent	300 / 300	8·5 / 8·5	Ci.-St.	310	5·0
15	11 45	180	9	90	0·5	40	1·4	70	0·5	250	3·0	165	3·9	100	1·9	..	Cu.	..	..	..	..	..
16	12 15	130	10	80	6·0	95	3·4	110	9·5	135	10·0	125	11·5	..	..	12 40	Cu. / A.-St.; A.-Cu.	125 .. / 180	1·9	Ci.-St.	..	..
23	17 15	220	5	220	4·5	220	3·8	225	5·0	240	7·5	245	9·0	..	..	..	..	..	..	Cloud less		
24	7 35	125	7	60	3·2	70	2·4	125	5·5	195	7·5	190	8·0	180	9·0	..	..	..	..	Cloud less		
24	11 20	140	10	100	6·5	110	6·5	115	6·5	140	10·0	155	7·5	170	9·5	..	Cu.	135	5·5	..	..	..
26	17 10	130	9	75	2·7	65	3·2	80	1·0	60	1·7	80	4·1	..	..	..	A.-Cu.	..	..	..	..	..
29	7 35	?	?	65	3·5	55	1·7	180	2·7	200	5·5	180	6·0	205	10·0	8 10	Cu.; Fr.-Cu.	85	..	Ci.	195	2.5
		5000 m		6000 m		7000 m		8000 m		9000 m		10000 m		11000 m								
15	11 45	145	3·0	215	2·3	185	5·5	190	6·5	200	10·0	230	10·5	225	11·0	..	Cu.	..	..	..	..	..
24	7 35	175	11·0	180	13·5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	Cloud less		
24	11 20	195	10·5	..	..	..	..	..	..	..	..	..	..	..	..	..	Cu.	135	5·5	..	..	..
29	7 35	205	15·0	..	..	..	..	..	..	..	..	..	..	..	..	8 10	Cu.; Fr.-Cu.	85	..	Ci.	195	2·5
		(For observations at lower levels, see above.)																				
									SOUTH FARNBOROUGH.													
1	7 25	180	7	135	4·6	165	5·5	185	8·5	195	7·5	215	9·0	235	20·0	..	A.-Cu.; A.-St	..	..	..	..	..
4	6 35	300	9	290	7·0	315	11·5	305	10·0	285	10·0	255	12·5	280	12·0	..	Fr.-Cu.	..	..	..	..	..
5	7 20	?	?	220	4·0	225	9·0	245	8·5	305	11·5	..	..	..	..	..	S .-Cu.; A-Cu	..	..	Ci.	..	..
7	6 40	280	18	225	11·0	280	14·0	285	19·5	285	17·0	..	..	..	..	..	Fr.-Cu.	..	..	..	..	..
10	7 30	?	?	45	4·5	85	7·0	95	2·8	280	4·0	290	12·0	290	15·5	..	..	..	..	Ci.-Cu.	..	..
11	7 40	125	12	70	6·5	120	12·0	120	12·0	180	4·6	285	4·3	255	11·0	..	..	..	..	Ci.-Cu.	..	..
13	7 30	280	14	250	11·5	270	13·0	270	14·0	265	17·5	..	..	..	..	..	St.-Cu.	..	..	Ci.	..	..
14	7 30	?	?	290	2·9	295	4·9	310	7·0	325	13·5	325	16·0	310	16·5	..	..	..	..	Ci.; Ci.-St.	..	..
15	7 25	?	?	110	4·5	90	9·5	75	10·0	65	8·5	120	3·2	115	4·2	..	..	..	..	Ci.; Ci.-St.	..	..
21	7 30	300	6	310	2·6	210	1·8	185	4·3	100	3·4	140	6·5	145	6·0	..	..	..	..	Cloud less		
22	7 30	245	9	250	8·5	245	10·0	255	7·5	270	7·0	..	..	..	..	..	Fr.-Cu.; St.-Cu.	..	..	..	..	..
24	6 30	90	13	70	8·5	100	13·5	85	14·5	105	13·0	..	..	..	..	..	..	..	..	Cloud less		
25	6 40	130	6	45	3·1	215	3·5	190	3·7	220	5·5	220	7·0	230	3·8	..	..	..	..	Ci -Cu	..	..
				5000 m.		6000 m.		7000 m.		8000 m.		9000 m.		10000 m								
4	6 35	(For		300	9·5	305	11·0	305	9·0	305	14·5	305	12·5	..	..	..	Fr.-Cu.	..	..	..	..	..
10	7 30	observations		285	21·5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	Ci,-Cu.	..	..
11	7 40	at lower		250	11·5	260	15·0	275	22·0	275	19·5	..	..	..	..	..	..	..	..	Ci.-Cu.	..	..
15	7 25	levels,		165	6·0	170	5·0	140	5·0	165	10·5	155	11·0	160	10·0	..	..	..	..	Ci.; Ci.-St.	..	..
21	7 30	see above.)		130	6·5	125	8·5	105	14·0	..	..	..	..	..	..	..	..	..	..	Cloud less		
25	6 40			225	2·5	215	3·2	225	4·0	..	..	..	..	..	..	..	..	..	..	Ci.-Cu.	..	..
									CAHIRCIVEEN.													
4	6 35	280	9	50	1·0	285	2·1	290	3·1	285	8·0	300	17·5	300	22·5	..	Cu.	290	..	..	..	..
7	7 10	280	9	280	6·5	280	13·5	285	15·5	280	20·0	..	..	..	..	..	Cu.; St.-Cu.	270	..	..	..	..
9	6 40	290	5	275	3·2	280	4·6	310	7·5	275	9·5	280	16·5	280	23·5	..	Cu.; St.-Cu.	290	..	..	..	..
14	16 15	?	?	240	2·8	220	4·7	215	10·0	220	10·0	260	8·0	270	5·5	17 45	..	..	..	Ci.; Ci.-St.	150	2·0
15	6 30	?	?	calm		160	9·0	180	10·0	180	6·5	150	6·0	160	7·0	7 50	..	..	..	Ci.-St.; Ci.-Cu.	190	1·7
24	7 35	100	4	90	1·0	100	2·0	140	6·5	155	9·5	150	8·5	..	..	8 25	A.-Cu.	205	2·5	Ci..; Ci.-Cu.	200	2·0
25	6 30	110	6	60	3·5	140	4·2	150	7·0	150	7·0	..	..	..	..	6 50	Cu.	175	..	Ci.-St.; Ci.-Cu.	170	2·0
		5000 m.		6000 m.		7000 m.		8000 m.		9000 m.		10000 m.		11000 m.								
4	6 35	325	32·0	320	45.0	..	..	..	..	..	..	..	..	..	..	..	Cu.	290	..	..	..	..
9	6 40	275	35·0	..	..	..	..	..	..	..	..	..	..	..	..	..	Cu.; St..-Cu	290	..	..	..	..
14	16 15	220	6·0	215	5·0	235	4·1	205	7·5	190	5·5	170	7·5	150	10·0	17 45	..	..	..	Ci.; Ci.-St.	150	2·0
15	6 30	160	6·0	180	9·5	175	9·0	170	13·5	195	17·5	..	..	..	..	7 50	..	..	..	Ci.-St.; Ci.-Cu.	190	1·7

Height of Station above M.S.L. = H.
Anemometer above ground = h.

	H.	h.
Aberdeen	14 m.	22 m.
Eskdalemuir	242 m.	15 m.
S. Farnborough	70 m.	31 m.
Cahirciveen	9 m.	13 m.



Wind Protractor.

Notes on Pressure Distribution.

May, 1920.

1st, 7 h. Low centered over the Azores and over Scandinavia ; Ridge over the British Isles.
4th, 7 h. Anticyclone centered W. of Spain ; Low centered near Christiansund.
5th, 7 h. Anticyclone centered over France ; deep depression S.W. of Iceland.
7th, 7 h. ; 8th, 13th ; 9th, 7 h. Westerly type.
10th, 7 h. 18 h. Anticyclone over the British Isles.
11th, 7 h. 13 h. Anticyclone over the North Sea, shallow Low S.W. of Ireland.
13th, 7 h. Deep depression centered near Stornoway.
14th, 7 h. 13 h. 18 h. The Azores. Anticyclone covering the British Isles, extensive Low over Scandinavia.
15th, 7 h. 13 h. Anticyclone over the British Isles, centered over the Baltic.
16th, 13 h. High over the North Sea.
21st, 7 h. ; 22nd, 7 h. Ridge from the Azores to the Baltic ; Low S.W. of Iceland.
23rd, 18 h. ; 24th 7 h, 13 h. Anticyclone centered over the Baltic covering the British Isles.
25th, 7 h. Shallow Low over the Azores covering the British Isles.
26th, 18 h. Shallow Trough from Iceland to the Continent across the British Isles.
29th, 7 h. High over the British Isles.

Notes on Ascents.

Aberdeen—
14th. 18 h. 30 m. Visibility good.
24th. 12 h. 30 m. Slight haze.

Eskdalemuir—
11th. 11 h. 35 m. Solar halo during ascent.
15th. 11 h. 45 m. Solar halo at 11h.
16th. 12 h. 15 m. Solar halo at 10h. 30 m.

South Farnborough—
24th 6 h. 30 m. Atmosphere very hazy.

11. Nephoscope Observations.

Aberdeen.

Day and Hour. G.M.T.	Type of Cloud.	Velocity-height-ratio.				Remarks.
		Degrees from N.	Milliradians per Second.	Components.		
				W.–E.	S.–N.	
4 13	Cu.-Nb.	316	8·3	+5·8	−6·0	Cu. changing to Cu.-Nb.
4 15	Cu. Cu.-Nb.	313	6·9	+5·0	−4·7	
4 17	Cu. Cu.-Nb.	322	5·2	+3·2	−4·1	
5 18	St.-Cu.	261	4·6	+4·5	+0·7	Small high St. Cu,
6 12	False Ci.	258	3·9	+3·8	+0·8	False Ci. becoming fused A.-cu.
6 13	Cu.	254	5·9	+5·7	+1·6	Cu. to Cu.-Nb.
6 16	Cu.-Nb.	261	7·4	+7·3	+1·1	
7 9	Cu.	273	8·3	+8·3	−0·4	Base of cloud measured.
7 12	Cu. Cu.-Nb.	275	3·6	+3·6	−0·3	Apex Do. do.
7 13	Cu. Nb.	285	8·6	+8·3	−2·2	Base Do. do.
7 16	Cu. Cu.-Nb.	276	8·3	+8·3	−0·9	Base Do. do.
7 18½	St.-Cu.	275	5·2	+5·2	−0·5	St. Cu. formed from apical parts of Cu.-Nb.
8 13	St.-Cu.	265	4·2	+4·2	+0·4	High St. Cu. at 3.5 km. by pilot balloon. Cloudlets were nevertheless large.
10 13	St.-Cu.	271	3·4	+3·4	0·0	Thin high St. Cu.
11 13	A.-Cu.	247	3·0	+2·8	+1·2	Thin hazy indefinite A.-Cu. Cirro-nebula above with ⊕.
13 13	Ci.-Cu.	250	2·4	+2·3	+0·8	Flat, fused Ci.-Cu. in bands and lenticular patches, Radiant pt. W.S.W.
	Cu. Fr.-Cu.	271	16·0	+16·0	−0·1	Very squally; cumulus much broken up,
14 13	Cu.	296	5·3	+4·8	−2·3	Faint Cirro-nebula and also Ci. low in N.E. above the Cu.
18 13	Ci.	175	7·1	−0·6	+7·1	Ci. in bands, Radiant pt. S.S.W, striated at 90° to direction.
19 13	Cu. Nb.	264	12·5	+12·4	+1·3	Central part of cloud measured; clouds rather small type.
20 13	Cu. Cu.-Nb.	250	5·4	+5·0	+1·8	Broken Cu. measured; rest of cloud composed of degraded Cu.-Nb.
22 13	Ci.-Cu.	242	3·1	+2·7	+1·5	Ci.-Cu. in fused sheets.
29 13	St.-Cu.	65	2·8	−2·5	−1·2	Thin low St.-Cu.
31 13	Cu.	250	5·2	+4·9	+1·8	Closed sheet of Cu. rapidly formed, clouds not deep.

12. Aurora.

Day.	a.m. or p.m.	Moon.	Magnetic Character.		Aurora Observations.	
			Eskdalemuir.	Richmond.	Stations.	Remarks.
2	p.	..	1, 1	1, 1	Deerness	
3	a.	○	..	..	..	
12	p.	..	0, 2	0, 2	Tenbury	
13	p.	..	2, 2	2, 1	Aberdeen, Tenbury	An auroral arch, moderately faint, was clearly seen above the usual twilight arch at and after 23 h.
17	p.	..	0, 0	0, 0	Tenbury	
18	a.	●	..	..	..	

Note.—The two magnetic "characters" entered in each case refer to the two periods of 24 hours ending and beginning at midnight of the night in question.

METEOROLOGICAL OFFICE OBSERVATORIES.—GEOPHYSICAL JOURNAL.

DAILY VALUES.—*Solar Radiation, Meteorology, Atmospheric Electricity, Terrestrial Magnetism, and Seismology.*

Tenth YEAR.—No. 6. JUNE, 1920.] Units based on the C.G.S. System. [*Price* 1s.

1. SUNSHINE AND SOLAR RADIATION.

Day.	WESTMINSTER. Bright Sunshine.* Total.	Per cent. of Possible.	SOUTH KENSINGTON.—Lat. 51° 30′ N. Long. 0° 10′ W. Radiation received on Horizontal Surface by Callendar Radiograph. Daily Total.	Per cent. of Planetary.	Maximum. For Day. Amount.	Time.	11·30 h. to 12·30 h.	RICHMOND.—Lat. 51° 28′ N. Long. 0° 19′ W. Bright Sunshine.* Total.	Per cent. of Possible.	Radiation at Noon by Ångström Pyrheliometer. Intensity.	Vertical Component.	Sky.	ESKDALEMUIR.—Lat. 55° 19′ N. Long. 3° 12′ W. Bright Sunshine.* Total.	Per cent. of Possible.	Radiation by Ångström Pyrheliometer. Time.	Sky.	$\frac{p}{p_0}$ sec. Z.	Intensity.	CAHIRCIVEEN. Bright Sunshine.* Total.	Per cent. of Possible.
	hr.	%	j/cm².	%	mw/cm².	h. m.	mw/cm².	hr.	%	mw/cm².	mw/cm².		hr.	%	h. m.			mw/cm².	hr.	%
1	4·7	29	1094	27	90	13 50	54	4·3	27	..	..	..	0·8	5	..	..	..	..	1·6	10
2	11·2	69	2195	54	83	11 40	83	10·5	64	74	65	Clear	4·5	26	..	..	..	..	9·6	59
3	6·6	40	1727	43	86	12 15	86	6·8	42	..	..	..	1·5	9	..	..	..	..	14·8	90
4	4·1	25	1117	28	82	14 10	59	3·7	23	..	..	..	12·4	73	..	..	..	..	10·7	65
5	6·5	40	1127	28	*x*92	13 40	66	7·9	48	..	..	..	8·6	50	..	..	..	..	13·5	82
6	7·6	46	2040	50	83	12 10	83	6·9	42	..	..	..	1·2	7	..	..	..	..	*x*15·2	92
7	9·7	59	1795	44	*x*92	10 55	86	11·1	68	70	61	Clear	5·2	30	..	..	..	..	14·0	85
8	13·7	84	2186	54	74	10 35	72	12·9	72	..	..	..	12·7	74	..	..	..	..	1·6	10
9	14·1	86	2229	55	71	12 25	71	*x*14·6	89	69	60	Hazy	*x*15·7	91	12 13	Hazy	1·17	71	0·1	1
10	2·1	13	744	18	66	14 20	4	3·2	19	..	..	..	11·1	65	..	..	..	..	7·4	45
11	3·2	19	872	21	67	14 40	18	3·6	22	..	..	..	8·1	47	..	..	..	..	5·5	33
12	1·5	9	1001	24	80	13 25	55	1·5	9	..	..	..	5·9	34	..	..	..	..	5·4	33
13	3·3	20	1370	33	70	11 5	54	2·1	13	..	..	..	4·0	23	..	..	..	..	6·4	39
14	5·2	32	1356	33	83	10 50	82	5·0	30	..	..	..	8·6	50	..	..	..	..	8·5	51
15	7·4	44	2305	56	74	11 30	74	6·7	41	..	..	..	15·0	87	..	..	..	..	9·4	57
16	6·5	39	1532	37	88	12 15	*x*88	5·5	33	..	..	..	11·0	63	..	..	..	..	11·8	71
17	6·1	36	1311	32	76	11 20	75	7·3	44	..	..	..	13·2	76	..	..	..	..	11·5	69
18	*x*14·6	88	2262	55	82	12 5	82	13·6	82	..	..	..	6·8	39	..	..	..	..	1·8	11
19	4·8	29	1354	33	91	11 25	87	6·0	36	..	..	..	11·2	64	..	..	..	..	0·1	1
20	0·0	0	483	12	11	12 20	11	0·0	0	..	..	..	3·2	18	..	..	..	..	8·9	53
21	10·8	65	1917	47	86	12 5	86	9·6	58	73	65	Clear	3·5	20	..	..	..	..	1·8	11
22	13·2	80	*x*2391	58	82	12 55	81	12·2	73	73	64	Clear	2·0	11	..	..	..	..	0·3	2
23	7·4	45	1638	40	87	11 10	40	7·5	45	..	..	..	4·8	28	..	..	..	..	12·7	76
24	11·8	71	2186	53	83	13 2	82	12·0	72	62	55	Hazy	0·1	1	..	..	..	..	3·5	21
25	5·3	32	1116	27	66	8 48	64	4·1	25	..	..	..	0·0	0	..	..	..	..	0·0	0
26	0·2	2	877	21	53	12 10	53	0·1	1	..	..	..	7·6	44	..	..	..	..	0·5	3
27	0·1	1	881	21	73	11 0	48	0·7	4	..	..	..	0·4	2	..	..	..	..	0·0	0
28	3·5	21	1433	35	88	12 5	*x*88	2·4	15	71	63	Clear	0·1	1	..	..	..	..	5·4	33
29	5·3	32	1108	27	77	13 35	66	4·0	24	..	..	..	5·0	29	..	..	..	..	5·6	34
30	10·3	63	1645	40	88	12 30	*x*88	8·8	53	74	65	Clear	2·0	12	..	..	..	..	0·0	0
Means.	6·69	41	1510	37	77	—	66	6·49	39	—	—	—	6·21	36	—	—	—	—	6·25	38
Normals.	5·80	36	1553	38	—	—	—	6·57	40	—	—	—	5·43	32	—	—	—	—	6·27	38
	←— years —→		←—8 years—→					←—35 years—→					←—5 years—→						←—35 years—→	

2. METEOROLOGY AND MAGNETISM:—CAHIRCIVEEN (VALENCIA OBSERVATORY).—Lat. 51° 56′ N. Long. 10° 15′ W.

Heights above M.S.L.:—H=9·1 m. H_b=13·7 m. H_a=26·4 m. Above Ground: h_t=1·3 m. h_r=0·56 m. h_s=12·8 m. h_a=13·9 m.

Day.	Air Pressure at Station Level. 9 h.	21 h.	Air Temperature in Degrees Absolute. 9 h.	21 h.	Max. 0 h. to 24 h.	Min. 0 h. to 24 h.	Humidity. Vapour Pressure. 9 h.	21 h.	Percentage. 9 h.	21 h.	Wind—Veer from North in degrees and Speed in metres per second. 9 h. Veer	9 h. m/s.	21 h. Veer	21 h. m/s.	Cloud Amount (0–10) and Weather. 9 h.	21 h.	Rain 0 h. to 24 h.	Min. Temp. on Grass. 18 h. to 9 h.	Remarks.	Magnetism. Horizontal Force, Declination West, and Inclination.
	mb.	mb.	*a* 200+	*a* 200+	*a* 200+	*a* 200+	millibar.		%	%	°	m/s.	°	m/s.	Tenths of Sky covered.		mm.	*a* 200+		
1	1029·1	1030·8	86·3	85·5	88·9	84·7	13·2	13·6	87	94	220	5	—	1	10	10	—	83	o. *n*. g. c. to o. *a* o. and d⁰. *p*.	
2	1030·2	1027·9	84·2	87·1	*x*92·4	83·4	11·9	13·6	90	85	345	3	—	1	10	3	—	84	o. *n*. o. ≡⁰ *a*. Fine, day.	
3	1026·4	1023·9	90·8	86·9	91·5	82·6	15·5	13·4	77	85	—	1	—	1	2	1	—	80	Fine ☽. *n*. Fair to fine day.	
4	1021·8	1021·6	89·9	86·7	81·6	82·1	12·4	13·4	65	86	80	2	—	0	*1*	10	—	80	Fine ☽. Fine *a*. c. to o. *p*.	
5	1020·6	1019·6	87·5	86·0	89·5	81·8	11·5	12·8	70	86	—	1	—	0	2	7	—	79	o, *n*. Fine ☽. *a*. Fine ∞, day.	
6	1018·0	1015·5	88·0	86·0	90·5	80·0	12·3	12·2	73	82	—	1	—	0	0	*1*	—	80	Fine, *n*. ∞. Fine, dry day.	
7	1013·8	1012·7	87·1	86·0	91·9	*n*79·9	12·3	12·5	77	84	—	1	—	0	3	6	—	*n*75	Fine ☽², early. Fine day.	
8	1011·8	1011·9	88·6	86·6	89·3	82·8	11·1	11·0	63	71	130	6	115	5	10	10	—	77	Fine ∞ at first. o. and ∞, day.	17837γ. 19° 17·6′ 68° 3·7′
9	1010·5	1009·9	86·5	85·5	86·6	84·8	11·1	12·5	72	87	115	4	120	2	10	10	10·8	83	o. ∞, *a*. ● *p*. c. to o. *n*.	
10	1006·1	997·9	88·4	85·4	89·3	84·6	12·7	11·8	73	83	105	4	110	13	7	10	5·6	84	Fair, day. ● *n*.	19° 17·2′
11	996·8	999·3	86·1	83·7	88·5	82.9	12·9	10·2	86	80	180	3	95	5	9	10	*x*12·1	82	o. *n*. p²., *a*. p. day.	
12	999·8	1000·2	86·6	87·1	88·8	83·1	11·0	11·5	71	72	105	11	110	12	9	4	3·2	81	p⁰. all day.	
13	1001·3	1007·5	86·6	86·2	88·5	84·9	12·2	11·1	79	74	110	10	110	6	9	2	1·7	83	p⁰., early. p., day. Fine, *n*,	
14	1009·8	1012·6	87·1	86·7	91·0	84·6	12·1	12·9	76	83	100	6	165	3	9	6	0·6	82	o. p⁰ to c. *a*. Fair to fine. *p*.	
15	1014·1	1013·3	87·2	86·9	90·9	84·3	12·7	13·4	79	85	115	4	—	1	7	7	—	82	Fair, *a*. Fair to fine. *p*.	68° 4·9
16	1011·7	1011·7	89·5	87·5	90·1	81·1	14·4	12·9	77	79	—	1	—	1	7	6	0·2	78	Fair, early. o. d⁰ to fair. *p*.	
17	1011·9	1012·2	88·8	87·4	90·4	83·0	13·9	13·9	78	85	340	2	—	0	6	7	—	80	Fair to fine, day.	19° 15.6′
18	1008·6	1007·9	87·0	87·0	89·8	84·5	13.0	13·9	82	88	95	2	—	1	10	.6	4·8	81	o. to ●, *a*. Fair, *p*.	17833γ. 19° 15·5′
19	1005·6	1001·8	87·5	87·6	88·5	82·7	14·1	15·8	86	96	165	6	195	5	10	10	6·2	79	Fair, *n*. o. to c. *a*. ●, *p*.	
20	1001·5	1008·1	86·5	85·6	89.8	85·0	13·4	11·6	87	80	215	8	235	7	7	7	0·3	85	o. to c. p⁰., *a*. Fair, *p*.	
21	1015·1	1019·1	87·3	87·0	88·9	84·4	12·9	13·6	80	86	225	6	185	4	9	10	0·5	82	p⁰., o, to c. *a*. Dull, day.	
22	1018·3	1024·6	87·1	87·4	90·0	86·1	15·3	14·8	96	91	185	7	245	7	10	10	2·0	85	●, *a*. Dull, day.	
23	1030·1	1030·0	87·0	85·8	90·0	82·4	10·8	11·2	68	76	335	4	—	1	1	4	0·1	84	Fair, *a*. Fine, day.	
24	1026·2	1020·6	89·6	86·1	89·6	82·1	12·2	14·1	65	94	265	2	255	4	8	10	5·8	80	Fair, early. ●, *a*. o. d. *p*.	19° 16·5′
25	1018·2	1018·4	86·6	86·8	87·5	85·2	14·8	15·2	96	97	225	5	245	5	10	10	4·9	84	●, *a*. Dull day.	
26	1017·4	1016·1	86·9	88·0	90·9	86·2	15·1	15·9	96	94	—	1	180	4	10	10	1·5	86	p⁰. *a*. Dull, day.	
27	1012·9	1010·4	87·0	86·3	87·9	85·2	15·1	13·8	95	91	235	4	255	2	10	9	8·1	86	p⁰., early. ●, *a*. o. *p*.	
28	1003·3	1006·8	88·0	84·8	88·6	84·3	16·6	10·2	98	74	220	8	195	4	10	6	2·1	84	●⁰, *a*. Fair, day.	
29	1001·4	1003·6	84·9	85·4	88·2	83·9	9·9	12·4	72	87	230	10	230	9	6	9	3·0	82	p²., *a*. Fair, day. p. *n*.	17855γ. 68° 4·0′
30	1008·1	1006·7	86·3	85·1	87·6	84·5	13·7	12·8	90	91	220	3	175	3	10	10	4·2	83	Dull day. ●⁰. *n*.	17842γ.
Means.	1013·4	1013·4	87·4	86·3	89·6	83·6	13·0	12·9	80	88	—	4·3	—	3·6	7·4	7·4	77·7	81·8	Monthly Totals or Means	19° 16·5′
Normals.	1014·5	1014·7	87·2	86·3	89·8	83·7	13·2	13·0	80	84	—	4·7	—	4·1	--	--	90·5	—	Normals	68° 4·2′
	←—45 years—→						←—30 years—→				←—35 years—→						45 years			

* By Campbell-Stokes Sunshine Recorder. *x* denotes the maximum and *n* the minimum value in the column.

3. METEOROLOGY:—RICHMOND, SURREY (KEW OBSERVATORY).—Lat. 51° 28′ N. Long. 0° 19′ W.

Heights above Mean Sea Level:—Rain-gauge Site, H=5·5 m. Barometer, H_b=10·4 m. Cups of Anemometer, H_a=25 m.
Heights above Ground:—Thermometers, h_t=3·0 m. Rain-gauge, h_r=0·53 m. Sunshine Recorder, h_s=13·3 m. Cups of Anemometer, h_a=20 m.

Day.	Air Pressure at Station Level.		Air Temperature in Degrees Absolute.				Humidity.				Wind—Veer from North in degrees and Speed in metres per second.				Cloud Amount and Weather.		Rain 0 h. to 24 h.	Min. Temp. on Grass. 18 h. to 9 h.	Remarks.
					Max.	Min.	Vapour Pressure.		Percentage										
	9 h.	21 h.	9 h.	21 h.	0 h. to 24 h.		9 h.	21 h.	9 h.	21 h.	9 h.		21 h.		9 h.	21 h.			
	mb.	mb.	*a* 200+	*a* 200+	*a* 200+	*a* 200+	millibar.		%	%	°	m/s.	°	m/s.	Tenths of Sky covered.		mm.	*a* 200+	
1	1027·0	1026·0	88·3	90·4	96·1	84·9	13·8	15·4	80	78	280	2	—	1	10	2	—	82	Dull *a*. Overcast to fine *p*.
2	1025·6	1024·2	90·9	90·1	95·6	85·5	14·8	13·5	73	70	340	3	335	2	3	7	—	81	☂. Fine. ∞ *a*.
3	1023·0	1019·0	87·5	91·0	94·0	85·1	11·5	14·3	70	70	340	2	330	3	9	10	—	83	Overcast to 11h.—fine later.
4	1020·8	1021·3	83·4	83·0	87·5	81·9	8·2	7·6	66	62	20	5	15	3	10	7	—	82	Overcast to 10h. 30m.—finer later.
5	1020·0	1018·2	82·0	82·9	87·1	80·0	7·4	8·1	65	67	5	5	30	3	9	2	—	79	Overcast to 10h.—fair to fine after.
6	1017·9	1016·3	82·1	83·5	87·4	*n*77·3	7·6	8·8	66	70	20	2	360	2	3	4	—	*n*71	≡ early. Fine *a*—cloudy *p*.
7	1016·6	1016·7	85·1	84·8	90·0	*n*77·3	9·2	9·4	65	68	360	3	80	4	7	4	—	72	☂. ≡⁰ early. Fine.
8	1017·7	1017·4	85·1	83·2	89·7	79·2	8·6	8·3	61	67	85	3	110	4	6	1	—	73	☂. ≡⁰ early. Fine after 8h. ∞
9	1016·5	1014·6	86·1	84·4	90·3	78·9	9·0	9·5	60	71	80	6	85	6	3	2	—	*n*71	☂. ≡ early. Fine ∞ *a*.
10	1012·7	1011·2	86·6	85·4	89·1	81·8	11·7	12·0	76	84	100	4	100	6	10	4	2·3	80	≡⁰ early. ● 11h.-12h. Dull to fine.
11	1008·2	1008·7	87·2	90·0	93·7	83·9	14·1	14·2	88	74	140	4	140	3	10	9	0·3	82	Overcast to 14h. 30m.—finer later. *p*. 20h.
12	1009·3	1006·2	90·4	88·5	93·7	84·6	15·8	16·4	80	94	120	2	105	3	10	10	*x*36·0	79	≡⁰.☂. ↖ 14h.-15h. ↖² 16h. and 17h.
13	1011·7	1013·4	88·6	86·4	92·7	83·8	13·2	12·8	75	84	—	—	180	2	8	2	—	80	Cloudy to overcast. () *p*.
14	1014·3	1015·9	90·9	88·5	93·9	82·3	13·8	14·7	68	84	160	2	—	1	6	2	1·9	77	☂ Fine ⊕ *a*.—cloudy ┳ () *p*.
15	1015·4	1014·4	89·9	90·3	95·0	85·1	14·9	12·5	78	64	80	2	90	4	9	5	2·0	80	● early. Mostly cloudy to fine. ┳ 12h. 50m.
16	1011·8	1011·7	92·2	91·8	*x*96·9	87·0	14·6	14·2	66	66	90	3	135	2	9	7	2·1	83	Fine to dull. ┳ *a*. ↖ 21h. ❹ *n*.
17	1011·8	1014·5	92·5	89·7	94·5	85·4	14·9	14·7	66	78	—	1	110	2	2	5	14·5	81	☂. Fine to dull. ↖²▲●²12h. ↖ ●²14h.30m.
18	1014·2	1011·9	88·8	88·9	95·9	83·8	13·7	13·4	77	75	250	2	195	2	2	2	—	79	≡☂. Fine. () *p*.
19	1012·2	1012·8	90·9	89·9	95·8	85·1	14·8	13·9	73	73	195	2	235	3	9	1	—	81	☂ Overcast to fine. () *p*.
20	1010·4	1010·6	88·7	88·9	90·2	86·9	15·7	16·5	89	92	200	4	220	3	10	10	16·2	84	Dull and wet all day.
21	1018·3	1023·0	88·9	89·7	94·7	84·4	12·2	14·1	68	75	280	3	235	2	5	10	—	80	☂. Fine to cloudy. () *p*.
22	1025·9	1025·9	89·9	91·7	95·8	85·2	10·5	14·3	55	67	265	2	235	4	3	10	—	80	Fine most of day.
23	1026·6	1026·7	91·0	90·7	95·4	87·6	14·7	11·9	72	59	290	3	5	2	10	2	—	83	Overcast to fine to 13h.—fine later.
24	1026·2	1021·1	88·8	89·8	95·0	84·6	9·6	13·8	54	73	10	2	—	—	1	8	—	80	Fine. ☂ *a*.
25	1019·7	1017·4	89·2	90·9	94·9	86·9	13·2	11·6	72	57	270	3	280	2	10	10	—	81	Fine to 8h.—overcast to cloudy later.
26	1017·4	1017·3	90·1	89·0	93·2	87·2	14·9	15·7	77	87	275	3	310	2	10	10	—	84	Dull. Showers *p*.
27	1016·8	1011·9	90·3	89·2	93·6	88·0	15·3	15·9	78	87	—	1	195	4	10	10	2·1	86	Dull mostly. ● after 14h. 15m.
28	1010·4	1011·9	90·0	91·5	94·6	88·0	13·4	17·4	70	82	270	4	215	4	10	10	0·4	87	Showers early. Dull to fine.
29	1011·4	1011·0	90·5	89·3	94·5	87·2	15·5	14·2	78	77	190	6	210	5	10	1	0·2	87	Dull to fine. Shower 1h. 30m.
30	1012·7	1013·5	90·0	89.0	93.8	86·6	11·5	12·8	60	71	235	5	220	5	7	10	—	82	☂. Fine to 14h.—fine to overcast later.
Means	1016·8	1016·2	88·5	88·4	93·2	84·2	12·6	13·1	71	74	—2·9		—2·9		7·4	5·9	78·0	80·3	Monthly Totals or Means.
Normal	1015·3	1015·3	88·3	87·6	92·8	83·4	12·3	12·5	71	75	—3·6		—2·7		—	—	55·6 (45 years.)	—	Normals.
	45 years.						30 years.		29 years.		35 years.								

4. METEOROLOGY:—ESKDALEMUIR, DUMFRIESSHIRE.—Lat. 55° 19′ N. Long. 3° 12′ W.

Heights above Mean Sea Level:—Rain-gauge Site, H=242 m. Barometer, H_b=237·3 m. Vane of Anemometer, H_a=250 m.
Heights above Ground:—Thermometers, h_t=0·9 m. Rain-gauge, h_r=0·38 m. Sunshine Recorder, h_s=1·5 m. Vane of Anemometer, h_a=15 m.

1	993·9	994·8	86·4	87·4	89·0	83·6	13·0	13·9	85	85	250	10	250	8	10	10	—	82	o. *a and p*. : c to o d⁰ *n*.
2	996·8	997·8	85·3	83·9	88·0	83·3	12·0	10·2	85	79	330	3	310	6	10 q	10 q	—	83	oq *a* cq *p* oq *n*.
3	995·1	995·7	86·6	80·6	90·4	79·1	12·2	9·5	79	91	280	5	40	6	10	10	0·3	81	oq *a* c-o *p* ●⁰ ≡⁰ to bc *n*.
4	996·9	996·4	81·9	79·6	86·6	75·0	7·5	7·9	67	81	30	7	10	3	8	0	—	72	o to c *a* ⊕ bcy *p*. b *n*.
5	994·3	991·7	79·7	79·0	85·8	75·3	7·6	7·5	79	81	30	3	360	2	10	1	—	72	b early : o to c *a* : ⊕ bc *p*. b *n*.
6	990·7	989·0	81·3	82·0	86·4	78·0	7·8	9·4	71	82	30	4	50	5	10	10	—	75	o. occasional patches blue *a p n*.
7	989·3	990·2	82·2	80·3	87·7	77·5	8·3	8·1	72	79	70	3	20	2	10	2	—	78	o. *a*. : c *p*. : ⊕ by *n*.
8	990·4	990·7	86·0	82·6	90·9	75·1	9·1	9·5	61	80	—	1	10	3	0	0∞	—	72	▭ 1h. b *a* bcy *p* : b ∞ *n*.
9	990·3	989·5	86·9	82·3	91·2	76·3	8·6	8·9	55	76	70	2	—	1	0	0∞	—	72	☂ early cloudless day y *a p* ∞⁰ *n*.
10	988·6	986·7	82·5	80·2	85·0	75·8	8·4	7·6	71	75	70	6	90	4	8∞	10∞	—	73	b early : c ∞ *a* : b c ∞ *p* : o *n*.
11	984·7	984·5	84·4	81·9	88·1	76·4	8·9	10·2	67	90	80	8	60	9	4	10●	2·4	74	b c *a and p* : ●⁰ after 17h. *n*.
12	986·0	985·7	86·1	83·4	91·1	81·6	12·1	11·4	81	91	40	5	30	9	8	10≡⁰	0·9	80	●⁰ ≡⁰ till 2h. : c to o *a p* ≡⁰ *n*.
13	985·3	988·4	86·6	84·8	93·5	81·9	13·3	10·9	86	79	70	7	60	10	9≡⁰	5	—	81	o. ≡⁰ at first bc to o ∞ ┳ *a and p* b *n*.
14	990·6	992·4	87·9	85·6	92·7	82·6	12·4	9·8	74	68	70	8	50	5	8	6	—	80	b to o early cy q *a* ⊕ bcqy *p* bc *n*.
15	992·6	991·6	89·2	85·6	93·8	81·3	12·8	9·5	70	66	60	7	90	6	5	4	—	78	Fine ⊕ *a* y *a and p*.
16	989·0	988·3	89·5	85·5	93·2	79·0	9·7	10·3	52	71	100	5	60	4	6	7	—	75	bcy to cy : *a p n*.
17	988·2	987·6	89·5	88·3	*x*96·6	82·0	13·0	10·8	70	63	30	2	—	—	6	6∞	—	80	≺ early bc *a* bcy ∞ *p n*.
18	985·9	984·8	92·9	86·3	94·2	81·9	11·7	13·0	51	86	150	5	150	6	3∞	9●u	11·0	77	b∞┳⊕ *a* ↖ q *p* ┳≺ q ● p *n*.
19	983·6	981·5	91·7	86·7	93·8	81·0	13·9	12·9	65	83	150	5	200	3	3	10≡⁰	—	77	b☂ *a* b to o ∞ *p* o ≡⁰ *n*.
20	976·4	977·3	85·7	84·6	88·2	83·8	14·3	12·5	98	92	160	5	190	6	10●⁰	10	9·2	81	≡⁰ early ≡⁰ d till 11h. *a* o to c *p* o p *n*.
21	985·0	992·1	85·3	84·6	88·0	80·4	10·8	10·8	76	80	210	8	200	2	10	9	4·4	78	o-c *a p n* ● p 12h. 40m. and 13h. 30m.
22	994·6	992·0	86·0	85·0	87·9	79·7	10·9	13·4	73	96	190	6	200	7	10	10	5·4	76	o ☂ *a* ●≡⁰ *p n*.
23	996·6	998·7	86·2	81·3	86·7	79·4	9·3	8·4	62	77	290	7	280	3	8	6	—	81	b c—o *a p n*.
24	996·5	992·2	82·3	82·9	85·5	78·8	10·0	9·7	86	80	230	4	240	4	10●⁰	8	0·2	75	c to o p early o *a* o *p* c *n*.
25	986·6	986·5	84·5	85·6	86·3	80·3	13·1	13·6	97	94	220	6	230	3	10	8	3·8	76	≡⁰ d *a p* o to b *n*.
26	987·2	988·8	86·3	79·6	89·0	76·2	10·2	7·9	67	81	—	1	280	3	8	2	—	77	b to c all day y *p*.
27	987·3	980·0	83·6	85·8	89·4	*n*74·4	11·3	13·3	89	91	—	1	30	2	10≡⁰	10●	*x*13·8	*n*70	b—o ☂ early ≡⁰ *a p* ●² ≡⁰ *n*.
28	978·3	978·2	85·1	85·8	87·0	83·1	10·3	13·9	73	95	220	6	200	6	10	10≡⁰	10·9	84	● ≡⁰ early o *a* ● ≡⁰ *p* ● ≡⁰ b later *n*.
29	975·0	973·9	85·0	83·2	86·4	77·1	9·9	10·5	71	85	200	11	210	10	10	10	4·5	72	b–o early ● ≡⁰ *a p* o–bc occasional ● ≡⁰ *n*.
30	976·4	980·7	84·3	83·8	86·2	83·0	10·2	11·3	77	88	220	11	—	2	8	10	4·1	81	● ≡⁰ early o to c with p.
Means	988·4	988·3	85·7	83·6	89·3	79·4	10·8	10·6	74	82	—5·3		—4·6		7·7	7·1	70·9	77·1	Monthly Totals or Means.
Normal 1911-1915	986·7	986·9	85·5	83·5	89·1	79·6	11·1	10·8	77	84	—5·3		—3·6		—	—	80·2	—	Normals.

Temperatures at or below the normal freezing point of water are printed in small type. *x* denotes the maximum, and *n* the minimum, value in the column.

5. GEOPHYSICS :—RICHMOND (KEW OBSERVATORY).

Day.	Earth Temperature at 9 h. 0·3 m.	Earth Temperature at 9 h. 1·2 m.	Height above M.S.L. of Surface of Underground Water. Daily Mean.	Height above M.S.L. of Surface of Underground Water. Extremes.	Terrestrial Magnetic Force. Horizonal Comp't. Mean Time.	Horizonal Comp't.	Declination. Mean Time.	Declination. West.	Inclination. Mean Time.	Inclination.	Magnetic Character of Day.	Electric Character of Day.	Charge per cc. × 10^{16}. +. About 15 h.	Charge per cc. × 10^{16}. −. About 15 h.	Air-Earth Current. × 10^{16}. About 15 h.	Potential Gradient, Volts per metre. Factor 2.35. 3 h.	9 h.	15 h.	21 h.
	a	*a*											Coulomb.		Amp/cm².	v/m.	v/m.	v/m.	v/m
	200+	200+	cm.	cm.	h m	γ	h m	° ′	h m	° ′									
1	88·2	85·2	226	..	..	..	..	..	..	..	0	0	0·61	..	0·95	115	275	160	185
2	88·7	85·3	225	..	..	..	..	..	..	..	0	0	..	..	..	315	245	215	275
3	89·4	85·5	224	214	11 6	18391	14 14	14 37·4	..	..	1	0	..	0·24	0·45	60	175	200	145
4	89·6	85·4	224	214	..	..	..	..	14 39	66 57·7	1	1	1·10	..	1·65	130	345	275	275
5	87·9	85·7	224	..	..	..	..	..	..	...	0	0	..	..	..	145	245	215	390
6	87·1	85·8	225	..	..	..	..	..	..	..	1	1	..	..	..	230	145	100	245
7	87·1	85·8	225	..	..	..	..	..	..	..	0	0	..	..	..	115	260	290	330
8	87·5	85·9	224	..	..	..	..	..	..	..	0	0	..	0·31	1·00	—	490	475	390
9	87·1	85·8	223	..	..	..	..	..	..	..	1	0	0·88	..	1·35	—	560	445	390
10	87·3	85·8	222	..	11 6	18348	14 21	14 40·0	14 36	67 0·4	2	1	..	0·08	1·00	260	275	560	505
11	87·0	85·8	221	..	..	..	..	..	..	..	1	0	0·68	..	1·30	445	115	200	345
12	87·4	85·8	219	..	..	..	..	..	..	..	1	2	..	..	..	230	z ±	z±	z+
13	87·8	85·8	218	..	..	..	..	..	..	..	0	0	..	..	..	115	260	145	230
14	87·9	85·8	217	..	..	..	..	..	..	..	0	1	..	0·33	1·15	175	275	175	145
15	88·0	85·8	217	..	..	..	..	..	..	..	0	1	..	0.49	0·90	60	260	315	300
16	88·9	85·9	217	..	..	..	..	..	..	..	0	1	0·82	..	0·90	175	200	130	145
17	89·2	86·0	218	..	11 10	18412	14 15	14 35·8	14 41	66 58·5	0	1	..	..	..	60	85	z−	175
18	89·0	86·0	219	..	..	..	..	..	..	..	0	0	..	0·99	0·95	85	85	130	315
19	89·8	86·1	222	..	..	..	..	..	..	..	0	0	..	..	..	175	185	145	260
20	89·9	86·1	226	233	..	..	..	..	..	..	0	1	..	..	..	85	85	70	−115
21	89·2	86·3	230	233	..	..	..	..	..	..	0	0	0·69	..	1·55	70	215	130	145
22	89·9	86·6	231	..	..	..	..	..	..	..	0	0	..	0·52	1·00	160	230	130	215
23	90·9	86·6	231	..	..	..	..	..	..	..	0	0	0.71	..	1·40	145	175	130	200
24	90·8	86·8	230	..	11. 17	18392	14 22	14 41·1	..	..	1	0	..	0·10	0·75	200	330	115	185
25	91·1	86·8	228	..	..	..	..	..	14 32	66 56·3	0	0	0·83	..	1·00	130	175	130	175
26	90·9	87·0	227	..	..	..	..	..	..	..	0	0	..	..	..	100	100	85	70
27	90·4	87·1	224	..	..	..	..	..	..	..	0	0	..	..	..	85	115	175	215
28	90·4	87·1	221	..	..	..	..	..	..	..	1	0	..	0·37	0·75	85	185	145	160
29	90·7	87·1	220	..	..	..	..	..	..	..	1	0	1·06	..	1·50	—	145	200	275
30	90·0	87·3	218	..	..	..	..	..	..	..	1	0	..	0·44	0·65	175	185	145	115
M.	89·0	86·1	223	—	—	—	—	—	—	—	0·40	0·32	0·82	0·39	1·06	153†	206†	180†	218†
	88·1	85·6	— 12 years —																

† Mean for 25 days.

6. GEOPHYSICS :—ESKDALEMUIR, DUMFRIESSHIRE.

Day.	Terrestrial Magnetic Force. North Component. Maximum. 15000 γ +. h m	γ	Minimum. 15000 γ +. γ	h m	Range. γ	West Component. Maximum. 4000 γ +. h m	γ	Minimum. 4000 γ +. γ	h m	Range. γ	Vertical Component. Maximum. 44000 γ +. h m	γ	Minimum. 44000 γ +. γ	h m	Range. γ	Magnetic Character of Day.	Electric Character of Day.	Potential Gradient, Volts per metre. Factor 6·19.‡ 3 h. v/m	9 h. v/m	15 h. v/m	21 h. v/m
1	17 32	1046	952	12 0	94	14 4	888	808	8 30	80	18 10 / 19 40	1046	1020	13 52	26	0	0 *a*	120	165	90	185
2	17 30	1023	937	10 34	86	13 29	890	796	7 46	94	18 0	1047	1015	11 45	32	0	0 *a*	230	270	220	225
3	18 5	1045	957	12 0	88	15 38	877	803	7 27	74	19 15	1050	1016	12 25	34	0	1 *a*	200	135	230	140
4	16 30	1054	927	13 18	127	16 30	*x*897	*n*766	8 38	*x*131	18 44	1060	1016	12 41	44	1	0 *a*	110	145	210	260
5	17 33	1031	954	11 31	77	14 3	878	811	8 50	67	18 30	1044	1021	12 27	23	0	1 *a*	95	75	150	245
6	17 27	1044	944	11 52	100	16 5	880	800	5 32	80	18 10	1055	1022	10 55	33	1	1 *a*	40	75	95	120
7	19 0	1026	955	10 8	71	13 20	871	796	7 17	75	19 20	1051	1023	13 6	28	0	1 *a*	75	115	150	210
8	17 27	1018	957	11 44	61	14 17	874	815	7 44	*n*59	17 15	1051	1026	12 45	25	0	0 *a*	165	155	195	425
9	18 25	1069	964	11 12	105	18 7	895	799	8 40	96	19 52	1064	1023	12 10	41	1	0 *a*	495	415	245	545
10	*	*	*	*	*	*	*	*	*	*	16 40	*x*1162	*n*959	23 20	*x*203	2	0 *a*	615	305	295	185
11	15 51	1065	*n*919	11 18	*x*146	14 9	878	816	15 37	62	17 38	1071	981	1 0	90	1	1 *b*	75	155	115	0
12	19 38	1046	950	11 28	96	14 35 / 15 1	864	799	5 40	65	19 28	1056	1017	1 17	39	0	1 *b*	195	200	155	75
13	22 11	1022	964	12 8	*n*58	14 0	871	797	6 0	74	19 30	1061	1033	9 7	28	0	1 *b*	z ±	155	120	200
14	18 8	1024	959	11 39	65	12 42	868	806	5 45	62	19 34	1054	1029	11 8	25	0	0 *a*	140	130	230	265
15	16 7	1032	964	11 30	68	16 7	874	791	8 45	83	18 13	1048	1024	11 7	24	0	0 *a*	155	160	185	190
16	17 12	1037	970	12 11	67	13 40	872	808	7 55	64	17 25	1050	1023	11 40	27	0	0 *a*	120	275	75	185
17	16 52 / 18 20	1035	975	11 38	60	16 49	868	805	8 34	63	19 30	1049	1024	11 58	25	0	1 *b*	115	115	−5	300
18	19 3	1028	953	10 20	75	15 47	874	796	7 28	78	17 13	1059	1029	12 0	30	0	2 *c*	200	105	z ±	z ±
19	18 21	1049	962	11 16	87	17 35	893	793	8 58	100	18 36	1059	1017	12 40	42	0	0 *a*	340	270	90	140
20	17 0	1030	937	10 2	93	14 26	876	800	8 15	76	19 10	1055	1021	12 36	34	0	1 *b*	190	190	115	175
21	18 47	1045	962	11 10	83	16 7	881	803	7 32	78	19 40	1051	1024	13 12	27	0	1 *b*	155	115	115	105
22	18 30	1041	965	12 22	76	14 34	883	804	7 28	79	20 10	1050	1017	12 0	33	0	1 *a*	185	205	110	70
23	19 59	1037	973	11 50 / 12 10	64	14 5	866	787	3 38	79	20 28	1053	1023	9 31 / 11 20	30	0	0 *a*	50	185	120	260
24	21 43	1047	953	12 42	94	16 1	886	794	7 20	92	17 30	1069	1017	12 0	52	1	1 *a*	200	75	155	190
25	20 47	1051	968	11 42	83	13 3	867	804	7 33	63	20 20	1057	1026	11 25	31	1	1 *b*	90	85	75	200
26	18 27	1029	969	10 50	60	13 41	866	803	6 26	63	17 5	1057	1039	8 50	*n*18	0	0 *a*	210	125	115	240
27	22 12	1034	970	10 49	64	12 30	856	792	6 52	64	17 40	1053	1029	9 58	24	0	1 *b*	105	35	185	75
28	17 28	*x*1076	969	11 2 / 11 24	107	13 45	893	802	5 55	91	19 30	1067	1024	13 0	43	1	1 *b*	235	105	120	315
29	19 18	1044	971	11 18	73	14 30	866	786	6 0	80	19 10	1054	1033	12 45	21	1	1 *b*	315	150	105	205
30	18 15	1059	975	10 10	84	14 46	887	797	7 5	90	19 57	1065	1034	10 3	31	1	2 *b*	55	120	−215	200
M.	—	†1041	†958	—	†83	—	†877	†799	—	†78	—	1059	1020	—	39	0·37	0·67	‡181	‡163	‡133	‡205

x denotes the maximum and *n* the minimum value in the column. Potential gradient is reckoned as positive if the potential increases upwards. For Indeterminate potential gradient the following notation is used :—z+Indeterminate, positive value ; z— Indeterminate, negative value ; z ± Indeterminate in magnitude and sign.

* No trace, Gas pressure low. † Mean for 29 days. ‡ Mean for 28 days.

7. Jersey (St. Louis Observatory).—Lat. 49° 12′ N. Long. 2° 6′ W.

Heights above M.S.L.:—H = 54 m. H_b = 55 m. Above Ground:—h_t = 1·48 m. h_r = 1·72 m. h_a = 8 m.

Day.	Air Pressure at Station Level. 9 h.	14 h.	21 h.	Mean of 3 Readings.	Air Temperature in degrees Absolute. 9 h.	14 h.	21 h.	Max.	Min.	Mean of 5 Readings.	Min. Temp. on Grass.	Percentage of Humidity. 9 h.	14 h.	21 h.	Mean.	Rain 0 h. to 24 h.	Remarks.
	mb.	mb.	mb.	mb.	a 200+	a 200+	a 200+	a 200+	a 200+	a 200+	a 200+	%	%	%	%	mm.	
1	1024·3	1024·4	1023·6	1024·0	86·0	88·1	85·3	89·4	83·9	86·5	79·3	87	83	95	88	—	Overcast.
2	1021·5	1020·5	1019·0	1020·3	90·2	92·5	87·2	92·8	83·1	89·2	76·0	77	69	86	77	—	
3	1017·7	1016·3	1014·6	1016·2	89·2	90·6	85·9	92·0	85·0	88·5	79·2	78	65	87	73	—	
4	1012·7	1013·4	1014·6	1013·6	87·0	88·0	83·0	38·8	81·8	85·7	77·4	88	66	73	76	—	
5	1014·3	1013·3	1012·6	1013·4	84·2	86·3	82·4	87·6	*n*79·9	84·1	73·7	96	60	72	76	—	
6	1012·1	1011·3	1010·3	1011·2	86·0	88·0	83·8	89·1	*n*79·9	85·4	*n*73·3	57	55	70	61	—	
7	1010·3	1010·1	1009·7	1010·0	86·5	88·6	83·9	89·6	80·0	85·7	73·9	55	56	75	62	—	
8	1009·5	1008·4	1008·2	1008·7	86·0	87·5	84·4	88·7	81·7	85·7	74·4	55	54	83	64	—	Fine day. 16h. 30m.
9	1006·5	1005·9	1007·7	1006·7	88·0	90·2	84·6	91·6	84·0	87·7	81·4	59	64	96	73	4·9	⊕ 7h. horizon S.W. gloomy 15h.; ●²
10	1007·0	1005·8	1002·8	1005·2	87·0	89·0	87·2	91·2	84·0	85·7	83·0	78	68	84	77	3·0	horizon S.W. gloomy 14h.; ●⁰ 18h.;
11	1001·3	1001·8	1002·9	1002·0	88·4	87·9	87·1	91·6	85·5	88·1	84·3	88	88	85	87	4·1	●² 11h. ●² 20h. 30m.
12	1003·1	1001·9	1002·5	1002·5	86·2	86·9	85·6	88·9	84·6	86·4	81·7	88	88	95	90	12·7	●² 4 h. 15m. continuing all day.
13	1004·9	1005·7	1006·3	1005·6	86·3	88·7	87·3	90·6	85·0	87·6	81·6	91	77	80	83	—	●⁰ 11h. 30m.; 13h.
14	1008·8	1008·3	1009·4	1008·8	87·4	91·5	87·5	93·0	85·0	88·9	79·8	83	50	88	74	—	horizon S. & S.W. gloomy 15h. & 17h.
15	1009·4	1009·0	1008·3	1008·9	89·3	92·0	86·7	92·4	85·8	89·2	84·3	75	64	91	77	0·4	● afternoon and 20h.
16	1005·0	1004·8	1005·0	1004·9	87·7	87·7	87·0	89·7	85·8	87·6	83·1	90	85	95	90	3·0	≡⁰ 4h. & 9h. ●² 11h. 30m., 17h. 30m. &
17	1007·0	1007·9	1009·9	1008·3	87·9	89·9	86·0	92·3	84·1	88·0	84·1	92	76	89	86	—	≡² about 23h. after 21h.
18	1009·2	1007·7	1006·8	1007·9	88·2	88·4	86·6	91·9	84·3	87·8	79·5	82	90	98	90	12.2	≡⁰ 4h. ●² 13h. continuous.
19	1007·4	1008·4	1008·6	1008·1	88·5	89·5	87·3	91·0	86·4	88·5	84·7	88	78	84	83	—	
20	1006·3	1005·7	1008·6	1006·9	87·9	89·2	85·5	89·6	85·0	87·4	83·4	100	97	96	98	*x*16.1	●² early, continuous.
21	1015·9	1017·5	1019·4	1017·6	88·8	90·8	85·8	91·5	84·6	88·3	79·5	78	68	88	78	—	
22	1021·8	1022·4	1023·2	1022·5	89·9	91·2	87·4	93·8	84·0	89·3	78·5	63	56	73	64	—	Fair weather.
23	1023·6	1023·4	1022·2	1023·1	91·4	91·7	87·1	93·3	84·9	89·8	78·5	71	78	86	78	—	
24	1019·8	1018·5	1017·5	1018·6	91·8	93·6	87·5	*x*94·4	85·6	90·6	79·0	73	63	83	73	—	Fair weather.
25	1016·6	1016·6	1015·6	1016·3	90·6	92·3	87·4	93·0	84·8	89·6	78·0	68	63	96	76	—	17h. fog rolling on the bay.
26	1015·2	1015·3	1014·7	1015·1	88·9	90·6	87·8	92·3	86·5	89·2	84·3	83	74	94	84	—	
27	1013·4	1011·8	1009·8	1011·7	88·5	91·2	88·3	92·8	86·8	89·5	86·2	83	76	91	83	—	
28	1008·6	1009·7	1010·1	1009·5	89·3	91·3	89·6	92·8	86·6	89·9	83·7	91	83	86	87	—	4h. fog on the bay.
29	1008·2	1008·3	1009·2	1008·6	89·5	89·3	87·7	93·2	87·7	89·5	82·9	89	84	80	84	0·3	●⁰ ≡⁰ 14h. 30m.
30	1010.9	1010.9	1010.5	1010·8	89.8	90.7	87.5	91.9	87·2	89·4	83·7	80	64	93	79	0·5	16h. rainy at sea; ●⁰ after 18h.
Means	1011·7	1011·5	1011·5	1011·6	88·2	89·8	86·3	91·4	84·5	88·0	80·4	80	71	86	79	57·2	
Normal	1011·4	1011·0	1011·2	1011·2	88·2	90·0	86·3	91·2	84·5	88·0	81·4	—	67	83	—	47·5	
	←27 years→				←27 years→						←24 years→	←25 years→				←27 years→	

Jersey (St. Louis Observatory).

Day.	Wind Direction and Force (0-12 on the Beaufort Scale). 9 h.	14 h.	21 h.	Mean of Force.	Sunshine.* Total.	Per cent. of Possible.	Cloud Amount (tenths of Sky covered), Type of Cloud, and Direction whence coming. 9 h. Tenths.	Upper. Type.	Direction.	Lower. Type.	Direction.	14 h. Tenths.	Upper. Type.	Direction.	Lower. Type.	Direction.	21 h. Tenths.	Upper. Type.	Direction.	Lower. Type.	Direction.	Mean Amount.
	Dir(0-12)	Dir(0-12)	Dir(0-12)		hr.	%																
1	293 3	293 3	270 2	2·7	0·8	5	10	..	..	..	..	10	..	..	..	..	10	..	..	..	..	10·0
2	90 1	360 2	360 3	2·0	15·3	96	5	..	..	Cu.	NNE	5	Ci.-Cu.	NNW	Cu.-Nb.	..	10	..	..	..	..	6·7
3	23 3	23 4	23 2	3·0	15·0	94	2	Ci	..	..	..	3	Ci.	..	..	..	5	Ci.	..	..	..	3·3
4	45 5	45 5	45 3	4·3	11·5	72	10	..	..	..	..	4	..	..	Cu.	NE	0	..	..	..	..	4·7
5	45 3	23 4	67 2	3·0	14·1	88	6	..	..	Cu.	NE	4	..	..	Cu.	E	0	..	..	..	..	3·3
6	247 1	45 3	23 1	1·7	10·1	62	7	..	..	St.-Cu	N	6	..	..	Cu.	NE	0	..	..	..	..	4·3
7	67 3	337 3	45 4	3·3	9·9	62	7	A.-Cu.	NE	..	..	2	..	..	Cu.	ENE	0	..	..	..	..	3·0
8	67 5	45 5	67 5	5·0	16·0	100	0	..	..	..	..	0	..	..	..	..	2	..	..	..	..	0·7
9	67 5	67 5	270 1	3·7	6·6	41	6	Ci-Cu.A-Cu.	..	..	..	7	A.-Cu.	SSE	..	..	6	A.-Cu.	SSE	..	..	6·3
10	180 3	157 3	157 2	2·7	7·5	46	3	A.-Cu.	SW	Cu.	SSW	7	A.-Cu.	SW	..	..	10	Ci.	..	Nb.	..	6·7
11	180 3	247 1	135 2	2·0	10·2	63	7	A.-Cu.	S	Cu.-Nb.	S	7	Ci. / A.-Cu.	SW / S	Nb	..	7	Ci.	..	..	..	7·0
12	90 2	67 2	90 2	2·0	0·5	3	10	..	..	..	..	10	..	..	Nb	..	6	A.-Cu.	NW	Cu.-Nb.	SW	8·7
13	157 3	180 2	157 2	2·3	7·3	46	9	..	..	Cu.-Nb.	..	6	Ci.-Cu.	S	Cu.-Nb.	..	4	A.-Cu.	SE	Cu.	SSE	6·3
14	180 3	157 2	67 2	2·3	12·7	78	6	..	..	Cu.	S	5	Ci.	W	Cu.	SSW	6	A.-Cu.	SE	..	..	5·7
15	247 1	293 2	360 2	1·7	10·3	64	7	A.-Cu.	..	Cu.	..	4	..	..	Cu.	..	3	Ci.-Cu	..	..	..	4·7
16	225 1	225 1	135 1	1·0	0·3	2	10	..	..	Nb.	..	10	..	..	..	..	10	..	..	..	..	10·0
17	203 3	45 2	calm 0	1·7	10·5	65	5	A.-Cu.	NE	Cu.-Nb.	SSE	6	A.-Cu.	SW	Cu.-Nb.	SW	1	..	..	..	..	4·0
18	203 3	203 2	247 1	2·0	4·7	29	3	A.-Cu.	SW	Cu.	SW	10	..	..	Nb.	..	10	..	..	Nb.	..	7·7
19	270 2	225 2	calm 0	1·3	4·4	27	9	..	..	..	..	8	A.-Cu.	SW	..	..	8	..	..	..	..	8·3
20	180 3	203 2	270 1	2·0	0·0	0	10	..	..	Nb.	..	10	..	..	Nb.	..	10	..	..	Nb.	..	10·0
21	247 3	270 3	315 1	2·3	14·0	87	7	..	..	Cu.-Cu.-Nb	W	3	..	..	Cu.	W	5	A.-Cu.	..	..	..	5·0
22	247 1	180 2	67 1	1·3	15·9	98	2	Ci.-Cu.	..	Cu.	..	0	..	..	..	..	0	..	..	..	..	0·7
23	225 2	315 2	337 1	1·7	10·6	65	4	..	..	Cu.	N	9	..	..	Cu.-Nb.	N	2	Ci.-Cu.	NW	..	..	5·0
24	180 2	315 2	337 1	1·7	16·2	100	1	..	..	Cu.	..	2	..	..	Cu.	..	0	..	..	..	..	1·0
25	247 3	293 3	270 3	3·0	13·3	82	1	..	..	..	..	3	Ci.	..	..	..	10	..	..	..	..	4·7
26	247 3	247 3	270 2	2·7	7·0	43	10	..	..	..	..	7	..	..	Cu.	NW	10	..	..	..	..	9·0
27	225 3	247 2	293 1	2·0	6·5	40	6	..	..	Cu.	WSW	4	Ci.	..	..	..	6	..	..	Cu.; Cu.-Nb.	WSW	5·3
28	225 4	247 5	247 3	4·0	2·5	15	10	..	..	..	..	10	..	..	..	..	4	A.-Cu.	SW	Cu.-Nb.	NW	8·0
29	180 4	293 4	270 3	3·7	4·4	27	10	..	..	..	..	10	..	..	..	..	3	..	..	..	..	7·7
30	225 4	247 4	202 2	3·3	10·5	65	3	..	..	..	..	6	..	..	Cu.	WSW	10	..	..	..	..	6·3
Means	2·8	2·8	1·9	2·5	9·0	56	6·2	—	—	—	—	5·9	—	—	—	—	5·3	—	—	—	—	5·8
Normal	3·3	3·6	3·1	3·3	8·4	52	6·1	—	—	—	—	5·6	—	—	—	—	5·3	—	—	—	—	5·
	←17 years→				23 years							←26 years→										

* For method of estimation see Introduction.

8. WIND COMPONENTS: Metres per second at fixed hours, together with the greatest mean hourly velocity, or the greatest velocity attained in a gust, and the time of its occurrence.

NORTH WALES:—HOLYHEAD.

Height of Head above—Roof 8·8 m., Ground 13·7 m., M.S.L. 19·2 m.
Height of Cups above—Roof 4·6 m., Ground 7·6 m., M.S.L. 15·2 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	h. m.
1	1·2	..	6·1	..	3·9	..	5·8	..	4·5	..	6·7	..	3·7	..	2·4	..	14	11 55
2	..	..	6·5	..	..	0·8	3·9	..	..	0·4	2·0	..	..	Calm		..	12	5 0
3	..	Calm		..	..	4·1	4·1	..	..	3·0	2·0	..	..	6·6	2·7	..	12	21 10
4	..	7·5	..	..	..	4·0	..	9·7	..	6·2	..	6·2	..	4·0	..	4·0	14	8 45
5	..	Calm		..	..	Calm		..	..	2·2	..	0·9	..	Calm		..	4	16 10
6	..	2·8	..	1·1	..	1·8	..	0·8	..	3·5	0·7	..	..	3·8	..	2·6	6	23 20
7	..	Calm		..	..	1·8	..	1·2	..	1·6	..	..	..	Calm		..	9	16 0
8	..	Calm		..	..	Calm		..	1·6	..	0·7	..	..	0·8	..	1·9	6	21 40
9	..	..	..	2·2	..	..	..	2·2	..	1·6	..	7·9	1·0	..	..	4·9	13	12 5
10	0·8	..	..	4·1	0·6	..	..	3·2	3·7	..	1·5	..	2·0	..	..	9·9	14	22 35
11	2·1	..	..	10·4	2·1	..	..	10·6	3·2	..	..	1·3	2·5	..	..	6·0	18	6 40
12	0·6	..	..	1·5	1·5	..	..	3·6	..	1·7	..	2·5	..	1·5	..	1·5	8	22 5
13	4·3	..	..	..	4·1	..	..	..	..	4·7	..	3·1	..	Calm		..	11	0 35
14	2·3	..	..	3·4	1·0	..	..	2·3	2·2	..	..	5·4	..	2·5	..	1·7	10	11 35
15	..	0·9	..	4·5	..	Calm		..	..	Calm		..	..	Calm		..	8	15 35
16	..	1·2	..	6·2	..	..	..	3·0	..	2·2	..	..	2·9	..	..	0·6	13	16 20
17	..	Calm		..	..	Calm		..	..	3·4	0·7	..	4·4	..	0·9	..	12	18 50
18	..	Calm		..	..	Calm		..	1·1	..	1·7	..	1·4	..	2·1	..	6	12 30
19	..	Calm		..	4·2	..	..	1·7	5·4	..	1·1	..	7·5	..	1·5	..	13	22 55
20	9·8	..	..	..	7·5	..	5·0	..	8·4	..	5·6	..	6·0	..	6·0	..	16	17 10
21	2·7	..	6·5	..	4·3	..	6·5	..	5·4	..	5·4	..	4·3	..	4·3	..	12	13 55
22	4·2	..	4·2	..	6·0	..	2·5	..	8·8	..	5·9	..	5·7	..	5·7	..	17	16 40
23	1·7	..	8·3	..	..	2·5	5·9	..	..	1·1	2·8	..	1·1	..	5·5	..	11	3 15
24	..	..	4·1	..	..	2·0	0·4	..	..	3·0	1·2	..	3·4	..	2·3	..	8	23 25
25	5·7	..	3·8	..	3·7	..	3·7	..	4·5	..	4·5	..	3·7	..	5·5	..	12	23 50
26	..	..	6·0	..	..	4·9	..	..	..	2·9	..	0·6	..	2·3	..	0·4	12	0 15
27	..	3·9	..	0·8	7·2	..	..	..	6·1	..	2·5	..	1·9	..	9·3	..	13	22 35
28	..	..	6·4	..	4·7	..	4·7	..	7·1	..	4·8	..	4·3	..	6·4	..	15	13 30
29	4·9	..	4·9	..	8·3	..	3·4	..	10·2	..	6·8	..	8·6	..	5·8	..	20	14 10
30	6·7	..	6·7	..	5·7	..	8·5	..	6·2	..	6·2	..	5·1	..	5·1	..	15	2 20
S+N & W+E	63·3		97·7		86·7		92·7		115·9		90·7		91·0		99·0			
S−N & W−E	30·7		29·3		42·9		16·1		40·9		34·9		48·0		32·0			

SCOTLAND N.:—DEERNESS.

Height of Cups above—Roof 1·5 m., Ground 4·9 m., M.S.L. 57·3 m.

Day.	3 h.				9 h.				15 h.				21 h.				Vel. in Max. Hourly Run.	Time of Max.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	hrs.
1	1·8	..	9·0	..	2·5	..	12·6	..	..	..	10·8	..	0·9	..	4·5	..	13·1	11
2	..	..	3·9	..	..	3·4	5·2	..	..	3·0	3·0	..	..	1·1	1·1	..	6·9	8
3	..	1·1	1·1	..	..	3·6	..	..	..	8·3	1·7	..	..	8·0	1·6	..	9·2	24
4	..	8·7	1·7	..	..	8·2	..	..	..	9·3	1·2	..	..	6·7	2·8	..	9·8	4
5	..	6·8	1·2	..	..	6·8	1·3	..	..	6·6	4·4	..	..	4·9	4·9	..	7·9	15, 17
6	..	4·9	3·3	..	..	10·6	4·4	..	..	6·8	1·3	..	..	5·1	1·0	..	11·5	9
7	..	2·6	..	..	..	1·4	..	2·2	..	0·6	..	3·2	0·3	..	..	1·6	3·9	8, 12, 14
8	0·3	..	..	1·0	3·2	..	..	2·2	3·2	..	..	2·2	2·7	..	..	1·8	4·9	13, 14, 17
9	..	Calm		..	1·6	..	..	1·6	..	..	..	2·3	..	0·4	..	2·3	3·0	16, 17, 19
10	..	0·6	..	3·2	..	..	..	5·6	1·1	..	..	5·5	2·3	..	..	5·5	·2	14
11	2·1	..	..	5·2	1·3	..	..	6·8	1·3	..	..	6·5	2·4	..	..	5·7	6·9	9, 24
12	1·3	..	..	6·8	1·5	..	..	7·7	..	..	..	7·2	..	..	..	4·3	7·9	8, 9, 11
13	..	..	..	4·9	..	1·7	..	8·7	..	..	..	8·2	0·6	..	..	3·2	·9	9
14	0·8	..	..	3·8	..	..	..	4·9	..	..	..	4·9	0·5	..	..	2·6	6·2	13
15	0·4	..	..	2·0	0·7	..	..	3·5	..	1·1	..	5·5	..	1·6	..	4·0	5·9	14
16	..	1·8	..	4·3	..	2·6	..	6·4	..	1·5	..	7·4	..	..	..	3·3	8·5	13
17	0·6	..	..	2·9	3·2	..	..	2·2	4·0	..	..	4·0	2·2	..	..	3·2	6.2	16
18	2·8	..	..	2·8	4·3	..	..	2·9	4·9	..	..	3·3	4·0	..	..	1·0	9·5	12
19	3·6	..	..	1·5	5 5	..	..	3·7	7·2	..	..	7·2	7·6	..	..	7·6	11·8	24
20	8·6	..	..	8·6	10·2	..	..	10·2	9·6	..	..	6·4	4·8	..	..	1·0	14·4	9
21	3·8	..	0·8	..	7·9	..	..	..	2·3	..	5·5	..	..	Calm		..	7·9	9
22	..	Calm		..	3·2	..	..	2·2	6·0	..	..	4·6	7·9	..	..	..	8·2	19
23	..	..	10·8	..	..	..	16·7	..	..	..	15·1	..	..	..	8·5	..	17·0	12
24	..	1·1	5·5	..	1·4	..	7·1	..	..	..	6·9	..	4·2	..	..	0·8	7·5	12
25	2·0	..	0·4	..	3·5	..	0·7	..	2·6	..	..	..	..	1·9	4·5	..	5·9	20
26	0·6	..	3·2	..	1·2	..	6·1	..	..	..	6·6	..	..	1·1	2·8	..	7·5	12
27	0·3	..	1·6	..	1·3	..	1·9	..	2·5	..	..	2·5	1·8	..	..	4·3	5·6	17, 23, 24
28	2·4	..	..	5·7	6·3	..	..	6·3	6·6	..	..	4·4	5·5	..	..	1·1	9·2	17
29	..	Calm		..	5·2	..	..	3·4	7·9	..	..	3·3	6·1	..	..	1·2	9·5	24
30	9·0	..	1·8	..	8·1	..	5·4	..	6·0	..	9·0	..	..	..	3·0	..	11·8	14
S+N & W+E	68·0		97·6		110·4		141·9		102·4		154·2		84·6		89·8			
S−N & W−E	12·8		−9·0		33·8		−19·1		28·0		−21·8		23·0		−20·4			

ENGLAND, S.W.:—SCILLY.

Height of Head above—Ground 9·8 m., M.S.L. 49·7 m.
Height of Cups above—Ground 5·8 m., M.S.L. 45·7 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	h. m.
1	..	1·6	2·8	..	..	1·1	1·3	..	..	2·1	2·1	..	..	2·4	2·8	..	7	0 50
2	..	1·5	1·5	..	..	0·1	0·1	..	..	1·5	..	..	..	2·5	..	0·9	6	24 0
3	..	3·0	..	2·1	..	1·8	..	1·5	..	1·9	..	1·3	..	1·5	..	0·9	8	3 50
4	..	3·4	..	1·2	..	3·2	..	1·5	..	..	..	3·0	1·2	..	..	2·0	9	6 40
5	0·2	..	..	1·0	0·3	..	..	2·0	0·3	..	..	0·4	..	1·5	..	0·6	5	9 35
6	..	1·6	..	0·6	..	0·7	..	0·2	..	2·2	1·3	..	..	1·1	0·7	..	6	14 05
7	..	Calm		..	0·7	..	..	1·2	2·1	..	..	1·2	2·0	..	..	1·2	4	23 40
8	3·2	..	..	3·8	5·3	..	..	6·3	3·7	..	..	8·0	2·9	..	..	8·0	13	17 55
9	3·5	..	..	7·4	4·0	..	..	6·9	2·1	..	..	3·6	2·4	..	..	2·9	15	10 25
10	0·5	..	..	0·6	1·9	..	..	2·2	4·2	..	..	5·0	5·0	..	..	8·7	15	20 05
11	4·0	..	4·0	..	No record				7·2	..	..	2·6	6·1	..	..	2·2	16	18 00
12	7·4	..	..	5·2	7·8	..	..	6·6	7·6	..	..	6·4	3·2	..	..	1·2	15	11 15
13	3·2	..	..	..	3·6	..	..	1·3	2·9	..	..	2·9	1·9	..	..	4·1	9	22 30
14	2·7	..	..	3·2	2·3	..	..	1·9	2·1	..	..	1·0	0·4	..	..	0·3	7	1 10
15	0·3	..	..	0·2	1·3	..	..	0·9	0·6	..	..	0·4	0·1	..	..	0·1	3	9 15
16	0·4	..	..	0·2	0·2	..	..	2·2	..	0·6	..	1·4	..	1·2	..	1·6	4	9 40
17	..	Calm		..	..	1·6	2·2	..	..	0·9	2·5	..	..	0·4	1·6	..	5	15 55
18	..	0·4	1·4	..	5·2	..	..	5·2	3·4	..	2·4	..	1·9	..	1·3	..	11	9 50
19	1·5	..	1·0	..	2·7	..	2·3	..	2·6	..	0·2	..	4·4	..	..	0·8	8	23 30
20	4·4	..	..	..	3·6	..	0·6	..	1·7	..	4·7	..	..	..	6·0	..	9	17 40
21	..	..	5·6	..	No record				..	..	2·1	..	..	..	1·0	..	8	0 05
22	..	..	0·9	..	..	..	3·1	..	1·5	..	3·2	..	1·0	..	2·8	..	7	15 00
23	0·5	..	1·4	..	0·2	..	0·7	..	..	0·6	0·4	..	..	1·2	0·2	..	4	20 05
24	..	0·5	0·1	..	..	Calm		..	..	1·6	1·6	..	..	1·0	1·2	..	4	15 15
25	..	..	2·0	..	..	0·4	4·9	..	..	1·6	4·5	..	..	1·1	4·2	..	9	14 10
26	..	0·6	3·3	..	..	0·5	3·0	..	..	1·0	3·6	..	..	0·7	2·5	..	6	6 35
27	..	0·7	2·6	..	..	0·3	3·2	..	3·3	..	4·0	..	..	0·5	6·0	..	8	22 00
28	..	..	0·3	..	2·9	..	4·2	..	1·9	..	5·2	..	..	0·1	0·1	..	10	13 45
29	0·6	..	3·4	..	No record				2·0	..	5·5	..	1·1	..	6·4	..	17	20 10
30	1·2	..	6·6	..	0·8	..	4·2	..	0·9	..	2·4	..	2·5	..	5·3	..	10	11 20
S+N & W+E	46·9		62·4		52·5†		69·7†		64·1		83·5		51·3		77·6			
S−N & W−E	20·3		11·4		33·1		−10·1		36·1		7·9		20·9		6·6			

† 27 days only.

ENGLAND, E.:—SHOEBURYNESS.

Height of Head above—Ground 27·4 m., M.S.L. 31·4 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	sm	m/s	m/s	m/s	h. m.
1	0·7	..	3·6	..	..	1·3	2·0	..	0·4	..	2·1	..	1·7	..	0·7	..	9	4 50
2	..	1·3	3·1	..	..	3·6	2·4	..	..	2·8	1·1	..	..	..	..	2·1	9	18 15
3	..	Calm		..	..	1·7	1·2	..	..	2·1	2·1	..	..	1·1	..	5·7	9	22 10
4	..	5·4	..	1·1	..	6·0	..	1·2	..	7·6	..	..	..	4·9	..	..	14	18 15
5	..	4·3	1·8	..	..	6·0	1·2	..	..	5·7	1·1	..	..	2·4	..	..	13	15 40
6	..	1·3	1·3	..	..	2·9	0·6	..	..	4·0	..	..	..	Calm		..	9	11 50
7	..	1·3	1·3	..	..	3·4	..	..	1·9	..	..	2·8	..	0·7	..	3·3	9	10 30
8	..	2·4	..	..	..	0·8	..	3·9	..	..	..	6·1	..	1·3	..	6·6	10	21 10
9	..	1·9	..	4·5	..	1·1	..	5·4	..	1·7	..	8·6	..	2·5	..	5·9	12	15 15
10	..	..	..	7·3	..	1·4	..	6·9	..	..	..	5·5	..	..	..	6·1	11	1 15
11	2·6	..	..	6·2	3·3	..	..	0·7	5·4	..	..	2·2	1·8	..	..	4·3	10	4 30
12	..	Calm		..	..	..	..	3·4	..	2·0	..	10·2	6·7	..	..	2·8	23	16 45
13	2·6	..	3·8	..	..	Calm		..	2·5	..	..	1·7	..	Calm		..	5	16 40
14	..	Calm		..	..	Calm		..	1·4	..	..	6·9	..	0·7	..	3·3	9	15 15
15	..	2·5	..	1·7	..	2·6	..	2·6	..	3·3	..	7·9	..	2·7	..	4·1	12	18 15
16	..	Calm		..	..	..	..	5·5	..	..	..	7·9	..	Calm		..	11	15 55
17	..	Calm		..	..	..	..	1·8	..	..	..	6·1	..	Calm		..	22	17 55
18	..	Calm		..	..	Calm		..	..	Calm		..	..	Calm		..	7	17 40
19	..	Calm		..	2·0	..	1·3	..	0·6	..	..	2·9	2·6	..	3·8	..	9	23 55
20	4·1	..	4·1	..	8·3	..	1·7	..	8·0	..	1·6	..	4·1	..	4·1	..	11	10 35
21	..	..	4·3	..	..	0·8	3·9	..	..	0·7	3·3	..	1·7	..	2·5	..	10	1 05
22	..	0·6	2·9	..	2·0	..	1·3	..	2·1	..	3·1	..	1·6	..	4·0	..	9	11 40
23	0·6	..	2·9	..	..	1·1	2·8	..	..	2·8	1·9	..	..	3·1	..	1·3	9	13 35
24	..	3·1	2·1	..	..	Calm		..	1·5	..	..	1·5	4·5	..	..	4·5	9	18 05
25	0·5	..	2·6	..	..	..	3·0	..	0·8	..	3·9	..	0·7	..	1·7	..	13	12 50
26	..	..	4·0	..	..	..	4·0	..	1·5	..	3·7	..	0·5	..	2·6	..	10	11 10
27	..	Calm		..	1·3	..	1·3	..	3·0	..	3·0	..	6·3	..	4·2	..	13	23 45
28	5·2	..	5·2	..	1·2	..	6·0	..	1·2	..	6·0	..	6·3	..	4·2	..	13	12 30
29	4·1	..	4·1	..	8·4	..	5·6	..	6·4	..	6·4	..	3·2	..	4·8	..	15	13 00
30	3·4	..	5·1	..	4·3	..	4·3	..	2·7	..	4·1	..	4·9	..	4·9	..	12	3 15
S+N & W+E	47·9		73·0		63·5		74·0		72·1		113·7		66·0		87·5			
S−N & W−E	−0·3		31·4		−1·9		11·2		6·7		−26·9		27·2		−12·5			

9. SEISMOLOGICAL DIARY.

The notation used is explained in the Introduction.

EARTHQUAKES—ESKDALEMUIR.

Day.	Phase	Time. G.M.T.	Period.	Amplitudes. A_N.	Amplitudes. A_E.	Amplitudes. A_Z.	Δ.	Remarks.
		h m s	s	μ	μ	μ	km.	
2	L	22 38 to	28	..	..	..	..	
	L	22 48	16	..	..	..	..	
	F	23 12	..	..				
3	L	0 47	20	..	..	..	..	
5	O	4 22 34	..	..	..	..	..	
	P	4 34 25	..	..	..	..	8480	
	PR_1	4 37 54	..	..	..	..	..	
	S	4 45 9	..	..	..	..	..	
	L	4 59 35	..	..	..	..	..	Beginning of L phase doubtful. Sharp emergence.
	M_N	5 6 13	40	200	..	..	..	
	F	7 20	..	..	..	..	..	
	L	17 24	20	..	..	..	..	
	F	17 50	..	..	..	..	..	
	L	21 20	20	..	..	..	..	
	F	21 40	..	..	..	..	..	
9	P_E	11 50 41	..	..	..	..	10500(?)	
	L	12 23	..	..	..	..	..	
	M_N	12 30	36	35	..	..	..	
	F	14 5	..	..	..	..	..	
10	P_E	2 56 53	..	..	..	..	..	
	L	3 18	..	..	..	..	..	
	F	4	..	..	..	..	..	
		18 15	..	..	..	..	..	Beginning of moderate disturbance. Record imperfect after 18h. 38m.
14		13 36 to	..	..	..	..	..	
		13 55	..	..	..	..	..	Slight disturbance.
25	L	10 35 to	..	..	..	..	..	
		10 40	..	..	..	..	..	
27		11 27 to	..	..	..	..	..	
		11 44	..	..	..	..	..	Slight disturbance.

MICROSEISMS OF N. COMPONENT—ESKDALEMUIR.

Day.	0 h. A_N.	0 h. T.	6 h. A_N.	6 h. T.	12 h. A_N.	12 h. T.	18 h. A_N.	18 h. T.
	μ	s	μ	s	μ	s	μ	s
1	0·6	4	0·4	6	1·1	4	1·0	4·5
2	0·9	5	0·4	4·5	0·2	4	0·2	4
3	0·2	4	0·2	4	0·5	4	0·9	4
4	1·1	4	1·2	4·5	1·4	6	..	..
5	1·7	6	..	..	1·1	5	0·8	6
6	1·1	4·5	0·8	6	0·3	5	0.2	5
7	0·2	5	0·1	4·5	0·3	4	0·2	4
8	0·1	4·5	..	..	0·1	4	..	..
9	0·1	4·5	0·1	4	..	..	0·2	4
10	0·1	4	0·1	4	0·1	4	0·1	5·5
11	0·6	5·5	..	..	0·8	4	1·0	4
12	0·8	4	0·3	4	0·6	4	0·6	8
13	0·5	4·5	..	..	0·5	4	0·1	3
14	0·1	4	..	..	..	..	..	..
15	..	..	..	..	..	..	..	..
16	0·0	0	0·0	0	0·0	0	0·0	0
17	0·1	4	..	..	..	..	..	..
18	..	..	..	..	..	..	..	..
19	..	..	..	..	..	..	..	..
20	0·1	3·5	0·1	4	..	..	..	..
21	..	..	..	..	..	..	..	..
22	..	..	..	..	..	..	..	..
23	..	..	..	..	..	..	..	..
24	0·6	4	..	..	0·2	5	0·1	4
25	..	..	..	..	0·2	4	..	..
26	..	..	..	..	..	..	0·1	5
27	0·0	0	0·0	0	0·0	0	0·0	0
28	0·0	0	0·0	0	0·0	0	0·0	0
29	0·5	6	1·2	6·5	..	..	1·3	6·5
30	1·2	5	0·9	5	0·5	6	0·6	5

Means for Month $\begin{cases} A_N. = 0·4\mu. \\ T = 3·9\,s. \end{cases}$

Normals for Month, 1911–19 $\begin{cases} A_N. = 0·5\mu. \\ T = 4·5\,s. \end{cases}$

EARTHQUAKES:—RICHMOND (KEW OBSERVATORY).

Day.	Times, G.M.T. of Commencement.	Times, G.M.T. of Max. Phase.	Remarks.
	h m	h m	
2	..	22 51	Small.
3	..	0 52	Small.
5	4 44	5 15	Large disturbance, Amplitude on trace > 17mm. Small waves to 7h. 05m.
	..	17 33	Small.
	..	21 27	Small.
9	12 08	12 51	Small — Succession of very small waves to 13h. 57m.
10	..	18 40	Very small.

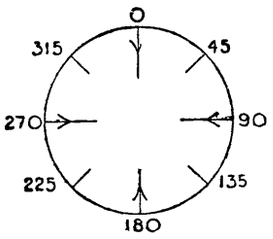
10. Soundings with Pilot Balloons.

Day	Time of Start, G.M.T.	Horizontal Velocity of Wind. Geostrophic.		By Anemometer.		At Heights above M.S.L.										Cloud Observations.						
						500 m.		1,000 m.		2,000 m.		3,000 m.		4,000 m		Time, G.M.T.	Type.	Deg. from N.	mr/s.	Type.	Deg. from N.	mr/s.
	h. m.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	h. m.						
									ABERDEEN.													
7	17 0	?	?	85	4·5	85	5·0	20	5·0	350	12·0	350	13.5	..	..	..	St.-Cu.	335	..	..	..	..
9	17 0	130	7	175	3·5	105	5·0	350	6·5	15	7·0	10	8·0	..	..	..	..	..	..	Cloud less.		
15	12 30	?	?	85	3·5	60	5·5	75	6·0	100	9·5	..	..	..	..	..	..	..	..	Cloud less.		
25	17 0	270	4	310	2·0	305	5.5	300	7·0	295	12·5	..	..	..	..	13 0	Cu.	245	9·5	A.-Cu.	245	2·5
																..	Cu.-Nb.	310	..	..	..	..
									ESKDALEMUIR.													
5	17 25	?	?	60	1·3	50	3·9	340	5·5	350	8·5	345	12·0	340	14·5	17 20	..	..	..	Ci.; Ci.-St.	360	2·5
7	17 35	?	?	95	5·0	80	3·2	15	3·0	25	5·5	335	4·6	30	3·2	..	Fr.-Cu.	25	..	..	..	..
8	7 30	?	?	75	0·5	50	1·8	20	2·8	340	2·6	10	5·5	325	6·5	8 10	A.-Cu.	25	3·0	..	..	..
9	7 15	130	7	75	2·0	65	2·5	75	4·4	100	5·5	90	8·0	70	9·5	..	..	..	..	Cloud less.		
9	11 30	120	8	65	5·0	70	3·5	80	5·5	85	9·0	105	9·5	100	12·5	..	..	..	..	Cloud less.		
14	12 20	110	13	90	10·0	90	9·5	120	13·0	120	20·0	..	..	..	..	12 10	..	..	..	Ci.; Ci.-St.	120	2·5
14	17 25	130	17	90	10·0	95	15·5	105	13·0	120	14·0	..	..	..	..	17 40	A.-Cu.	..	..	Ci.; Ci.-St.	130	2·5
15	12 0	120	11	110	7·5	100	3·6	105	6·5	120	16·0	130	16·5	..	..	12 45	Cu.	135	..	Ci.	135	1·5
16	7 20	115	6	85	5·0	105	5·5	125	8·5	135	8.0	145	7·5	..	..	6 45	..	..	..	Ci.; Ci.-St.	140	2·5
16	12 5	120	5	115	4·7	110	5·5	135	4·7	200	3·0	..	..	..	..	..	St.-Cu.	..	..	..	..	..
17	7 25	?	?	50	4·0	105	5·5	125	15·0	145	14·5	..	..	..	..	..	A-Cu; St.Cu	..	..	Ci.	175	..
18	7 25	160	7	105	0·5	140	5·0	155	9·5	160	13·0	..	..	..	..	..	St.-Cu.	..	..	Ci.	180	0·5
19	7 30	165	5	135	1·0	135	2·5	165	10·0	160	13·5	175	10·0	210	5·5	..	Cu.	..	..	..	..	..
										5,000 m.		6,000 m.		7,000 m.								
7	17 35									350	9·5	340	9·5	350	9·5	..	Fr.-Cu.	25	..	..	..	..
8	7 30	(For observations at lower levels, see above.)								355	9·5	..	..	..	..	8 10	A.-Cu.	25	3·0	..	..	..
9	7 15									50	5·0	..	..	..	..	..	..	..	..	Cloud less.		
9	11 30									105	5·5	35	7·5	100	8·0	..	..	..	..	Cloud less.		
19	7 30									200	8·5	235	5·5	..	..	..	Cu.	..	..	..	..	..
									SOUTH FARNBOROUGH.													
2	9 40	320	5	350	5.0	345	5·0	345	6.5	350	10.0	20	8.0	..	..	..	Fr.-Cu.	..	..	Ci.; Ci.-St.	..	..
7	7 10	?	?	90	3.5	35	2.4	20	3.9	320	10.5	360	12.5	..	..	..	A.-St.	..	..	..	..	..
9	6 40	120	8	100	4.0	100	9.5	95	7.0	90	3.6	80	3.3	15	1.5	..	..	..	..	Cloud less.		
12	7 5	140	6	Calm		45	1.8	115	7.0	150	8.5	..	..	..	..	..	Cu.; St.-Cu.	..	..	Ci.-Cu.; Ci.-St.	..	..
14	6 55	165	4	135	3.0	135	3.9	130	4.6	150	5.5	..	..	..	..	..	A.-Cu.	..	..	Ci.; Ci.-St.	..	..
16	15 15	?	?	165	6.5	135	7.5	130	8.0	130	10.5	140	10.0	..	..	..	Cu. ; Nb.	..	..	A.-Cu.	..	..
18	7 5	?	?	250	3.0	205	6.5	185	6.5	150	8.0	140	7·5	..	..	..	Fr-St. A-Cu	..	..	Ci.; Ci.-St.	..	..
22	7 10	235	5	300	3.8	285	2.6	280	3.3	270	10.0	295	12.0	..	..	..	A.-Cu.	..	..	Ci.	..	..
25	6 45	?	?	?	?	275	5·5	275	8.5	290	10.0	..	..	..	..	..	Nb.	..	..	Ci.; Ci.-St.	..	..
30	6 40	250	14	260	8.5	245	9.0	255	13.0	255	11.5	240	16.0	235	19.0	..	Fr.-Cu.	..	..	Ci.-Cu.; Ci.-St.	..	..
						5,000 m.		6,000 m.		7,000 m.		8,000 m.		9,000 m.								
9	6 40	(For observations at lower levels, see above.)				65	4.3	85	4.3	60	6.5	40	5.0	310	9.0	..	..	..	..	Cloud less.		
						..	..	10000 m.		11000 m.		12000 m.		13000 m.								
						..	..	270	12.0	280	9.0	275	6.5	280	5.5							
									CAHIRCIVEEN.													
2	12 10	?	?	345	5·5	35	3.6	360	3·0	230	3.7	300	2.5	315	3.4	13 30	Cu.	..	..	Ci.	80	1·0
3	6 35	?	?	55	1·1	?	?	55	2·2	30	0.8	50	2.7	80	1.4	9 10	Cu.	45	..	Ci.	110	0.5
4	6 35	45	4	330	1·7	75	4.0	15	5·5	10	4.6	35	1.6	15	2.6	..	Cu.; St.-Cu.	135	..	..	..	..
5	6 35	?	?	45	1·5	130	2.5	110	6·0	115	5.0	75	3.3	15	4.0	..	..	..	..	Ci.-Cu.	45	..
6	6 30	?	?	Calm		..	..	180	0·7	360	1.5	10	3.6	20	6.5	..	..	..	..	Cloud less		
7	11 0	?	?	270	2·5	190	2.0	165	5.0	165	2.9	180	4.5	160	7.5	12 40	A.-Cu.	205	1.0	..	..	..
11	7 15	?	?	130	3.4	195	5.5	190	7.5	175	12.5	..	..	..	..	..	St. Mammato-Cu.	200	..	A-St.	160	..
																		180	..			
16	6 40	110	5	30	1.5	100	3.2	70	3.1	125	11.0	135	4.0	..	..	..	St.-Cu. ; A.-Cu.	110	..	Ci.	..	..
																		135	..			
17	6 55	?	?	355	1.0	345	4.1	5	1.2	155	3.2	..	..	..	..	..	Low St.-Cu.	315	..	A.-Cu.	135	..
																	St.-Cu.	90	..			
18	6 35	?	?	90	3.3	125	4.8	140	6.0	155	3.0	180	3·6	..	..	..	Fr -Cu.	135	..	..	..	..
																	St.-Cu.-A.-St.	..	..			
				5,000 m.		6,000 m.		7,000 m.		8,000 m.		9,000 m.		10,000 m.								
2	12 10			315	4·0	335	1·3	305	1·7	110	3·3	85	6·0	60	8·0	13 30	Cu.	..	..	Ci.	80	1·0
3	6 35	(For		115	1·5	30	3·2	170	2·7	150	9·5	135	11·0	140	11·5*	9 10	Cu.	45	..	Ci.	110	0.5
4	6 35			60	0·6	30	2·3	260	2·8	230	4·9	215	4·5	210	3·8†	..	Cu.; St.-Cu.	135	..	..	..	..
5	6 35			70	14·0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	Ci.-Cu.	45	..
6	6 30	observations		5	4·6	355	2·7	55	2·0	340	0·8	20	2·3	360	9·0‡	..	..	..	..	Cloud less		
7	11 0			165	6·5	160	6·0	200	4·9	185	19·0	185	26·5	..	..	12 40	A.-Cu.	205	1.0	..	..	..
		at		11,000 m.		12,000 m.		13,000 m.		14,000 m.		15,000 m.		16,000 m.								
*3	6 35			130	13·0	120	12·0	120	15·5	95	7·0	160	9·5	95	9·5	9 10	Cu.	45	..	Ci.	110	0·5
†4	6 35			240	4·1	265	7·5	240	5·5	235	8·5	245	13·5	270	19·0	..	Cu.; St.-Cu.	135	..	..	..	..
‡6	6 30	lower		20	10·0	15	13·0	30	14·5	..	..	..	..	..	..	..	..	..	..	Cloud less.		
						17,000 m.		18,000 m.		19,000 m.		20,000 m.		21,000 m.								
*3	6 35	levels, see above.)				95	7·0	100	11·5	95	14·0	155	14·0	115	21·5	9 10	Cu.	45	..	Ci.	110	0·5
†4	6 35					310	16·0	..	..	..	..	..	..	..	..	..	Cu.; St. Cu.	135	..	..	..	..

10. SOUNDINGS WITH PILOT BALLOONS—*cont.*

Height of Station above M.S.L. = H.
Anemometer above ground = h.

	H.	h.
Aberdeen	14 m.	23 m.
Eskdalemuir	242 m.	15 m.
S. Farnborough	70 m.	31 m.
Cahirciveen	9 m.	13 m.



Wind Protractor.

Notes on Pressure Distribution.

June, 1920.
2nd, 7 h. 13 h. Anticyclone over the British Isles centered W. of Ireland.
3rd, 7 h. " " " " " " N. of Ireland.
4th, 7 h. 18 h. " " " " " " over the Faröe Islands
5th, 7 h. " " " " " " " " " Icelandic regions.
6th, 7 h. " " " " " stretching from Spitzbergen to the Azores.
7th, 7 h. 13 h. 18 h. } Anticyclone over the British Isles, irregular isobars.
8th, 7 h. }
9th, 7 h. 13 h. 18 h. Ridge extending from Iceland to Germany.
11th, 7 h. } Low centered over Cahirciveen.
12th, 7 h. }
14th, 7 h. 13 h. 18 h. }
15th, 13 h. } High over the Arctic and the Azores, shallow Trough
16th, 7 h. 13 h. } over the British Isles.
17th, 7 h. }
18th, 7 h. Shallow Low W. of Ireland } High over the Azores and Scandinavia.
19th, 7 h. Shallow Low over Ireland }
22nd, 7 h. Anticyclone over the British Isles centered over France.
25th, 7 h. 18 h, The Azores Anticyclone extending to the British Isles; Low over Scandinavia and Iceland.
30th, 7 h, Deep depression centered over the Faröe Islands.

Notes on Ascents.

Aberdeen—
25th, 17 h. 0 m., sudden rain squall interrupted ascent. Cu-Nb with line front like line-squall cloud. Trough passing.

Eskdalemuir—
14th, 12 h. 20 m. Barometer unsteady but changing little.
15th, 12 h. Solar Halo during morning.

South Farnborough—
14th, 6 h. 55 m. Brilliant Solar Halo.
16th, 15 h. 15 m. Balloon entered A-Cu.

Cahirciveen—
2nd, 12 h. 10 m. Atmosphere very clear, balloon being visible to the naked eye during greater part of the ascent.

11. NEPHOSCOPE OBSERVATIONS.

ABERDEEN.

Day and Hour G.M.T.	Type of Cloud.	Velocity-height-ratio. Degrees from N.	Milliradians. per Second.	Components. W.-E.	Components. S.-N.	Remarks.
4 13	St.	355	15·0	+ 1·3	−14·9	Low loose Stratus-cumuliformis cloud.
5 13	St.	350	10·0	+ 1·7	− 9·8	Low loose cloud.
12 8	Ci.-Cu.	128	6·1	− 4·8	+ 3·8	Sheet of heavy Ci.-Cu. formed rather suddenly.
16 15	Ci.	165	1·0	− 0·2	+ 1·1	True Ci. in irregular patches.
21 13	Cu.	269	5·9	+ 5·9	+ 0·1	Rather massive Cu. became Cu.-Nb. later.
22 7	Ci.	308	5·8	+ 4·6	− 3·6	Ci. became floccular Ci.-St. at 9h. with ⊕
23 13	Cu.	288	8·9	+ 8·5	− 2·7	Heavy Cu.
24 13	Cu.	278	5·0	+ 4·9	− 0·7	Degraded Cu. below a sheet of fused St.-Cu.
25 13	A.-Cu. to St.-Cu.	245	2·3	+ 2·1	+ 1·0	Very thin and flat high St.-Cu.
	Cu.	243	9·6	+ 8·6	+ 4·4	Cu. becoming Cu.-Nb. later.
26 13	St.-Cu.	268	3·3	+ 3·3	+ 0·1	St.-Cu. in fused sheet.
28 13	Fr.-St.	171	19·0	− 3·0	+19·0	Velocity approximate, varying somewhat.
29 13	A.-St.	186	7·8	+ 0·8	+ 7·8	Incipient A.-Cu. fused later into dense A.-St.
30 13	Cu., Cu.-Nb.	245	7·2	+ 6·5	+ 3·0	Cu. to Cu.-Nb.; central cloud mass measured.

Note:—Several intervals of perfectly cloudless sky during month.

12. AURORA.

None reported.

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Tenth YEAR.—NO. 7. JULY, 1920.] Units based on the C.G.S. System. [*Price* 1*s.*

1. SUNSHINE AND SOLAR RADIATION.

Day.	WESTMINSTER. Bright Sunshine.* Total.	Per cent. of Possible.	SOUTH KENSINGTON.—Lat. 51° 30′ N. Long. 0° 10′ W. Radiation received on Horizontal Surface by Callendar Radiograph. Daily Total.	Per cent. of Planetary.	Maximum. For Day. Amount.	Time.	11.30 h. to 12.30 h.	RICHMOND.—Lat. 51° 28′ N. Long. 0° 19′ W. Bright Sunshine.* Total.	Per cent. of Possible.	Radiation at Noon by Ångström Pyrheliometer. Intensity.	Vertical Component.	Sky.	ESKDALEMUIR.—Lat. 55° 19′ N. Long. 3° 12′ W. Bright Sunshine.* Total.	Per cent. of Possible.	Radiation by Ångström Pyrheliometer. Time.	Sky.	$\frac{p}{p_0}$ sec. Z.	Intensity.	CAHIRCIVEEN. Bright Sunshine.* Total.	Per cent. of Possible
	hr.	%	j/cm².	%	mw/cm².	h. m.	mw/cm².	hr.	%	mw/cm².	mw/cm².		hr.	%	h. m.			mw/cm².	hr.	%
1	0·0	0	612	15	60	12 7	60	0·0	0	..	..	..	0·1	1	..	..	..	..	0·0	0
2	3·5	21	1223	30	89	11 20	85	4·6	28	..	..	..	0·8	5	..	..	..	..	9·9	60
3	3·2	19	1141	28	85	13 10	75	2·6	16	..	..	..	4·8	28	..	..	..	..	*13·8	83
4	4·2	26	1331	33	87	10 40	26	1·8	11	..	..	..	6·2	36	..	..	..	..	1·9	12
5	0·0	0	..	..	..	..	..	0·0	0	..	..	..	0·1	1	..	..	..	..	0·0	0
6	1·2	7	863	21	72	14 25	16	1·1	7	..	..	..	6·6	38	..	..	..	..	0·1	1
7	0·6	4	983	24	73	12 0	73	0·3	2	..	..	..	0·6	3	..	..	..	..	10·0	61
8	5·8	35	1457	36	84	9 30	31	6·2	38	..	..	..	1·5	9	..	..	..	..	6·7	41
9	6·1	37	1464	36	86	11 50	86	7·6	47	..	..	..	3·6	21	..	..	..	..	2·1	13
10	1·6	10	972	24	61	8 20	47	1·7	10	..	..	..	1·2	7	..	..	..	..	6·9	42
11	5·0	30	1370	34	*92	12 0	92	5·3	32	..	..	..	5·2	31	..	..	..	..	0·1	1
12	3·3	20	1178	30	74	12 40	56	2·5	15	..	..	..	0·4	2	..	..	..	..	4·1	25
13	9·4	58	1707	43	88	12 8	88	9·0	56	..	..	..	1·0	6	..	..	..	..	0·1	1
14	11·4	70	2021	51	87	10 8	62	11·5	71	..	..	..	0·5	3	..	..	..	..	2·0	12
15	5·9	37	1420	36	85	9 35	41	6·8	42	..	..	..	4·2	25	..	..	..	..	4·5	28
16	*13·1	81	*2296	58	82	11 42	82	*12·2	76	..	..	..	0·0	0	..	..	..	..	3·7	23
17	3·1	19	1313	33	84	11 15	82	2·5	16	..	..	..	0·6	4	..	..	..	..	8·4	52
18	8·9	56	1930	49	88	12 25	88	8·9	56	76	65	Thro' Ci.	4·3	26	..	..	..	..	6·5	40
19	11·5	72	1951	50	91	13 10	89	10·8	67	77	67	Clear	*9·4	56	..	..	..	..	0·1	1
20	3·4	21	1428	37	88	10 40	75	3·3	21	..	..	..	2·9	17	..	..	..	..	0·0	0
21	0·0	0	578	15	48	12 0	48	0·0	0	..	..	..	4·2	25	..	..	..	..	1·4	9
22	4·8	30	1600	41	84	13 20	81	5·0	31	..	..	..	0·6	4	..	..	..	..	0·0	0
23	0·1	1	685	18	57	14 53	37	0·6	4	..	..	..	5·1	31	..	..	..	..	0·7	4
24	9·1	58	1729	45	84	12 35	83	9·8	62	..	..	..	7·3	44	..	..	..	..	10·9	69
25	5·0	32	1182	31	88	10 50	26	3·3	21	..	..	..	4·8	29	..	..	..	..	2·2	14
26	1·7	11	683	18	70	9 30	48	1·9	12	..	..	..	1·0	6	..	..	..	..	8·8	56
27	1·5	10	916	24	75	11 20	60	1·8	12	..	..	..	1·2	7	..	..	..	..	5·6	36
28	0·0	0	850	23	40	9 30	27	0·2	2	..	..	..	1·7	10	..	..	..	..	1·5	10
29	8·0	52	1745	47	85	12 15	85	8·8	57	68	58	Clear	0·3	2	..	..	..	..	0·0	0
30	0·5	3	671	18	48	16 10	29	0·8	5	..	..	..	5·5	34	..	..	..	..	2·1	13
31	1·4	9	942	25	70	11 30	70	2·4	16	..	..	..	5·5	34	..	..	..	..	0·0	0
Means	4·30	27	†1275	†32	†77	—	†62	4·30	27	—	—	—	2·94	18	—	—	—	—	3·68	23
Normals	5·84	37	1306	33	—	—	—	6·48	41	—	—	—	5·00	30	—	—	—	—	5·13	32
	←35 years→		←8 years→					←35 years→					←5 years→						←35 years→	

2. METEOROLOGY AND MAGNETISM:—CAHIRCIVEEN (VALENCIA OBSERVATORY).—Lat. 51° 56′ N. Long. 10° 15′ W.

Heights above M.S.L.:—H=9·1 m. H_b=13·7 m. H_a=26·4 m. Above Ground: h_t=1·3 m. h_r=0·56 m. h_s=12·8 m. h_a=13·9 m.

Day.	Air Pressure at Station Level. 9 h.	21 h.	Air Temperature in Degrees Absolute. 9 h.	21 h.	Max. 0 h. to 24 h.	Min. 0 h. to 24 h.	Humidity. Vapour Pressure. 9 h.	21 h.	Percentage. 9 h.	21 h.	Wind—Veer from North in degrees and Speed in metres per second. 9 h. °	m/s.	21 h. °	m/s.	Cloud Amount (0–10) and Weather. 9 h.	21 h.	Rain 0 h. to 24 h.	Min. Temp. on Grass. 18 h. to 9h.	REMARKS.	Magnetism. Horizontal Force, Declination West, and Inclination.
			a	a	a	a												a		
	mb.	mb.	200+	200+	200+	200+	millibar.		%	%					Tenths of Sky covered.		mm.	200+		
1	999·3	996·8	86·9	86·4	87·7	84·7	15·1	13·9	96	91	195	3	55	3	10●	10	*13·4	84	●⁰, early. o, to ●⁰, day.	
2	1005·4	1014·7	86·0	85·1	87·6	84·5	11·6	10·1	78	72	355	8	350	10	10	2	2·4	84	●⁰, early. Fair to fine, day.	
3	1018·9	1023·7	86·2	85·4	87·9	84·1	11·1	11·1	74	78	340	11	350	5	6	2	—	82	Fair, at first. Fine, later.	
4	1024·1	1021·3	85·9	85·6	87·3	n83·1	10·9	12·6	74	87	355	4	—	1	8	8	—	80	Fair, early. o to c, day.	
5	1014·5	1011·7	87·2	85·2	89·1	84·9	14·1	11·0	88	78	—	0	340	7	10	9	0·2	84	o, at first. o to d⁰, *p*.	
6	1006·8	1002·7	86·4	84·2	87·4	84·0	12·2	12·4	80	94	280	4	—	1	10	10	4·8	83	o to c, *a*. ●⁰, to p, day.	
7	1001·6	1006·4	84·8	85·9	87·5	83·4	10·5	11·3	76	77	345	8	340	12	8	7	7·6	82	p, *n* p² *a*. Fair to fine, day.	68° 5′·3
8	1009·5	1013·2	86·3	85·0	87·6	84·9	11·6	11·5	77	83	345	11	325	7	8	9	0·2	84	o to Fair, *a*. Fair, day.	17814γ
9	1013·7	1009·2	87·1	85·5	88·2	84·3	12·3	13·6	77	94	275	7	165	8	7	10	7·5	84	p, early. Fair *a*. ●, *p*.	19° 15′·1
10	1009·0	1011·5	87·0	85·9	89·6	84·7	13·3	13·1	84	89	220	6	230	5	8	7	0·3	83	p, at first. Fair, day.	
11	1011·5	1005·2	87·3	86·1	87·7	85·1	13·6	13·9	84	93	180	5	170	8	10	10	10·2	84	Fair *a*. o to ●, *p*.	
12	1002·2	1009·3	86·7	86·1	88·8	85·4	13·5	12·9	87	86	265	9	245	12	9	8	4·9	85	●, *n*. p⁰, *a*. Fair to fine, *p*.	
13	1015·3	1016·2	86·6	87·1	88·9	85·1	13·2	13·7	85	86	245	8	180	5	10●⁰	10	0·2	84	p, *n*. Dull, day.	
14	1012·9	1010·7	87·0	86·2	88·7	85·8	13·8	13·6	87	90	175	7	205	4	10	8	3·9	86	o, to ●⁰, *a*. o and p⁰, *p*.	
15	1011·3	1012·8	87·6	86·3	88·1	85.0	13·5	13·5	82	89	235	9	200	4	7	10	1·4	84	Fair, *n*. p, *a*, Dull, *p*.	
16	1008·6	1007·8	86·0	86·0	*89·9	84·3	13·1	13·2	88	89	245	6	265	2	9	2	5·0	84	●⁰, *n*. o, *a*. Fine, later.	
17	1009·0	1012·8	86·5	86·3	89·0	84·1	13·7	13·2	89	87	285	2	285	4	9	8	2·0	80	p, *a*. Fair, day.	
18	1017·8	1024·3	86·1	86·1	88·5	85·3	12·1	12·1	81	81	305	7	310	3	9	4	0·2	83	o, *a*. Fair, day.	
19	1024·9	1022·4	87·2	87·5	88·1	84·9	14·0	15·7	87	96	195	5	205	3	10	10≡⁰	6·2	81	Fair, *n*. p, to ●, day.	
20	1022·0	1021·7	87·8	87·1	88·9	86·9	16·2	15·6	97	98	225	4	250	2	10●⁰	10●⁰	1·3	86	●⁰, *n*. Damp, day.	
21	1017·4	1014·7	85·3	86·1	88·3	85·1	13·1	13·6	92	91	30	2	275	3	10●	8	6·6	84	●⁰, at first. Fair later.	19° 18′·4
22	1009·2	1004·2	87·4	85·3	88·0	85·1	14·8	13·7	91	96	240	10	195	6	9	10≡⁰	4·9	84	●⁰, *a*. Fair, *p*, ●⁰, *n*.	68° 5′·7
23	998·5	1005·1	86·6	85·4	87·7	85·1	14·8	10·9	96	77	310	2	355	7	10●⁰	4	1·8	84	d⁰, at first. Damp, day. Fair, *n*.	17833,
24	1013·2	1013·9	87·8	85·2	89.3	84·0	12·8	12·0	77	85	275	3	230	2	4	8	—	80	Fair, *n*. Fine, day.	17834γ
25	1002·8	1009·9	87·7	84·6	87·8	83·9	15·1	10·8	91	80	160	3	340	10	10	6	11·1	83	p, to ●⁰, at first. ●⁰, *a*. Fair, *p*.	
26	1015·0	1017·9	84·7	85·3	88·0	84·0	11·6	10·9	85	77	325	8	335	8	8	7	1·4	82	p, *a*. Fair, day.	
27	1021·2	1017·3	87·0	84·5	89·0	83·2	12·0	11·1	76	82	300	4	180	6	7	10	4·3	n79	Fair, *a*. o to ●⁰, *p*.	
28	1014·8	1020·3	86·9	86·8	88·5	85·6	13·7	12·8	87	82	295	7	310	4	10	9	1·9	83	●, *n*. o to c, day.	
29	1021·5	1016·9	86·9	88·0	89·4	85·6	14·8	16·6	94	98	220	3	235	8	10●⁰	10●⁰	7·5	84	Dull, damp, day.	
30	1012·1	1012·6	87·8	86·2	*89·9	86·0	16·2	13·0	97	86	255	2	315	3	10	10	11·5	87	●² & **T**, *n*. ●, *a*. c to o, *p*.	
31	1009·8	1006·5	86·5	86·6	87·9	85·3	12·6	13·9	82	90	255	4	235	5	10	10	0·4	84	Dull, day.	
Means	1012·1	1012·7	86·7	85·9	88·4	84·8	13·3	12·8	85	87	—	5·5	—	5·4	8·9	7·9	123·1	83·3	Monthly Totals or Means.	17827γ
Normals	1014·0	1014·5	88·3	87·4	90·7	85·1	14·5	14·2	83	86	—	4·6	—	4·0	—	—	99·9	—	Normals.	19° 16′·8
	←45 years→						←30 years→				←35 years→						45 years			68° 5′·5

* By Campbell-Stokes Sunshine Recorder. † Mean or 30 days only. * denotes the maximum and *n* the minimum value in the column.

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3. METEOROLOGY:—RICHMOND, SURREY (KEW OBSERVATORY).—Lat. 51° 28′ N. Long. 0° 19′ W.

Heights above Mean Sea Level:—Rain-gauge Site, H=5·5 m. Barometer, H_b=10·4 m. Cups of Anemometer, H_a=25 m.
Heights above Ground:—Thermometers, h_t=3·0 m. Rain-gauge, h_r=0·53 m. Sunshine Recorder, h_s=13·3 m. Cups of Anemometer, h_a=20 m.

Day.	Air Pressure at Station Level.		Air Temperature in Degrees Absolute.				Humidity.				Wind—Veer from North in degrees and Speed in metres per second.				Cloud Amount and Weather.		Rain 0 h. to 24 h.	Min. Temp. on Grass.	Remarks.
					Max.	Min.	Vapour Pressure.		Percentage.										
	9 h.	21 h.	9 h.	21 h.	0 h. to 24 h.		9 h.	21 h.	9 h.	21 h.	9 h.		21 h.		9 h.	21 h.		18 h. to 9 h.	
			a	*a*	*a*	*a*									Tenths of Sky covered.				
	mb.	mb.	200+	200+	200+	200+	millibar.		%	%	°	m/s.	°	m/s.			mm.	200+	
1	1010·4	1007·9	89·5	86·8	91·4	86·3	14·7	13·9	79	89	200	6	195	3	10 ●	10	2·2	85	Dull and wet.
2	1003·5	1007·1	90·8	89·2	92·8	86·4	14·9	14·4	74	79	190	7	210	5	8	10	4·9	83	Fine to overcast. Showery.
3	1008·9	1011·5	89·4	87·9	93·4	86·7	12·9	13·9	70	83	190	4	—	1	10	8∞	—	84	Dull to fair. T 15 h. 30 m.
4	1013·2	1014·7	90·1	86·6	92·6	84·8	13·5	13·1	70	85	25	4	360	4	10∞	10 ●⁰	16·5	79	☂. Dull to fine. ☇ 10 h. ●² at times.
5	1010·8	1006·6	83·3	83·8	85·0	82·8	11·5	11·8	93	92	330	2	280	3	10 ●	10 ●⁰	15·5	81	Dull and wet all day.
6	1003·7	1005·9	87·6	87·5	91·0	83·6	14·3	15·2	87	93	205	4	275	2	10 ●	10 ≡⁰	8·6	82	Dull and wet to 13 h. ● *n*.
7	1005·5	1003·8	85·9	87·7	90·3	84·1	12·8	15·2	87	92	160	3	155	3	10 ●⁰	10 ●	6·7	83	Dull. ● at times.
8	1005·1	1006·6	88·9	86·4	90·1	83·0	10·7	12·8	60	84	170	8	180	5	5	6	1·3	77	≡⁰. Fine to 10 h. Showers ⸝ (gust) ☂.
9	1010·7	1016·8	89·3	87·4	92·0	83·9	12·7	11·2	69	69	245	5	240	2	9	4	—	81	☂. Fair to overcast. ◠ 16 h. 40 m.
10	1017·6	1017·0	89·4	88·6	90·3	84·5	12·8	14·9	69	85	205	6	210	4	10	10	0·1	81	Fine to overcast *a*. ●⁰ 11 h. 45 m.–21 h.
11	1017·3	1015·7	89·6	89·0	93·1	86·4	13·8	15·9	74	88	235	4	205	2	5	9	2·6	85	● early and ☂. Overcast to fine.
12	1011·5	1009·6	90·7	90·2	95·5	87·8	17·3	15·9	86	82	205	3	220	5	10	10	6·0	87	≡⁰ early. ● 3 h.–7 h. Dull to fine.
13	1014·9	1020·5	89·0	87·6	92·6	85·3	11·7	11·7	65	71	260	5	265	3	9	3	—	83	☂. Fair to fine with ☾.
14	1021·6	1018·1	89·9	88·8	94·2	84·9	11·8	13·0	62	73	230	4	215	2	7	3	—	80	Fine.
15	1015·3	1017·4	90·5	88·7	94·0	85·2	13·5	12·9	68	73	205	5	—	1	9	2	2·1	81	≡⁰ early. Fine to overcast. Shower 13 h.
16	1017·3	1013·0	90·8	89·9	95·0	83·6	13·9	13·7	69	72	195	3	—	1	7	5	—	79	≡⁰, ☂. Fair to fine with ☾.
17	1008·7	1012·4	92·5	88·6	95·6	85·5	16·4	14·9	73	85	225	4	—	1	7	3 ≡⁰	0·3	80	Fair *a*—dull to cloudy ☂.
18	1014·8	1019·2	89·2	88·3	94·2	84·7	11·1	10·7	61	62	260	2	270	3	6	2	—	80	≡⁰, ☂☂. Cloudy to fine.
19	1024·4	1026·4	89·0	89·9	*x*95·8	83·0	13·0	12·0	72	63	265	2	285	2	7	1	—	78	≡⁰, ☂☂. Fine.
20	1025·2	1022·1	89·8	91·0	94·9	84·2	13·4	17·4	71	85	225	6	230	2	10	8	—	79	Fine early. Cloudy to dull later.
21	1019·6	1014·5	91·6	91·1	95·0	89·3	17·7	19·3	83	94	230	2	210	2	10	10 ●	*x*17·8	85	≡⁰ early. Dull. ● ☂.
22	1009·5	1009·6	90·5	89·2	93·4	88·1	16·1	12·8	81	70	260	4	260	4	10	10	3·3	88	● early. Fine to overcast.
23	1004·4	1000·8	89·0	89·3	92·0	87·6	13·7	15·4	76	84	210	7	220	7	10 ●	10	0·3	85	Dull most of day. ● at times. ⸝ ☂.
24	1005·1	1014·9	86·2	85·0	91·0	82·8	11·1	11·3	74	81	305	4	—	1	9	1 ≡⁰	8·7	82	● 1 h.–7 h. Fine after 7 h. 30 m. ☾ ☂.
25	1014·6	1006·0	87·6	85·4	90·0	*n*80·5	10·7	12·6	65	88	235	4	185	5	6	10	3·8	*n*74	☂. Fine early. Dull and wet ☂.
26	1000·2	1011·9	86·1	85·3	88·8	84·0	12·3	11·5	82	81	275	4	295	3	10	10	0·7	83	●⁰ early. Dull to cloudy. [fair.
27	1016·1	1019·5	84·3	83·6	89·5	80·7	11·9	11·7	90	92	—	1	—	0	10	9	2·5	75	☇ ●⁰p. 11 h. 13 m. ☇ 16 h. 10 m. Dull to
28	1017·9	1013·8	87·7	86·2	88·6	*n*80·5	12·3	14·3	74	95	230	5	—	0	10	9 ≡⁰	2·9	76	☂. Dull. ● 11 h. 30 m.–15 h. 30 m.
29	1018·6	1017·5	88·2	89·1	93·7	84·1	11·5	13·8	67	76	310	5	250	3	6	7 ≡⁰	—	79	≡⁰, ☂. Fine.
30	1013·0	1011·9	90·7	89·2	92·6	86·9	16·7	16·2	83	89	230	6	250	2	10 ●⁰	4	5·0	84	● 10 h.–14 h. o. to 16 h. 30 m., then fine.
31	1010·0	1007·3	89·9	90·2	94·8	86·9	12·6	16·5	66	85	—	1	220	4	8	5	—	84	≡⁰, ☂. o. early; fair to fine later.
Means	1012·6	1012·9	88·9	88·0	92·4	84·8	13·3	13·9	74	82	4·2		2·6		8·6	7·1	111·8	81·4	Monthly Totals or Means.
Normal	1014·7	1014·5	90·1	89·5	94·7	85·4	13·7	14·1	71	76	3·4		2·4		—	—	60·1 (45 years)	—	Normals.
			45 years.				30 years.				35 years.								

4. METEOROLOGY:—ESKDALEMUIR, DUMFRIESSHIRE.—Lat. 55° 19′ N. Long. 3° 12′ W.

Heights above Mean Sea Level:—Rain-gauge Site, H=242 m. Barometer, H_b=237·3 m. Vane of Anemometer, H_a=250 m.
Heights above Ground:—Thermometers, h_t=0·9 m. Rain-gauge, h_r=0·38 m. Sunshine Recorder, h_s=1·5 m. Vane of Anemometer, h_a=15 m.

																			Remarks.
1	978·7	973·8	85·6	85·0	86·4	82·1	12·5	13·6	86	98	150	3	170	2	9	10 ●	11·7	81	o early, then ●⁰≡⁰.
2	974·2	979·7	86·6	84·1	88·3	83·6	13·4	11·3	87	86	—	1	20	7	10	10	*x*22·8	85	●≡⁰ o u: ☇ 10½–14½ h.: ●≡⁰ ☂ and *n*.
3	985·1	990·8	83·8	83·1	88·0	81·9	10·3	9·9	80	80	20	10	30	9	10	8	1·0	82	●⁰. o to c *a* and ☂: p *n*.
4	993·4	991·2	83·7	82·9	87·0	80·4	8·9	9·8	70	81	40	9	—	1	6	8	0·8	79	bc ⊕ *a*: c to o ☂ and *n*; ●⁰ after 22 h.
5	985·1	977·9	81·8	84·4	87·6	81·1	8·9	10·6	79	79	20	4	—	0	10 ●⁰	9	0·7	80	o ●⁰ *a*: oy ☂: o *n*.
6	972·4	975·7	83·1	80·1	88·9	76·6	10·3	8·0	84	79	—	1	240	3	10 ●	3	1·8	78	o early: ●≡⁰ *a*: c ☂: b *n*.
7	977·9	980·1	85·4	83·1	86·7	*n*75·9	10·6	10·8	74	88	140	2	50	5	10	3	—	*n*72	☂ at first: o. ≡⁰ *a* and ☂: c *n*.
8	977·8	979·8	84·6	82·9	86·1	82·6	11·9	10·8	88	89	30	8	—	1	10	5	20·0	80	o early; ●²≡⁰ *a*: T●⁰ ☂: ☇ bc *n*.
9	978·9	982·3	86·5	83·8	87·4	82·5	12·1	11·9	79	93	70	6	180	2	9	10	4·1	79	o at first: p T 10 h.–14 h. then c.
10	983·0	982·9	84·2	84·9	86·8	82·5	11·8	12·6	89	91	160	4	190	6	10	10 ≡⁰	3·6	79	●⁰≡⁰ *a*: ●≡⁰ then c ☂: o ≡⁰ *n*.
11	984·6	985·1	85·3	82·7	88·4	82·6	11·7	10·2	83	85	210	6	200	3	9	7	0·5	82	cp *a*: o to c ☂ and *n*.
12	979·9	976·5	85·8	85·4	87·9	83·6	12·7	13·8	87	96	150	4	210	5	10	10 ●	9·9	80	●≡⁰ to o *a*: ●²≡⁰ ☂: ●⁰≡⁰ *n*.
13	977·7	986·1	84·8	84·4	87·0	82·1	12·5	11·0	91	82	230	6	210	2	10 ●	10	6·9	80	bc early: ●≡⁰ 6 h.–15 h. then c to o.
14	986·8	984·2	86·0	84·6	87·5	83·4	11·0	12·5	74	92	220	8	200	8	8	10 ≡⁰	1·7	82	d ≡⁰ 1h.–3 h.: o *a* and ☂: d ≡⁰ after 19 h.
15	980·4	983·3	85·0	85·0	88·8	82·3	10·7	12·8	77	92	230	7	190	2	9	8	5·0	84	●≡⁰ 1 h.–6 h.: ⊕ o *a*: op ☂: c *n*.
16	983·6	981·4	85·0	83·7	87·0	82·2	12·2	11·8	88	92	220	6	200	10	10	10 ●	14·7	80	c early: o *a*: ●²≡⁰ 12 h.–23 h.
17	978·2	981·6	83·5	84·0	88·6	81·1	11·7	10·9	93	84	30	2	230	4	10 ●	6	8·1	82	●≡⁰ till 9½ h: o *a* and ☂: p to bc *n*.
18	984·5	989·6	86·7	83·6	*x*90·6	80·7	12·0	10·6	77	84	260	3	—	2	9	3	5·5	75	cp⁰ *a*: ctl ☂: ☇² 17 h.: T☂ to b. *n*.
19	994·4	992·4	86·6	84·7	89·7	76·6	10·8	12·4	70	91	270	4	200	7	6	10 ●⁰	0·8	73	♓⁰ 1 h.: ☂ bc *a*: cy ☂: d⁰≡⁰ after 21 h.
20	988·4	990·4	86·3	82·2	88·5	80·5	15·0	10·7	99	93	210	7	—	0	10 ●⁰	2	4·0	84	●⁰≡⁰ to ≡⁝ till 15 h. then bc.
21	989·0	984·8	86·0	83·6	90·4	79·1	11·7	10·9	79	86	220	5	—	1	10	10	—	74	c early: o ⊕ *a*: oy ☂; c to o *n*.
22	977·2	972·9	85·5	83·7	86·7	81·6	11·1	10·7	77	84	230	7	260	6	10 ●⁰	8	8·3	78	o early: d ≡⁰ q *a*: p² ☂: c to o *n*.
23	968·8	970·5	83·6	83·0	89·1	81·9	10·6	9·8	84	80	—	1	300	2	10 ●⁰	8	2·1	81	♓⁰ 1 h.: ●⁰ 4 h.–10 h.: bcyv ☂: c to ●⁰ *n*.
24	977·0	982·3	82·9	82·3	87·3	80·0	7·9	9·4	65	81	310	7	250	3	4	8	0·1	80	●⁰ 1 h.: o to bc *a*: c ☂ and *n*.
25	981·8	978·7	85·0	83·0	87·7	77·1	9·1	10·1	65	83	260	4	—	1	9	10 ●⁰	0·5	73	cp *a* and ☂: o then ●⁰ *n*.
26	978·5	983·0	84·3	80·6	86·3	79·5	9·7	8·7	73	84	10	6	—	1	10	7	1·4	81	●⁰ till 7 h. then o *a* and ☂: ●⁰ to c *n*.
27	988·3	988·9	84·0	80·5	87·3	78·9	8·6	8·5	66	82	10	2	290	2	10	10	—	77	bc early: oy *a*: c to o ☂ and *n*: ⊕ 19 h.
28	980·2	983·4	83·5	84·0	87·3	79·5	11·7	10·6	93	81	220	10	290	6	10 ●	8	5·7	76	●≡⁰ 3 h.–13 h.: o to bc.
29	987·6	981·6	84·7	85·5	86·4	82·9	11·1	12·8	81	89	250	4	270	5	10	8	9·2	81	o early: o ●⁰ *a*: ●²≡⁰ ☂: c *n*.
30	980·0	982·9	85·0	83·8	89·0	83·0	10·7	9·5	77	74	250	6	270	5	9	7	—	82	o at first then cloudy.
31	980·9	977·4	86·9	82·7	88·1	81·9	9·6	10·2	61	85	200	5	200	2	6	7	1·9	81	bc *a*: ●⁰≡⁰ ☂: c *n*.
Means	981·8	982·3	84·9	83·5	87·8	81·0	11·1	10·9	80	86	5·0		3·6		9·1	7·8	152·8	79·4	Monthly Totals or Means.
Normal 1911-1915.	986·5	986·6	86·8	85·1	90·3	81·5	12·4	12·3	78	87	4·7		3·4		—	—	77·3	—	Normals.

Temperatures at or below the normal freezing point of water are printed in small type. *x* denotes the maximum, and *n* the minimum, value in the column.

5. GEOPHYSICS :—RICHMOND (KEW OBSERVATORY).

Day.	Earth Temperature at 9 h. 0.3 m.	Earth Temperature at 9 h. 1·2 m.	Height above M.S.L. of Surface of Underground Water. Daiiy Mean.	Extremes.	Terrestrial Magnetic Force. Horizontal Comp't. Mean Time.		Declination. Mean Time.	Declination. West.	Inclination. Mean Time.	Inclination.	Magnetic Character of Day.	Electric Character of Day.	Charge per cc. × 10^{16}. +. About 15 h.	Charge per cc. × 10^{16}. −. About 15 h.	Air-Earth Current. × 10^{16}. About 15 h.	Potential Gradient, Volts per metre. Factor 2·06. 3 h.	9 h.	15 h.	21 h.
	a 200+	*a* 200+	cm.	cm.	h m	γ	h m	° ′	h m	° ′			Coulomb.		Amp/cm².	v/m	v/m	v/m	v/m
1	89·9	87·3	216	..	11 6	18395	14 17	14 36.3	14 38	66 56.3	0	1	..	..	..	75	15	140	140
2	89·3	87·4	215	..	..	..	..	..	..	..	0	1	..	..	..	40	175	125	150
3	89·5	87·4	214	..	..	..	..	..	..	..	0	1	..	..	..	125	175	150	150
4	89·3	87·3	215	..	..	..	..	..	..	..	0	1	..	..	..	175	290	125	50
5	88·8	87·3	217	236	..	..	..	..	..	..	0	2	..	..	..	175	−115	125	−15
6	87·7	87·2	220	236	..	..	..	..	..	..	1	1	..	0·52	0·60	25	175	125	290
7	88·0	87·1	222	..	..	..	..	..	..	..	1	1	..	..	..	140	0	175	−125
8	88·1	87·1	224	..	10 58	18366	14 22	14 37·1	14 38	66 58·2	1	1	..	..	..	340	200	125	200
9	88·0	87·2	226	..	..	..	..	..	..	..	0	1	..	0·48	0·85	140	190	150	290
10	88·0	87·1	227	..	..	..	..	..	..	..	0	0	..	..	..	215	175	200	140
11	88·3	87·1	227	..	..	..	..	..	..	..	0	0	..	..	..	100	225	115	265
12	89·2	87·1	227	..	..	..	..	..	..	..	1	1	0·64	..	1·15	115	265	175	175
13	89·5	87·1	226	..	..	..	..	..	..	..	0	0	..	0·56	0·35	150	240	125	240
14	89·5	87·1	225	..	..	..	..	..	..	..	0	0	0·70	..	0·50	125	175	165	275
15	89·8	87·2	225	..	11 2	18420	..	..	14 37	66 57·9	2	1	0·66	..	1·10	75	z+	165	250
16	89·4	87·2	225	..	..	..	14 14	14 35·0	..	..	1	0	..	1·09	1·00	215	240	175	315
17	89·9	87·4	225	..	..	..	..	..	..	..	0	0	..	..	..	200	240	150	300
18	89·8	87·4	227	..	..	..	..	..	..	..	1	0	..	..	..	200	240	125	115
19	89·9	87·6	230	..	..	..	..	..	14 26	66 56·6	0	0	0·76	..	1·10	150	290	150	175
20	90·0	87·4	232	..	..	..	..	..	..	..	0	0	..	0·36	1·05	190	165	190	250
21	90·4	87·4	233	..	..	..	..	..	..	..	0	2	..	..	..	125	190	−315	0
22	90·4	87·6	232	..	10 58	18394	14 15	14 38·2	14 37	66 57·7	1	1	0·62	..	0·90	−40	240	240	175
23	90·3	87·6	230	..	..	..	..	..	..	..	1	1	..	..	..	125	115	165	200
24	89·5	87·9	228	..	..	..	..	..	..	..	1	1	..	..	..	125	300	150	250
25	89·0	87·9	225	..	..	..	..	..	..	..	0	1	..	..	..	240	190	90	140
26	88·8	87·9	224	..	..	..	..	..	..	..	1	1	..	0·13	0·30	125	175	125	z±
27	87·9	87·9	222	..	..	..	..	..	..	..	0	1	0·23	..	0·45	290	300	150	240
28	87·5	88·1	221	..	11 10	18394	14 17	14 34·6	14 43	66 56·0	0	0	..	..	..	225	415	90	390
29	87·5	87·6	220	..	..	..	..	..	..	..	0	0	..	0·49	0·60	190	250	150	300
30	88·7	87·6	219	..	..	..	..	..	..	..	0	1	..	..	..	65	125	140	265
31	88·9	87·3	219	213	..	..	..	..	..	..	0	0	..	..	..	240	565	200	240
M.	88·1	87·4	224	—	—	—	—	—	—	—	0·39	0·68	0·60	0·52	0·77	154†	209†	133†	192†
	90·0	87·3																	
	— 12 years. —																		

† Mean for 29 days.

6. GEOPHYSICS :—ESKDALEMUIR, DUMFRIESSHIRE.

Day.	Terrestrial Magnetic Force. North Component. Maximum 15000 γ +. h m	γ	Minimum. 15000 γ +. γ	h m	Range. γ	West Component. Maximum. 4000 γ +. h m	γ	Minimum. 4000 γ +. γ	h m	Range. γ	Vertical Component. Maximum. 44000 γ +. h m	γ	Minimum. 44000 γ +. γ	h m	Range. γ	Magnetic Character of Day.	Electric Character of Day.	Potential Gradient, Volts per metre. Factor 6·20. 3 h.	9 h.	15 h.	21 h.
	h m	γ	γ	h m	γ	h m	γ	γ	h m	γ	h m	γ	γ	h m	γ			v/m	v/m	v/m	v/m
1	19 0	1037	967	13 11	70	14 25	864	791	8 20	73	19 30 / 19 46	1061	1037	12 40	24	0	2 *b*	50	200	−35	125
2	20 15	1035	972	11 47	63	14 39	877	806	7 40	71	18 0	1060	1033	13 38	27	0	2 *c*	−45	−40	*z* ±	45
3	21 2	1017	972	10 29	*n*45	14 33	876	804	7 51 / 8 3	72	19 20	1054	1037	15 0	17	0	1 *a*	20	70	115	125
4	18 13	1038	968	11 50	70	14 0	875	792	6 45	83	18 10	1055	1015	11 50	40	0	1 *b*	115	125	210	245
5	17 32	1038	979	11 20	59	16 11	866	810	9 11	56	5 0	1054	1030	12 15	24	0	1 *a*	135	−5	130	195
6	17 48	1081	967	14 48	114	17 45	888	767	23 49	121	21 40	1069	1031	12 34	38	1	2 *b*	275	−160	110	160
7	20 43	*x*1152	951	12 1	*x*201	20 50	910	765	8 28	145	20 32	1075	981	2 16	94	1	—	50	110	‡‡	‡‡
8	23 6	1033	*n*929	11 33	104	14 56	872	776	6 27	96	17 12	1064	1019	0 36	45	1	2 *c*	150	85	85	325
9	20 0	1024	960	11 35	64	15 10	865	786	6 10	79	20 20	1061	1022	2 22	39	0	2 *c*	160	−195	1080	130
10	20 20	1032	974	11 15	58	15 24	870	800	9 9	70	19 37	1064	1018	12 30	46	0	1 *a*	125	110	80	75
11	21 47	1045	980	12 5	65	14 44	875	804	8 4	71	18 50	1060	1037	11 30	23	0	*a*	*	*	90	120
12	20 33	1070	951	10 50	119	14 48	884	786	7 49	98	17 10 / 20 20	1078	1038	11 40	40	1	1 *a*	55	150	155	00
13	19 52	1037	952	13 5	85	14 48	862	793	6 55	69	16 46	1065	1039	11 47	26	0	1 *a*	90	10	40	155
14	22 22	1052	971	12 27	81	14 34	868	797	6 0	71	20 30	1072	1036	9 50	36	0	1 *a*	25	115	115	20
15	19 12	1092	934	23 26	158	17 30	*x*921	*n*749	20 18	*x*172	20 18	*x*1122	*n*963	23 51	*x*159	2	1 *b*	00	90	70	110
16	22 38	1033	938	9 19	95	14 41	861	767	0 41	94	18 5	1069	964	0 13	105	1	2 ?	40	25	−50	?
17	16 40	1038	976	3 38	62	13 43	873	797	7 30	76	18 9	1072	1039	12 10	33	0	—	?	?	125	175
18	17 20	1064	969	14 47	95	14 56	900	792	6 43	108	18 5	1106	1027	23 13	79	1	2 *c*	350	195	*	*
19	19 31	1033	955	11 50	78	14 20	868	798	8 19 / 8 40	70	19 30	1075	1041	0 1	34	0	—	*	*	*	40
20	8 28	1029	975	12 55	54	14 10	850	793	8 46	57	18 0	1068	1035	1 16	33	0	0 *a*	120	105	85	245
21	19 48	1037	968	10 52	69	13 49	871	805	8 3	66	18 52 / 20 0	1068	1054	13 33	*n*14	0	0 *a*	200	230	135	210
22	17 18	1054	968	13 41	86	17 18	889	795	6 33	94	18 22	1095	1041	12 18	54	1	2 *c*	225	70	00	150
23	14 58	1073	941	12 35	132	14 58	908	789	7 45	119	17 6 / 17 22	1105	1033	0 40	72	1	1 *b*	*	*	165	165
24	22 46	1053	946	9 41	107	12 52	856	792	8 24	64	20 41	1079	1050	12 53	29	0	1 *a*	120	310	110	160
25	18 37	1034	966	11 32	68	14 53	861	792	8 12 / 8 26 / 8 38	69	16 36 / 17 40	1071	1045	12 0	26	0	1 *a*	175	135	−140	165
26	22 52	1052	969	12 33	83	15 17	860	808	2 25 / 3 9	*n*52	18 31	1075	1037	1 40	38	0	1 *b*	115	90	75	235
27	18 18	1030	975	10 43	55	13 10	860	805	5 23	55	18 5	1078	1046	11 22	32	0	—	500	‡‡	‡‡	310
28	20 51	1023	967	13 6	56	14 37	857	799	7 18	58	19 10	1070	1053	10 45	17	0	2 *a*	−280	105	120	190
29	22 32	1031	962	11 24	69	12 48	862	799	7 49	63	17 15	1070	1045	10 45	25	0	1 *a*	145	−70	−35	110
30	19 48 / 22 44	1036	980	11 11	56	13 20	876	791	7 21	85	17 15	1068	1043	11 0	25	0	0 *a*	115	75	110	75
31	20 2	1035	967	12 53	68	12 19	866	797	6 33	69	17 21	1066	1046	12 23	20	0	0 *a*	40	110	425	345
M.	—	1046	963	—	84	—	874	792	—	82	—	1073	1030	—	42	0·32	‡1·19	†99	†80	†138	†161

x denotes the maximum and *n* the minimum value in the column. Potential gradient is reckoned as positive if the potential increases upwards. For indeterminate potential gradient the following notation is used :—*z*+ Indeterminate, positive value ; *z*— Indeterminate, negative value ; *z*± Indeterminate in magnitude and sign.

‡ Mean for 27 days. † Mean for 22 days. * Light failed. ‡‡ Water failed.

7. JERSEY (ST. LOUIS OBSERVATORY).—Lat. 49° 12′ N. Long. 2° 6′ W.

Heights above M.S.L.:—H = 54 m. H_b = 55 m. Above Ground:—h_t = 1·48 m. h_r = 1·72 m. h_a = 8 m.

Day.	Air Pressure at Station Level. 9 h.	14 h.	21 h.	Mean of 3 Readings.	Air Temperature in Degrees Absolute. 9 h.	14 h.	21 h.	Max.	Min.	Mean of 5 Readings.	Min. Temp. on Grass.	Percentage of Humidity. 9 h.	14 h.	21 h.	Mean.	Rain 0 h. to 24 h.	Remarks.
	a 200+	a 200+	a 200+	a 200+	a 200+	a 200+	a 200+	a 200+	a 200+	a 200+	a 200+	%	%	%	%	mm.	
1	1007·3	1005·9	1002·6	1005·3	88·2	88·4	88·5	89·0	87·1	88·2	85·0	91	93	86	90	3·1	● early and from 5 h. 30 m. to 13 h.
2	999·2	1001·6	1001·7	1000·8	89·4	89·9	87·1	91·3	86·4	88·8	84·6	76	79	91	82	5·6	●² 3 h.
3	1004·7	1006·0	1010·1	1006·9	86·0	86·6	86·4	88·8	86·0	86·8	82·8	93	93	87	91	2·2	● the whole day.
4	1007·9	1008·3	1009·0	1008·4	87·2	88·1	87·3	89·7	86·0	87·8	84·6	87	75	94	85	0·2	● 5 h.; 7 h.; 11 h.
5	1008·5	1007·4	1006·3	1007·4	86·8	88·1	86·2	88·8	85·8	87·1	84·2	89	77	87	84	—	
6	1001·0	1002·9	1003·6	1002·5	89·6	89·5	86·3	89·2	85·5	88·0	82·7	77	73	84	78	4·5	●² 4 h. to 10 h.; 21 h.
7	998·0	997·0	999·8	998·3	86·0	89·0	86·5	90·5	84·4	87·3	84·2	94	82	67	81	4·7	●² early to noon.
8	998·7	1001·9	1005·5	1002·0	85·4	86·1	86·4	89·0	84·5	86·3	81·8	100	93	93	95	5·5	●² 8 h. continuous ⸗ S.W.9.
9	1008·1	1013·4	1015·1	1012·2	87·9	88·6	85·5	90·0	85·1	87·4	83·0	79	70	81	77	—	
10	1014·2	1013·6	1014·1	1014·0	88·3	88·6	88·3	91·0	84·8	88·2	80·5	79	82	91	84	0·1	●° 13 h. 45 m.
11	1013·5	1012·5	1010·9	1012·3	88·5	90·8	88·0	91·6	87·4	89·3	85·6	97	87	92	92	8.6	●² 4 h. 30 m. to noon.
12	1007·7	1007·8	1007·9	1007·8	90·5	91·9	87·0	93·4	86·0	89·8	84·9	77	78	94	83	3·6	●² 18 h. 30 m. to 20 h. 30 m.
13	1014·6	1017·0	1017·9	1016·5	89·0	90·1	86·2	91·0	84·3	88·1	81·9	70	64	92	75	—	
14	1017·1	1014·9	1013·5	1015·2	89·2	93·0	88·0	94·1	83·8	89·6	76·4	89	63	80	77	—	
15	1012·3	1013·3	1014·7	1013·4	90·1	90·5	86·2	92·5	84·4	88·7	79·1	79	79	92	83	—	
16	1012·4	1010·4	1007·5	1010·1	89·6	92·7	89·0	94·7	*n*83·4	89·9	75·6	78	68	84	77	—	
17	1005·9	1007·0	1008·6	1007·2	90·4	90·9	87·5	93·4	86·5	89·7	81·4	86	74	91	84	3·0	●² 20 h. 40 m.
18	1012·6	1015·0	1017·8	1015·1	88·5	89·8	86·5	91·6	85·5	88·4	84·3	72	66	88	75	—	
19	1022·2	1023·5	1024·1	1023·3	89·1	91·9	85·8	92·5	84·1	88·7	76·7	79	65	89	78	—	
20	1023·3	1022·1	1019·4	1021·6	88·6	91·9	87·8	*x*94·8	83·6	89·3	74·7	73	50	89	71	—	
21	1015·3	1013·6	1010·6	1013·2	89·6	93·9	88·4	*x*94·8	87·0	90·7	81·1	90	78	100	89	—	about 10 h. ≡ from S. intermittent;
22	1008·9	1009·7	1009·3	1009·3	88·6	91·2	87·6	91·5	87·6	89·3	87.7	90	72	81	81	0·2	[≡ ² 20 h.
23	1003·7	1001·8	1001·5	1002·3	89·2	89·7	88·3	90·0	87·8	89·0	85·1	80	81	92	84	2·6	● after noon.
24	1004·9	1009·4	1012·7	1009·0	87·0	90·6	85·8	91·0	84·4	87·8	84·6	75	58	78	70	*x*9·2	●² early to 6 h. 30 m.
25	1011·1	1007·0	1001·7	1006·6	87·9	89·6	87·9	90·8	83·5	87·9	*n*74·6	67	60	96	74	3·8	●° noon; ●² 19 h.
26	1004·0	1008·1	1010·1	1007·4	86·5	89·0	85·9	89·6	85·4	87·3	82·7	71	60	76	69	0·1	●° afternoon and 19 h. 30 m.
27	1013·5	1014·1	1016·1	1014·6	87·5	88·8	85·6	89·7	84·4	87·2	80·3	61	60	83	68	0·8	● early.
28	1015·5	1013·1	1011·4	1013·3	85·6	85·9	86·8	87·4	84·6	86·1	77·6	72	95	95	87	2.2	● from 8 h. 15 m.; ≡ 11 h.
29	1015·9	1017·3	1017·3	1016·8	89·3	92·2	86·9	92·6	86·8	89·6	80·0	83	61	82	75	—	[●² 20 h.
30	1012·6	1012·0	1009·8	1011·5	87·6	89·2	88·5	89·6	86·4	88·3	82·8	93	91	97	94	3·4	● 3 h. 50 m.; ≡ 4 h. 25 m. to 8 h. 30 m.;
31	1006·0	1005·7	1005·3	1005·7	88·7	89·4	87·9	90·5	86·6	88·6	88·2	98	89	98	95	4·2	● early to 5 h.: ≡ ² 5 h. 30 m. to 16 h.
Means	1009·7	1010·1	1010·2	1010·0	88·2	89·9	87·1	91·1	85·5	88·4	81·9	82	75	88	82	67·6	
Normal	1011·4	1011·3	1011·4	1011·4	90·1	92·1	88·3	93·2	86·5	90·0	83·1	?	67	84	?	46·4	
	◄— 27 years —►				◄— 27 years —►						24 years	◄— 25 years —►				27 years	

JERSEY (ST. LOUIS OBSERVATORY).

Day.	Wind Direction and Force (0-12 on the Beaufort Scale). 9 h.	14 h.	21 h.	Mean of Force.	Sunshine* Total.	Per cent. of Possible.	Cloud Amount (tenths of Sky covered), Type of Cloud, and Direction whence coming. Tenths.	Upper. Type.	Direction.	Lower. Type.	Direction.	Tenths.	Upper. Type.	Direction.	Lower. Type.	Direction.	Tenths.	Upper Type.	Direction.	Lower. Type.	Direction.	Mean Amount.
	9 h.	14 h.	21 h.				9h.	9 h.	9 h.	9 h.	9 h.	14 h.	14 h.	14 h.	14 h.	14 h.	21 h.	21 h.	21 h.	21 h.	21 h.	
	(Dir. 0-12)	(Dir. 0-12	(Dir. 0-12)		hr.	%																
1	203 4	203 4	203 5	4·3	1·2	7	10	..	..	Nb.	..	10	..	..	Nb.	..	7	A.-Cu.	..	Cu.-Nb.	SW	9·0
2	203 5	225 4	247 2	3·7	7·7	41	3	..	..	..	..	8	..	..	Cu.-Nb.	..	7	..	..	..	..	6·0
3	293 2	293 3	270 3	2·7	0·4	3	10	..	..	Cu.-Nb.	NW	10	..	..	Nb.	..	10	..	..	Cu.-Nb.	NW	10·0
4	337 4	337 4	360 2	3·3	3·8	23	10	..	..	..	..	10	..	..	Cu.-Nb.	N	10	..	..	..	..	10·0
5	293 2	270 4	270 4	3·3	0·9	5	10	..	..	Cu.-Nb.Nb.	WNW	9	..	..	Cu.-Nb.	NW	7	A.Cu.	NW	..	..	8·7
6	247 5	247 5	247 2	4·0	2·9	18	10	..	..	Nb.	SW	6	A.-Cu.	..	St.-Cu.	WNW	10	A.-Cu.	..	Nb.	SW	8·7
7	180 4	247 4	225 4	4·0	4·7	21	10	..	..	Nb.	S	9	..	..	{ Cu. Nb.	SW W	3	..	..	Cu.-Nb.	SW	7·3
8	225 7	225 6	247 4	5·7	3·0	11	10	..	..	Nb.	SW	10	..	..	Nb.	..	5	..	..	Cu.-Nb.	W	8·3
9	247 4	247 4	270 3	3·7	12·1	76	8	..	..	Cu.-Nb.	W	7	A.-Cu.	..	Cu.	..	2	A.-Cu.	..	..	..	5·7
10	203 4	225 4	203 1	4·0	4·8	30	8	A.-Cu.	..	..	..	10	..	..	Nb.	..	10	..	..	St.-Cu.	..	9·3
11	203 2	225 3	360 1	2·0	0·0	0	10	..	..	Nb.	..	10	..	..	St.-Cu.	..	7	A.-Cu.	SW	..	..	9·0
12	247 2	247 3	293 2	2·3	5·2	33	8	A.-Cu.	SW	..	..	8	A.-Cu.	SW	..	..	7	..	..	Cu.-Nb.	SW	7·7
13	270 4	270 4	293 1	3·0	13·8	86	5	..	..	Cu.	WNW	6	..	..	Cu.	{ WNW SW	0	..	..	..	..	3·7
14	203 1	23 2	23 3	2·0	10·9	69	6	..	..	..	..	3	Ci.	W	..	..	6	A.-Cu.	SW	Cu.-Nb.	SW	5·0
15	225 3	315 4	293 1	2·7	7·0	44	7	..	..	..	..	7	..	..	Cu.	W	1	..	..	..	..	5·0
16	180 3	203 2	203 1	2·0	10·7	68	4	..	..	Cu.	S	10	..	..	St-Cu.	SW	3	..	..	St.	..	5·7
17	203 4	247 3	360 1	2·7	6·2	33	10	..	..	..	..	10	..	..	..	..	10	..	..	Nb.	..	10·0
18	315 3	270 4	293 3	3·3	12·3	78	7	..	..	Cu.	WNW	6	Ci.-Cu.	SW	Cu.-Nb.	WNW	4	..	..	Cu.	WNW	5·7
19	247 3	247 3	315 1	2·3	14·9	95	6	..	..	Cu.; Cu.-Nb	NW	2	..	..	Cu.	NW	0	..	..	..	..	2·7
20	247 3	247 2	315 1	2·0	*x*15·5	99	1	..	..	Cu.	..	2	A.-Cu.	..	..	..	2	A.-Cu.	..	..	..	1·7
21	225 1	360 1	360 1	1·0	6·5	42	10	..	..	..	..	6	..	..	Cu.	NW	8	..	..	≡	..	8·0
22	270 4	247 4	270 4	4·0	4·6	30	8	..	..	Cu.-Nb.	WNW	9	..	..	Cu.	..	7	..	..	Cu.-Nb.	W	8·0
23	225 5	225 6	247 5	5·3	0·3	2	10	A.-Cu.	SW	..	..	10	..	..	Nb.	..	10	..	..	{ St.-Cu. Nb.	SW WSW	10·0
24	315 4	270 5	293 3	4·0	11·0	71	6	..	..	Cu,	NW	4	..	..	Cu.	NW	3	..	..	Cu.	WNW	4·3
25	225 3	203 2	225 5	3·3	5·8	38	4	..	..	Cu.	SW	10	..	..	..	..	10	..	..	Nb.	SW	8·0
26	270 5	270 6	270 3	4·7	8·8	57	10	..	..	Cu.	WNW	5	..	..	Cu.	WNW	7	..	..	Cu.-Nb.	NW	7·3
27	315 3	293 4	293 2	3·0	13·5	88	5	..	..	Cu.	NW	3	..	..	Cu.	NW	4	Ci.	..	..	..	4·0
28	225 4	225 5	247 3	4·0	0·0	0	10	..	..	Nb.	SW	10	..	..	≡Nb.	SW	7	A.-Cu.	SW	Nb.	W	9·0
29	337 3	247 4	270 4	3·7	12·8	83	7	..	..	Cu.	NW	4	..	..	Cu.	NW	8	..	..	Cu.-Nb.	WNW	6·3
30	247 4	247 4	247 3	3·7	0·0	0	10	..	..	Nb.	..	10	..	..	Nb.	..	10	..	..	Nb:	..	10·0
31	247 4	247 3	270 2	3·0	1·2	7	10	..	..	..	..	10	..	..	≡	..	10	..	..	Nb.	..	10·0
Means	3·5	3·7	2·7	3·4	6·5	41	7·8	—	—	—	—	7·5	—	—	—	—	6·3	—	—	—	—	7·2
Normal	3·2	3·5	3·0	3·2	8·7	55	6·2	—	—	—	—	5·4	—	—	—	—	5·1	—	—	—	—	6·2
	◄— 17 years —►				23 years		◄— 26 years —►															

* For method of estimation see Introduction.

8. WIND COMPONENTS: Metres per second at fixed hours, together with the greatest mean hourly velocity, or the greatest velocity attained in a gust, and the time of its occurrence.

NORTH WALES:—HOLYHEAD.

Height of Head above—Roof 8·8 m., Ground 13·7 m., M.S.L. 19·2 m.
Height of Cups above—Roof 4·6 m., Ground 7·6 m., M.S.L. 15·2 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m	m/s.	m/s.	m/s.	m/s.	m/s.	h. m.
1	2·3	..	2·3	..	4·5	..	..	..	6·8	..	4·6	..	5·1	..	2·1	..	14	14 10
2	2·3	..	0·4	..	1·4	..	..	0·9	..	6·4	1·3	..	..	9·2	3·8	..	14	22 15
3	..	10·3	2·0	..	..	10·9	..	..	..	10·3	..	2·0	..	9·0	..	1·8	17	10 40
4	..	10·4	..	7·0	..	8·7	..	5·8	..	5·7	..	3·8	..	4·0	..	1·6	17	2 15
5	..	4·6	0·9	..	..	3·7	0·7	..	..	3·8	3·8	..	3·3	..	3·3	..	9	4 45
6	..	3·3	..	2·2	..	6·0	4·0	..	5·3	..	2·2	..	5·5	..	2·3	..	11	7 15
7	4·3	..	..	..	1·4	..	..	1·4	..	1·7	..	8·3	..	4·7	..	7·1	14	19 15
8	..	3·4	..	8·2	..	1·1	..	1·1	..	3·6	2·4	..	..	3·3	1·4	..	No Record	
9	..	..	1·6	..	..	..	6·9	..	4·0	..	4·0	..	2·4	..	3·6	..		
10	5·8	..	1·2	..	6·9	..	2·9	..	8·5	..	3·5	..	6·2	..	4·2	..		
11	4·7	..	3·1	..	6·7	..	2·8	..	6·1	..	1·2	..	4·6	..	..	..		
12	4·8	..	..	1·0	9·1	..	..	3·8	9·0	..	1·8	..	2·7	..	4·1	..		
13	5·1	..	5·1	..	4·9	..	7·4	..	6·0	..	6·0	..	2·9	..	4·3	..		
14	4·7	..	3·1	..	6·0	..	4·0	..	8·8	..	3·6	..	6·9	..	2·9	..		
15	5·2	..	3·4	..	6·0	..	6·0	..	8·5	..	3·5	..	5·6	..	5·6	..		
16	4·9	..	4·9	..	7·4	..	1·5	..	7·1	..	1·4	..	2·4	..	1·0	..	14	13 40
17	..	5·2	..	3·4	..	2·9	4·3	..	3·8	..	2·6	..	3·7	..	3·7	..	11	17 40
18	1·5	..	3·6	..	..	..	6·6	..	4·0	..	4·0	..	1·8	..	1·8	..	10	15 25
19	..	2·5	2·5	..	..	1·8	4·3	..	7·3	..	3·0	..	8·5	..	3·5	..	19	22 40
20	7·1	..	4·7	..	6·6	..	4·4	..	4·4	..	6·6	..	0·6	..	1·5	..	17	0 40
21	2·1	..	2·1	..	..	Ca	lm	..	..	0·3	1·6	..	..	0·8	..	1·8	5	2 10
22	..	0·9	2·1	..	4·2	..	4·2	..	8·5	..	5·7	..	5·1	..	7·6	..	18	12 55
23	4·9	..	3·3	..	4·9	..	4·9	..	..	3·2	2·2	..	0·4	..	2·0	..	16	4 15
24	..	9·2	6·2	..	..	7·2	7·2	..	4·4	..	4·4	..	..	..	4·6	..	15	6 45
25	..	..	5·2	..	3·0	..	1·3	..	3·3	..	..	4·9	2·3	..	..	..	13	17 20
26	..	14·8	..	..	..	8·8	3·6	..	..	2·9	6·9	..	..	5·3	5·3	..	18	1 30
27	..	6·7	2·8	..	..	6·9	2·9	..	..	3·0	3·0	..	3·3	..	3·3	..	12	3 20
28	4·7	..	4·7	..	7·3	..	3·0	..	..	..	6·2	..	..	3·1	7·6	..	19	5 50
29	..	6·4	9·6	..	1·2	..	6·1	..	10·0	..	2·0	..	4·6	..	6·8	..	17	15 55
30	3·4	..	5·2	..	1·4	..	7·1	..	..	..	3·0	..	2·4	..	1·0	..	13	4 0
31	1·8	..	0·8	..	2·1	..	2·1	..	3·2	..	2·2	..	4·0	..	4·0	..	10	20 15
S+N & W+E	147·3		102·6		143·0		111·2		159·9		111·7		123·7		103·6			
S−N & W−E	−8·1		59·0		27·0		85·2		78·1		73·7		44·9		79·0			

SCOTLAND N:—DEERNESS.

Height of Cups above—Roof 1·5 m., Ground 4·9 m., M.S.L. 57·3 m.

Day.	3 h.				9 h.				15 h.				21 h.				Vel. in Max. Hourly Run.	Time of Max.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	hrs.
1	1·5	..	..	0·6	3·2	..	..	2·2	1·5	..	..	3·6	..	..	..	2·6	4·3	11-14,16
2	..	1·4	..	2·2	..	6·1	1·2	..	..	5·8	1·2	..	..	7·1	1·4	..	7·5	20
3	..	6·8	1·3	..	..	11·3	2·2	..	..	7·9	3·3	..	..	5·8	1·2	..	11·5	9
4	..	3·2	0·6	..	..	2·9	0·6	..	..	2·2	..	3·2	..	Ca	lm	..	4·3	1, 2, 16
5	..	Ca	lm	..	..	2·1	..	0·9	..	2·3	..	2·3	..	3·3	..	..	4·6	23
6	..	4·0	4·0	..	..	5·6	5·6	..	1·2	..	5·8	..	1·8	..	2·7	..	8·5	12
7	1·7	..	1·1	..	3·2	..	..	2·2	3·3	..	..	3·3	1·3	..	..	1·9	5·2	14, 16
8	..	0·6	..	3·2	..	2·6	..	3·8	..	5·8	..	5·8	4·9	..	..	3·3	8·2	14, 15
9	2·1	..	..	2·1	..	..	..	5·2	3·5	..	..	3·5	..	..	..	4·6	5·6	23
10	0·8	..	..	4·2	3·3	..	..	3·3	4·7	..	..	3·1	5·7	..	..	3·8	6·9	18, 21
11	3·5	..	..	0·7	4·8	..	..	1·0	6·4	..	..	2·6	..	Ca	lm	..	6·9	15
12	1·4	..	..	1·4	5·5	..	..	3·7	5·8	..	..	5·8	5·3	..	..	5·3	9·8	17
13	4·0	..	..	4·0	2·0	..	..	..	2·3	..	..	0·4	..	2·8	2·8	..	6·9	1, 2
14	..	..	7·5	..	3·9	..	..	..	4·8	..	..	1·0	..	..	3·0	..	7·5	3
15	2·4	..	..	1·0	3·2	..	0·6	..	5·1	..	1·0	..	2·0	..	0·4	..	6·6	12
16	4·3	..	2·9	..	4·9	..	3·3	..	5·1	..	1·0	..	5·2	..	..	2·1	6·9	5, 6, 7
17	..	Ca	lm	..	0·4	..	2·3	..	..	Ca	lm	..	..	2·5	1·7	..	3·3	1
18	..	2·8	2·8	..	..	4·8	1·0	..	..	4·3	2·9	..	..	1·3	1·9	..	5·9	16
19	..	Ca	lm	..	3·3	..	3·3	..	5·2	..	..	..	5·2	..	2·1	..	6·2	20
20	3·7	..	3·7	..	..	..	3·6	..	..	..	8·2	..	..	..	6·9	..	10·8	18
21	2·5	..	6·1	..	4·9	..	4·9	..	3·4	..	8·2	..	1·7	..	1·1	..	10·2	14
22	5·2	..	2·1	..	5·9	..	..	..	8·0	..	..	1·6	2·3	..	..	0·4	8·2	15,23,24
23	5·4	..	8·1	..	5·8	..	8·7	..	..	4·4	6·6	..	..	5·3	7·9	..	11·5	8
24	..	4·6	6·8	..	..	4·9	7·4	..	..	5·1	7·6	..	..	1·0	5·1	..	11·1	1
25	..	..	3·6	..	..	2·6	3·8	..	..	1·6	4·0	..	..	1·7	1·1	..	5·6	8
26	..	1·3	1·9	..	..	3·6	2·4	..	..	6·0	4·0	..	..	8·2	3·4	..	8·9	21
27	..	6·6	4·4	..	..	7·4	4·9	..	..	6·8	4·6	..	..	Ca	lm	..	10·8	11
28	5·9	..	..	..	6·8	..	..	1·3	1·3	..	6·8	..	..	1·4	7·1	..	8·9	17
29	..	1·9	9·6	..	..	..	8·9	..	9·6	..	1·9	..	4·7	..	4·7	..	11·8	20
30	5·5	..	3·7	..	3·4	..	8·2	..	3·4	..	8·2	..	2·3	..	5·5	..	11·1	10
31	3·0	..	3·0	..	6·5	..	1·3	..	6·8	..	..	4·6	4·8	..	..	1·0	8·2	15
S+N & W+E	86·1		92·6		124·9		97·8		133·6		116·1		87·6		85·0			
S−N & W−E	19·7		53·8		17·1		50·6		29·2		34·5		6·8		35·0			

ENGLAND S.W.:—SCILLY.

Height of Head above—Ground 9·8 m., M.S.L. 49·7 m.
Height of Cups above—Ground 5·8 m., M.S.L. 45·7 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	h. m.
1	5·8	..	2·1	..	6·5	..	3·0	..	5·4	..	1·5	..	4·8	..	2·8	..	13	13 50
2	3·2	..	6·9	..	..	1·6	4·4	..	..	1·7	2·4	..	..	6·0	..	0·5	13	1 00
3	..	8·0	2·9	..	..	10·2	3·7	..	..	9·2	4·3	..	..	8·2	3·0	..	?	?
4	..	7·3	3·4	..	..	8·5	4·0	..	..	8·1	0·7	..	..	6·3	2·3	..	14	12 50
5	..	2·6	1·8	..	..	3·2	2·2	..	..	0·3	1·6	..	..	0·3	3·1	..	7	1 10
6	..	5·6	6·7	..	..	4·6	4·6	..	..	0·5	5·1	..	1·6	..	2·7	..	13	2 40
7	6·1	..	..	2·8	..	6·8	9·7	..	..	3·3	8·9	..	..	2·5	9·2	..	22	23 40
8	..	7·1	5·9	..	..	4·8	5·8	..	..	4·3	5·1	..	..	3·0	6·4	..	19	0 05
9	..	3·5	6·1	..	..	2·7	5·9	..	..	0·5	5·4	..	3·3	..	2·3	..	12	11 05
10	5·9	..	1·0	..	4·9	..	1·8	..	1·1	..	3·0	..	1·5	..	3·2	..	11	0 50
11	1·6	..	2·7	..	1·8	..	2·6	..	2·5	..	0·4	..	3·2	..	..	0·3	7	9 55
12	5·1	..	..	..	6·5	..	3·8	..	..	2·5	5·3	..	..	2·4	5·1	..	12	10 20
13	..	2·6	7·1	..	..	1·4	3·9	..	..	0·6	3·6	..	0·9	..	2·4	..	13	0 25
14	2·0	..	1·7	..	2·8	..	0·2	..	7·2	..	1·3	..	7·2	..	0·6	..	14	18 50
15	3·3	..	7·2	..	0·8	..	2·2	..	0·7	..	1·5	..	1·1	..	2·3	..	12	2 25
16	2·0	..	2·9	..	3·6	..	..	..	4·1	..	..	2·4	5·0	..	..	0·4	9	23 15
17	..	2·9	4·1	..	..	2·8	2·8	..	..	1·1	3·1	..	..	0·7	1·8	..	10	3 35
18	..	1·1	2·9	..	..	1·4	2·9	..	..	1·6	4·5	..	..	2·2	5·9	..	9	20 20
19	..	1·7	3·7	..	..	Ca	lm	..	..	0·7	1·8	..	0·6	..	3·2	..	8	1 10
20	2·6	..	4·4	..	1·9	..	5·3	..	1·2	..	3·3	..	0·8	..	2·2	..	8	8 50
21	..	Ca	lm	..	0·8	..	1·6	..	0·4	..	2·0	..	0·6	..	3·5	..	10	23 25
22	..	1·9	4·1	..	No	Re	cord		..	0·5	6·0	..	0·8	..	4·5	..	9	0 15
23	5·9	..	5·9	..	2·8	..	7·8	..	0·6	..	7·2	..	1·1	..	6·1	..	16	3 05
24	..	6·6	2·4	..	..	6·5	4·5	..	..	0·9	1·5	..	..	0·5	2·6	..	16	1 30
25	1·8	..	1·5	..	7·3	..	..	0·6	2·4	..	5·1	..	..	6·3	10·9	..	20	24 00
26	..	9·6	11·5	..	..	7·7	7·7	..	..	4 8	6·9	..	..	5·6	8·0	..	21	2 20
27	..	6·4	6·4	..	..	4·9	0·9	..	..	1·3	2·8	..	0·6	..	3·5	..	16	0 05
28	3·6	..	3·0	..	5·1	..	6·1	..	0·7	..	7·4	..	..	1·0	5·9	..	12	7 10
29	..	3·9	5·5	..	No	Re	cord		No	Re	cord		3·2	..	5·5	..	10	18 05
30	4·4	..	4·4	..	4·1	..	4·9	..	3·8	..	3·8	..	1·5	..	1·8	..	11	7 00
31	1·3	..	2·3	..	0·4	..	4·4	..	..	..	4·6	..	..	0·4	2·5	..	8	19 15
S+N & W+E	125·4		123·3		†116·4		†107·3		‡72·0		‡112·5		83·2		114·5			
S−N & W−E	−16·2		117·7		−17·8		106·1		−11·8		107·7		−7·6		112·1			

† 29 days only. ‡ 30 days only.

ENGLAND E.:—SHOEBURYNESS.

Height of Head above—Ground 27·4 m., M.S.L. 31·4 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	h. m.
1	7·0	..	2·9	..	8·1	..	3·4	..	7·6	..	3·1	..	6·1	..	4·1	..	14	12 20
2	8·5	..	..	..	8·9	..	1·8	..	9·1	..	6·1	..	5·2	..	5·2	..	14	16 05
3	5·8	..	3·9	..	5·3	..	3·6	..	6·1	..	..	..	4·5	..	..	2·0	9	2 25
4	..	2·1	0·4	..	..	3·4	..	1·4	0·9	..	..	4·5	..	4·0	..	..	13	10 50
5	..	3·6	2·4	..	..	1·1	2·8	..	..	..	3·7	..	..	..	3·7	..	10	23 50
6	1·9	..	4·5	..	8·1	..	5·4	..	7·6	..	5·1	..	..	Ca	lm	..	14	15 20
7	2·7	..	4·1	..	5·1	..	..	3·4	6·1	..	..	..	6·7	..	..	2·8	15	1 15
8	2·8	..	2·8	..	10·1	..	..	..	12·8	..	..	..	10·1	..	..	..	18	13 35
9	7·9	..	3·3	..	1·9	..	4·5	..	2·3	..	5·6	..	3·1	..	4·6	..	14	13 50
10	2·1	..	3·1	..	7 9	..	5·3	..	6·9	..	6·9	..	6·0	..	6·0	..	14	13 00
11	2·4	..	3·6	..	..	Ca	lm	..	5·3	..	3·6	..	2·8	..	1·1	..	9	16 25
12	2·4	..	..	0·5	3·3	..	..	0·7	3·7	..	3·7	..	4·3	..	4·3	..	11	23 05
13	..	..	4·3	..	1·7	..	8·6	..	1·1	..	5·7	..	..	..	8·5	..	15	11 50
14	0·7	..	3·6	..	1·9	..	2·8	..	4·8	..	3·2	..	3·7	..	3·7	..	9	16 05
15	0·8	..	1·9	..	0·5	..	2·4	..	2·0	..	4·8	..	..	1·0	5·1	..	10	12 40
16	..	..	1·8	..	2·2	..	..	0·9	5·3	..	3·6	..	2·4	..	..	..	10	16 35
17	2·8	..	..	1·9	2·1	..	3·1	..	6·0	..	6·0	..	..	Ca	lm	..	14	12 40
18	..	Ca	lm	..	..	2·0	1·3	..	1·5	..	3·7	..	..	..	2·7	..	11	17 30
19	..	..	5·2	..	..	1·1	2·8	..	2·1	..	3·1	..	2·7	..	4·1	..	8	21 30
20	2·4	..	3·6	..	2·3	..	5·6	..	6·6	..	6·6	..	0·7	..	3·6	..	14	13 55
21	1·4	..	3·4	..	2·1	..	2·1	..	2·4	..	2·4	..	2·8	..	1·9	..	8	0 35
22	1·5	..	1·5	..	1·8	..	4·3	..	1·4	..	6·9	..	4·6	..	6·8	..	14	15 50
23	3·2	..	4·8	..	9·1	..	6·1	..	8·8	..	8·8	..	3·9	..	3·9	..	21	12 45
24	..	2·8	1·1	..	..	2·6	3·8	..	..	2·9	7·0	..	..	1·3	3·1	..	16	11 25
25	0·5	..	2·4	..	0·7	..	1·7	..	6·8	..	4·6	..	7·3	..	..	3·0	13	23 45
26	6·6	..	4·4	..	5·3	..	3·6	..	..	2·5	5·9	..	..	..	2·4	..	15	14 20
27	..	0·9	2·2	..	..	Ca	lm	..	..	Ca	lm	..	..	Ca	lm	..	14	16 45
28	1·5	..	2·2	..	2·1	..	3·1	..	8·6	..	5·8	..	2·6	..	3·8	..	15	19 15
29	..	1·8	2·7	..	..	3·1	4·6	..	..	1·0	4·8	..	3·9	..	3·9	..	11	13 00
30	2·1	..	5·1	..	1·1	..	5·7	..	3·6	..	5·3	..	1·3	..	3·0	..	13	1 35
31	..	3·0	..	..	..	0·6	..	2·9	..	Ca	lm	..	3·3	..	2·2	..	7	0 05
S+N & W+E	81·2		83·6		105·5		97·7		135·8		130·5		94·6		95·5			
S−N & W−E	52·8		78·8		77·7		79·1		123·0		121·5		82·0		79·9			

9. SEISMOLOGICAL DIARY.

The notation used is explained in the Introduction.

EARTHQUAKES:—ESKDALEMUIR.

Day.	Phase.	Time. G.M.T.	Period.	Amplitudes. A_N.	Amplitudes. A_E.	Amplitudes. A_Z.	△.	Remarks.
		h m s	s	μ	μ	μ	km.	
2	e	19 2 32	..	..	..	..	..	
	L	19 34	..	..	..	..	..	
	F	21	..	..	..	..	..	
2	P(?)	21 56 33	..	..	..	..	..	P taken from vertical record. L phase ill-defined.
	L	21 32	..	..	..	..	..	
	F	23 30	..	..	..	..	..	
4		0 22 to	..	..	..	..	..	Moderate disturbance. Time marker out of action. P probably at 0h. 22m. 35s.
		1 15	..	..	..	..	..	
			..	..	..	..	..	
4	L	9 40 to	..	..	..	..	..	
		9 50	..	..	..	..	..	
6		3 28 to	..	..	..	..	..	Slight disturbance.
		4 45	..	..	..	..	..	
7	O	18 41 21	..	..	..	..	6650	
	P	18 51 29	..	..	..	..	..	
	S	18 59 33	..	..	..	..	..	
	L	19 10½	..	..	..	..	..	
	M_N	19 17 1	19	10	..	..	..	
	F	20	..	..	..	..	..	
10	L	0 7 to	..	..	..	..	..	
		0 30	..	..	..	..	..	
10	L	16 34 to	23	..	..	..	..	
		16 45	..	..	..	..	..	
11	O	1 30 54	..	..	..	..	7750	
	P	1 42 2	..	..	..	..	..	
	S	1 51 19	..	..	..	..	..	
	L	2 5	26	..	..	..	..	
	F	2 25	..	..	..	..	..	
18		23 11 to	..	..	..	..	..	Faint disturbance.
		23 30	..	..	..	..	..	
20		1 39 to	..	..	..	..	..	Faint disturbance.
		2 26	..	..	..	..	..	
20		6 0 to	..	..	..	..	..	Faint disturbance
		6 12	..	..	..	..	..	
21		14 40 to	..	..	..	..	..	Slight disturbance. No well-defined phases.
		15 10	..	..	..	..	..	
26	e	5 37 15	..	..	..	..	..	
	L	6 0	..	..	..	..	..	
	F	6 35	..	..	..	..	..	

MICROSEISMS OF N. COMPONENT:—ESKDALEMUIR.

Day.	0 h. A_N.	0 h. T.	6 h. A_N.	6 h. T.	12 h. A_N.	12 h. T.	18 h. A_N.	18 h. T.
	μ	s	μ	s	μ	s	μ	s
1	0·2	5·5	0·6	4	0·2	5	0·3	4
2	0·5	4	0·2	4	0·1	3	0·1	4
3	0·3	3·5	0·1	3	0·3	4	0·3	3
4	0·2	4	0·1	4	0·2	4	0·1	4
5	0·3	4	0·3	4	..	..	..	..
6	0·2	4	0·8	6	0·6	6	0·8	6
7	0·6	5	0·5	5	0·4	4·5	0·7	4
8	0·3	6	0·2	4	0·3	4·5	0·2	4
9	0·2	4	0·1	4	0·0	0	0·0	0
10	0·1	2	0·1	3	0·0	0	0·0	0
11	0·0	0	0·0	0	0·0	0	0·0	0
12	0·1	4	0·1	4	0·3	4	0·7	4
13	0·5	6	0·4	4·5	0·5	4	0·2	4
14	0·2	4	0·1	3	0·2	4	0·3	5
15	0·3	4	0·2	4	0·3	4·5	0·6	4
16	0·6	4	0·2	5	0·6	3	0·5	4
17	0·3	4	0·2	4·5	0·1	4	0·0	0
18	0·0	0	0·0	0	0·0	0	0·0	0
19	0·0	0	0·0	0	0·0	0	0·0	0
20	0·1	4	0·2	4	0·3	4	0·2	4
21	0·3	4	0·3	4·5	0·5	4·5	1·0	4
22	0·9	4·5	0·8	5	0·9	4	0·8	4
23	0·9	4·5	0·8	4	0·8	4	0·9	4
24	1·1	4	1.1	4	1·1	4	0·7	4
25	0.4	5	0·2	5	0·2	4	0·1	5
26	0·3	4	..	..	0·5	4	0·4	4
27	0·2	4	0·2	4	..	..	..	..
28	0·3	3	0·6	4	0·8	4	0·7	4
29	0·9	4	0·8	4	0·8	4	0·9	4
30	0·9	5	0·9	6	1·5	6	1·6	6
31	1·2	5	0·9	6	0·9	6	1·1	5

Means for Month $\begin{cases} A_N = 0·4\ \mu. \\ T = 3·7\ s. \end{cases}$

Normals for Month, 1911–19 $\begin{cases} A_N = 0·3\ \mu. \\ T = 4·1\ s. \end{cases}$

EARTHQUAKES:—RICHMOND (KEW OBSERVATORY).

Day.	Times, G.M.T. of Commencement.	Times, G.M.T. of Max. Phase.	Remarks.
	h. m.	h. m.	
10	..	16 38	Instrument out of order to 8 July. Small.
26	..	6 04	Very small.

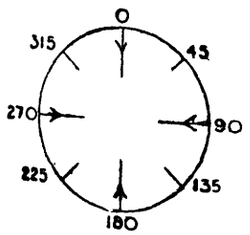
10. SOUNDINGS WITH PILOT BALLOONS.

Day	Time of Start, G.M.T.	Horizontal Velocity of Wind. Geostrophic *		By Anemometer.		At Heights above M.S.L. 500 m.		1000 m.		2000 m.		3000 m.		4000 m.		Cloud Observations. Time, G.M.T.	Type.	Deg. from N.	mr/s	Type.	Deg. from N.	mr/s
	h. m.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	h. m.						
									ABERDEEN.													
7	12 0	?	?	135	4·0	170	4·0	170	3·0	150	6·0	175	8·0	..	..	..	A.-Cu.	190	2·0	..	..	..
15	16 0	225	12	225	6·5	245	12·5	255	13·5	265	8·0	..	..	..	..	..	Cu.-Nb.;St-Cu.	225	..	Ci.	215	..
																13 0	Cu.-Nb.	240	5·0	Ci.	200	2·5
19	11 0	270	12	180	4·5	225	5·5	235	10·5	255	8·0	..	..	..	..	..	St.-Cu.; Fr.-St.	270	..	..	..	..
																13 0	St.-Cu.	270	3·5	..	..	..
									ESKDALEMUIR.													
21	17 20	225	6	255	3·3	255	4·8	250	4·0	280	6·0	245	12·0	..	..	..	Fr.-Cu.	240	..	Ci.-Cu ; Ci.-St.	245	..
26	7 35	40	13	10	5·5	20	8·0	20	9·0	360	10·0	..	..	..	..	..	Cu.	25		A.-St.	10	..
									SOUTH FARNBOROUGH.													
13	13 55	270	16	295	12·0	265	18·0	270	11·0	290	15·0	..	..	..	..	..	Cu. Fr.-Cu.	..	..	..	..	..
16	7 35	225	7	205	5·5	205	5·5	210	7·0	220	12·0	..	..	..	..	..	Cu. Fr.-Cu.	..	..	Ci.; Ci.-Cu.	..	..
19	7 20	315	7	300	5·5	310	5·5	280	5·0	325	7·0	..	..	..	..	..	Cu.	..	..	..	..	..
29	15 20	280	9	285	7·0	260	6·5	260	8·0	335	10·5	320	17·0	..	..	..	Cu. Fr.-Cu. A.Cu.A.-St.	..	..	Ci.; Ci.-St.	..	..
									CAHIRCIVEEN.													
3	6 35	350	10	350	8·0	350	10·0	360	12·5	350	13·5	..	..	..	..	..	Cu.; St.-Cu.	335	..	..	..	..
3	17 0	10	14	355	8·0	5	7·5	355	12·5	360	15·0	360	7·5	10	14·0	..	Fr.-Cu.	360	..	..	..	..
4	6 25	350	5	360	2·3	20	3·2	355	12·5	350	11·5	355	18·0	355	20·0	6 50	St.-Cu.	360	..	A.-Cu.	350	5·5
7	15 45	20	12	350	10·5	350	12·0	360	17·0	25	7·0	..	..	..	..	..	Cu.	360	..	Ci.-Cu.	20	..
																	A.-Cu.	20	..			
21	16 25	280	7	315	3·9	325	11·0	325	6·0	295	7·0	245	8·5	250	10·5	17 15	St.	315	..	Ci.-St.	200	2·0
																	A.-Cu.	240	3·5			
		(For observations at lower levels, see above.)								5000 m.		6000 m.		7000 m.								
3	17 0									25	13·0	5	32·0	5	34·0	..	Fr.-Cu.	360	..	..	..	..

* Measured from *Daily Weather Report* (International Section) with isobars at intervals of 4 mb.

Height of Station above M.S.L. = H.
Anemometer above ground = h.

	H.	h.
Aberdeen	14 m.	22 m.
Eskdalemuir	242 m.	15 m.
S. Farnborough	70 m.	31 m.
Cahirciveen	9 m.	13 m.



Wind Protractor.

Notes on Pressure Distribution.

July, 1920.

3rd. 7 h. 18 h. Shallow Low over the British Isles, extension of the Azores Anticyclone towards Scandinavia.

4th 7 h. Wedge extending from the Azores to Scandinavia, Shallow Low over Germany.

7th. 13 h. 18 h. Shallow Low over the Faröe Islands, deep Secondary over the Bristol Channel.

13th. 13 h. Anticyclone centered over the Bay of Biscay, Shallow Trough from Iceland to Scandinavia.

15th. 18 h. } South Westerly type.
16th. 7 h. }

19th. 7 h. 13 h. The Azores Anticyclone covering the British Isles.

21st. 18 h. Westerly type.

26th. 7 h. Low with centres over England and the Gulf of Bothnia.

29th. 18 h. Westerly type.

Notes on Ascents.

Aberdeen—

7th. 12 h. Balloon entered cloud.
15th. 16 h. Barometer commencing to rise.
19th. 11 h. Barometer falling. Balloon eclipsed by Fr.-St.

Eskdalemuir—

21st. 17 h. 20 m. Solar Halo during flight.
26th. 7 h. 35 m. Barometer rising slowly, thick A.-St.

South Farnborough—

16th. 7 h. 35 m. Trace of Fr.-Cu.—increasing.
19th. 7 h. 20 m. *b* at start and *bc* at the end of the ascent.

Cahirciveen—

3rd. 6 h. 35 m. Balloon was lost behind St.-Cu. cloud. Atmosphere clear.
21st. 16 h. 25 m. Considerable turbulence apparent at times.

11. NEPHOSCOPE OBSERVATIONS.

ABERDEEN.

Day and Hour. G.M.T.	Type of Cloud.	Velocity-height-ratio.				Remarks.
		Degrees from N.	Milliradians per Second.	Components.		
				W.–E.	S.–N.	
1 13	A.-Cu.	185	5·2	+0·5	+5·2	Thin flat partial A.-Cu.
3 13	Nb.	359	12·5	+0·2	−12·5	Low nimbus-cumuliformis, formed from a stratiform sheet.
7 11	A.-Cu.	189	2·4	+0·4	+2·4	Flotillae of thin flat A.-Cu.
7 13	A.-Cu.	188	2·0	+0·3	+2·0	Do. now fusing.
7 15	A.-Cu.	185	1·7	+0·2	+1·7	A.-Cu. of heavier normal type.
7 17	A.-Cu.	177	2·3	−0·1	+2·3	Do. now much heavier.
7 19	A.-Cu. to St.-Cu.	174	2·4	−0·3	+2·4	Cloud now becoming St.-Cu. in type.
10 15	Ci.-St.	157	2·1	−0·8	+1·9	Coarse Ci.-St. at rear of A.-St. sheet.
12 13	St.-Cu.	201	3·1	+1·1	+2·9	Thin high St.-Cu.
14 13	St.-Cu.	239	2·9	+2·5	+1·5	Lenticular banks of fused St.-Cu.
15 13	Ci.	201	2·6	+0·9	+2·4	Banded normal Ci., Radiant pt. S.S.W.
	Cu., Cu.-Nb.	238	4·8	+4·1	+2·5	Cu. becoming Cu.-Nb. in places.
18 9	A.-Cu.	280	1·0	+1·0	−0·2	
19 13	St.-Cu.	270	3·6	+3·6	0·0	
21 13	St.-Cu.	273	6·3	+6·3	−0·3	Low heavy St.-Cu.
23 13	St.-Cu.	270	3·2	+3·2	0·0	
24 13	Cu.-Nb.	310	12·5	+9·6	−8·0	Slight hail showers.
25 13	St.-Cu.	270	2·8	+2·8	0·0	
27 13	St.-Cu.	320	8·3	+5·3	−6·4	Heavy St.-Cu.
27 18	A.-Cu.	270	4·2	+4·2	0·0	
28 13	A. Cu.	270	5·0	+5·0	0·0	
30 8	Ci.	270	3·6	+3·6	0·0	
30 18	Ci.-Cu.	295	3·7	+3·4	−1·6	
31 13	St.-Cu.	225	10·0	+7·1	+7·1	Low heavy St.-Cu.

12. AURORA.

The only observations reported during July were at Eskdalemuir, where an auroral glow was observed at 1 h. on the 19th and 23rd.

METEOROLOGICAL OFFICE OBSERVATORIES.—GEOPHYSICAL JOURNAL.

DAILY VALUES.—*Solar Radiation, Meteorology, Atmospheric Electricity, Terrestrial Magnetism, and Seismology.*
Tenth YEAR.—No. 8. AUGUST, 1920.] Units based on the C.G.S. System. [*Price* 1s. 6*d*.

1. SUNSHINE AND SOLAR RADIATION.

Day.	WESTMINSTER. Bright Sunshine.* Total.	Per cent. of Possible.	SOUTH KENSINGTON.—Lat. 51° 30′ N. Long. 0° 10′ W. Radiation received on Horizontal Surface by Callendar Radiograph. Daily Total.	Per cent. of Planetary.	Maximum. For Day. Amount.	Time.	11·30 h. to 12·30 h.	RICHMOND.—Lat. 51° 28′ N. Long. 0° 19′ W. Bright Sunshine.* Total.	Per cent. of Possible.	Radiation at Noon by Ångström Pyrheliometer. Intensity.	Vertical Component.	Sky.	ESKDALEMUIR.—Lat. 55° 19′ N. Long. 3° 12′ W. Bright Sunshine.* Total.	Per cent. of Possible.	Radiation by Ångström Pyrheliometer. Time.	Sky.	$\frac{p}{p_0}$ sec. Z.	Intensity.	CAHIRCIVEEN. Bright Sunshine.* Total.	Per cent. of Possible.
	hr.	%	j/cm².	%	mw/cm².	h. m.	mw/cm².	hr.	%	mw/cm².	mw/cm².		hr.	%	h. m.			mw/cm².	hr.	%
1	8·4	55	1645	45	82	12 40	81	7·9	51	76	63	Clear	4·3	27	..	..	..	..	2·4	15
2	0·4	3	526	14	60	13 10	29	0·3	2	..	..	..	3·2	20	..	..	..	..	2·8	18
3	x13·2	86	1854	51	x90	12 5	x90	11·7	76	80	66	Clear	3·1	20	..	..	..	..	6·9	45
4	2·1	14	1064	29	76	9 35	38	1·3	9	81	67	Clear	0·2	1	..	..	..	..	0·0	0
5	4·1	27	1223	34	84	13 0	67	4·7	31	..	..	..	0·0	0	..	..	..	..	5·8	38
6	1·5	10	836	23	59	16 0	45	1·3	9	..	..	..	6·9	44	..	..	..	..	11·9	78
7	5·1	34	1490	42	89	13 30	76	5·6	37	..	..	..	1·4	9	..	..	..	..	0·0	0
8	12·3	82	x2217	62	78	12 20	78	x12·1	81	..	..	..	0·0	0	..	..	..	..	4·2	28
9	4·9	33	1117	32	64	9 50	57	4·9	33	..	..	..	0·2	1	..	..	..	..	7·4	49
10	4·0	27	931	27	75	10 30	57	1·5	10	..	..	..	2·9	19	12 31	Clear	1·29	90	2·3	15
11	3·2	22	1182	34	70	11 32	70	3·1	21	52	42	Hazy	2·2	14	12 36	Hazy	1·31	83	0·6	4
12	1·5	10	1064	31	60	11 25	58	1·2	8	..	..	..	0·0	0	..	..	..	..	0·0	0
13	6·7	46	1342	39	67	12 40	61	6·4	44	..	..	..	2·3	15	..	..	..	..	0·0	0
14	9·7	66	1747	51	70	10 50	69	10·4	71	75	60	Clear	5·6	37	..	..	..	..	0·0	0
15	8·9	61	1736	51	80	12 23	80	8·6	59	..	..	..	0·0	0	..	..	..	..	6·9	47
16	4·0	28	1103	33	65	9 20	48	3·8	26	..	..	..	0·7	5	..	..	..	..	1·4	10
17	0·3	2	761	23	44	7 40	27	0·3	2	..	..	..	0·0	0	..	..	..	..	0·0	0
18	0.2	1	610	18	47	8 30	35	0·2	1	..	..	..	2·5	17	..	..	..	..	x12·2	84
19	5·9	41	1223	37	88	12 5	88	6·2	43	75	58	Clear	7·3	49	..	..	..	..	5·3	37
20	5·5	38	1184	36	68	9 40	55	4·9	34	..	..	..	8·2	56	..	..	..	..	6·1	42
21	4·7	33	855	26	67	9 10	31	5·1	36	..	..	..	7·8	53	..	..	..	..	6·2	43
22	5·6	39	1202	38	76	11 50	76	4·8	34	..	..	..	6·8	47	..	..	..	..	3·5	25
23	3·4	24	1117	35	70	11 25	69	0·5	4	..	..	..	1·1	8	..	..	..	..	2·6	18
24	4·3	31	1160	37	77	11 20	50	6·0	43	52	40	Clear	4·3	30	..	..	..	..	0·8	6
25	0·5	4	486	16	30	17 0	26	1·0	7	..	..	..	0·7	5	..	..	..	..	3·2	23
26	8·2	59	1376	44	73	11 10	58	8·8	63	..	..	..	6·8	48	..	..	..	..	12·1	86
27	7·0	50	1290	42	75	12 50	62	6·7	48	46	35	Clear	x9·9	70	..	..	..	..	6·9	50
28	1·9	14	875	29	60	13 0	39	3·1	22	..	..	..	8·7	62	..	..	..	..	8·7	63
29	1·2	9	848	28	73	12 10	73	1·0	7	..	..	..	0·0	0	..	..	..	..	2·6	19
30	6·5	47	1084	36	66	9 50	28	5·7	42	..	..	..	6·2	44	..	..	..	..	3·5	26
31	0·1	1	714	24	47	8 5	23	0·5	4	..	..	..	7·0	50	..	..	..	..	1·7	12
Means.	4·69	32	1157	34	69	—	56	4·50	31	—	—	—	3·56	24	—	—	—	—	4·13	28
Normals.	5·48	38	1193	36	—	—	—	6·03	42	—	—	—	4·32	29	—	—	—	—	5·00	35
	←— years —→		←—8 years—→					←—35 years—→					←—5 years—→						←—35 years—→	

2. METEOROLOGY AND MAGNETISM:—CAHIRCIVEEN (VALENCIA OBSERVATORY).—Lat. 51° 56′ N. Long. 10° 15′ W.

Heights above M.S.L.:—H=9·1 m. H_b=13·7 m. H_a=26·4 m. Above Ground: h_t=1·3 m. h_r=0·56 m. h_s=12·8 m. h_a=13·9 m.

Day.	Air Pressure at Station Level. 9 h.	21 h.	Air Temperature in Degrees Absolute. 9 h.	21 h.	Max. 0 h. to 24 h.	Min. 0 h. to 24 h.	Humidity. Vapour Pressure. 9 h.	21 h.	Percentage. 9 h.	21 h.	Wind—Veer from North in degrees and Speed in metres per second. 9 h. °	m/s.	21 h. °	m/s.	Cloud Amount (0–10) and Weather. 9 h.	21 h.	Rain 0 h. to 24 h.	Min. Temp. on Grass 18 h. to 9 h.	REMARKS.	Magnetism. Horizontal Force, Declination West, and Inclination.
	mb.	21 b.	*a* 200+	*a* 200+	*a* 200+	*a* 200+	millibar.		%	%	°	m/s.	°	m/s.	Tenths of Sky covered.		mm.	*a* 200+		
1	1008·8	1009·2	87·4	86·7	89·5	85·5	12·8	13·4	79	86	260	9	260	5	9	10	0·7	84	op at first, then c. to o.	
2	1008·6	1012·0	87·4	86.2	89·0	84·5	12·8	12·1	79	80	280	3	290	7	7	10	—	82	o. early. Fair day. o. *n*.	
3	1014·2	1013·2	86·5	85·5	88·3	84·5	12·0	12·8	78	89	280	7	240	4	9	10 ●^{0}	0·9	83	Fair, day. o. to d. *n*.	
4	1003·3	999·8	87.6	86.1	87·7	84·3	16·5	13·5	100	90	225	7	270	3	10 ●	7	12·3	83	● at first, then o.	4 {17844γ 19° 16·8′ 68° 5·3′
5	999·8	1007·5	86·4	86·3	88.5	84·9	13·9	11·9	91	79	270	6	335	8	9p	7	3·9	83	p. early. cp day b. *n*.	5 {17829γ 19° 16·6′ 68° 6·2′
6	1014·7	1018·5	86·8	85.2	89·0	83·4	12·2	12·6	78	89	340	6	—	0	3	7	0·8	81	p^0. *a*. b. *p*. c. *n*.	
7	1014·3	1008·5	86·9	88·0	88·5	n81.5	12·9	16·6	82	98	140	9	180	3	10	10 ●	x19·4	80	bc. early, then ● all day.	
8	1009·0	1012·4	88·1	86.6	89·1	86·6	16·0	13·9	94	90	230	6	245	12	9	10	2·5	86	op at first. o. to c. p. *n*.	
9	1019·1	1022·9	87·2	86·9	89·2	86·2	14·6	13·1	91	83	315	6	325	2	10p	9	0.2	85	c. to o. *a*. bc *p*. *n*.	
10	1022·8	1023·5	87·2	86.9	90·4	85·0	13·4	14·0	83	89	—	1	—	0	9	9	—	83	Fair day.	
11	1024·4	1025·0	88·7	86·9	90·9	84·9	13·1	14·8	74	94	—	1	170	3	9	10 ●	2·9	82	Dull day. ●^{0} *n*.	11 {17857γ 19° 17·3′ 68° 4·8′
12	1024·1	1023·1	88·4	87·0	89·0	86·5	16·6	14·9	96	94	215	3	310	3	10	10	0·9	86	p^0. *a*. dull rest of day.	
13	1022·9	1025·0	88·1	87.6	90·0	86·2	15·1	15·3	89	93	—	1	315	2	10	7	0·6	84	d^0. early o. *a*. *p*. bc. *n*.	
14	1025·9	1027·1	87·9	87·9	90·1	85·8	16·3	15·6	97	93	350	2	—	0	10 ≡^{0}	10	1·0	82	d. ≡^{0} *a*. o. later.	14 {17831γ 19° 17·5′ 68° 5·6′
15	1025·8	1024·9	88·4	88·3	90·8	86·8	16·3	16·2	94	94	270	2	245	3	9	10	0·9	84	d. ≡^{0} *a*. bc. later.	
16	1023·4	1019·9	88·8	88·7	91.0	87.4	16·6	17·0	93	96	200	3	190	3	10	10 ●^{0}	1·2	86	o. to c. *a*. *p*. d. *n*.	
17	1016·0	1011·1	89·6	88·9	89·9	86.5	17·1	17·0	91	95	200	5	245	7	10	10 ●	3·7	87	o. at first ●^{0} later.	
18	1013·6	1016·9	86·4	85·3	87·6	83.5	10·7	10·2	70	72	30	9	5	8	5	4	2·0	83	●^{0} early, then bc. to b.	
19	1019·8	1022·0	85·4	85.0	87·2	82·7	10·6	10·6	74	76	5	4	345	5	4	5	—	n79	Fair day.	19 {17823γ 19° 15·6′ 68° 6·9′
20	1024·4	1025·9	85·3	84·9	87·9	84·3	11·0	10·7	78	78	15	4	335	2	4v	7	—	79	Fair day.	
21	1025·8	1024·0	86·1	86·0	88·5	84·9	10·5	11·7	70	79	340	2	—	1	10v	10	—	81	bc. early. o. to c. v later.	21 {17833γ 19° 17·0′ 68° 5·8′
22	1023·3	1024·0	87·5	86·4	90·0	85·8	12·0	12·8	73	84	340	2	—	1	10	5	—	83	o. early. bc. v *a*. *p*.	
23	1023·0	1122·0	88·5	88·1	90·1	84·4	12·8	15·6	73	92	280	5	260	5	9v	10	—	80	o. *a*. c. to o. v *p*. *n*.	
24	1021·3	1022·6	88·5	87·7	89·5	87·4	14·5	13.8	83	83	290	5	—	1	10	10	—	85	bc. *a*., then o.	24 {17844γ 19° 17·3′ 68° 6·1′
25	1023·7	1025·8	87·0	86·8	89·7	66·4	13·9	12·8	88	82	350	4	—	1	10	10	—	85	o. to bc.	
26	1026·5	1025·9	87·5	85·8	90·1	83·3	11·8	12·4	72	85	—	1	—	1	2	4	—	80	Very Fine day.	
27	1026·4	1027·1	88·0	88·1	92·0	85·1	12·8	12·1	76	71	75	2	140	3	10	3∞	—	81	Fine warm day. ∞	
28	1027·1	1027·2	90·0	88·0	91·5	86·5	14·4	12·5	75	74	105	4	120	5	2∞	6	—	81	b. ∞ early. bc. ∞ day.	
29	1025·1	1025·8	89·5	88·9	x92·3	87·0	13·6	14·1	73	79	125	5	140	6	9∞	10∞	—	82	c. to o. ∞	
30	1025·5	1024.0	88·7	87·6	91·9	86·7	15·0	14·5	85	88	160	3	—	1	10∞	8∞	—	85	o. ∞ at first. bc. ∞ later.	
31	1022·4	1023·8	88·0	87·1	91·1	84·0	14·7	14·0	87	88	—	1	310	4	5∞	9	—	82	b. ⌓ ∞ *a*. c. to o. *p*. *n*.	17837γ. 19° 16·9′ 68° 5·8′
Means.	1019·5	1020·0	87·7	86·9	89·7	85·2	13·8	13·6	83	86	—	4·0	—	3·4	8·2	8·3	53·9	82·8	Monthly Totals or Means	
Normals.	1012·7	1013·1	88·3	87·4	90·9	85·3	14·6	14·3	85	87	—	4·7	—	4·1	--	--	124·1	—	Normals	
	←54years→						←30 years→				←35 years→						45 years			

* By Campbell-Stokes Sunshine Recorder. *x* denotes the maximum and *n* the minimum value in the column.

(4202) Wt. 109/612/773 400 9/21 Harrow G.69/7.

3. METEOROLOGY:—RICHMOND, SURREY (KEW OBSERVATORY).—Lat. 51° 28′ N. Long. 0° 19′ W.

Heights above Mean Sea Level:—Rain-gauge Site, H=5·5 m. Barometer, H_b=10·4 m. Cups of Anemometer, H_a=25 m.
Heights above Ground:—Thermometers, h_t=3·0 m. Rain-gauge, h_r=0·53 m. Sunshine Recorder, h_s=13·3 m. Cups of Anemometer, h_a=20 m.

Day.	Air Pressure at Station Level.		Air Temperature in Degrees Absolute.				Humidity.				Wind—Veer from North in degrees and Speed in metres per second.				Cloud Amount and Weather.		Rain o h. to 24 h.	Min. Temp. on Grass. 18 h. to 9 h.	Remarks.
					Max.	Min.	Vapour Pressure.		Percentage										
	9 h.	21 h.	9 h.	21 h.	o h. to 24 h.		9 h.	21 h.	9 h.	21 h.	9 h.		21 h.		9 h.	21 h.			
			a	*a*	*a*	*a*									Tenths of Sky covered.				
	mb.	mb.	200+	200+	200+	200+	millibar.		%	%	°	m/s.	°	m/s.			mm.	*a* 200+	
1	1008·0	1010·2	88·1	87·5	93·2	85·0	11·8	11·5	69	70	260	4	270	2	10	4	0·2	83	O'cast to fine *a*. Fine v *p*.
2	1010·8	1010·4	87·7	87·3	90·2	84·3	13·9	15·2	84	94	220	4	225	3	10●	10●^{0}	*x*17·8	81	☔. Wet after 7h.
3	1011·9	1013·7	88·0	86·7	92·1	84·4	12·8	10·4	76	67	260	2	250	3	1	3	—	82	☔. Fine.
4	1014·6	1008·4	88·4	86·9	91·0	83·6	11·1	12·3	64	78	240	4	205	3	8	10	—	80	Cloudy to o'cast.
5	998·1	1002·0	89·9	86·7	92·5	85·8	15·6	12·6	82	81	220	6	235	4	10	3	0·8	85	● early. Dull to fine. ☇ 15h. 45m. v *p*.
6	1005·8	1015·2	87·9	86·9	90·7	84·0	12·1	12·4	72	79	275	5	—	1	10	8	0·1	83	●^{0} early. O'cast to cloudy.
7	1020·2	1020·6	88·0	88·5	93·0	82·2	10·5	13·1	62	75	275	3	190	2	3	8	—	78	☔. ≡^{0}. Fine to cloudy.
8	1017·9	1015·5	91·9	90·3	*x*95·9	81·1	14·3	13·1	66	67	180	5	195	2	5	8	0·1	78	☔. Fine. Shower 22h.
9	1015·5	1017·1	88·9	88·1	92·2	86·3	12·3	13·9	69	82	245	4	270	3	10	3	—	83	☔. O'cast to fine. ●^{0} 12h. 15m.
10	1019·6	1021·4	87·9	88·9	91·3	84·6	12·2	13·1	73	73	290	4	—	1	9	10	—	81	☔. Dull to cloudy.
11	1024·3	1025·3	87·5	89·5	93·1	84·1	13·4	15·3	82	82	305	2	—	1	10☔	10	—	79	☔. ≡^{0}. O'cast to fine.
12	1025·9	1024·6	89·9	87·9	93·8	85·0	13·5	13·1	71	78	—	1	130	2	10☔☔	1	—	85	☔. ≡^{0}. Dull to fine. ∞.
13	1023·9	1022·1	87·4	87·0	93·7	82·4	14·3	13·3	88	84	—	0	70	2	5≡^{0}	0≡^{0}	—	78	≡ ☔. ≡^{0} to 9h. Fine to cloudy. ∞.
14	1021·4	1021·7	89·1	90·2	94·9	82·6	13·3	15·0	73	77	50	2	—	1	5∞	4	—	79	≡ ☔ early. Fine with ∞^{0}.
15	1023·3	1022·6	89·8	89·7	95·5	87·3	12·0	14·7	63	78	310	2	300	2	5∞	0	—	83	Fine after 8h.
16	1024·4	1021·4	90·3	90·9	93·1	85·6	14·5	14·4	74	71	290	2	—	1	4	10	—	80	☔. Fine early, o'cast later.
17	1019·2	1014·5	90·3	88·5	92·3	87·2	14·1	13·1	72	75	250	2	270	2	10	6	—	84	☔. Dull after 7h. Fine *n*.
18	1009·6	1009·0	90·2	84·9	91·8	84·0	13·6	12·4	70	90	230	6	—	1	10	10●	11·8	83	Dull most of day. ● *p and n*.
19	1010·1	1015·0	85·2	82·6	88·7	80·5	10·7	9·1	76	76	5	6	350	2	7	9	5·5	82	● early. Fine to cloudy. ●^{0} 18h.
20	1018·5	1020·8	84·1	84·1	88·9	79·2	10·0	9·3	76	71	340	3	—	1	2☔	1	0·6	76	☔. Fine to o'cast. ● 12h.
21	1020·0	1017·3	85·9	84·4	88·3	*n*79·0	10·5	10·3	71	77	310	4	305	3	6☔	4	—	75	☔ ≡^{0}. Fine to dull.
22	1015·3	1017·7	85·0	84·6	89·6	82·0	11·0	11·5	79	85	300	4	—	1	10	0☔	0.4	79	● early. Dull to fine. ☐ *n*.
23	1017·9	1017·7	86·2	85·9	88·4	80·8	11·8	13·3	78	90	—	1	—	1	10	10●	0·5	76	≡^{0}. Mostly dull. Showery.
24	1018·9	1019·2	86·3	85·0	90·8	82·0	12·9	12·4	85	89	—	1	—	1	10☔	0≡^{0}	0·1	79	≡^{0} ☔. Fine after 10h.
25	1019·5	1021·9	85·5	88·1	90·4	82·3	13·0	13·4	90	79	—	1	10	2	10≡^{0}	10	—	78	≡^{0} ☔. Dull most of day.
26	1025·8	1026·6	86·6	85·0	89·6	81·4	10·1	10·7	65	77	10	4	—	1	3	0≡^{0}	—	79	≡^{0} ☔. Fine *a*. Fair to fine *p* ≡^{0} *n*.
27	1028·0	1028·5	86·1	87·3	90·2	80·2	10·5	12·4	70	77	50	4	—	1	3☔	10	—	75	☔. Fine *a*. to 13h. o'cast later. ∞.
28	1029·7	1030·3	89·1	88·8	93·8	85·1	12·5	13·3	69	75	80	3	50	3	9≡^{0}	0∞	—	79	≡^{0}. O'cast to cloudy.
29	1031·0	1029·1	85·1	84·6	89·3	83·0	9·6	11·7	68	86	40	4	360	2	10	2☔	—	81	O'cast *a*, cloudy to o'cast *p*.
30	1026·1	1022·6	84·8	84.4	87.0	79·1	10·2	8·9	74	67	360	3	30	3	5☔	10	—	*n*73	≡^{0} ☔. Fine to o'cast.
31	1021·1	1021·1	85·7	86·0	88·3	80·7	11·4	12·5	78	84	25	4	—	1	9	10	—	76	☔. Fine to 6h., dull later.
Means	1018·6	1018·8	87·6	87·0	91·4	83·1	12·2	12·5	74	79	—3·2		—1·9		7·4	5·6	37·9	79·8	Monthly Totals or Means.
Normal	1014·2	1014·1	89·6	88·8	94·1	85·1	13·9	14·1	75	80	—3·5		—2·5		—	—	56·6 (45 years.)	—	Normals.
	45 years.						30 years.				35 years.								

4. METEOROLOGY:—ESKDALEMUIR, DUMFRIESSHIRE.—Lat. 55° 19′ N. Long. 3° 12′ W.

Heights above Mean Sea Level:—Rain-gauge Site, H=242 m. Barometer, H_b=237·3 m. Vane of Anemometer, H_a=250 m.
Heights above Ground:—Thermometers, h_t=0·9 m. Rain-gauge, h_r=0·38 m. Sunshine Recorder, h_s=1·5 m. Vane of Anemometer, h_a=15 m.

1	974·6	975·8	84·9	83·5	87·7	81·8	9·2	11·5	67	91	260	9	250	6	7	5	21·4	79	●2h.-6h: cp^0 *a and p*: p^{2}q 18h. and 20h.: c *n*
2	976·6	978·5	85·3	83·0	87·0	81·3	10·4	10·0	73	82	240	8	220	2	9	8	14·8	81	c to o: p^2 12h.-17h. then c to bc.
3	978·7	978·5	84·5	82·1	85·8	79·7	10·4	10·5	77	91	230	7	230	8	9	9	3·3	75	bc early: o to c with frequent p.
4	980·1	972·8	83·5	84·2	84·7	81·2	10·4	13·1	82	99	220	8	160	4	10	10●	16·6	81	p till 4h.: o *a*: ●≡^{0} after 11h.
5	966·4	968·3	84·8	84·0	87·0	83·5	13·0	12·2	95	94	—	1	—	1	10●	10●	18·7	83	●≡^{0} till 11h.: o ●^{0} *p*: ●≡^{0} *n*.
6	975·9	984·0	85·5	82·6	88·9	80·0	10·3	9·5	71	80	310	4	300	5	6	4	0·1	82	●^{0} early: bc ∞ *a*: bc to o *p and n*.
7	989·2	989·8	83·4	81·1	86·7	78·2	8·9	9·8	71	91	290	3	—	1	10	10	—	73	b early: o after 7h.
8	985·6	983·5	85·0	86·0	86·4	81·6	12·8	13·4	92	90	180	3	210	6	10●^{0}	10≡^{0}	13·8	80	o till 5h.; ●^{0}≡^{0} *a*: ●^{2}≡^{0} *p*: d^0≡^{0} *n*.
9	983·3	987·0	86·2	85·6	88·0	84·0	12·2	12·5	81	86	290	4	320	3	10	7	11·1	84	●≡^{0} till 9h.: o *a*: ● *p*: c *n*.
10	991·5	994·2	87·4	86·3	92·1	84·4	12·7	13·7	78	90	330	3	—	1	10	10	—	82	o early cy *a*: o *p and n*.
11	996·8	997·7	86·5	84·0	89·7	81·9	12·8	11·6	83	89	—	1	—	1	10	9	—	83	o at first: c ∞ *a*: c to o *p and n*.
12	997·7	996·8	84·2	84·7	87·3	81·5	11·9	12·0	90	88	—	1	—	0	10≡^{0}	8	—	80	≡^{0} early, then o'cast.
13	995·3	994·3	86·3	85·8	90·2	80·2	11·3	11·3	75	77	180	3	—	1	7	10	—	78	Valley ≡ till 8h.: c *a*: o ∞ *p*: o to c *n*.
14	993·7	994·2	88·0	83·4	*x*92·9	78·6	13·5	8·9	80	71	310	4	310	2	8	4	—	83	o to c *a*: bcy *p*: bc ☐ *n*.
15	993·5	990·9	83·4	86·4	87·6	77·5	10·3	14·2	82	93	220	5	220	7	10	10●^{0}	0·4	74	bc early: o *a*: d^0≡^{0} *p and n*.
16	991·2	989·0	87·5	87·0	90·0	85·9	14·3	14·7	87	93	220	7	200	8	10	10●^{0}	0·8	84	bc d^0 early: o *a and p*: d^0≡^{0} *n*. [16h.
17	985·5	980·2	86·1	86·3	87·9	81·8	14·8	14·6	99	96	200	7	170	7	10≡⋮^{0}	10●	*x*34·1	85	≡⋮ 7h. to 11h. then ● till 15h.: ●^{2}≡^{0} after
18	981·0	985·7	81·2	79·7	85·2	76·7	9·0	8·4	84	86	10	9	360	3	10	5	14·6	79	●^{2}≡^{0} till 2h.: ●q till 7h.: cp^0 *a and p*: bcp *n*.
19	987·2	989·1	80·8	78·2	86·4	75·9	8·1	7·7	77	88	360	5	360	2	9	1	0.3	*72*	●^{0} early: cp^0 *a and p*: b *n*.
20	991·0	992·1	82·0	80·9	88·1	*n*75·1	7·3	9·1	64	86	350	6	—	0	6	4	—	*n71*	☐^{0}: v 7h.: bc to c: y *p*.
21	992·2	990·4	84·4	81·1	87·9	77·0	8·4	9·5	63	88	350	5	10	3	8	7	1·3	73	☐ ≡^{0} at first: c *a*: o *p*: ●^{0} *n*.
22	990·4	990·2	85·0	81·7	89·9	79·0	9·9	9·8	71	88	350	3	360	2	9	5☔^{0}	—	77	Variable cloud: y *a and p*.: ☐ *n*.
23	989·6	990·5	85·0	84·0	88·9	80·6	10·7	11·6	77	89	—	0	—	0	9	10	0·1	77	o *a*: ●^{0} 14h.-15h. then o to c.
24	990·4	991·0	86·5	85·0	88·2	83·2	10·6	12·1	69	87	240	4	—	1	7	10	—	*83*	c *a*: o *p and n*.
25	992·3	996·2	87·1	85·4	87·9	82·0	12·9	12·9	81	90	—	1	—	1	10	10	0.2	84	o at first: d≡^{0} 11h.-12h. then o: bc *n*.
26	998·5	999·4	86·8	84·3	91·7	77·6	11·8	12·1	75	91	—	1	—	1	1∞	5	—	75	Valley ≡ ☐^{2} early: b ∞ *a*: bcy to o *p*
27	1000·6	1001·9	86·7	82·9	*x*92·9	79·7	13·7	10·4	88	86	—	1	—	0	2≡^{0}	0☔	—	77	Valley ≡☐ very fine, ∞: valley ≡ *n*. [and *n*
28	1003·2	1004·7	89·2	84·8	*x*92·9	78·7	13·5	12·2	74	89	—	2	350	3	0∞	9	—	74	Valley ≡ ☐ : bc ∞ *a and p*: o *n*.
29	1005·1	1002·9	83·8	84·2	87·3	82·5	11·2	11·2	87	85	360	3	—	1	10	10	—	82	o all day.
30	999·8	997·6	83·9	82·2	88·4	81·1	10·6	9·9	82	86	40	3	—	1	10	10	—	82	o *a*: bc *p*: o *n*.
31	995·9	993·9	82·0	79·8	89·6	77.3	8·8	8·5	77	86	—	1	—	0	10	6	—	77	o till 10h. then by *a and p*: bc ☐ *n*.
Means	989·4	989·7	85·1	83·6	88·6	80·3	11·2	11·3	79	88	—3·9		—2·6		8·3	7·6	151·6	79·0	Monthly Totals or Means.
Normal 1911-1915	985·7	986·0	86·4	84·5	89·7	81·1	12·5	12·1	81	89	—4·5		—3·3		—	—	103·6	—	Normals.

Temperatures at or below the normal freezing point of water are printed in small type. *x* denotes the maximum, and *n* the minimum, value in the column.

5. GEOPHYSICS:—RICHMOND (KEW OBSERVATORY).

Day.	Earth Temperature at 9 h. 0·3 m.	Earth Temperature at 9 h. 1·2 m.	Height above M.S.L. of Surface of Underground Water. Daily Mean.	Height above M.S.L. of Surface of Underground Water. Extremes.	Terrestrial Magnetic Force. Horizontal Comp't. Mean Time.	Horizontal Comp't.	Declination. Mean Time.	Declination. West.	Inclination. Mean Time.	Inclination.	Magnetic Character of Day.	Electric Character of Day.	Charge per cc. × 10^{16}. +. (About 15 h.)	Charge per cc. × 10^{16}. −. (About 15 h.)	Air-Earth Current. × 10^{16}. About 15 h.	Potential Gradient, Volts per metre. Factor 2·28. 3 h.	9 h.	15 h.	21 h.
	a 200+	*a* 200+	cm.	cm.	h m	γ	h m	° ′	h m	° ′			Coulomb.		Amp/cm².	v/m.	v/m.	v/m.	v/m
1	89·5	87·3	222	..	..	..	..	..	..	..	0	1	..	..	..	125	210	140	295
2	89·2	87·3	227	..	..	..	..	..	..	..	0	2	..	..	..	210	165	100	365
3	88·8	87·5	230	..	..	..	..	..	..	..	0	0	0·78	..	1·15	100	405	180	320
4	89·0	87·5	232	..	..	..	..	..	..	..	1	1	..	0·52	0·75	165	225	165	280
5	88·7	87·3	235	236	11 12	18376	14 18	14 37·2	14 30	66 58·2	0	1	0·53	..	1·20	70	250	210	235
6	88·8	87·5	234	236	..	..	15 4	14 33·9	..	..	0	0	..	0·30	0·55	140	165	195	350
7	88·3	87·6	232	..	..	..	..	..	..	..	0	0	..	..	..	375	420	165	375
8	88·8	87·5	231	..	..	..	..	..	..	..	1	0	..	..	..	350	280	140	335
9	89·6	87·5	229	..	..	..	..	..	..	..	1	0	0·64	..	0·70	210	280	165	280
10	89·1	87·5	226	..	..	..	..	..	..	..	0	0	..	0·09	0·80	210	265	180	210
11	88·8	87·5	224	..	..	..	..	..	..	..	0	0	..	0·10	1·15	125	405	305	195
12	89·4	87·5	222	..	11 3	18396	14 16	14 34·3	14 33	66 56·5	2	0	..	..	..	70	—	140	210
13	89·2	87·6	221	..	..	..	..	..	..	..	1	0	0·39	..	0·65	110	210	225	180
14	88·9	87·6	221	..	..	..	..	..	..	..	1	0	..	..	..	125	235	140	110
15	88·9	87·6	223	..	..	..	..	..	..	..	1	0	..	..	..	85	195	125	140
16	90·1	87·7	223	..	..	..	..	..	..	..	0	0	0·58	..	0·80	110	280	155	235
17	90·2	87·7	225	..	..	..	..	..	..	..	0	0	..	0·34	0·90	125	210	140	140
18	89·9	87·8	226	..	..	..	..	..	..	..	1	1	..	..	..	110	140	125	100
19	89·0	87·9	229	..	11 12	18370	14 35	14 36·0	14 39	66 58·4	1	2	0.69	..	0·60	−15	280	70	−15
20	88·0	87·9	231	..	..	..	14 33	14 36·8	..	..	1	1	..	0·49	0·90	250	280	125	225
21	87·1	87·9	232	..	..	..	..	..	..	..	1	0	..	..	..	195	225	70	140
22	87·0	87·8	230	..	..	..	..	..	..	..	2	1	..	..	..	30	180	85	140
23	86·9	87·6	228	..	..	..	..	..	..	..	0	1	0.38	..	0·20	110	110	85	85
24	87·1	87·3	224	..	..	..	..	..	..	..	0	0	..	0·09	0·70	100	305	165	195
25	87·5	87·3	221	..	10 57	18392	14 27	14 32·6	14 41	66 57·5	0	0	..	..	..	225	280	—	320
26	87·5	87·3	218	..	..	..	..	..	..	..	0	0	0·95	..	0·25	250	375	320	350
27	87·1	87·3	216	..	..	..	..	..	..	..	0	0	..	0.29	0·85	295	420	390	235
28	87·4	87·2	215	..	..	..	..	..	..	..	0	0	..	..	..	210	350	180	335
29	87·9	87·2	213	..	..	..	..	..	..	..	0	0	..	..	..	125	305	195	195
30	87·0	87·1	213	..	..	..	..	..	..	..	1	0	0·32	..	1·25	180	335	250	460
31	86·7	87·1	213	213	..	..	..	..	..	..	1	0	..	0·18	1·50	180	420	280	280
M.	88·4	87·5	225	—	—	—	—	—	—	—	0·52	0·36	0·58	0·27	0·83	161†	273†	175†	234†
	89·7	88·1	— 12 years —																

† Mean of 29 days.

6. GEOPHYSICS:—ESKDALEMUIR, DUMFRIESSHIRE.

Day.	Terrestrial Magnetic Force. North Component. Maximum. 15000 γ +.			Minimum. 15000 γ +.		Range.	West Component. Maximum. 4000 γ +.			Minimum. 4000 γ +.		Range.	Vertical Component. Maximum. 44000 γ +.			Minimum. 44000 γ +.		Range.	Magnetic Character of Day.	Electric Character of Day.	Potential Gradient, Volts per metre. Factor 6·06. 3 h.	9 h.	15 h.	21 h.
	h m	γ		γ	h m	γ	h m	γ		γ	h m	γ	h m	γ		γ	h m	γ			v/m	v/m	v/m	v/m
1	19 37	1033		972	13 12	61	14 55	828		797	7 40	*n*31	17 40	1066		1037	12 34	29	0	2 *c*	−145	115	65	75
2	18 51	1033		962	11 30	71	14 10	861		798	8 11	63	17 43	1066		1045	13 10	21	0	2 *c*	185	90	z±	295
3	19 18	1070		975	13 5	95	15 44	869		804	8 40	65	21 16	1069		1034	12 47	35	0	2 *c*	280	20	z±	0
4	19 3	1108		950	12 59	158	16 17	889		772	4 29	117	18 54	1083		1037	2 39	46	1	2 *b*	95	75	155	115
5	18 30	1036		953	12 8	83	14 27	862		794	7 0	68	17 30	1077		1044	3 56	33	0	2 *a*	−40	300	80	40
6	8 38	1027		976	11 7	51	13 20	860		800	9 15	60	7 0 16 20	1066		1048	12 28	18	0	0 *a*	105	400	210	220
7	23 52	1066		961	10 57	105	12 20	870		802	9 8	68	19 0	1066		1039	12 20	27	0	0 *a*	185	155	165	*
8	19 16	1060		939	10 46	121	0 1	856		759	22 45	97	19 10	1087		1032	23 30	55	1	1 *a*	185	185	100	80
9	18 18	1037		899	10 35	138	13 2	877		787	8 13	90	17 22	1083		1033	1 15	50	1	2 *c*	−840	225	40	360
10	19 33	1043		954	12 38	89	15 13	857		798	7 51	59	19 40	1080		1046	2 19	34	0	0 *a*	215	195	145	90
11	17 29	1040		979	9 42	61	15 0	857		765	8 8	92	17 50	1076		1047	12 0	29	0	0 *a*	70	120	195	260
12	19 56	*x*1155		*n*869	22 38	*x*286	1 36	*x*919		*n*707	22 51	*x*212*	19 51	1101		*n*885	22 40	*x*216	2	0 *a*	50	185	135	330
13	20 30	1051		947	11 53	104	20 35	866		781	22 22	85	20 10	1085		1016	0 1	69	1	0 *a*	520	290	150	305
14	19 25	1051		948	12 21	103	13 21	900		773	7 15	127	14 41	1106		1044	0 1	62	1	0 *a*	145	115	285	585
15	20 39	1036		953	11 10	83	14 12	856		795	8 11	61	20 22	1073		1035	0 58	38	0	1 *a*	265	155	110	75
16	18 3	1017		954	11 49	63	13 30	857		782	7 55	75	17 30	1076		1038	0 1	38	0	0 *a*	145	115	70	360
17	19 15	1032		947	11 23	85	13 32	851		796	8 30	55	7 30	1074		1052	11 45	22	0	2 *b*	145	140	75	−405
18	22 42	1061		972	10 29	89	14 1 14 16	877		772	23 2	105	16 30	1077		1045	12 26	32	0	2 *b*	−100	−440	180	150
19	2 40	1041		948	11 12	93	13 44	862		754	1 6	108	16 56	1077		985	3 21	92	1	1 *b*	300	45	215	195
20	21 50	1032		954	12 4	78	13 38	867		782	9 17	85	7 38	1076		1045	24 0	31	0	0 *a*	230	305	195	440
21	16 6	1047		916	22 26	131	15 13 16 7	893		760	22 29	133	19 2	*x*1134		1005	2 51	129	1	1 *a*	675	350	170	260
22	18 59	1034		904	3 24	130	13 14	862		721	2 8	141	16 50 19 27	1084		955	0 42	129	1	0 *a*	100	190	120	255
23	23 53	1034		973	10 56 12 32	61	12 50	851		781	1 48	70	16 50	1080		1034	1 45	46	0	0 *a*	120	185	130	330
24	0 1	1017		968	11 33	*n*49	12 55	856		797	6 32	59	17 28	1078		1039	0 20	39	0	0 *a*	145	185	110	135
25	19 56	1022		972	9 39	50	12 56	854		796	7 32	58	15 20	1071		1051	11 30	20	0	0 *a*	100	105	90	150
26	20 20	1034		974	10 48	60	13 33	858		800	7 48	58	8 20	1071		1049	13 23	22	0	0 *a*	150	245	210	275
27	23 36	1035		964	10 30	71	14 2	872		794	8 14	78	18 15	1071		1051	12 40	20	0	0 *a*	255	295	185	305
28	0 1	1028		969	11 16	59	13 33	857		798	6 20	59	16 30 23 40	1066		1051	0 45	*n*15	0	1 *a*	165	325	155	160
29	22 37	1032		965	11 2	67	12 34	860		798	8 0	62	15 50	1071		1047	11 30	24	0	1 *a*	110	115	150	230
30	2 55	1048		934	11 2	114	12 58	868		778	3 42	90	17 35	1082		1037	3 0	45	1	1 *a*	15	185	140	260
31	22 11	1025		957	11 3	68	13 8	856		787	8 48	69	7 50	1069		1047	13 0	22	0	1 *a*	120	105	150	365
M.	—	1045		952	—	93	—	865		781	—	84	—	1079		1031	—	48	0·35	0·77	‡118	‡172	‡143	‡214

x denotes the maximum and *n* the minimum value in the column. Potential gradient is reckoned as positive if the potential increases upwards. For Indeterminate potential gradient the following notation is used:—z+ Indeterminate, positive value; z— Indeterminate, negative value; z± Indeterminate in magnitude and sign.

* Insulation faulty. ‡ Mean for 28 days.

7. Jersey (St. Louis Observatory).—Lat. 49° 12′ N. Long. 2° 6′ W.

Heights above M.S.L.:—H = 54 m. H_b = 55 m. Above Ground:—h_t = 1·48 m. h_r = 1·72 m. h_a = 8 m.

Day.	Air Pressure at Station Level. 9 h.	14 h.	21 h.	Mean of 3 Readings.	Air Temperature in degrees Absolute. 9 h.	14 h.	21 h.	Max.	Min.	Mean of 5 Readings.	Min. Temp. on Grass.	Percentage of Humidity. 9 h.	14 h.	21 h.	Mean.	Rain 0 h. to 24 h.	Remarks.
	mb.	mb.	mb.	mb.	a 200+	a 200+	a 200+	a 200+	a 200+	a 200+	a 200+	%	%	%	%	mm.	
1	1006·7	1007·9	1009·0	1007·9	89·0	90·5	86·6	91·5	86·0	88·7	85·0	69	73	76	73	—	
2	1008·6	1008·5	1007·6	1008·2	88·6	89·4	89·0	90·5	86·1	88·7	81·4	72	82	86	80	0·1	●⁰ continuous after 11h.
3	08·7	10·4	12·2	10·4	87·6	88·7	85·9	90·9	85·6	87·7	85·6	86	73	82	80	3·5	●² early to 8h.
4	1012·2	1009·7	1004·5	1008·8	88·8	90·4	88·1	91·2	85·2	88·7	80·0	74	64	66	68	—	
5	997·3	999·0	1002·6	999·6	88·2	88·9	87·3	90·0	87·0	88·3	84·2	96	76	77	83	*10·2	●² early. ≡² 6h. to 8h. some showers.
6	1007·4	1010·5	1013·7	1010·5	88·6	89·5	86·2	90·4	85·8	88·1	84·5	72	66	84	74	—	
7	16·9	16·5	15·0	16·1	89·4	90·9	87·9	92·4	83·9	88·9	76·1	74	62	89	75	—	Fair.
8	1012·2	1011·8	1012·2	1012·1	90·9	95·4	89·8	*96·1	86·6	91·8	80·5	72	50	83	68	—	Fine to 19h.
9	15·0	16·0	16·6	15·9	89·6	89·4	87·3	91·5	87·0	89·0	83·5	70	70	87	76	—	
10	17·3	17·4	17·8	17·5	89·5	90·3	85·9	92·1	85·3	88·6	78·9	64	65	84	71	—	
11	18·9	19·1	19·3	19·1	89·8	90·9	87·1	91·3	84·3	88·7	77·3	70	62	86	73	—	
12	19·2	18·1	17·3	18·2	90·0	94·2	88·0	94·6	86·4	90·6	82·9	84	58	90	77	—	≡⁰ 4h. 15m. to 8h.
13	16·5	15·8	15·7	16·0	90·2	93·2	87·8	93·4	87·0	90·3	83·1	74	53	83	70	—	
14	15·1	16·5	17·5	16·4	90·5	93·0	88·8	93·7	86·4	90·5	80·0	67	60	85	71	—	≡⁰ afternoon. Cloudless except in the evening.
15	18·8	19·0	19·6	19·1	90·1	91·6	87·9	92·5	*87·8	90·0	83·6	82	65	53	67	—	
16	20·4	19·7	17·5	19·2	89·6	91·3	85·6	91·8	84·9	88·6	83·6	68	58	91	72	—	
17	14·7	13·4	11·5	13·2	89·0	90·4	85·7	92·5	83·6	88·2	79·8	72	71	91	78	—	
18	07·0	06·1	03·8	05·6	88·9	89·4	88·6	90·6	83·6	88·2	78·1	78	75	89	81	7·4	●⁰ 12h. 40m. ●² 23h.
19	06·0	08·3	11·0	08·4	86·5	87·7	84·6	*88·6	84·3	86·3	83·2	74	64	71	70	—	
20	15·0	16·5	17·4	16·3	86·8	88·5	84·5	89·5	*83·1	86·5	75·6	61	56	76	64	—	
21	17·9	17·0	15·7	16·9	87·3	89·2	86·4	90·3	83·3	87·3	*75·5	64	59	76	66	—	
22	13·7	14·3	15·2	14·4	87·4	88·2	85·9	90·0	84·6	87·2	78·8	72	57	81	70	—	
23	15·9	15·9	15·0	15·6	88·0	90·4	87·3	92·0	83·8	88·3	76·3	85	71	83	80	—	Cloudless to 6h. 30m. ●⁰ 8h. 30m.
24	13·9	13·9	14·7	14·2	88·8	90·0	86·1	91·4	85·0	88·3	83·0	68	72	93	78	—	
25	14·8	15·3	16·5	15·5	90·1	90·0	88·2	91·1	85·0	88·9	78·0	76	74	85	78	—	
26	18·8	19·3	19·7	19·3	89·3	91·0	86·9	92·3	86·3	89·2	78·3	82	63	79	75	—	
27	20·6	19·8	20·6	20·3	88·3	90·6	86·7	91·6	84·1	88·3	77·6	75	57	79	70	—	Fair.
28	22·6	22·3	23·0	22·6	89·5	92·0	88·0	92·6	85·9	89·6	81·9	67	62	81	70	—	Fair.
29	23·0	21·9	21·3	22·1	88·7	90·5	87·6	91·0	86·9	88·9	83·3	67	71	84	74	—	
30	18.5	17.3	16.3	17·4	88.6	90.2	85.2	91.1	84·7	88·0	82·8	79	78	81	79	—	Fair afternoon.
31	1015·7	1015·3	1016·5	1015·8	86·5	88·6	84·6	88·8	83·6	86.4	79·0	63	55	77	65	—	Fair afternoon.
Means	1014·5	1014·6	1014·7	1014·6	88·8	90·5	87·0	91·5	85·3	88·6	80·7	73	65	82	73	21·2	
Normal	1010·7	1010·5	1010·6	1010·6	90·4	92·3	88·7	93·3	87·0	90·3	83·7	?	67	82	?	57·5	
	◄——27 years——►				◄——27 years——►						24 years	◄——25 years——►				27 years	

Jersey (St. Louis Observatory).

Day.	Wind Direction and Force (0-12 on the Beaufort Scale). 9 h.	14 h.	21 h.	Mean of Force.	Sunshine.* Total.	Per cent. of Possible.	Cloud Amount (tenths of Sky covered), Type of Cloud, and Direction whence coming. Tenths.	Upper. Type.	Direction.	Lower. Type.	Direction.	Tenths.	Upper. Type.	Direction.	Lower. Type.	Direction.	Tenths.	Upper. Type.	Direction.	Lower. Type.	Direction.	Mean Amount.
	9 h.	14 h.	21 h.				9 h	9 h.	9 h.	9 h.	9 h.	14 h.	14 h.	14 h.	14 h.	14 h.	21 h.	21 h.	21 h.	21 h.	21 h.	
	Dir(0-12)	Dir(0-12)	Dir(0-12)		hr.	%																
1	270 3	247 4	270 2	3·0	8·0	53	9	..	..	Cu.-Nb.	WNW	7	..	..	Cu.-Nb.	WNW	5	..	..	Cu.	W	3·7
2	225 4	225 4	225 4	4·0	0·2	1	10	A.-Cu.	SW	..	..	10	..	..	..	..	10	..	..	..	..	10·0
3	315 1	315 3	293 2	2·0	6·3	42	9	..	..	Cu.-Nb.	SW	6	..	..	Cu.	WNW	2	..	..	..	..	5·7
4	225 4	203 3	225 6	4·3	7·5	50	7	A.-Cu.	WSW	Cu.-Nb.	SW	6	Ci.-A-Cu.	..	..	..	10	..	..	..	..	7·7
5	247 3	270 5	247 5	4·3	3·9	26	9	..	..	Nb.	W	6	Ci.	..	Cu.-Nb.	..	7	..	..	Cu.-Nb.	..	7·3
6	270 5	270 5	270 4	4·7	9·3	63	6	..	..	Cu.-Nb.	WNW	5	..	..	Cu.-Nb.	WNW	4	..	..	..	..	5·0
7	225 2	203 2	67 4	2·7	12·9	88	3	..	..	Cu.	W	3	..	..	Cu.	W	3	..	..	..	..	3·0
8	180 2	180 3	270 2	2·3	12·9	88	1	A.-Cu.	..	..	..	1	A.-Cu.	..	..	..	10	..	..	..	..	4·0
9	270 4	247 5	270 3	4·0	5·7	39	6	..	..	Cu.-Nb.	WNW	10	..	..	Cu.-Nb.	W	7	..	..	..	..	7·7
10	293 2	315 3	293 1	2·0	8·7	59	3	..	..	Cu.	WNW	7	..	..	Cu.	WNW	1	Ci.	..	..	..	3·7
11	45 1	337 2	23 3	2·0	11·8	81	5	..	..	Cu.	N	0	..	..	..	..	3	..	..	..	..	2·7
12	90 1	90 3	90 4	2·7	7·8	54	6	A.-Cu.	S	..	..	4	A.-Cu.	WSW	..	..	8	..	..	..	..	6·0
13	90 3	67 4	360 3	3·3	7·7	53	8	A.-Cu.	..	..	..	6	A.-Cu.	..	..	..	3	..	..	..	..	5·7
14	23 4	360 4	337 3	3·7	14·4	100	0	..	..	..	..	0	..	..	..	..	3	..	..	..	..	1·0
15	337 3	315 3	293 1	2·3	2·1	14	10	..	..	..	..	8	..	..	..	..	8	..	..	..	..	8·7
16	247 1	225 2	45 1	1·3	0·3	2	10	..	..	..	..	8	..	..	..	..	3	..	..	..	..	7·0
17	270 1	293 3	calm 0	1·3	3·4	23	10	..	..	..	..	7	..	..	Cu.	NW	0	..	..	..	..	5·7
18	225 1	270 2	247 3	2·0	0·6	4	8	..	..	St.-Cu.	SW	10	..	..	..	..	10	..	..	..	..	9·3
19	23 5	360 4	315 2	3·7	10·4	73	7	..	..	Cu.-Cu.-Nb	NNE	6	..	..	Cu.	N	0	..	..	..	..	6·3
20	337 3	293 4	315 2	3·0	13·2	93	4	..	..	Cu.	N	4	..	..	Cu.	NW	0	..	..	..	..	2·7
21	315 3	270 4	293 1	2·7	3·4	23	10	..	..	..	..	8	..	..	Cu.	NNW	10	..	..	..	..	9·3
22	293 3	315 3	315 2	2·7	5·8	41	10	..	..	St.-Cu. Cu.-Nb.	NW	6	..	..	Cu.	NW	0	..	..	..	..	5·3
23	293 3	270 4	293 3	3·3	8·0	58	10	..	..	..	..	7	..	..	Cu.	NW	10	..	..	..	..	9·0
24	315 2	337 2	315 1	1·7	2·9	21	9	..	..	..	..	7	A.-Cu.	W	Cu.-Nb. Nb.	NNE	4	A.-Cu.	..	..	..	6·7
25	315 1	337 3	360 2	2·0	4·7	34	7	..	..	Cu.-Cu.-Nb	..	7	..	..	Cu.	NW	10	..	..	..	..	8·0
26	45 3	45 4	45 3	3·3	6·3	46	7	A.-Cu.	..	..	..	1	..	..	Cu.	NE	1	..	..	..	..	3·0
27	67 3	67 4	45 4	3·7	13·0	95	3	..	..	Cu.	..	2	..	..	..	..	0	..	..	..	..	1·7
28	90 4	67 4	45 4	4·0	10·8	79	3	..	..	Cu.	ENE	2	..	..	Cu.	..	0	..	..	..	..	1·7
29	45 4	67 5	23 4	4·3	8·5	62	3	..	..	Cu.	NE	3	..	..	Cu.	NE	10	..	..	..	..	5·3
30	23 4	23 4	45 1	3·0	6·4	47	7	..	..	..	..	4	..	..	..	..	3	Ci.	..	..	..	4·7
31	23 3	360 3	23 2	2·7	8·4	62	9	..	..	..	..	3	..	..	Cu.	ENE	0	..	..	..	..	4.0
Means	2·8	3·5	2·6	3·0	7·3	51	7·0	—	—	—	—	5·3	—	—	—	—	4·7	—	—	—	—	5·7
Normal	3·3	3·7	3·1	3·4	8·0	56	6·0	—	—	—	—	5·3	—	—	—	—	5·0	—	—	—	—	5·4
	◄——17 years——►				23 years		◄——26 years——►															

* For method of estimation see Introduction.

8. WIND COMPONENTS: Metres per second at fixed hours, together with the greatest mean hourly velocity, or the greatest velocity attained in a gust, and the time of its occurrence.

NORTH WALES:—HOLYHEAD.

Height of Head above—Roof 8·8 m., Ground 13·7 m., M.S.L. 19·2 m.
Height of Cups above—Roof 4·6 m., Ground 7·6 m., M.S.L. 15·2 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	h. m.
1	3·8	..	5·7	..	3·5	..	8·5	..	5·1	..	5·1	..	3·3	..	4·9	..	14	13 0
2	2·8	..	6·7	..	2·5	..	6·1	..	5·1	..	5·1	..	1·8	..	2·7	..	12	14 10
3	1·3	..	6·8	..	1·6	..	8·0	..	4·9	..	4·9	..	..	..	8·9	..	14	21 5
4	0·8	..	3·8	..	7·1	..	1·4	..	9·2	..	..	..	7·9	..	..	..	17	16 25
5	..	3·3	7·9	..	1·6	..	8·0	..	5·3	..	5·3	..	..	..	9·8	..	15	23 35
6	..	10·5	10·5	..	..	4·4	10·6	..	..	3·5	3·5	..	..	3·3	7·9	..	20	3 35
7	..	2·5	6·1	..	1·0	..	2·4	..	5·5	..	1·1	..	3·9	..	..	..	12	0 5
8	6·5	..	..	1·3	7·4	..	..	1·5	7·2	..	..	..	3·3	..	3·3	..	16	12 5
9	2·6	..	3·8	..	..	4·7	4·7	..	..	1·6	8·0	..	..	7·6	7·6	..	14	20 30
10	..	4·7	7·1	..	..	3·3	4·9	..	..	3·1	4·7	..	..	2·3	2·3	..	13	0 10
11	..	Ca	lm	..	..	1·6	1·6	..	..	1·1	1·1	..	..	Ca	lm	..	4	13 20
12	..	1·7	1·1	..	..	Ca	lm	..	..	1·5	..	0·6	..	2·6	..	..	4	11 55
13	..	2·8	..	1.1	..	1·5	..	0·6	..	2·6	..	..	..	Ca	lm	..	?	? ?
14	..	2·0	..	..	..	2·0	3·0	..	..	2·7	4·1	..	..	Ca	lm	..	6	14 45
15	..	2·1	2·1	..	1·3	..	3·0	..	4·3	..	2·9	..	4·3	..	2·9	..	11	5 50
16	2·0	..	4·8	..	2·3	..	5·5	..	6·2	..	4·2	..	6·7	..	2·8	..	13	16 45
17	4·7	..	3·1	..	6·7	..	2·8	..	5·5	..	2·3	..	7·9	..	5·3	..	17	23 20
18	..	3·8	9·1	..	..	10·3	2·0	..	..	8·3	1·7	..	..	9·7	..	4·0	18	7 10
19	..	0·9	..	1·3	..	1·2	5·8	..	..	6·5	1·3	..	..	5·7	2·4	..	11	12 35
20	..	6·9	2·9	..	..	6·1	2·5	..	..	6·4	2·6	..	..	6·9	2·9	..	13	22 25
21	..	6·2	4·2	..	..	6·0	4·0	..	..	7·6	5·1	..	..	8·5	3·5	..	14	17 50
22	..	4·6	8·0	..	..	6·5	3·7	..	..	2·4	0·9	..	0·7	..	3·8	..	14	23 45
23	..	6·8	8·0	..	..	4·7	5·5	..	..	2·8	2·3	..	..	..	2·0	..	15	1 15
24	..	Ca	lm	..	..	Ca	lm	..	..	..	2·6	..	..	2·2	0·8	..	6	23 10
25	..	..	5·2	..	..	1·8	3·1	..	..	4·5	2·6	..	..	7·4	1·3	..	10	18 15
26	..	3·0	0·5	..	..	2·3	0·4	..	..	2·4	0·9	..	..	Ca	lm	..	7	0 5
27	..	Ca	lm	..	..	Ca	lm	..	..	4·2	0·7	..	..	1·6	0·3	..	5	14 10
28	..	Ca	lm	..	..	Ca	lm	..	..	2·0	0·3	..	..	2·0	0·3	..	3	20 25
29	..	Ca	lm	..	..	Ca	lm	..	..	1·9	2·3	..	..	Ca	lm	..	6	13 25
30	..	Ca	lm	..	..	1·6	0·3	..	..	4·0	..	1·5	..	3·4	..	1·2	7	12 10
31	..	1·5	..	0·5	..	3·7	..	4·3	..	3·7	..	2·1	..	1·4	..	0·8	9	10 50
S+N & W+E	87·8		111·6		96·7		104·2		131·1		79·8		104·4		81·7			
S−N & W−E	−38·8		103·2		−26·7		91·4		−14·5		71·4		−24·8		69·7			

SCOTLAND N.:—DEERNESS.

Height of Cups above—Roof 1·5 m., Ground 4·9 m., M.S.L. 57·3 m.

Day.	3 h.				9 h.				15 h.				21 h.				Vel. in Max. Hourly Run.	Time of Max.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	hrs.
1	8·2	..	..	..	4·2	..	4·2	..	7·7	..	..	1·5	2·8	..	2·8	..	8·9	6
2	5·2	..	2·1	..	4·7	..	3·1	..	3·5	..	0·7	..	1·9	..	1·3	..	5·9	4, 13
3	..	Ca	lm	..	4·6	..	..	..	3·3	..	..	3·3	..	..	..	1·6	4·9	8
4	..	2·3	..	..	..	2·3	2·3	..	..	Ca	lm	..	..	Ca	lm	..	4·3	8
5	1·7	..	..	2·5	..	5·1	..	5·1	..	4·4	..	4·4	..	10·9	..	2·2	11·8	22
6	..	10·3	2·0	..	..	6·2	4·2	..	..	..	..	..	..	4·3	2·9	..	11·1	5
7	..	4·2	6·2	..	..	4·2	6·2	..	..	2·8	2·8	..	2·6	..	0·5	..	7·5	3, 7, 9, 10
8	..	..	..	2·6	2·4	..	..	3·6	4·9	..	..	3·3	3·8	..	..	2·6	5·9	15, 16, 17
9	1·9	..	..	1·3	..	Ca	lm	..	..	3·6	1·5	..	..	3·8	2·6	..	6·2	19
10	..	3·2	2·2	..	..	5·2	3·4	..	..	4·2	4·2	..	..	4·9	3·3	..	6·6	19, 20
11	..	2·7	1·8	..	..	2·7	1·8	..	..	4·4	4·4	..	..	2·1	2·1	..	6·9	16
12	..	Ca	lm	..	..	..	2·3	..	..	..	4·9	..	1·8	..	2·7	..	4·9	15
13	3·0	..	2·0	..	..	..	7·5	..	2·9	..	4·3	..	1·7	..	8·3	..	8·5	21
14	..	2·5	6·1	..	..	2·4	5·7	..	..	2·8	6·7	..	..	0·6	3·2	..	9·8	13
15	2·3	..	2·3	..	6·5	..	1·3	..	4·4	..	4·4	..	1·7	..	8·7	..	10·2	23
16	..	..	7·5	..	1·6	..	4·0	..	1·5	..	0·6	..	..	..	7·9	..	9·5	10
17	..	..	6·6	..	..	1·2	5·8	..	..	5·1	1·0	..	..	3·5	0·7	..	7·5	1
18	..	6·1	1·2	..	..	7·4	1·5	..	..	8·7	1·7	..	..	6·5	1·3	..	8·9	15, 24
19	..	8·0	1·6	..	..	6·9	2·9	..	..	7·1	4·7	..	..	6·2	4·2	..	9·8	5
20	..	9·3	1·9	..	..	6·7	2·8	..	..	8·7	5·8	..	..	8·8	3·6	..	10·5	15
21	..	8·0	2·9	..	..	9·5	3·5	..	..	8·1	..	1·4	..	4·5	..	0·8	11·1	12
22	..	4·0	1·5	..	..	2·8	1·0	..	..	3·4	1·2	..	..	Ca	lm	..	4·3	1, 3
23	..	Ca	lm	..	3·3	..	..	..	5·5	..	..	2·0	..	Ca	lm	..	5·9	15
24	0·7	..	1·9	..	2·6	..	1·5	..	1·9	..	2·3	..	0·4	..	2·3	..	3·6	8
25	..	..	3·3	..	..	1·7	4·6	..	..	3·4	6·0	..	..	1·0	2·8	..	6·9	15
26	..	0·5	1·5	..	..	..	3·3	..	..	..	6·6	..	0·6	..	3·5	..	6·6	16
27	..	..	7·9	..	2·6	..	4·5	..	1·3	..	7·4	..	..	..	3·0	..	7·9	3
28	..	Ca	lm	..	..	1·8	..	3·1	..	0·5	..	2·6	..	..	..	2·3	3·9	10, 11
29	0·8	..	..	2·2	0·6	..	..	3·2	1·3	..	..	3·7	0·5	..	..	2·6	4·3	10, 11, 16
30	..	..	..	1·6	..	0·5	..	2·6	..	1·1	..	2·0	..	Ca	lm	..	3·0	10, 14, 16
31	..	Ca	lm	..	0·3	..	..	1·6	4·0	..	..	1·5	5·3	..	..	1·9	5·6	21, 22, 24
S+N & W+E	84·9		72·7		100·0		96·6		110·5		96·9		80·2		81·7			
S−N & W−E	−37·3		52·3		−33·2		58·2		−26·1		45·5		−34·0		53·7			

ENGLAND, S.W.:—SCILLY.

Height of Head above—Ground 9·8 m., M.S.L. 49·7 m.
Height of Cups above—Ground 5·8 m., M.S.L. 45·7 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	h. m.
1	*0·6*	..	*3·2*	..	..	3·5	6·1	..	..	..	5·8	..	..	..	6·3	..		
2	1·8	..	5·1	..	2·3	..	4·0	..	..	..	*2·5*	..	..	2 9	2·4	..		
3	..	3·2	3·8	..	..	*3·2*	*3·8*	..	..	0·9	4·9	..	..	..	5·8	..		
4	2·5	..	4·3	..	7·6	..	4·4	..	9·1	..	1·6	..	11·3	..	..	..		
5	..	2·2	5·9	..	..	0·7	3·7	..	..	1·2	7·0	..	..	1·7	9·8	..		
6	..	3·9	6·8	..	..	3·1	5·5	..	..	2·2	5·9	..	..	1·6	2·9	..		
7	..	Ca	lm	..	*2·6*	..	*1·0*	..	4·5	..	..	0·8	5·7	..	..	1·0		
8	7·0	..	..	1·2	5·3	..	0·9	..	..	..	*4·2*	..	..	..	*3·8*	..		
9	..	..	8·3	..	..	3·7	6·5	..	..	2·0	5·5	..	..	*2·9*	*5·0*	..		
10	..	*2·1*	*2·5*	..	..	Ca	lm	..	..	Ca	lm	..	..	Ca	lm	..		
11	..	Ca	lm	..	*1·3*	..	..	*1·1*	*1·6*	..	..	*0·6*	..	Ca	lm	..		
12	..	Ca	lm	..	..	*2·2*	..	*1·9*	..	*2·5*	..	*2·1*	..	*2·5*	..	*3·0*		
13	..	*0·6*	..	*1·6*	..	*0·7*	..	*2·0*	..	Ca	lm	..	..	Ca	lm	..		
14	..	*1·6*	..	*1·9*	..	*3·6*	..	*1·3*	..	4·3	2·5	..	..	3·3	1·9	..		
15	..	2·5	0·4	..	..	2·7	1·0	..	..	4·4	3·8	..	..	3·6	2·1	..		
16	..	*2·5*	*1·4*	..	..	Ca	lm	..	..	Ca	lm	..	..	Ca	lm	..		
17	..	Ca	lm	..	..	..	*1·7*	..	..	..	3·8	..	..	..	4·6	..		
18	1·1	..	3·1	..	1·7	..	4·7	..	..	8·0	..	4·6	..	7·8	..	1·4		
19	..	6·2	..	1·1	..	6·7	..	..	..	7·9	..	..	..	5·1	1·8	..		
20	..	*3·1*	*1·1*	..	..	4·9	0·9	..	..	5·4	..	..	..	2·9	..	1·6		
21	..	*3·0*	*1·7*	..	..	4·1	0·7	..	..	3·7	0·7	..	..	3·6	2·1	..		
22	..	4·3	2·5	..	..	4·9	0·9	..	..	4·4	3·8	..	..	4·1	3·5	..		
23	..	4·0	2·3	..	..	2·9	5·0	..	..	2·7	4·7	..	..	3·8	4·4	..		
24	..	2·5	4·3	..	..	4·3	2·5	..	..	4·3	1·6	..	..	Ca	lm	..		
25	..	Ca	lm	..	..	1·8	..	1·0	..	3·1	..	1·1	..	1·9	..	1·6		
26	..	3·6	..	2·1	..	1·9	..	3·3	..	..	..	3·3	0·6	..	..	3·2		
27	*1·2*	..	..	*2·2*	0·9	..	..	4·9	2·4	..	..	6·7	..	..	..	3·3		
28	0·9	..	..	4·9	1·2	..	..	7·0	1·4	..	..	8·2	1·3	..	..	7·4		
29	2·0	..	..	5·5	2·3	..	..	6·3	3·3	..	..	5·8	*1·6*	..	..	*1·9*		
30	..	Ca	lm	..	0·6	..	..	3·2	..	Ca	lm	..	..	1·6	..	0·6		
31	..	Ca	lm	..	..	Ca	lm	..	..	Ca	lm	..	..	*1·7*	..	..		
S+N & W+E	62·4		77·2		80·7		85·3		79·3		91·5		71·5		81·4			
S−N & W−E	−28·2		36·2		−29·1		21·3		−34·7		25·1		−30·5		31·4			

Defective Records.

ENGLAND, E.:—SHOEBURYNESS.

Height of Head above—Ground 27·4 m., M.S.L. 31·4 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	h. m.
1	1·1	..	2·8	..	..	..	3·7	..	3·4	..	5·1	..	..	..	3·0	..	13	15 20
2	2·0	..	4·8	..	1·9	..	4·5	..	7·1	..	7·1	..	9·1	..	3·8	..	16	14 30
3	1·0	..	2·5	..	..	1·0	2·5	..	1·0	..	5·1	..	0·6	..	2·9	..	11	16 35
4	2·0	..	4·8	..	1·2	..	6·0	..	8·1	..	5·4	..	4·8	..	..	1·0	14	14 0
5	5·1	..	3·4	..	9·1	..	3·8	..	2·4	..	3·6	..	2·1	..	5·1	..	18	17 15
6	3·6	..	5·3	..	1·4	..	7·2	..	..	1·5	7·5	..	..	1·1	5·4	..	17	11 25
7	..	..	4·3	..	..	0·4	1·8	..	1·0	..	2·5	..	3·0	..	3·0	..	7	1 50
8	2·2	..	0·9	..	4·6	..	..	..	6·0	..	1·2	..	5·1	..	2·1	..	9	16 35
9	1·0	..	1·5	..	2·1	..	5·1	..	1·9	..	4·5	..	..	0·8	4·2	..	12	14 10
10	..	..	4·9	..	..	3·1	4·6	..	..	1·0	4·8	..	..	1·7	0·7	..	10	8 10
11	..	Ca	lm	..	..	Ca	lm	..	..	2·4	..	0·5	1·5	..	..	2·2	6	15 40
12	..	2·2	..	0·9	..	Ca	lm	..	..	..	..	2·4	0·7	..	..	3·6	6	22 50
13	..	Ca	lm	..	..	2·0	..	4·8	..	1·0	..	4·8	..	1·7	..	2·5	7	16 15 / 16 35
14	..	2·8	1·1	..	..	Ca	lm	..	1·4	..	..	1·2	..	Ca	lm	..	6	19 15
15	..	Ca	lm	..	..	Ca	lm	..	..	1·0	2·8	..	..	Ca	lm	..	6	15 50
16	..	Ca	lm	..	..	Ca	lm	..	..	..	2·7	..	..	Ca	lm	..	8	16 55
17	..	Ca	lm	..	..	..	2·1	..	0·7	..	3·9	..	..	..	2·1	..	8	14 0
18	1·8	..	3·2	..	4·2	..	4·9	..	2·4	..	4·2	..	..	2·4	..	..	13	9 35
19	..	5·2	..	1·9	..	4·8	0·9	..	..	4·6	..	..	..	1·7	2·9	..	12	10 50
20	..	3·1	3·8	..	..	4·2	3·6	..	..	1·3	3·7	..	..	Ca	lm	..	12	11 35
21	..	0·7	3·9	..	..	2·3	4·0	..	..	1·4	3·8	..	..	..	4·3	..	9	10 0
22	..	..	3·7	..	..	1·8	4·9	..	..	3·8	3·1	..	..	2·8	3·3	..	17	13 15
23	..	0·9	4·8	..	..	2·0	3·5	..	..	1·6	1·3	..	..	1·5	1·8	..	8	10 0
24	..	2·4	..	0·4	..	2·0	0·7	..	..	Ca	lm	..	..	Ca	lm	..	6	13 20
25	..	..	2·1	..	..	Ca	lm	..	..	3·0	0·5	..	..	2·1	..	·4	9	20 10
26	..	2·1	0·4	..	..	4·9	..	1·8	..	4·6	..	1·7	..	2·8	..	1·0	9	11 20
27	..	2·7	0·5	..	..	3·7	..	2·1	..	0·8	..	4·5	..	2·5	..	0·9	9	17 40
28	..	2·7	..	0·5	..	3·5	..	2·0	..	Ca	lm	..	..	2·4	..	0·4	9	10 30
29	..	4·5	..	0·8	..	4·0	..	..	..	4·6	..	1·7	..	4·3	..	..	13	13 25
30	..	3·6	0·6	..	..	4·2	0·7	..	..	3·7	..	..	..	2·4	..	..	9	16 40
31	..	2·9	1·7	..	..	3·9	0·7	..	..	4·2	0·7	..	..	2·3	1·3	..	9	10 15
S+N & W+E	55·6		65·5		72·3		75·9		75·9		90·3		59·4		57·9			
S−N & W−E	−16·0		56·5		−23·3		54·5		−5·1		56·7		−5·6		33·9			

Defective Records.

9. Seismological Diary.

The notation used is explained in the Introduction.

Earthquakes—Eskdalemuir.

Day.	Phase	Time. G.M.T.	Period.	Amplitudes. A_N.	A_E.	A_Z.	Δ.	Remarks.
		h m s	s	μ	μ	μ	km.	
3	P	4 20 25	..	..	..	..	6650	Very slow development of maximum long wave displacement.
	S	4 28 36	..	..	..	..	..	
	L	4 40	..	..	..	..	..	
	M_N	5 0 31	23	10	..	..	..	
	F	5 38	..	..	..	..	..	
	P (?)	20 15 13	..	..	..	..	..	All phases indistinct.
	S (?)	20 21 43	..	..	..	..	..	
	M_N	20 51	22	34	..	..	..	
	F	23	..	..	..	..	..	
5	L	19 45	22	..	..	..	..	
	F	20 10	..	..	...	..	..	
12	L	6 40	..	..	..	..	..	
	F	7 5	..	..	..	..	..	
13	P (?)	2 18 14	..	..	..	..	..	Feeble development of long waves.
	S	2 26 28	..	..	..	..	..	
	F	3 15	..	..	..	..	..	
15		1 5 to	..	..	..	..	..	Faint disturbance.
		1 16	..	..	..	..	..	
	L	7 36	..	..	..	..	..	
	F	8 4	..	..	..	..	..	
	e	8 35 31	..	..	..	..	..	Prolonged disturbance.
	L	8 39	..	..	..	..	..	Long waves of irregular form.
	F	11	..	..	..	..	..	
16		14 54 to	..	..	..	..	..	Slight disturbance.
		15 9	..	..	..	..	..	
19	L	2 28	19	..	..	..	..	
	F	2 46	..	..	..	..	..	
20	O	16 23 20	..	..	..	..	8150	
	P	16 34 49	..	..	..	..	..	
	S	16 44 17	..	..	..	..	..	
	L	17 2	..	..	..	..	..	
	M_N	17 19 40	21	21	..	..	..	
	F	19 30	..	..	..	..	..	
21	L	21 25	16	..	..	..	..	
	F	22	..	..	..	..	..	
25	e	22 14 30	..	..	..	..	..	
	e	22 24 32	..	..	..	..	..	
	L	22 46	..	..	..	..	..	
	F	24	..	..	..	..	..	
26	O	22 59 58	..	..	..	..	8050	
	P	23 11 22	..	..	..	..	..	
	S	23 20 45	..	..	..	..	..	
	L	23 33 (?)	..	..	..	..	..	
	L_N	23 43	..	..	..	..	..	
	F	24	..	..	..	..	..	

Microseisms of N. Component—Eskdalemuir.

Day.	0 h. A_N.	0 h. T.	6 h. A_N.	6 h. T.	12 h. A_N.	12 h. T.	18 h. A_N.	18 h. T.
	μ	s	μ	s	μ	s	μ	s
1	0·9	5	1·0	6	1·6	6	0·8	6
2	0·9	5	0·7	5·5	0·5	4	0·4	5
3	0·5	4	0·2	4	0·3	4	0·4	5
4	0·3	5	0·1	4	0·0	0	0·1	3
5	0·2	4	0·1	3·5	0·2	4	0·5	4
6	0·7	4	0·9	3·5	1·3	3·5	0.8	4
7	0·5	4·5	0·6	4	0·9	4	0·8	4
8	0·7	4·5	0·8	4	0·3	4	0·5	4
9	0·2	5·5	0·2	4	0·1	5	0·1	3·5
10	0·1	4	0·0	0	0·0	0	0·0	0
11	0·0	0	0·0	0	0·0	0	0·0	0
12	0·0	0	0·0	0	0·0	0	0·0	0
13	0·0	0	0·1	4·5	0·2	4·5	0·3	5
14	0·2	4	0·4	5·5	0·4	4·5	0·2	4·5
15	0·5	4	0·3	4·5	0·3	4·5	0·3	4
16	0·7	5	0·9	4·5	0·9	4·5	0·7	5
17	0·9	4	0·8	4·5	0·5	5	0·3	4
18	0·7	4	0·2	5	0·4	3·5	0·6	3
19	0·5	4	0·1	4	0·4	4	0·2	4
20	0·1	4	0·1	4	0·1	4	..	..
21	0·4	4	0·9	4	0·5	5	0·7	4
22	1·0	4·5	0·9	4·5	1·2	4	1·1	4
23	0·7	4	0·3	4	0·2	4	0·3	4
24	0·3	4·5	0·3	4·5	0·5	4	0·7	5
25	0·5	5	0·5	4	0·3	4·5	0·6	4·5
26	0·2	4	0·7	4	0·4	5	0·4	5
27	..	..	0·2	4·5	0·1	4	0·1	4
28	0·1	3·5	0·2	4·5	0·1	5·5	0·2	5
29	0·2	5·5	0·3	5	0·7	5	0·9	4·5
30	0·3	5·5	0·8	5	0·9	4·5	0·5	5
31	0·3	5	0·2	5	0·6	4	0·6	4·5

Means for Month $\begin{cases} A_N. = 0·4\mu. \\ T = 3·9s. \end{cases}$

Normals for Month, 1911–19 $\begin{cases} A_N. = 0·5\mu. \\ T = 4·4s. \end{cases}$

Earthquakes:—Richmond (Kew Observatory).

Day.	Times, G.M.T. of Commencement.	Times, G.M.T. of Max. Phase.	Remarks.
	h m	h m	
3	..	4 13	Small.
3	20 52	20 55	Amplitude on trace 1·9mm.
5	..	19 57	Very small.
			Instrument under adjustment from 10th to 18th August.
20	16 44	17 27	Amplitude on trace 1·9mm. Succession of very small waves to 19h. 10m.
21	..	21 30	Very small.
22	..	23 00	Very small.
26	..	23 48	Small.

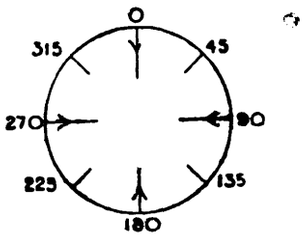
10. Soundings with Pilot Balloons.

Day	Time of Start, G.M.T.	Horizontal Velocity of Wind.														Cloud Observations.					
		Geostrophic.		By Anemometer.		At Heights above M.S.L.															
						500 m.		1,000 m.		2,000 m.		3,000 m.		4,000 m.							
		Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	Time, G.M.T.	Type.	Deg. from N.	mr/s.	Type.	Deg. from N. mr/s.
	h. m.															h. m.					
ABERDEEN.																					
9	11 45	?	?	100	2.0	55	3.5	10	2.5	120	1.5	20	5.5	85	3.0	..	Cu.,Cu.-Nb.	25	..	Ci.	90 ..
13	15 30	270	6	170	1.5	240	2.5	315	2.5	110	2.5	20	2.0	345	5.0	..	St.-Cu.	360	?..	..	.. ..
31	16 0	?	?	160	4.0	185	4.5	335	1.5	200	0.5	110	2.5	..	..	..	..	..	..	Cloudless.	
ESKDALEMUIR.																					
5	12 25	?	?	180	2.5	200	4.0	245	5.0	225	4.1	..	..	..	..	..	Nb.	225	..	A.-St.	.. ..
6	7 10	350	15	345	8.0	340	8.5	5	6.0	350	10.0	..	..	..	..	..	St.-Cu.	345	7.5	..	.. ..
SOUTH FARNBOROUGH.																					
2	6 5	270	12	250	6.0	250	9.0	255	8.5	275	14.5	..	..	..	..	..	A.-St.	..	..	..	..
3	7 10	?	?	295	3.5	295	4.5	290	7.5	250	11.5	240	15.0	230	16.0	..	Fr-Cu; A-Cu	..	..	..	..
7	8 20	?	?	335	5.0	335	7.0	355	7.0	340	7.0	335	7.5	330	9.5	..	Cu.	..	..	Ci.-St.	..
9	6 30	270	10	270	7.0	265	10.0	255	13.0	260	12.0	255	16.0	255	20.0	..	St.	..	..	..	..
14	7 50	?	?	315	2.0	10	7.5	345	4.5	345	7.5	..	..	..	..	..	..	..	..	Cloudless.	
16	6 35	270	5	275	3.5	335	4.0	310	2.5	265	6.0	335	7.5	350	5.5	..	St.-Cu.	..	..	..	.. ..
20	6 55	325	12	305	5.5	325	12.5	320	12.0	305	9.5	..	..	..	..	..	A.-St.	..	..	Ci.-Cu.; Ci.-St.	.. ..
21	6 45	305	14	290	6.5	330	11.0	320	8.0	335	11.5	340	15.0	335	18.0	..	A.-St.	..	..	..	.. ..
26	6 45	?	?	30	5.0	35	10.5	10	11.5	25	8.5	..	..	..	..	..	..	..	..	Cloudless.	
26	7 25	?	?	50	5.0	40	11.0	15	13.0	20	7.0	15	6.5	20	9.5	..	..	..	..	Cloudless.	
26	9 35	?	?	35	8.0	30	5.0	20	11.5	25	8.0	25	7.5	15	6.5	..	Cu.	..	..	..	.. ..
27	9 55	?	?	65	6.0	60	5.0	60	12.0	40	12.5	50	9.5	..	..	..	Fr.-Cu.	..	..	..	.. ..
27	10 25	?	?	70	6.0	60	4.5	65	11.0	40	11.5	..	..	..	..	..	Fr.-Cu.	..	..	..	.. ..
30	12 35	35	5	10	7.5	15	4.5	355	2.5	15	9.5	10	10.5	..	..	..	Cu.; St.-Cu.	..	..	..	.. ..
31	6 50	?	?	20	4.5	35	8.5	50	6.5	25	9.0	15	7.0	15	13.5	..	..	..	..	Cloudless.	
				5,000 m.		6,000 m.		7,000 m.		8,000 m.		9,000 m.		10,000 m.							
16	6 35	(For		350	3.5	345	3.5	275	3.5	310	6.0	280	6.5	300	6.5	..	St.-Cu.	..	..	..	.. ..
26	7 25	observations		15	7.5	10	10.5	355	11.0	345	13.0	..	..	..	..	..	..	..	..	Cloudless.	
31	6 50	at		10	12.5	360	17.5	10	14.5	..	..	..	..	..	..	..	..	..	..	Cloudless.	
		lower levels,		..	..	..	..	..	..	..	..	11,000 m.		12,000 m.							
16	6 35	see above.)		..	..	..	..	..	..	..	...	280	4.5	265	6.0	..	St.-Cu.	..	..	..	.. ..
CAHIRCIVEEN.																					
7	6 55	230	8	135	7.0	160	14.0	195	8.5	220	6.5	..	..	..	..	..	St.; St.-Cu.	160	..	A-St.	.. ..
10	6 45	?	?	Calm		5	1.6	70	0.5	290	4.3	290	5.5	300	7.5	..	St.-Cu.	340	..	A.-St.	.. ..
11	6 50	?	?	Calm		150	3.9	285	1.1	310	4.0	..	..	..	..	..	St.-Cu.	315	..	A.-Cu.	360 ..
13	6 55	?	?	Calm		65	2.6	100	4.7	40	8.5	25	11.0	..	..	6 50	Cu.-St.	20	...	A.-Cu.	20 1.5
																				A.-St.	.. ..
20	17 40	?	?	330	3.4	325	4.1	335	4.2	5	4.7	5	2.3	..	..	..	St.-Cu.; Cu.	340	..	..	.. ..
21	16 55	?	?	270	3.5	330	4.0	355	9.0	285	8.5	300	8.5	..	..	17 45	St.-Cu.	350	..	Ci.-Cu.	360 ..
																				Ci.	5 1.0
23	12 30	?	?	275	3.8	290	5.5	300	5.5	330	7.0	325	9.0	320	12.0	13 0	A.-Cu.	310	3.0	..	.. ..
																	A.-St.	310	..	..	.. ..
26	6 40	80	5	?	2.6	70	3.5	70	7.0	70	6.0	40	7.0	10	3.0	..	Fr.-Cu.	..	..	..	.. ..
26	17 10	?	?	335	2.5	320	1.1	75	4.1	105	4.5	80	1.7	80	3.0	..	Cu.	90	..	..	.. ..
28	6 40	120	4	Calm		140	6.0	135	15.5	145	11.0	..	..	..	..	..	A.-St.	..	..	..	.. ..
				5,000 m.		6,000 m.		7,000 m.		8,000 m.		9,000 m.		10,000 m.							
10	6 45			310	6.0	..	..	..	..	..	..	..	..	..	..	..	St.-Cu.	340	..	A.-St.	.. ..
26	6 40			25	4.2	355	9.5	325	9.5	320	8.5	305	9.5	300	8.5	..	Fr.Cu.	..	..	..	.. ..
26	17 10			50	2.0	70	2.8	5	5.0	..	..	..	..	..	..	..	Cu.	90	..	..	.. ..
												11,000 m.		12,000 m.							
26	6 40	(For observations at lower levels, see above.)										295	11.0	280	10.0	..	Fr.Cu.	..	..	..	.. ..

10. SOUNDINGS WITH PILOT BALLOONS—*cont.*

Height of Station above M.S.L. = H.
Anemometer above ground = h.

	H.	h.
Aberdeen	14 m.	23 m.
Eskdalemuir	242 m.	15 m.
S. Farnborough	70 m.	31 m.
Cahirciveen	9 m.	13 m.



Wind Protractor.

Notes on Pressure Distribution.

August, 1920.

2nd,	7 h.	Low centered over the Faröe Islands
3rd,	7 h.	Low centered SW of the Faröe Islands
5th,	13 h.	Low centered over Scotland
6th,	7 h.	Low centered over the Skager Rack

Anticyclone extending from the Azores to the Continent.

7th, 7 h. The Azores Anticyclone covering the British Isles; Low centered over Scandinavia.
9th, 7 h. Shallow Low over the British Isles; high over the Continent and the Azores
13 h. Extensive Anticyclone centered W. of Ireland; Shallow Low centered over the North Sea.
10th, 7 h. The Atlantic Anticyclone covering the British Isles; Shallow Low over Denmark.
11th, 7 h. Anticyclone centered over the British Isles.
13th, 7 h. 18 h. Ridge extending from the Azores to the British Isles.
14th, 7 h. Anticyclone centered S. of Ireland.
16th, 7 h. Anticyclone over the British Isles centered over the Bay of Biscay.
20th, 7 h. 18 h. } The Atlantic Anticyclone covering the British Isles; Low
21st, 7 h. 18 h. } centered over the North Sea.
23rd, 13 h. Anticyclone over the British Isles centered over the Bay of Biscay.
26th, 7 h. 18 h. Anticyclone over the British Isles centered over Ireland.
27th, 7 h. 13 h. Anticyclone centered over the British Isles.
28th, 7 h. Anticyclone over the British Isles centered N. of Scotland.
30th, 13 h. } Ridge over the British Isles extending from Scandinavia to
31st, 7 h. 18 h. } the Azores.

Notes on Ascents.

Aberdeen—
9th, 11 h. 45 m. Ci. very slow, Cu. to Cu.-Nb. from NNE. Cu.-Nb. masses in SW and NW. Frequent thunder after 13 h. Barometer rising.
13th. 15 h. 30 m. St.-Cu. scarcely moving.

Eskdalemuir—
5th, 12 h, 25 m. Rain at times during ascent. Barometer fall checked.

South Farnborough—
27th, 9 h. 55 m. Very hazy in south and west.

Cahirciveen—
7th, 6h. 55m. Balloon eclipsed by St.-Cu.
10th, 6h, 45m. Balloon eclipsed by St.-Cu.
11th, 6h. 50m. Balloon went into St.-Cu.
13th, 6 h. 55 m. Balloon lost in A.-St.
20th, 17 h. 40 m. Balloon eclipsed by Cu.
21st, 16 h. 55m. Balloon eclipsed by St.-Cu. patch.
23rd, 12 h. 30 m. Balloon went into A.-Cu.
26th, 6 h. 40 m. Balloon probably leaking during the last two minutes of the ascent; observed to burst. No reason to doubt results at 12·5 km., which are 290° from N. and 10 m/s.
28th, 6 h. 40 m. Atmosphere very hazy. Balloon lost to view in haze.

11. NEPHOSCOPE OBSERVATIONS.

ABERDEEN.

Day and Hour G.M.T.	Type of Cloud.	Velocity-height-ratio. Degrees from N.	Milliradians. per Second.	Components. W.-E.	Components. S.-N.	Remarks.
1 13	Ci.	225	?	..	..	No appreciable motion; direction approx.
2 13	False Ci.	228	3·0	+ 2·2	+ 2·0	False Ci. above Cu.-Nb.; became Ci.-Cu. later.
3 13	Cu.-Nb.	212	8·8	+ 4·7	+ 7·5	Broken base measured.
4 13	St.-Cu.	270	3·2	+ 3·2	0·0	High type St.-Cu. showing as A.-Cu. at edge of sheet.
4 15	Cu.-Nb.	267	6·2	+ 6·2	+ 0·3	Small type Cu.-Nb. with slight showers.
6 13	St.	330	28·0	+24·0	−14·0	Very low cumuliformis cloud; squally.
6 16	St.	315	20·8	+14·7	−14·7	Ditto
7 13	Cu.	298	3·3	+ 2·9	− 1·6	Low type Cu., really St. cumuliformis.
11 13	Cu.	295	7·4	+ 6·7	− 3·1	Low Cu., developed from St. cumuliformis.
12 13	Ci.; Ci.-St.	15	3·7	− 1·0	− 3·6	Ci. banking into Ci.-St. ⊕ visible.
14 13	Cu.	307	5·9	+ 4·7	− 3·5	Cu., showing eddying.
16 13	St.-Cu.	275	8·3	+ 8·3	− 0·7	St. Cu. in heavy banks of somewhat lenticular form.
18 13	Cu.-Nb.	354	13·0	+ 1·4	−12·8	Base measured; low small Cu.-Nb.
19 13	Cu.-Nb.	335	10·1	+ 4·2	− 9·1	Apex measured; clouds of small type.
24 13	St.-Cu.	270	2·0	+ 2·0	0·0	Fused St.-Cu.—measurements approximate.
	Fr.-St.	286	4·2	+ 4·0	− 1·2	Broken low stratus.
25 13	St.-Cu.	307	3·2	+ 2·6	− 1·9	Fused cloud-sheet; small Cu. below and in contact with upper layer.
27 13	Fr.-St.	295	3·4	+ 3·1	− 1·4	Fr.-St. eddying apparent in the detached masses.
30 13	Fr.-St.	332	8·2	+ 3·8	− 7·2	Broken St.; becoming cumuliform.
31 13	Fr.-St.	208	5·0	+ 2·3	+ 3·9	Thin fracto-stratus.

12. AURORA.

Day.	a.m. or p.m.	Moon.	Magnetic Character. Eskdalemuir.	Magnetic Character. Richmond.	Aurora Observations. Station.	Aurora Observations. Remarks.
11	p.	..	0, 2	0, 2	Wick	
14	a.	●	..	..	..	
16	a.	..	0, 0	1, 0	Eskdalemuir	1 hr.
22	p.	..	1, 0	2, 0	Deerness Wick	
29	p.	○	..	..	..	

Note.—The two magnetic "characters" entered in each case refer to the two periods of 24 hours ending and beginning at midnight of the night in question.

METEOROLOGICAL OFFICE OBSERVATORIES—GEOPHYSICAL JOURNAL.

DAILY VALUES.—*Solar Radiation, Meteorology, Atmospheric Electricity, Terrestrial Magnetism, and Seismology.*
Tenth YEAR.—No. 9. SEPTEMBER, 1920.] Units based on the C.G.S. System. [*Price* 1*s.* 6*d.*

1. SUNSHINE AND SOLAR RADIATION.

Day.	WESTMINSTER. Bright Sunshine.* Total.	Per cent. of Possible.	SOUTH KENSINGTON.—Lat. 51° 30′ N. Long. 0° 10′ W. Radiation received on Horizontal Surface by Callendar Radiograph. Daily Total.	Per cent. of Planetary.	Maximum. For Day. Amount.	Time. h.	m.	11.30 h. to 12.30 h.	RICHMOND.—Lat. 51° 28′ N. Long. 0° 19′ W. Bright Sunshine.* Total.	Per cent. of Possible.	Radiation at Noon by Ångström Pyrheliometer. Intensity.	Vertical Component.	Sky.	ESKDALEMUIR.—Lat. 55° 19′ N. Long. 3° 12′ W. Bright Sunshine.* Total.	Per cent. of Possible.	Radiation by Ångström Pyrheliometer. Time.	Sky.	$\frac{p}{p_0}$ sec. Z.	Intensity.	CAHIRCIVEEN. Bright Sunshine.* Total.	Per cent. of Possible
	hr.	%	j/cm².	%	mw/cm².	h.	m.	mw/cm².	hr.	%	mw/cm².	mw/cm².		hr.	%	h. m.			mw/cm².	hr.	%
1	1·3	10	823	28	50	11	10	46	1·4	10	..	..	..	0·7	5	..	..	..	..	0·0	0
2	0·2	1	669	23	42	10	15	35	0·2	1	..	..	..	0·0	0	..	..	..	..	0·0	0
3	1·4	10	900	31	63	10	45	43	4·4	33	60	43	Hazy	1·3	9	..	..	..	..	3·2	24
4	0·9	7	590	21	35	14	55	29	1·2	9	..	..	..	7·9	58	..	..	..	..	3·3	25
5	0·8	6	459	16	54	12	45	25	0·0	0	..	..	..	0·0	0	..	..	..	..	2·0	15
6	3·7	28	777	28	68	13	15	39	4·1	31	..	..	..	2·6	19	..	..	..	..	0·0	0
7	1·9	14	859	31	43	14	20	31	1·0	8	..	..	..	0·5	4	..	..	..	..	1·4	11
8	2·0	15	691	25	*x*69	11	10	15	1·8	14	..	..	..	4·2	32	..	..	..	..	0·4	3
9	6·5	50	1008	37	50	13	0	48	4·8	37	..	..	..	0·0	0	..	..	..	..	5·6	43
10	8·1	62	*x*1600	60	63	11	55	63	8·4	65	77	53	Clear	8·2	63	..	..	..	..	1·1	8
11	4·4	34	1134	43	54	13	5	45	5·3	41	..	..	..	0·0	0	..	..	..	..	2·0	16
12	8·5	66	1309	50	58	12	35	57	8·1	63	64	44	Thro' Ci.	2·1	16	..	..	..	..	0·3	2
13	3·3	26	743	29	59	11	20	33	3·2	25	..	..	..	7·4	57	..	..	..	..	7·6	59
14	4·7	37	929	36	52	12	50	51	4·5	35	..	..	..	0·0	0	..	..	..	..	0·1	1
15	0·0	0	386	15	33	11	50	33	0·0	0	..	..	..	4·2	33	..	..	..	..	5·1	40
16	4·2	33	601	24	56	13	30	42	4·5	36	33	22	Misty	1·0	8	..	..	..	..	4·1	33
17	4·9	39	956	38	55	11	35	55	6·0	48	..	..	..	5·0	40	..	..	..	..	4·8	38
18	0·1	1	509	21	28	12	15	28	0·4	3	..	..	..	5·5	44	..	..	..	..	5·2	42
19	*x*10·6	85	1356	56	64	12	45	54	*x*10·3	83	..	..	..	7·0	56	..	..	..	..	*x*10·6	86
20	8·2	67	1167	49	57	12	15	57	9·5	77	67	43	Clear	1·4	11	..	..	..	..	6·1	49
21	0·0	0	240	10	23	13	45	17	0·0	0	..	..	..	6·9	56	..	..	..	..	9·0	73
22	1·8	15	520	22	47	13	10	28	2·2	18	..	..	..	*x*10·6	86	..	..	..	..	7·2	59
23	3·3	27	761	33	51	12	30	51	3·9	32	..	..	..	3·6	30	..	..	..	..	2·6	22
24	0·7	6	506	22	43	11	50	43	0·9	7	..	..	..	7·0	58	..	..	..	..	0·0	0
25	0·0	0	312	14	20	14	25	13	0·0	0	..	..	..	0·0	0	..	..	..	..	3·1	26
26	3·4	29	789	36	54	11	35	54	0·9	8	..	..	..	0·1	1	..	..	..	..	1·0	8
27	4·8	40	1047	48	62	12	5	62	4·7	40	50	30	Clear	0·2	2	..	..	..	..	0·0	0
28	2·5	21	637	30	35	13	15	22	4·9	42	24	14	Hazy	7·8	66	..	..	..	..	2·9	25
29	3·3	28	687	32	48	11	50	48	3·7	32	43	25	Hazy	1·9	16	..	..	..	..	2·7	23
30	2·8	24	809	39	41	13	5	40	3·3	28	17	10	Thro' Ci.	1·0	9	..	..	..	..	2·2	19
Means	3·28	26	792	32	49	—		40	3·45	28	—	—	—	3·27	26	—	—	—	—	3·12	25
Normals	4·23	34	909	36	—	—		—	4·83	39	—	—	—	4·30	34	—	—	—	—	4·43	36
	←35 years→		←8 years→						←35 years→					←5 years→						←35 years→	

2. METEOROLOGY AND MAGNETISM:—CAHIRCIVEEN (VALENCIA OBSERVATORY).—Lat. 51° 56′ N. Long. 10° 15′ W.

Heights above M.S.L.:—H=9·1 m. H_b=13·7 m. H_a=26·4 m. Above Ground: h_t=1·3 m. h_r=0·56 m. h_s=12·8 m. h_a=13·9 m.

Day.	Air Pressure at Station Level. 9 h.	21 h.	Air Temperature in Degrees Absolute. 9 h.	21 h.	Max. 0 h. to 24 h.	Min. 0 h. to 24 h.	Humidity. Vapour Pressure. 9 h.	21 h.	Percentage 9 h.	21 h.	Wind—Veer from North in degrees and Speed in metres per second. 9 h. °	m/s.	21 h. °	m/s.	Cloud Amount (0–10) and Weather. 9 h.	21 h.	Rain 0 h. to 24 h.	Min. Temp. on Grass. 18 h. to 9h.	REMARKS.	Magnetism. Horizontal Force, Declination West, and Inclination.
	mb.	mb.	a 200+	a 200+	a 200+	a 200+	millibar.		%	%	°	m/s.	°	m/s.	Tenths of Sky covered.		mm.	a 200+		
1	1025·9	1023·2	87·1	87·9	88·9	85.2	11·8	16·1	74	96	315	3	245	9	10	10	11·8	80	o *a*. ● *p*. o d *n*.	
2	1017·7	1015·1	88·0	88·0	88·9	87.4	15·7	16·6	93	98	230	7	280	5	10 ●⁰	10	5·1	86	●⁰ to p day. o *n*.	
3	1018·2	1014·7	87·0	88·7	89·5	85·9	12·4	17·4	78	98	340	3	230	6	10	10 ●⁰	1.5	84	Fair day. ●⁰ to d *n*.	
4	1016·7	1019·5	87·2	87·5	88·9	87·1	14·9	15·6	93	95	305	7	200	2	8	10 ●⁰	0·5	86	Fair day. d *n*.	
5	1020·0	1020·4	88·7	88·5	90·4	88·2	17·0	15·9	96	91	250	9	245	5	10	10	0·9	87	d⁰, at first. o to c day.	
6	1020·0	1021·3	88·4	88·2	89·4	88·0	17·1	16·4	99	96	255	5	215	2	10	10	0·8	88	o d⁰. Damp day.	
7	1021·2	1020·5	89·3	88·5	91·1	87·5	17·3	16·8	94	96	260	4	250	2	8	10 ●⁰	0·9	87	d⁰ early. c *a*, o d *p*.	
8	1019·1	1017·1	88·4	88·5	*x*91·5	87.0	17·0	16·6	98	95	—	0	190	3	10 p	8	0·3	86	o all day. Fair, *n*.	
9	1014·2	1019·9	88·2	85·5	88·5	85·2	14·6	10·6	85	73	180	6	305	2	10	2	7·7	86	c early. ● *a*. Fair to fine later.	9 17833γ 19° 19′·1
10	1023·7	1023·2	85·5	86·0	89·0	82·1	11·9	12·6	83	85	—	0	180	5	10	10	—	79	Fine early. Fair day.	10 68° 4′·2
11	1018·3	1017·3	88·3	88·0	90·7	86·4	14·5	15·0	84	89	175	8	175	7	10	9	—	84	o at first. Fair, day. o *n*.	
12	1013·6	1014·4	88·3	87·5	89·5	86·5	14·0	15·2	81	93	170	9	220	2	9	8	0·2	87	o day. Fair *n*.	
13	1018·9	1019·9	87·0	86·0	89·2	85·8	12·5	12·9	79	87	255	4	195	3	8	10	0·3	82	p *a*. Fair *p*. o *n*.	
14	1011·0	1011·6	89·3	86·3	90·5	85·7	17·3	13·2	94	87	195	9	—	1	10 ●⁰	10	2·9	85	p *a*, o to c day.	
15	1012·0	1010·7	86·3	83·8	88·0	83.7	11·8	11·2	78	87	265	6	—	1	6	8	3·3	80	Fine early. Fair day.	
16	999·4	997·3	83·5	83·1	86·4	82·8	11·6	11·1	92	90	155	3	245	6	10	6	*x*18·2	80	p² to ● *a*. Fair *p*, p *n*.	
17	996·1	994·9	84·6	82·9	86·9	82·0	11·2	10·6	83	88	200	3	215	3	9 p	5	8·8	80	p at first. Fair day.	
18	995·3	1002·5	84·0	84·8	87·0	81·2	11·1	10·7	85	78	350	5	320	5	4	4	11·4	78	●, p to fair day.	
19	1005·6	1011·7	82·9	82·9	86·0	81·2	10·3	9·8	85	81	—	0	—	1	4	2	0·6	78	Fair to fine day.	
20	1018·0	1020·0	83·4	85·0	86·5	78·0	10·9	10·4	87	75	—	1	340	10	8	7	1·9	74	☌ early. Fine day.	20 68° 6′·9
21	1023·7	1026·1	83·4	82·5	86·6	79·6	8·4	9·1	67	77	15	5	60	2	2	5	0·1	77	Fine at first. Fair day. ☐ *n*,	21 17846γ 19° 17′·1
22	1027·1	1025·8	80·2	80·5	86·0	*n*75·7	9·1	9·0	90	87	—	0	35	2	8 ∞	1	—	*n*73	Fine ⌙ *a*. Fair to fine day ⩊ *n*.	
23	1023·5	1022·4	85·2	85·7	87·4	79·0	12·0	12·8	85	88	160	4	165	6	10	10	—	75	Fine ☍ *a*, c to o day.	
24	1019·7	1017·6	86·6	87·9	88.0	85·3	13·6	16·3	88	97	160	8	185	4	10	10	3·6	83	●⁰ to d day,	22 17830γ 19° 20′·5
25	1016·4	1016·1	88·1	87·3	90·4	86·6	16·0	15·5	94	96	180	5	210	3	9	10	0·8	86	o to c day. ●⁰ *n*.	68° 4′·8
26	1016·1	1013·6	88·3	88·1	90·1	86·5	16·5	15·6	96	92	180	7	180	9	10	9	0·1	85	Dull day.	
27	1012·0	1015·2	87·9	88·0	88·5	87·8	15·8	16·2	94	96	180	9	175	6	10 ●	10 ●⁰	12·5	87	p *a*. ● *p and n*.	
28	1012·7	1007·8	87·9	88·0	89·1	86·9	12·7	12·8	76	76	150	10	145	13	10 ∞	5 ∞	—	86	o *a*. Fair ∞ *p*.	
29	1004·6	998·9	89·1	89·5	91·0	85·3	14·5	16·8	80	90	140	13	145	11	9 ∞	10 ●	16·6	86	Fair ∞ day. ● *n*.	
30	1001·0	1001·5	84·2	83·5	87·1	82·3	12·0	11·5	91	91	—	1	155	3	10	8 p	13·8	82	● early, o *a*. Fine *p*. p *n*.	
Means	1014·7	1014·7	86·5	86·3	88·7	84·4	13·5	13·7	87	89	— 5·0		— 4·5		8·7	7·9	124·6	82·6	Monthly Totals or Means.	17836γ 19° 18′·9
Normals	1014·3	1014·5	86·6	86·2	89·6	83·8	13·4	13·2	85	86	— 4·7		— 4·3		—	—	113·3	—	Normals.	68° 5′·3
	←45 years→						←30 years→				←35 years→						45 years			

* By Campbell-Stokes Sunshine Recorder.

x denotes the maximum and *n* the minimum value in the column.

(4267) Wt.109/612/773 400 9/21 Harrow G.69/7

3. METEOROLOGY:—RICHMOND, SURREY (KEW OBSERVATORY).—Lat. 51° 28′ N. Long. 0° 19′ W.

Heights above Mean Sea Level:—Rain-gauge Site, H=5·5 m. Barometer, H_b=10·4 m. Cups of Anemometer, H_a=25 m.
Heights above Ground:—Thermometers, h_t=3·0 m. Rain-gauge, h_r=0·53 m. Sunshine Recorder, h_s=13·3 m. Cups of Anemometer, h_a=20 m.

Day.	Air Pressure at Station Level.		Air Temperature in Degrees Absolute.				Humidity.				Wind—Veer from North in degrees and Speed in metres per second.				Cloud Amount and Weather.		Rain 0 h. to 24 h.	Min. Temp. on Grass.	Remarks.
					Max.	Min.	Vapour Pressure.		Percentage.										
	9 h.	21 h.	9 h.	21 h.	0 h. to 24 h.		9 h.	21 h.	9 h.	21 h.	9 h.		21 h.		9 h.	21 h.		18 h. to 9 h.	
	mb.	mb.	*a* 200+	*a* 200+	*a* 200+	*a* 200+	millibar.		%	%	° m/s.		° m/s.		Tenths of Sky covered.		mm.	*a* 200+	
1	1020·1	1020·5	87·0	86·9	90·0	84·3	12·4	12·4	78	79	— 1		315 2		9≡⁰	10	0·2	82	≡⁰. Fine to dull. ●⁰ *p*.
2	1019·9	1014·6	86·2	86·7	88·7	82·0	11·8	13·8	78	89	280 3		240 4		10	10●⁰	1·2	79	☂. Overcast. ● *p*.
3	1014·1	1014·9	88·7	90·8	94·7	86·1	16·5	17·6	93	87	— 1		— 1		10☂	5	—	85	≡⁰, ☂. Dull to fine. ⊕ 17 h. 30 m.
4	1011·8	1014·8	89·2	88·0	93·1	85·0	15·2	11·3	83	67	230 4		300 3		10	3	1·6	86	● early. Dull to 17 h.; finer later.
5	1015·8	1013·9	86·9	90·9	92·9	82·9	13·4	17·3	85	85	245 4		260 4		10	9	0·1	79	☂, ●⁰ 8 h.–9 h. Dull.
6	1014·7	1017·3	90·9	88·5	94·8	85·0	15·6	11·0	77	63	270 4		330 2		10	5	—	86	Overcast *a*; finer *p*.
7	1020·9	1021·3	87·4	86·0	90·4	82·7	12·2	13·1	75	88	335 2		— 1		10☂	9	—	76	≡⁰, ☂. Overcast to 13 h.; cloudy later.
8	1021·3	1020·0	88·2	88·8	92·2	85·4	14·7	16·0	86	90	— 1		— 0		7≡⁰	10	—	80	≡⁰, ☂. Fine to dull. ∞
9	1018·6	1015·9	89·4	87·7	93·7	85·7	13·3	13·6	72	82	— 1		220 2		3☂	10	—	83	≡⁰, ☂. Fine to cloudy. ∞
10	1022·0	1027·0	86·5	82·9	90·1	80·4	10·2	10·9	66	90	320 4		— 0		2	0☂	—	78	☂. Fine to fair. ⊕ *p*.
11	1026·7	1023·5	85·3	83·0	92·1	78·0	11·9	11·0	84	90	— 1		— 1		4≡⁰	0	—	74	≡, ☂. Fine to overcast. ⊕ *a* & *p*.
12	1021·4	1017·9	84·8	84·7	*x*95·1	77·8	11·4	12·3	83	90	— 1		— 0		8≡⁰	0≡⁰	—	74	≡⁰, ☂. Fine after 9 h.
13	1016·2	1017·3	85·0	87·8	91·8	*n*77·2	11·8	14·3	85	86	— 0		300 2		4☂	1≡⁰	—	*n*74	≡, ☂. Fine to overcast. ∞
14	1019·7	1016·8	85·5	87·5	91·9	82·0	12·8	13·4	89	82	— 1		210 3		10≡⁰	10●	0·2	77	≡⁰, ☂. Dull to fine. Showers.
15	1012·1	1011·6	88·1	88·8	91·1	86·8	15·8	16·2	93	91	190 6		— 0		10●	10	4·6	85	● 3 h. 30 m.–10 h. Dull.
16	1004·5	1002·3	85·1	85·9	90·1	85·0	13·7	12·4	98	84	— 1		200 6		10●	1	*x*17·4	85	● 4 h.–10 h. 30 m. ≡. Dull to fine.
17	1005·3	1003·4	87·0	88·1	90·5	82·9	11·3	12·4	71	73	200 6		200 7		9	0	2·1	79	☂. Fine to dull. Showers.
18	997·6	994·5	86·8	85·0	88·8	83·7	13·9	11·0	89	79	210 3		195 6		10●	0	9·4	84	● *a*. Dull to fair.
19	1004·5	1010·7	85·0	82·9	89·5	80·0	10·2	10·9	73	90	235 5		— 1		2	2☂	—	76	☂. Fine. ☂ *n*.
20	1014·1	1014·0	84·4	84·0	89·1	78·4	9·8	9·4	73	72	270 3		360 2		5☂	10	—	75	≡⁰, ☂. Fine.
21	1015·0	1017·8	82·0	83·9	85·1	81·5	10·6	11·7	93	91	360 3		15 3		10●	2	14·9	78	Dull and wet. ↖ 18 h.
22	1019·8	1022·5	86·3	85·9	89·1	84·0	12·7	12·2	84	83	360 5		20 2		10	10	1·2	79	●. Dull *a*—finer ∞⁰ *p*.
23	1024·8	1025·1	85·9	87·0	90·6	83·1	12·7	14·4	86	91	20 2		80 2		6≡⁰	10≡⁰	—	78	≡⁰, ☂. Overcast to fine.
24	1023·6	1019·7	86·8	87·2	89·6	84·7	13·6	13·0	87	81	30 3		15 3		10☂	9	—	82	≡⁰, ☂. Dull to cloudy. ∞⁰.
25	1018·4	1020·1	86·0	85·0	88·6	84·0	12·8	13·8	86	99	345 2		— 1		10	9≡⁰	—	81	Dull. ∞⁰ *p*. ≡⁰ *n*.
26	1022·4	1021·7	86·6	86·2	90·8	83·0	13·9	14·2	90	94	310 2		— 1		10≡⁰	0	—	82	≡⁰, ☂. Cloudy to dull. ≡⁰ *n*.
27	1021·9	1022·5	85·9	85·1	92·2	80·7	13·4	13·7	91	98	— 1		— 1		10≡⁰	0	0·1	78	≡, ☂. Dull *a*, fine *p*. ≡⁰ *n*.
28	1023·8	1022·2	84·0	86·8	91·4	81·4	12·5	13·9	96	89	— 0		70 5		10≡	8≡⁰	0·1	79	≡⁰, ☂. ≡ 9 h. Dull to fine. ≡⁰ *n*.
29	1019·8	1015·5	88·6	86·6	91·6	86·0	14·7	14·2	84	92	80 4		70 4		5≡⁰	9☂	—	81	≡⁰, ☂. Fine after 9 h. ≡⁰ *n*.
30	1010·9	1005·9	86·9	87·5	92·6	85·7	14·0	15·4	89	94	70 3		— 0		1☂	8●	9·1	82	≡⁰, ☂. Fine to dull. ⊕ *p*. ● *n*.
Means	1016·7	1016·2	86·5	86·5	91·1	82·8	13·0	13·2	84	86	7·7		2·2		7·8	5·7	62·2	79·9	Monthly Totals or Means.
Normal	1016·0	1015·8	86·8	86·1	91·2	82·7	12·5	12·7	80	83	3·1		2·3		—	—	51·0 (45 years)	—	Normals.
	45 years.						30 years.				35 years.								

4. METEOROLOGY:—ESKDALEMUIR, DUMFRIESSHIRE.—Lat. 55° 19′ N. Long. 3° 12′ W.

Heights above Mean Sea Level:—Rain-gauge Site, H=242 m. Barometer, H_b=237·3 m. Vane of Anemometer, H_a=250 m.
Heights above Ground:—Thermometers, h_t=0·9 m. Rain-gauge, h_r=0·38 m. Sunshine Recorder, h_s=1·5 m. Vane of Anemometer, h_a=15 m.

																			Remarks.
1	991·7	992·4	81·0	82·8	88·1	76·7	10·6	9·7	99	80	— 0		— 0		10●	7	6·1	74	Valley≡☂ 1 h.: g 6h: ●≡⁰ to o *a*: o to c *p* and *n*.
2	987·6	982·7	82·0	85·5	86·4	78·3	10·9	13·9	96	96	— 1		— 1		10●⁰	10●⁰	7·9	76	c early: ●⁰≡⁰ 7 h.–21 h. then ≡⁝.
3	986·0	984·6	85·9	82·3	88·9	82·0	11·3	10·0	77	86	310 2		220 3		8	10	0·6	83	v 7 h.: c to o ⊕ *a*: o *p*: ● after 23 h.
4	976·4	983·9	85·6	82·0	87·3	81·6	11·3	8·7	78	76	270 9		290 6		6q	5	3·7	80	●≡⁰ till 7 h. then bcq: ⸗ 14 h.
5	983·5	983·0	82·4	85·2	87·0	80·6	10·5	12·3	89	87	200 3		260 2		10●⁰	9	2·4	78	c early: d≡⁰ *a* and *p*: o *n*.
6	983·7	988·1	87·0	83·0	88·0	81·0	13·3	10·0	84	82	260 5		— 2		10●⁰	0	—	83	o d⁰ *a*: o to bc *p*: b *n*.
7	991·4	992·4	85·3	83·5	85·8	76·5	10·5	11·4	74	90	300 4		— 1		9	10	—	73	b ☂ early: c ⊕ till 9 h. then o all day.
8	990·6	990·4	84·8	83·0	90·0	80·1	13·3	11·2	97	92	200 4		220 4		10●⁰	2	1·2	83	o early: d≡⁰ 5 h.–9 h: c *a*: bc *p*: ☿ 22 h.
9	988·5	984·6	84·1	82·3	87·2	80·9	12·7	10·1	97	87	190 2		290 3		10●⁰	10●	7·3	76	d⁰≡⁰ 6 h.–9 h.: ≡⁝⁰ *a*: ≡⁰ *p*: ●≡⁰ *n*.
10	988·6	995·4	84·0	82·3	88·0	80·5	9·6	9·1	74	78	270 11		270 5		7	5	0·7	77	cp till 15 h. then o to c: ☿ 22 h.
11	994·4	992·5	84·5	84·7	85·3	81·0	11·0	12·7	82	93	210 7		200 7		10	10●	3·4	79	o till 12 h.: d≡⁰ till 16 h.: d²≡⁰ after 19 h.
12	990·2	987·1	85·1	85·4	88·3	84·6	13·2	12·4	94	87	200 7		200 2		10≡⁰	10≡⁰	1·3	84	d≡⁰ till 6 h.: o≡⁰ *a*: c *p*: o≡⁰ *n*.
13	986·6	990·7	86·0	81·7	89·8	76·9	12·0	9·3	81	83	— 1		— 0		9	0☂	0·2	81	d⁰≡⁰ 5 h.: o to bc *a*: byv *p*: b ☂ *n*.
14	989·2	980·4	81·0	86·1	86·6	74·0	10·3	15·0	97	100	— 0		200 6		10≡⁝⁰	10●	*x*12·3	71	b☂² 1 h.: valley≡⁝ till 10 h.: ●≡⁰ 12h.-22h.
15	980·4	982·0	83·7	78·2	87·0	74·9	10·0	8·5	78	97	290 4		— 1		9	1☂	1·7	79	op⁰ *a*: c *p*: p² 19 h. then b ☂.
16	978·2	969·8	81·6	81·1	85·2	74·1	10·0	9·8	90	91	— 0		50 2		9☂	10	2·7	71	Valley≡⁝: c⊕ *a*: ●⁰ to c *p*: ●≡⁰after 22h.
17	969·3	970·3	81·6	81·3	86·0	80·4	9·2	10·0	83	92	240 7		— 0		9	10	6·2	76	●≡⁰ till 6 h.: o to c *a* & *p*: ●²p 19h.-22h.
18	966·8	966·4	82·9	75·7	86·7	75·0	10·7	6·5	88	87	— 0		— 0		5	1	8·5	76	●² 1 h.–2 h.: bc *a*: outlp *p*: bc *n*.
19	973·3	981·2	81·6	78·3	86·1	75·7	8·1	7·7	73	86	330 4		— 2		8	1	0·5	71	●⁰ early: bc *a* and *p*: b *n*.
20	985·9	986·9	77·5	77·0	82·9	*n*73·5	7·7	7·4	92	91	— 0		10 5		10	9	2·9	*n*70	b ☂ at first: c to o *a*: ● *p*: o to b *n*.
21	993·8	999·3	82·6	78·8	84·9	75·8	8·7	8·1	73	88	40 6		20 5		7	0☂	—	73	cp⁰ *a*: bcq *p*: b ☂ *n*.
22	1000·7	998·6	81·8	76·6	86·3	74·8	8·9	7·1	79	90	40 4		— 1		4	2☂	—	71	☂ early: very fine: ☿ 21 h. [b≡⁝ *n*.
23	997·3	997·0	81·8	83·0	86·6	73·6	10·8	11·0	96	90	170 3		210 4		10≡⁰	6≡⁰	—	*n*70	☿ 1 h.: valley≡⁝ till 9 h.: c to o ∞ *a* & *p*:
24	996·4	993·3	83·5	78·4	88·8	76·3	11·1	8·3	88	93	— 1		— 0		7≡⁰	0≡⁰	—	76	≡⁝ till 9 h.: bc ∞ *a* and *p*: ≡⁝ *n*.
25	991·0	990·4	83·4	85·0	85·3	76·6	11·4	13·8	91	99	200 4		190 4		10≡⁰	10≡⁝	0·6	72	≡⁝ early: o ≡⁰ *a*: d≡ 16 h.–19 h. then ≡⁝.
26	990·7	990·8	86·3	85·7	87·7	84·6	13·8	14·1	91	97	200 6		190 5		9	10d≡	2·9	84	d⁰≡⁰ at first: o *a*: d≡ *p* and *n*.
27	989·8	992·5	85·8	84·5	86·5	84·5	12·7	12·8	87	95	190 11		180 6		10q	10●⁰	2·7	84	d≡ till 1 h.: oq *a* and *p*: d≡⁰ after 18 h.
28	994·8	994·2	86·5	82·4	*x*91·1	82·0	13·2	10·7	86	91	— 1		— 0		2≡⁰	0≡⁰	1·0	84	d≡⁰ till 4 h.: o ≡⁰ till 8 h. then b∞⁰: valley ≡⁝ *n*.
29	993·5	989·8	86·3	85·1	86·9	80·8	12·2	11·9	81	85	130 5		90 4		3≡⁰	10≡⁰	—	77	Valley ≡⁝: ☂b till 10 h. then o ≡⁰.
30	984·4	979·8	86·2	83·9	89·1	83·8	13·0	11·7	86	91	120 6		50 5		4≡⁰	10≡⁰	—	83	Mainly o, with ≡⁰ or ∞.
Means	987·2	987·0	83·7	82·2	87·1	78·7	11·1	10·5	86	89	3·8		5·1		8·2	6·3	76·8	77·2	Monthly Totals or Means.
Normal 1911-1915.	989·3	989·2	83·8	82·1	87·5	78·4	10·8	10·3	83	88	4·6		3·4		—	—	67·0	—	Normals.

Temperatures at or below the normal freezing point of water are printed in small type. ***x*** **denotes the maximum, and** ***n*** **the minimum, value in the column.**

5. GEOPHYSICS :—RICHMOND (KEW OBSERVATORY).

Day.	Earth Temperature at 9 h. 0.3 m.	Earth Temperature at 9 h. 1·2 m.	Height above M.S.L. of Surface of Underground Water. Daily Mean.	Height above M.S.L. of Surface of Underground Water. Extremes.	Terrestrial Magnetic Force. Horizontal Comp't. Mean Time.	Horizontal Comp't.	Declination. Mean Time.	Declination. West.	Inclination. Mean Time.	Inclination.	Magnetic Character of Day.	Electric Character of Day.	Charge per cc. × 10^{16}. +. About 15 h.	Charge per cc. × 10^{16}. −. About 15 h.	Air-Earth Current. × 10^{16}. About 15 h.	Potential Gradient, Volts per metre. Factor 2·15. 3 h.	9 h.	15 h.	21 h.
	a 200+	*a* 200+	cm.	cm.	h m	γ	h m	° ′	h m	° ′			Coulomb.		Amp/cm².	v/m	v/m	v/m	v/m
1	86·8	87·1	213	..	..	..	..	..	..	..	1	1	..	..	..	145	170	40	225
2	86·9	87·0	215	..	..	..	..	..	..	..	1	1	..	..	..	170	250	130	55
3	87·1	87·0	217	..	11 13	18368	14 27	14 40·3	14 44	67 0·5	2	0	0·53	..	1·05	25	..	160	120
4	88·3	87·0	217	..	..	..	..	..	..	..	2	1	..	..	..	40	105	130	225
5	87·5	86·9	216	..	..	..	..	..	..	..	1	1	..	..	..	160	160	25	90
6	88·1	87·0	214	..	..	..	..	..	..	..	0	0	..	0·44	0·70	105	160	170	195
7	87·8	87·0	212	..	..	..	..	..	..	..	1	0	0·46	..	0·95	160	265	160	225
8	87·9	87·0	211	..	..	..	..	..	..	..	2	0	..	0·06	0·95	105	235	160	265
9	88·1	87·0	210	..	..	..	..	..	..	..	2	0	0·39	..	0·90	185	265	145	170
10	88·2	87·0	209	..	..	..	..	..	..	..	1	0	..	0·42	1·45	160	265	210	185
11	87·1	87·1	207	..	..	..	..	..	..	..	1	0	..	..	..	340	355	185	355
12	86·8	87·1	206	..	..	..	..	..	..	..	0	1	..	..	..	130	410	160	315
13	86·7	87·0	206	..	11 6	18400	14 45	14 33·9	14 46	66 56·1	1	1	0·78	..	0·70	300	420	195	185
14	86·8	87·0	206	..	..	..	..	..	..	..	1	1	..	0·45	0·65	105	185	160	250
15	87·3	86·9	209	..	..	..	..	..	..	..	1	1	..	..	..	120	−80	105	210
16	87·5	86·9	214	..	..	..	..	..	..	..	1	1	0·60	..	0·85	120	z+	210	225
17	86·9	86·9	217	..	10 46	18388	14 33	14 33·9	..	..	1	1	..	0·84	1·05	160	185	170	250
18	87·0	86·9	218	219	..	..	..	..	..	..	1	1	..	..	..	90	120	370	315
19	86·3	86·9	218	..	..	..	..	..	..	..	1	0	..	..	..	185	290	170	250
20	85·8	86·9	216	..	..	..	..	..	..	..	0	0	0·73	..	1·40	160	525	210	210
21	85·9	86·8	215	..	..	..	..	..	..	..	0	2	..	..	..	160	−250	105	525
22	85·4	86·6	213	..	..	..	..	..	..	..	2	1	..	0·45	0·50	65	330	525	445
23	85·9	86·6	210	..	10 45	18369	14 29	14 29·8	14 54	66 58·3	1	0	0·40	..	0·80	275	370	460	235
24	86·2	86·4	208	..	..	..	..	..	..	..	0	0	..	0·19	1·55	250	380	420	395
25	86·4	86·4	207	..	..	..	..	..	..	..	0	0	..	..	..	185	225	185	250
26	86·2	86·3	206	..	..	..	..	..	..	..	0	0	..	..	..	195	210	275	300
27	86·0	86·3	205	..	..	..	..	..	..	..	1	0	0·60	..	0·80	290	290	225	300
28	86·2	86·3	204	..	..	..	..	..	14 41	67 0·9	2	0	0·42	..	1·50	395	210	275	265
29	86·6	86·3	203	203	..	..	..	..	..	..	2	0	..	0·25	0·50	170	235	275	275
30	86·9	86·3	204	..	11 0	18350	14 33	14 32·0	14 36	66 59·9	1	1	0·69	..	1·10	145	300	235	−25
M.	86·9	86·8	211	—	—	—	—	—	—	—	1·00	0·50	0·56	0·39	0·97	177†	235†	210†	248†
	87·2	87·3	— 12 years. —																

† Mean for 28 days.

6. GEOPHYSICS :—ESKDALEMUIR, DUMFRIESSHIRE.

Day.	Terrestrial Magnetic Force. North Component. Maximum 15000 γ +. h m	γ	Minimum. 15000 γ +. γ	h m	Range. γ	West Component. Maximum. 4000 γ +. h m	γ	Minimum. 4000 γ +. γ	h m	Range. γ	Vertical Component. Maximum. 44000 γ +. h m	γ	Minimum. 44000 γ +. γ	h m	Range. γ	Magnetic Character of Day.	Electric Character of Day.	Potential Gradient, Volts per metre. Factor 6·04. 3 h. v/m	9 h. v/m	15 h. v/m	21 h. v/m
1	21 22	1043	916	11 34	127	12 43	890	780	23 35	110	18 36	1075	1028	24 0	47	1	*	*	*	215	255
2	22 2	1057	964	10 20	93	12 46	858	782	22 55	76	17 50	1070	1019	0 35	51	0	1 *b*	155	285	70	245
3	19 34	*x*>1160	889	19 5	>271	14 38	*x*893	713	19 53	180	15 24	1121	983	24 0	138	2	1 *a*	135	135	245	310
4	19 36	1080	901	12 40	179	14 16	872	723	2 2	149	17 34	1141	965	0 30	176	1	1 *b*	145	120	120	210
5	20 4	1027	943	1 51	84	22 43	845	787	19 56	58	19 56	1077	1028	2 20	49	0	1 *a*	145	110	70	255
6	0 9	1017	954	13 32	63	14 24	841	787	8 27	54	18 30	1074	1041	0 11	33	0	0 *a*	105	145	155	385
7	22 14	1051	955	11 54 / 12 3	96	21 38	878	797	7 39 / 8 42	81	8 10	1073	1032	22 15	41	1	0 *a*	240	110	160	295
8	22 12	1061	887	23 44	174	13 48	891	723	23 41	168	19 30	1092	948	2 57	144	1	1 *a*	40	285	205	430
9	20 0	1037	831	2 38	206	13 42	871	753	1 0	118	16 20	1111	926	2 54	185	1	2 *c*	210	105	220	*z* ±
10	23 57	1036	929	22 41	107	0 18	877	766	22 10	111	19 10	1096	1025	22 38	71	1	1 *b*	180	100	140	150
11	21 0	1081	956	15 38	125	12 40	865	787	20 55	78	15 57	1101	1046	0 11	55	1	1 *a*	130	130	125	215
12	21 35	1027	963	10 32	64	12 20	845	797	8 30	48	2 10	1076	1060	12 50	16	0	1 *a*	260	350	220	285
13	16 30	1055	974	10 8	81	13 31	861	789	20 48	72	16 47	1110	1054	12 25	56	0	0 *a*	140	245	215	335
14	22 46	1067	968	11 8	99	13 42	857	767	22 42	90	17 0	1086	1057	24 0	29	1	1 *a*	215	185	150	235
15	17 18	1039	939	13 4 / 13 13	100	12 46	878	786	3 58	92	18 24	1112	1037	4 40	75	1	1 *b*	330	260	245	620
16	22 30	1033	954	23 45	79	13 48	855	745	22 6	110	16 38	1089	1011	24 0	78	1	2 *b*	185	215	10	435
17	23 48	1033	948	11 51	85	12 39	878	755	0 8	123	16 30	1114	981	0 42	133	1	2 *c*	65	140	185	*z* −
18	23 39	1036	939	11 20	97	12 53	846	787	15 40	59	16 0	1103	1055	0 1	48	0	2 *c*	−500	365	*z*+	220
19	0 1	1018	959	10 38	59	13 56	847	772	23 20	75	16 51	1090	1057	0 22	33	0	1 *b*	75	170	160	485
20	23 41	1019	959	12 25	60	14 8 / 14 45	847	803	2 48	44	17 10	1092	1065	4 15 / 0 12	27	0	2 *b*	195	305	−100	80
21	0 1	1014	962	12 16	52	13 10	851	799	23 12	52	19 30	1088	1068	13 3	20	0	1 *b*	170	105	160	185
22	17 35	1043	807	22 2	236	11 51	870	632	23 30	238	19 53	1140	894	22 4	246	2	0 *a*	70	145	185	340
23	0 25	1080	912	0 1	168	13 2	842	747	0 55	95	24 0	1088	921	0 1	167	1	0 *a*	410	130	285	‡‡
24	17 33 / 18 18	1005	959	12 23	*n*46	13 8	856	788	6 53	68	17 20	1089	1070	11 46	19	0	0 *a*	‡‡	410	220	475
25	22 50	1023	974	12 3	49	14 0	835	797	9 1	*n*38	0 52	1081	1073	14 25	*n*8	0	0 *a*	580	430	385	585
26	21 24	1038	973	10 11	65	14 34	846	795	9 48	51	8 30	1081	1068	12 25	13	0	0 *a*	190	260	435	460
27	23 5	1090	968	13 32	122	12 48	851	744	24 0	107	17 50	1096	1036	24 0	60	1	0 *a*	165	320	150	205
28	18 22	1097	*n*< 692	20 8	*x*>405	13 40	881	*n*<529	20 6	*x*>352	17 26	*x*1182	*n*<768	¶	*x*>414	2	0 *a*	180	395	340	320
29	20 32	1019	*n*< 692	2 3	>327	14 6	867	607	1 50	260	20 9	1146	924	4 0	222	2	0 *a*	495	255	170	425
30	20 56	1021	963	11 20	58	21 2	853	733	0 28	120	20 40	1122	1028	2 50	94	1	0 *a*	390	360	210	330
M.	—	†1042	†939	—	†103	—	‡861	‡760	—	‡101	—	‡1097	‡1017	—	‡80	0·73	‡0·76	§205	§226	§176	§326

x denotes the maximum and *n* the minimum value in the column. Potential gradient is reckoned as positive if the potential increases upwards. For indeterminate potential gradient the following notation is used : *z*+ Indeterminate, positive value ; *z*— Indeterminate, negative value ; *z*± Indeterminate in magnitude and sign.

‡ Mean for 29 days. † Mean for 27 days. * Light failed. ‡‡ Faulty insulation. ¶ Between 20 h. 0 m. and 20 h. 20 m. § Mean for 24 days.

7. JERSEY (ST. LOUIS OBSERVATORY).—Lat. 49° 12′ N. Long. 2° 6′ W.

Heights above M.S.L.:—H = 54 m. H_b = 55 m. Above Ground:—h_t = 1·48 m. h_r = 1·72 m. h_a = 8 m.

Day.	Air Pressure at Station Level. 9 h.	14 h.	21 h.	Mean of 3 Readings.	Air Temperature in Degrees Absolute. 9 h.	14 h.	21 h.	Max.	Min.	Mean of 5 Readings.	Min. Temp. on Grass.	Percentage of Humidity. 9 h.	14 h.	21 h.	Mean.	Rain 0 h. to 24 h.	Remarks.
	a	*a*	*a*	*a*	*a*	*a*	*a*	*a*	*a*	*a*	*a*						
	mb.	mb.	mb.	mb.	200+	200+	200+	200+	200+	200+	200+	%	%	%	%	mm.	
1	1016·7	1016·6	1017·0	1016·8	88·8	89·2	87·5	90·6	*n*83·0	87·8	85·3	75	71	72	73	—	≡° 10 h.
2	17·4	15·8	13·4	15·5	88·2	89·0	87·8	89·8	85·4	88·0	80·8	74	79	87	80	0·5	●° 7 h. 30 m. to 16 h. ●² 16 h. 45 m.
3	11·0	11·3	12·8	11·7	88·9	90·9	88·7	89·2	85·4	88·6	84·8	98	86	87	90	4·2	●² early to 9 h. ≡² 9 h. to 10 h. 30 m.
4	11·9	11·7	13·5	12·4	88·1	89·6	88·5	90·2	87·1	88·7	85·8	92	96	93	94	0·2	● 7 h. 30 m. ≡² ●° 8 h. ≡° evening.
5	15·5	15·3	15·7	15·5	88·5	89·8	88·7	90·1	S6·5	88·7	82·0	96	94	91	94	—	≡°; ≡² 11 h. 30 m. for a short time.
6	15·7	14·9	14·9	15·2	88·8	91·9	88·9	92·1	87·9	89·9	86·6	86	72	92	83	—	
7	17·0	16·9	16·8	16·9	89·7	91·3	86·3	91·5	85·4	88·8	80·4	59	58	83	67	—	
8	16·5	14·9	13·9	15·1	88·7	91·8	86·8	92·7	85·4	89·1	79·2	73	62	88	74	—	
9	11·8	10·8	11·8	11·5	89·0	91·3	86·1	92·2	85·2	88·8	80·9	64	57	86	69	—	4 h. Fine weather.
10	17·8	20·0	21·5	19·8	88·1	90·3	85·8	90·6	84·8	87·9	79·7	76	49	71	65	—	
11	20·2	18·8	17·3	18·8	89·8	94·3	88·7	94·8	*n*83·0	90·1	79·9	70	53	73	65	—	4 h.
12	14·6	13·0	11·7	13·1	92·6	95·7	88·9	*x*96·4	86·0	91·9	80·5	53	40	71	55	—	Brilliant 4 h.
13	11·3	12·2	14·2	12·6	88·6	92·3	88·1	93·1	85·1	89·4	*n*78·5	91	65	84	80	—	4 h.
14	16·5	16·2	14·5	15·7	87·6	90·8	87·2	92·1	85·5	88·6	80·9	74	55	75	68	—	4 h.
15	10·5	09·0	07·8	09·1	88·9	91·2	88·8	92·4	87·9	89·8	79·5	84	70	93	82	5·5	●²16 h. continuous.
16	00·2	01·4	01·1	00.9	86·8	90·1	88·3	90·8	84·0	88·0	85.3	96	63	71	77	*x*21·0	●² to 8 h. 30 m. ●° 10 h. 40 m.
17	1003·5	1003·0	1001·5	1002·7	88·4	90·4	88·8	91·4	86·5	89·1	82·0	76	76	85	79	1·3	4 h. ●² 23 h. 15 m.
18	995·6	994·1	996·5	995·4	87·3	87·4	86·4	89·0	86·4	87·3	85·3	94	83	65	81	4·2	●² 8 h. to 14 h.
19	1002·8	1004·4	1005·3	1004·2	87·2	89·9	84·5	90·7	84·2	87·3	80.5	68	57	89	71	4.0	●² 4 h. 45 m.; 7 h; 17 h.
20	05·9	06·2	06·9	06·3	85·0	86·4	85·8	87·6	83·7	85·7	80·7	90	88	79	86	13.8	●² all day.
21	08·5	08·7	10·1	09·1	84·6	86·1	84·0	86·3	83·5	84·9	80·4	89	76	92	86	7·5	↖ 5 h. S and S.W. ↖ 6 h. 55 m. nearer in N.W. ● ² 9 h. and 20 h.
22	13·2	13·3	15·1	13·9	85·8	88·0	85·7	89·1	83·5	86·4	80·4	91	79	83	84	6·2	●² at night and frequently during the
23	17·9	17·7	18·2	17·9	88·0	90·0	87·2	90·6	84·1	88·0	78·9	77	68	86	77	—	Brilliant 4 h. [day.
24	15·2	13·4	13·7	14·1	88·3	88·3	87·9	89·3	87·0	88·2	83.8	86	79	85	83	0.6	● 4 h. to 7 h.
25	13·5	13·9	15·8	14·4	87·7	87·5	86·2	89·0	86·0	87·3	85.4	86	79	94	86	1·2	≡° early.
26	18·1	17·4	17·3	17·6	88·5	89·4	85·5	90·0	85·2	87·5	80·1	89	79	96	88	—	
27	17·0	16·6	17·1	16·9	86·9	87·3	85·9	88·0	84·9	86·6	79·0	93	89	98	93	—	
28	16·9	15·1	13·8	15·3	86·4	90·4	87·4	91·2	85·0	88·1	82.6	92	73	93	86	—	
29	11·1	08·6	07·0	08·9	88·7	93·5	88·0	93·9	85·3	89·9	81·3	81	64	91	79	—	Fine.
30	1003·6	1002·5	1004·1	1003·4	88·0	87·3	86·6	89·0	86·5	87·5	82.7	86	95	78	86	9·2	●° 9 h. p² 10 h. 45 m. ● after noon.
Means	1012·2	1011·8	1012·0	1012·0	88·1	90·0	87·2	90·8	85·3	88·3	81·8	82	72	84	79	79·4	
Normal	1011·4	1011·3	1011·7	1011·5	88·6	90·8	87·7	91·6	85·8	88·8	81·9	?	67	81	?	61·7	
	←27 years→				←27 years→						24 years	←25 years→				27 years	

JERSEY (ST. LOUIS OBSERVATORY).

Day.	Wind Direction and Force (0-12 on the Beaufort Scale). 9 h.	14 h.	21 h.	Mean of Force.	Sunshine* Total.	Per cent. of Possible.	Cloud Amount (tenths of Sky covered), Type of Cloud, and Direction whence coming. Tenths.	Upper. Type.	Direction.	Lower. Type.	Direction.	Tenths.	Upper. Type.	Direction.	Lower. Type.	Direction.	Tenths.	Upper. Type.	Direction.	Lower. Type.	Direction.	Mean Amount.
	9 h.	14 h.	21 h.				9h.	9 h.	9 h.	9 h.	9 h.	14 h.	14 h.	14 h.	14 h.	14 h.	21 h.	21 h.	21 h.	21 h.	21 h.	
	(Dir. 0-12)	(Dir. 0-12)	(Dir. 0-12)		rh.	%																
1	270 2	270 3	315 4	3·0	3·7	27	6	A.-Cu.	W	Cu.	WNW	10	..	..	..	..	6	Ci.	..	..	..	7·3
2	270 2	293 4	225 4	3·3	0·2	1	10	..	..	..	..	10	..	..	..	..	10	..	..	..	..	10.0
3	270 3	270 2	270 3	2·7	0·6	4	10	..	..	≡Nb	..	9	..	..	St.-Cu.	NW	10	..	..	..	..	9·7
4	247 4	247 3	293 4	3·7	0·0	0	10	..	..	≡	..	10	..	..	..	..	8	..	..	..	..	9·3
5	270 5	270 5	247 4	4·7	0·0	0	10	..	..	..	..	10	..	..	..	..	10	..	..	..	..	10·0
6	293 4	270 5	293 4	4·3	2·5	19	10	..	..	..	..	7	..	..	Cu.	W	10	..	..	..	..	9·0
7	360 2	23 3	360 1	2·0	7·8	59	7	..	..	Cu.	NW	3	..	..	..	..	1	A.-Cu.	..	..	..	3·7
8	180 1	45 1	45 3	1·7	4·0	31	10	..	..	..	..	7	..	..	St.-Cu.	NNE	0	..	..	..	..	5·7
9	67 2	337 2	23 1	1·7	12·8	99	0	..	..	..	..	1	..	..	Cu.	NE	1	..	..	..	..	0·7
10	360 4	360 3	45 3	3·3	11·7	91	5	..	..	Cu.	NW	3	Ci.	..	..	..	2	..	..	..	..	3·3
11	157 2	135 2	67 4	2·7	12·7	99	1	..	..	..	..	0	..	..	..	..	0	..	..	..	..	0·3
12	135 1	90 3	337 4	2·7	12·6	99	4	Ci.	SE	..	..	2	Ci	..	..	..	0	..	..	..	..	2·0
13	293 3	315 3	315 3	3·0	7·5	59	4	..	..	..	..	2	A.-Cu	..	..	..	2	..	..	..	..	2·7
14	315 3	247 3	225 2	2·7	8·7	68	3	..	..	..	..	4	A.-Cu.	NNE	Cu.	WSW	2	..	..	..	..	3·0
15	203 5	225 5	203 3	4·3	2·5	20	9	..	..	St.-Cu. Fr.-Nb	SW WSW	10	..	..	St-Cu.	WSW	10	..	..	..	..	9·7
16	67 1	247 4	225 5	3·3	6·1	48	10	..	..	Nb	W	1	..	..	..	..	3	..	..	..	..	4·7
17	225 6	225 6	203 6	6·0	4·1	32	10	..	..	..	..	8	..	..	..	..	10	..	..	..	..	9·3
18	203 6	225 4	270 5	5·0	0·7	5	10	..	..	Nb	SW	10	..	..	Nb.	WSW	4	..	..	..	..	8·0
19	247 3	247 4	67 2	3·0	7·4	60	6	..	..	Cu-Nb, Nb.	W	4	Ci.	W	Cu.-Nb.	W	10	..	..	..	..	6·7
20	360 1	337 4	337 4	3·0	0·8	6	10	..	..	Nb	..	10	..	..	Nb.	SSW	9	..	..	..	..	9·7
21	337 1	315 2	337 3	2·0	0·2	1	10	..	..	Nb	NE	9	A.-Cu.	NNE	..	..	10	..	..	Nb.	..	9·7
22	23 2	90 1	45 2	1·7	2·0	16	10	..	..	St.-Cu.	NE	7	A.-Cu.	NNE	Cu.-Nb.	NNE	6	A.-Cu.	NE	..	..	7·7
23	45 4	360 4	23 3	3·7	11·6	95	2	A.-Cu.	E	Cu.	SE	3	..	..	..	..	10	..	..	..	..	5·0
24	23 4	360 5	360 2	3·7	0·8	6	10	..	..	..	..	10	..	..	..	..	10	..	..	..	..	10·0
25	360 4	337 3	— 0	2·3	1·0	8	9	..	..	St.-Cu. Nb.	NE N	10	A.-Cu.	ENE	Cu.-Nb.	..	10	..	..	..	..	9·7
26	315 1	360 2	315 1	1·3	0·8	7	8	..	..	Cu.-Nb.	N	9	..	..	St.-Cu.	NE	7	A.-Cu.	NW	..	..	8.0
27	135 1	67 2	67 3	2·0	0·1	1	10	..	..	..	..	10	..	..	..	..	0	..	..	..	..	6·7
28	90 3	67 3	67 4	3·3	5·7	48	10	..	..	..	..	8	..	..	St.-Cu.	..	0	..	..	..	..	6·0
29	67 4	135 3	67 3	3·3	11·8	100	0	..	..	..	..	0	..	..	..	..	0	..	..	..	..	0·0
30	90 3	247 4	247 4	3·7	0·2	1	10	..	..	Nb	SSE	10	..	..	Nb.	W	6	A.-Cu.	SW	..	..	8·7
Means	2·9	3·3	3·1	3·1	4·7	37	7·5	—	—	—	—	6·6	—	—	—	—	5·6	—	—	—	—	6·5
Normal	3·3	3·7	3·3	3·4	6·6	53	6·0	—	—	—	—	5·2	—	—	—	—	4·6	—	—	—	—	5·3
	←17 years→				←23 years→		←26 years→															

* For method of estimation see Introduction.

8. WIND COMPONENTS: Metres per second at fixed hours, together with the greatest mean hourly velocity, or the greatest velocity attained in a gust, and the time of its occurrence.

NORTH WALES:—HOLYHEAD.

Height of Head above—Roof 8·8 m., Ground 13·7 m., M.S.L. 19·2 m.
Height of Cups above—Roof 4·6 m., Ground 7·6 m., M.S.L. 15·2 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	h. m.
1	..	1·4	..	0·8	..	8·5	4·9	..	..	2·6	4·5	..	1·9	..	3·4	..	18	6 50
2	3·3	..	2·8	..	4·8	..	2·8	..	5·7	..	4·8	..	1·7	..	4·6	..	16	11 20
3	..	0·5	3·0	..	..	6·2	..	..	..	Calm		..	3·4	..	1·9	..	13	22 40
4	5·7	..	4·8	..	..	..	12·5	..	..	2·1	5·8	..	..	1·3	7·1	..	17	7 40
5	0·8	..	4·5	..	3·4	..	9·1	..	1·4	..	8·1	..	1·6	..	9·4	..	16	22 35
6	3·0	..	8·3	..	..	..	7·2	..	..	1·2	6·8	..	..	1·9	5·3	..	16	0 45
7	..	1·8	4·9	..	..	0·3	2·0	..	4·0	..	1·5	..	4·5	..	0·8	..	8	15 55
8	3·2	..	0·6	..	..	..	3·3	..	..	0·3	2·0	..	4·0	..	1·5	..	10	23 55
9	4·6	..	..	..	4·2	..	0·7	..	4·5	..	2·6	..	..	2·3	6·2	..	17	18 45
10	..	3·4	9·1	..	..	1·4	8·1	..	4·4	..	4·4	..	3·5	..	3·5	..	14	6 35
11	3·4	..	1·9	..	6·5	..	2·4	..	8·8	..	1·5	..	5·1	..	0·9	..	14	13 25
12	4·2	..	0·7	..	6·6	..	..	..	5·1	..	0·9	..	4·5	..	0·8	..	13	12 30
13	3·4	..	1·2	..	..	1·3	7·4	..	..	2·8	4·8	..	..	1·6	..	..	10	8 45
14	2·0	..	..	0·3	..	..	..	6·2	..	..	..	8·9	5·1	..	4·3	..	17	14 55
15	..	1·0	1·7	..	..	4·0	4·0	..	1·7	..	4·6	..	2·1	..	2·5	..	8	13 0
16	..	Calm		..	4·2	..	..	2·4	..	..	..	6·2	3·9	..	6·8	..	14	20 25
17	4·4	..	7·7	..	5·1	..	5·1	..	8·0	..	2·9	..	5·3	..	1·9	..	15	15 0
18	3·3	..	3·3	..	2·3	..	2·3	..	1·5	..	4·0	..	..	1·6	9·1	..	14	19 40
19	..	3·9	10·7	..	..	4·1	7·1	..	..	2·8	3·3	..	..	1·7	2·0	..	14	0 10
20	..	1·5	1·3	..	..	4·8	2·8	..	..	1·9	3·4	..	..	6·2	3·6	..	14	22 40
21	..	10·3	..	1·8	..	6·6	..	7·8	..	8·2	..	4·7	..	5·8	..	6·8	17	9 5
22	..	4·3	..	5·1	..	4·0	..	4·7	..	5·3	..	4·5	..	2·3	..	0·4	10	13 45
23	..	Calm		..	..	Calm		..	2·4	..	0·9	..	1·6	..	0·3	..	6	12 45
24	1·6	..	0·3	..	2·2	..	..	0·8	3·4	..	1·9	..	1·7	..	1·0	..	7	14 10
25	4·5	..	0·8	..	5·5	..	1·0	..	5·8	..	2·1	..	6·1	..	1·1	..	?	?
26	6·2	..	2·3	..	6·2	..	2·3	..	7·0	..	2·6	..	7·0	..	2·6	..	13	11 15
27	6·1	..	1·1	..	6·5	..	2·4	..	7·7	..	2·8	..	6·2	..	2·3	..	15	15 40
28	4·5	..	0·8	..	4·5	..	..	0·8	4·2	..	0·7	..	..	Calm		..	13	12 0
29	2·5	..	..	3·0	3·9	..	..	4·5	3·6	..	..	6·2	2·1	..	..	3·7	11	13 30
30	1·8	..	..	4·9	0·9	..	..	4·8	5·1	..	..	4·3	3·8	..	3·1	..	12	13 50
S+N & W+E	96·6		87·7		108·0		119·4		111·5		111·6		98·2		98·5			
S+N & W−E	40·4		55·9		25·6		55·4		57·1		42·0		52·0		76·7			

SCOTLAND N:—DEERNESS.

Height of Cups above—Roof 1·5 m., Ground 4·9 m., M.S.L. 57·3 m.

Day.	3 h.				9 h.				15 h.				21 h.				Vel. in Max. Hourly Run.	Time of Max.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	hrs.
1	6·0	..	..	3·4	2·9	..	..	1·6	..	2·5	2·1	..	..	Calm		..	6·9	2, 3
2	..	Calm		..	3·1	..	..	3·8	5·5	..	..	4·7	7·7	..	..	4·4	8·9	20, 21
3	..	1·6	9·1	..	..	1·6	9·1	..	..	0·8	4·5	..	6·2	..	..	2·3	12·5	24
4	10·1	..	..	3·7	8·2	..	14·2	..	..	6·9	19·0	..	..	6·0	10·5	..	20·7	14
5	..	2·8	4·8	..	..	5·2	9·1	..	..	4·7	8·2	..	..	1·8	4·9	..	10·5	9
6	..	2·6	4·5	..	..	3·0	2·5	..	..	4·7	5·5	..	..	3·4	1·9	..	8·2	16
7	..	2·3	2·3	..	..	1·5	2·6	..	..	Calm		..	..	Calm		..	3·9	1
8	2·0	..	1·1	..	3·4	..	..	1·9	3·5	..	..	0·6	..	..	2·3	..	6·2	12
9	2·6	..	..	..	8·8	..	..	1·5	..	2·1	2·5	..	..	1·1	..	1·1	8·9	9
10	..	1·9	5·3	..	..	1·8	10·0	..	..	3·5	9·5	..	..	2·4	6·5	..	10·5	16
11	0·5	..	2·6	..	6·1	..	1·1	..	6·5	..	..	1·1	5·3	..	..	1·9	6·6	14, 15
12	4·2	..	..	0·7	5·6	..	..	..	6·2	..	..	..	2·6	..	..	..	6·6	12, 14
13	..	Calm		..	1·5	..	2·6	..	..	1·2	6·8	..	..	Calm		..	7·5	13, 14, 16
14	..	Calm		..	6·2	..	..	3·6	10·2	..	..	5·9	10·1	..	..	3·7	12·8	18
15	..	0·4	2·3	..	..	0·4	2·3	..	..	0·8	2·2	..	..	Calm		..	7·2	1
16	..	Calm		..	1·5	..	1·3	..	2·0	..	..	1·1	..	Calm		..	3·0	13
17	..	Calm		..	..	Calm		..	..	Calm		..	..	Calm		..	Calm	
18	..	..	..	2·3	..	0·6	..	3·2	..	4·8	..	5·7	..	6·5	..	2·4	7·5	15 to 17, 20, 22
19	..	7·1	1·3	..	..	4·0	2·3	..	..	6·5	3·7	..	..	5·1	4·3	..	8·5	17
20	..	4·8	5·7	..	..	2·8	3·3	..	..	3·7	1·3	..	..	1·4	0·8	..	9·8	2
21	..	Calm		..	..	Calm		..	3·0	..	..	..	2·3	..	..	..	3·0	15
22	2·0	..	1·1	..	3·4	..	1·2	..	6·1	..	..	1·1	6·8	..	..	1·2	6·9	12, 19, 20, 24
23	8·1	..	1·4	..	4·2	..	2·4	..	7·0	..	2·6	..	5·1	..	0·9	..	8·5	5
24	7·4	..	1·3	..	6·2	..	..	..	7·5	..	..	..	4·3	..	..	..	8·2	10, 11
25	5·9	..	..	..	5·1	..	..	0·9	4·6	..	..	1·7	2·0	..	0·3	..	8·2	1
26	5·2	..	..	..	..	0·6	3·2	..	4·3	..	..	3·7	5·8	..	..	1·0	7·2	1
27	5·8	..	..	1·0	7·4	..	..	2·7	6·5	..	..	1·1	0·6	..	3·5	..	9·5	8
28	..	Calm		..	1·1	..	..	3·1	3·1	..	..	5·4	5·1	..	..	8·8	12·5	23
29	10·5	..	..	6·0	9·1	..	..	3·4	8·5	..	..	4·9	6·8	..	..	5·8	12·8	5
30	8·5	..	..	7·1	5·4	..	..	9·4	5·5	..	..	9·6	7·4	..	..	8·8	13·1	17
S+N & W+E	102·3		67·0		110·7		102·3		132·2		114·5		105·8		77·3			
S+N & W−E	55·3		18·6		67·7		32·1		47·8		21·3		50·4		−5·5			

ENGLAND S.W.:—SCILLY.

Height of Head above—Ground 9·8 m., M.S.L. 49·7 m.
Height of Cups above—Ground 5·8 m., M.S.L. 45·7 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	h. m.
1	..	2·2	1·9	..	..	4·9	0·9	..	..	5·7	1·0	..	..	4·1	3·5	..		
2	..	0·9	4·9	..	..	2·8	5·1	..	..	1·5	8·7	..	..	1·5	8·7	..		
3	..	4·4	7·6	..	..	3·0	3·5	..	..	3·2	3·8	..	..	1·3	3·6	..		
4	..	1·2	7·0	..	..	3·9	6·8	..	..	4·1	7·2	..	..	5·4	6·4	..		
5	..	1·6	4·3	..	..	2·6	7·0	..	..	3·1	8·6	..	..	2·3	6·3	..		
6	..	2·2	5·9	..	..	1·7	4·7	..	..	2·0	5·5	..	..	3·5	4·1	..		
7	..	1·1	1·3	..	..	Calm		..	..	1·0	1·8	..	..	1·4	2·5	..		
8	No Record				No Record				No Record				No Record					
9	No Record				No Record				..	..	2·9	..	..	4·4	3·8	..		
10	..	4·5	0·8	..	..	2·5	..	0·4	No Record				No Record					
11	3·1	..	..	1·1	3·8	..	..	..	2·5	..	..	2·1	2·1	..	..	2·5		
12	1·5	..	..	1·6	2·1	..	..	3·6	3·6	..	..	1·3	..	0·7	2·0	..		
13	..	0·7	2·0	..	..	5·0	2·9	..	..	3·6	2·1	..	..	Calm		..		
14	..	Calm		..	1·2	..	2·2	..	5·8	..	3·3	..	6·1	..	5·1	..		
15	6·5	..	3·7	..	..	3·2	3·8	..	..	4·1	3·5	..	..	Calm		..		
16	..	Calm		..	2·9	..	2·4	..	..	..	9·6	..	..	..	12·5	..		
17	1·7	..	4·7	..	1·3	..	7·4	..	6·2	..	7·4	..	4·6	..	5·4	..		
18	..	..	4·6	..	1·4	..	8·2	..	..	4·5	12·4	..	..	6·0	10·5	..		
19	..	4·1	4·8	..	..	Calm		..	0·5	..	2·9	..	..	Calm		..		
20	..	1·2	..	2·2	..	5·4	..	4·6	..	5·5	..	2·0	..	4·7	1·7	..		
21	..	4·2	..	..	..	7·1	..	..	..	6·3	..	..	..	4·4	..	3·8		
22	..	5·5	..	3·1	..	5·0	..	2·9	..	6·3	..	2·3	..	4·7	..	1·7		
23	..	Calm		..	..	Calm		..	..	Calm		..	..	Calm		..		
24	..	Calm		..	..	Calm		..	..	Calm		..	..	Calm		..		
25	..	Calm		..	No Record				No Record				*1·0*	..	*1·8*	..		
26	..	Calm		..	2·1	..	..	..	3·1	..	1·1	..	2·5	..	..	..		
27	*2·9*	..	*1·6*	..	4·7	..	..	1·7	2·9	..	1·6	..	*2·6*	..	..	*0·5*		
28	4·1	..	..	0·7	3·3	..	..	1·9	6·1	..	..	5·1	5·7	..	..	6·7		
29	7·0	..	..	6·0	8·0	..	..	6·7	8·0	..	..	9·6	6·7	..	..	8·0		
30	7·6	..	..	4·4	No Record				2·1	..	3·6	..	1·6	..	2·9	..		
S−N & W+E	†68·6		†74·2		§76·9		§76·7		‡91·7		‡109·4		†77·3		†104·0			
S−N & W−E	1·0		36·0		−15·3		33·1		−10·1		64·6		−11·5		57·6			

ENGLAND E.:—SHOEBURYNESS.

Height of Head above—Ground 27·4 m., M.S.L. 31·4 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	h. m.
1	..	2·4	2·4	..	..	2·8	2·4	..	..	Calm		..	..	2·1	2·1	..	8	15 55
2	..	2·4	2·4	..	..	Calm		..	3·1	..	3·8	..	1·0	..	1·8	..	10	12 35
3	..	Calm		..	..	0·7	2·0	..	..	Calm		..	1·2	..	1·4	..	5	9 10
4	1·0	..	2·8	..	1·7	..	4·6	..	1·3	..	3·5	..	..	3·8	3·1	..	11	6 30
5	..	..	3·7	..	0·4	..	2·4	..	2·1	..	3·7	..	..	0·7	4·2	..	14	20 30
6	0·9	..	4·8	..	..	..	4·9	..	..	2·1	3·7	..	..	4·0	2·3	..	13	14 30
7	..	2·1	3·7	..	..	Calm		..	..	Calm		..	..	Calm		..	8	0 5
8	..	Calm		..	..	Calm		..	..	Calm		..	..	Calm		..	4	13 5
9	..	Calm		..	..	Calm		..	..	..	..	5·2	..	Calm		..	7	14 45
10	..	..	4·3	..	..	4·8	2·7	..	..	2·2	2·6	..	..	1·0	2·8	..	10	7 45
11	..	Calm		..	..	Calm		..	3·5	..	1·3	..	1·8	..	0·3	..	7	10 55, 11 10
12	..	Calm		..	..	Calm		..	1·0	..	..	2·8	..	Calm		..	6	16 15
13	..	Calm		..	..	Calm		..	..	Calm		..	..	2·9	1·7	..	5	21 5
14	..	1·5	2·6	..	..	Calm		..	2·3	..	0·8	..	1·7	..	2·9	..	6	23 55
15	4·3	..	4·3	..	6·5	..	5·5	..	7·3	..	6·2	..	4·5	..	2·6	..	14	14 15
16	..	Calm		..	3·0	..	3·0	..	2·1	..	5·7	..	6·6	..	2·4	..	13	19 20
17	3 2	..	5·5	..	3·0	..	3·0	..	7·0	..	5·9	..	8·5	..	4·9	..	16	15 35
18	8·5	..	3·1	..	9·5	..	5·5	..	5·1	..	4·4	..	6·6	..	3·8	..	17	8 35
19	..	..	6·7	..	..	1·1	6·0	..	1·5	..	4·0	..	..	..	2·1	..	17	0 45
20	..	Calm		..	..	Calm		..	0·3	..	..	1·8	1·6	..	..	0·9	5	22 50
21	..	Calm		..	..	5·5	..	..	..	3·4	..	..	..	7·1	..	4·1	13	22 25
22	..	6·1	..	..	..	2·1	..	1·2	..	2·9	..	1·7	..	Calm		..	10	2 20
23	..	Calm		..	..	5·1	0·9	..	..	1·9	..	5·2	..	2·8	..	3·3	7	15 0
24	..	2·9	..	1·7	..	4·0	..	2·3	..	4·9	..	5·8	..	2·7	..	0·5	12	12 50
25	..	1·7	0·6	..	..	2·0	0·7	..	..	1·6	0·9	..	..	Calm		..	6	0 5
26	..	..	2·1	..	..	0·6	1·7	..	..	1·2	1·4	..	..	Calm		..	5	15 10
27	..	Calm		..	..	Calm		..	..	Calm		..	..	Calm		..	5	11 35
28	..	Calm		..	..	Calm		..	..	..	..	3·4	..	1·8	..	4·9	8	22 35
29	..	1·5	..	2·6	..	..	..	5·8	..	..	..	2·4	..	1·2	..	1·4	8	9 40
30	..	Calm		..	..	Calm		..	1·0	..	..	5·7	3·1	..	..	2·6	9	23 15
S+N & W+E	38·5		53·3		52·8		54·6		57·8		81·9		66·7		56·1			
S+N & W−E	−2·7		44·7		−4·6		36·0		17·4		13·9		6·5		20·7			

† 28 days only. ‡ 27 days only. § 26 days only.

9. SEISMOLOGICAL DIARY.

The notation used is explained in the Introduction.

EARTHQUAKES:—ESKDALEMUIR.

Day.	Phase.	Time. G.M.T.	Period.	Amplitudes. A_N.	Amplitudes. A_E.	Amplitudes. A_Z.	△.	Remarks.
		h m s	s	μ	μ	μ	km.	
1		10 42 to	..	..	..	..	..	Faint disturbance. A few long waves of low amplitude and 18 secs. period at 10h. 45m.
		10 52	..	..	..	..	..	
3	L	4 29	..	..	..	..	..	Well marked group of long waves of 19 secs. period from 4h. 37m. to 4h. 46m. Noticeable feature is the steady difference in phase of the waves in N.-S. and E.-W. directions.
	F	4 54	..	..	..	..	..	
4		..	..	..	..	..	..	Moderate disturbance. Time marker out of action.
6		14 12 to	..	..	..	..	..	Slight disturbance. Preliminary phases masked by wind effects.
		14 30	..	..	..	..	..	
6		23 55 to	..	..	..	..	..	Slight disturbance.
		24 31	..	..	..	..	..	
7	O	5 55 47	..	..	..	..	1520	Epicentre, N. Italy. L uncertain.
	P	5 59 3	..	..	..	..	..	
	S	6 1 42	..	..	..	..	..	
	M_N	6 4 26	19	75	..	..	..	
	F	7 18	..	..	..	..	..	
8	P	2 5 24	..	..	..	..	..	P well marked, but S doubtful. Long waves ill-defined and of irregular form.
	S	2 19 1	..	..	..	..	..	
	L	2 30	..	..	..	..	..	
	F	4 40	..	..	..	..	..	
9		..	..	..	..	..	..	Moderate disturbance. Time marker out of action.
14	P	2 17 42	..	..	..	..	..	Slight disturbance.
	L	2 23	..	..	..	..	..	
	F	2 35	..	..	..	..	..	
16	L	15 44 to	..	..	..	..	..	
		16 2	..	..	..	..	..	
18	P(?)	0 3 38	..	..	..	..	..	Faint disturbance
	F	0 28	..	..	..	..	..	
20	O	14 45 23	..	..	..	..	10200	Further details unobtainable owing to faintness of trace and rapidity of motion.
	P	14 58 35	..	..	..	..	..	
	S	15 9 42	..	..	..	..	..	
	L	15 30	..	..	..	..	..	
	F	20	..	..	..	..	..	
20	L	21 12	19	..	..	..	..	
	F	21 30	..	..	..	..	..	
21		0 3 to	..	..	..	..	..	Slight, ill-defined, disturbance.
		0 28	..	..	..	..	..	
21	O	17 42 10	..	..	..	..	8700	
	P	17 54 7	..	..	..	..	..	
	PR^1	17 57 11	..	..	..	..	..	
	S	18 4 3	..	..	..	..	..	
	SR^1	18 9 10	..	..	..	..	..	
	L	18 21½	..	..	..	..	..	
	F	18 40	..	..	..	..	..	
27		6 6 to	..	..	..	..	..	Faint disturbance.
		6 17	..	..	..	..	..	

MICROSEISMS OF N. COMPONENT:—ESKDALEMUIR.

Day.	0 h. A_N.	0 h. T.	6 h. A_N.	6 h. T.	12 h. A_N.	12 h. T.	18 h. A_N.	18 h. T.
	μ	s	μ	s	μ	s	μ	s
1	0·6	4	0·2	6	0·5	5	0·9	4·5
2	0·6	6	0·7	5·5	0·6	5·5	0·7	5
3	0·7	5·5	0·6	5	..	..	..	..
4	..	..	..	..	..	..	..	..
5	..	..	..	..	..	..	..	..
6	..	..	..	..	0·7	4	0·7	4
7	0·5	5	0·8	4	0·7	5·5	1·0	4·5
8	0·9	5	0·8	5	0·6	5	..	..
9	..	..	..	..	..	..	..	..
10	..	..	..	..	..	..	0·2	4·5
11	0·3	4	0·2	4	0·2	5·5	0·4	4·5
12	0·8	5	0·7	5·5	0·7	5	0·8	5·5
13	0·9	5·5	0·8	6·5	..	..	0·8	6
14	0·9	6	0·7	6	0·8	6	0·9	5
15	0·9	5·5	1·0	5	0·8	7	1·2	5·5
16	0·9	5·5	1·2	6	1·0	5·5	0·8	5·5
17	0·8	6	0·5	5	0·3	5	0·6	6
18	0·5	5	0·5	6	0·6	7	0·2	5·5
19	0·3	5	1·0	4	0·5	5·5	0·9	4
20	0·9	4	0·7	4·5	0·9	4·5	..	..
21	0·7	4	0·3	4	0·9	4	..	..
22	0·4	5·5	..	..	0·8	5	..	..
23	0·7	5·5	..	..	..	..	..	..
24	..	..	..	..	..	..	..	..
25	..	..	..	..	..	..	..	..
26	..	..	..	..	..	..	..	..
27	0·8	6	0·7	5·5	0·9	5	..	..
28	0·6	5·5	..	..	0·6	5·5	..	..
29	..	..	..	..	..	..	..	..
30	1·2	6	1·5	5·5	1·6	6	1·6	5·5

Means for Month $\begin{cases} A_N = 0·8\ \mu. \\ T = 5·2\ s. \end{cases}$

Normals for Month, 1911–19 $\begin{cases} A_N = 0·8\ \mu. \\ T = 4·9\ s. \end{cases}$

EARTHQUAKES:—RICHMOND (KEW OBSERVATORY).

Day.	Times, G.M.T. of Commencement.	Times, G.M.T. of Max. Phase.	Remarks.
	h. m.	h. m.	
1	..	10 48	Very small.
4	14 55	15 24	Amplitude on trace 1·2 mm.
6	..	14 12	Very small.
7	5 59	6 2	Amplitude on trace 4·8 mm.
8	2 10	2 30	Succession of small waves to 4h. 11m.
9	..	20 24	Small.
14	..	2 23	Very small.
17, 18	..	..	Instrument out of order.
20	..	7 49	Small. Succession of small waves to 8h. 55m.
20	14 56	16 22	Amplitude on trace 2·4 mm.
20	..	21 19	Very small.
21	..	0 10	Small.
21	..	18 39	Small.
27	..	6 14	Very small.

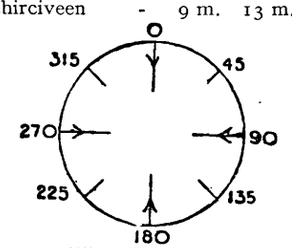
10. SOUNDINGS WITH PILOT BALLOONS.

Day	Time of Start, G.M.T.	Horizontal Velocity of Wind. Geostrophic *		By Anemometer.		At Heights above M.S.L. 500 m.		1000 m.		2000 m.		3000 m.		4000 m.		Cloud Observations. Time, G.M.T.	Type.	Deg. from N.	mr/s	Type.	Deg. from N.	mr/s
	h. m.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	h. m.						
									ABERDEEN.													
8	16 0	230	4	190	4.0	270	7.0	290	6·5	325	6·0	..	..	..	..	..	Fr.-St.	205	..	Ci.	285	..
																..	St.-Cu.	285	..			
																18 0	St.-Cu.	285	6·5	Ci. ; Ci.-St.	285	..
10	16 0	290	13	270	7·0	285	15·0	290	13·5	290	21·0	..	..	..	..	..	Cu.-Nb.	285	10·0	..	..	..
16	12 0	?	?	100	1·5	175	1·5	210	2·5	160	4·5	..	..	..	..	..	A.-St.	180	..	..	..	..
									ESKDALEMUIR.													
1	17 10	315	7	330	6·0	320	7·0	310	7·0	230	1·6	290	5·5	..	..	..	Cu.	250	..	Ci.	315	2·5
3	17 5	?	?	225	3·0	245	4·4	215	3·4	265	10·5	255	10·0	..	..	..	A.-St.	270	..	Ci.-St.	270	2·0
7	7 30	315	8	Calm		305	4·4	290	1·6	300	10·5	..	..	..	..	..	Cu.	..	..	Ci.-St.	310	3·5
																				Ci.-Cu.	310	4·0
10	17 25	270	10	295	6·5	270	5·5	270	16·5	285	11·0	..	..	..	..	..	Cu.	270	..	Ci.-St.	295	5·0
12	16 55	230	12	200	4·8	215	9·5	220	15·0	235	18·5	..	..	..	..	..	St.-Cu.	225	8·5	Ci.	225	5·5
																	A.-Cu.	225	3·0			
13	17 5	330	5	290	4·0	310	6·5	320	6·0	310	7·5	285	8·5	310	9·0	..	..	..	..	Cloud less		
15	7 30	230	4	270	2·5	285	5·0	275	7·5	245	7·0	240	13·0	..	..	..	A.-Cu.	225	3·0	Ci.-St.	..	..
																	A. St.	230	4·5			
17	17 5	195	6	200	4·5	205	8·5	220	8·5	215	10·5	..	..	..	..	..	Cu.	..	..	Ci.	230	4·0
18	8 20	?	?	Calm		200	2·2	210	3·8	235	5·5	..	..	..	..	..	Cu.	210	..	Ci.	210	2·5
18	17 20	?	?	270	2·5	290	5·0	300	3·2	220	4·6	205	7·0	..	..	..	Cu.-Nb.	..	..	A.-Cu.	190	..
20	7 30	310	7	Calm		350	3·0	350	4·8	320	9·5	..	..	..	..	..	A.-St.	..	..	..	..	..
22	7 35	?	?	10	2·0	50	7·0	80	7·5	75	4·6	75	5·5	45	11·0	..	Cu.	..	..	..	..	..
22	11 40	?	?	55	3·5	60	3·1	75	4·3	130	3·3	70	5·0	45	9·0	..	Cu.	..	..	..	..	..
22	16 40	?	?	45	1·8	65	3.5	145	2·3	165	1·6	35	3·2	35	6·3	..	A.-Cu.	..	..	Ci.	..	..
28	11 20	180	8	160	4·0	160	4·7	155	9·0	160	11·5	175	11·0	..	..	..	Cu.	135	..	Ci.	225	1·5
						5000 m.		6000 m.		7000 m.		8000 m.		9000 m.								
22	7 35	(For observations at lower levels, see above.)				35	12·5	..	..	..	..	..	..	..	..	..	Cu.	..	..	..	..	..
22	11 40					45	10·5	30	19·0	20	27·5	..	..	..	..	..	Cu.	..	..	..	..	..
22	16 40					15	7·5	20	16·5	20	21·5	10	22·0	10	29·0	..	A.-Cu.	..	..	Ci.	..	..
									SOUTH FARNBOROUGH.													
9	11 5	?	?	180	2·0	160	2·5	165	3·0	170	6·5	..	..	..	..	..	Cu.; A.-St.	..	..	..	..	..
10	7 0	350	10	300	5·0	335	9·5	330	10·5	320	10·0	285	14·5	280	19·0	..	..	..	..	Ci.; Ci.-St.	..	..
10	10 40	?	?	355	7·5	335	6·5	310	6·0	310	8·0	295	15·5	..	..	..	Fr.-Cu.	..	..	Ci.; Ci.-St.	..	..
10	14 20	?	?	350	6·5	330	3·5	310	4·0	300	7·5	290	14·0	..	..	..	A.-St.	..	..	Ci.-St.	..	..
11	6 35	?	?	115	2·5	180	6·0	225	4·5	270	3·5	275	9·0	280	19·0	..	A.-St.	..	..	Ci.-St.	..	..
11	8 20	?	?	140	2·0	180	7·0	200	5·0	230	4·5	265	9·5	..	..	..	A.-St.	..	..	Ci.; Ci.-St.	..	..
13	6 25	?	?	160	4·5	195	4·5	270	3·5	250	7·5	225	7·0	..	..	...	A.-Cu.	..	..	Ci.-Cu.	..	..
13	13 30	?	?	300	5·0	290	3·0	280	6·5	240	7·5	..	..	..	..	..	St.-Cu.	..	..	A.-St.	..	..
16	13 25	270	8	245	7·0	255	7·0	250	12·5	235	15·5	..	..	..	..	..	Cu.; Fr.-Cu.	..	..	A.-Cu.	..	..
17	6 20	240	14	220	8·0	245	15·0	250	16·5	245	18·0	245	22·0	..	..	..	..	..	..	Ci.-Cu.	..	..
20	6 25	?	?	340	1·5	60	5·0	50	1·0	75	1·5	..	..	..	..	..	A.-Cu.	..	..	Ci.-Cu.	..	..
20	10 50	?	?	20	5·0	10	4·0	60	2·0	350	0·5	155	0·5	240	5·5	..	Fr.-Cu.	..	..	..	..	..
23	13 45	?	?	60	4·0	55	3·0	75	4·5	105	2·0	..	..	..	..	..	Fr.-Cu.; St.	..	..	A.-Cu.; A.-St.	..	..
27	13 25	?	?	280	4·0	285	3·0	305	4·5	280	2·0	240	2·0	335	3·0	..	Cu.	..	..	Ci.	..	..
28	13 30	?	?	140	4·5	110	6·0	115	5·0	100	9·0	..	..	..	..	..	Cu. ; St.	..	..	..	..	..
												5000 m.		6000 m.								
11	6 35	(For observations at lower levels, see above.)										285	22·0	..	..	..	A.-St.	..	..	Ci.-St.	..	..
20	10 50											240	10·0	245	14·5	..	Fr.-Cu.	..	..	..	..	..
									CAHIRCIVEEN.													
10	6 20	?	?	Calm		280	5·5	285	8·5	285	9·5	285	13·0	290	16·0	6 50	Cu.; A.-Cu.	315	..	Ci.-St.; Ci.-Cu.	340	2·0
13	6 30	290	8	300	1·5	310	7·5	305	9·0	285	11·5	..	..	..	..	..	St.; St.-Cu.	315	..	..	..	..
13	16 50	280	5	275	2·3	270	2·4	270	3·6	280	8·0	280	9·5	260	7·5	17 35	A.-Cu.	280	3·5	A.-St.	270	..
15	6 35	270	6	250	2.5	270	6·0	290	7·5	270	9·0	260	16·0	250	17·5	..	Fr.-Cu.	270	..	..	..	..
17	6 35	230	9	225	4·4	235	8·0	245	12·5	235	17·0	240	17·0	240	25·5	6 45	Cu.. Fr.-Cu	225	..	Ci.; Ci.-St.	255	5·0
18	6 45	?	?	355	3·3	345	10·0	350	15·0	345	14·0	340	15·5	..	..	..	St.; Fr.-Cu.	340	..	Ci.-St.	340	..
19	6 40	300	7	50	1·6	335	2·4	300	6·0	290	6·5	290	8·0	275	7·5	6 50	Cu.	315	..	A.-Cu.	290	1·0
20	7 5	350	3	Calm		?	?	340	9.5	5	6·5	350	7·5	..	..	7 45	Cu.; St.-Cu	360	..	Ci.;Ci.-Cu.	360	3·5
21	6 35	10	12	5	4·2	20	7·5	20	10·5	50	5·5	10	15·0	..	..	..	Cu.	20	..	..	..	..
22	6 35	?	?	Calm		105	2·5	115	0·8	360	2·1	35	5·0	..	..	6 50	A.-Cu.	20	3·0	A.-St.	20	..
22	15 40	?	?	285	1·7	335	3·1	210	1·4	315	2·3	355	8·0	10	10·5	17 15	A.-Cu.	25	4·0	..	..	..
		5000 m.		6000 m.		7000 m.		8000 m.		9000 m.		10000 m.		11000 m.								
15	6 35	255	28·0	..	..	..	..	..	..	..	..	..	..	..	..	..	Fr.-Cu.	270	..	..	..	..
19	6 40	265	8·5	320	8·0	320	7·0	330	10·5	325	8·0	305	14·5	285	7·5	6 50	Cu.	315	..	A.-Cu.	290	1·0
22	15 40	10	16·0	5	19·0	360	20·5	360	21·0	..	..	..	..	..	..	17 15	A.-Cu.	25	4·0	..	..	..

(For observations at lower levels, see above.)

Height of Station above M.S.L. = H.
Anemometer above ground = h.

	H.	h.
Aberdeen	14 m.	22 m.
Eskdalemuir	242 m.	15 m.
S. Farnborough	70 m.	31 m.
Cahirciveen	9 m.	13 m.



Wind Protractor.

Notes on Pressure Distribution.

September, 1920.

1st. 18 h. The Azores Anticyclone covering the British Isles.
3rd 18 h. Shallow Low over Iceland ; Anticyclone from the Azores to Germany.
7th. 7 h. The Azores Anticyclone covering the British Isles : Low over the Baltic and over Iceland.
8th. 18 h. } Ridge across England.
9th. 13 h. }
10th. 7 h. 13 h. 18 h. Anticyclone centered S. of Ireland, Shallow Low over the Arctic region.
11th. 7 h. Anticyclone over the British Isles centered over Belgium.
12th. 18 h. } Large depression centered W. of Iceland, high over the Azores and the
13th. 7 h. 13 h. 18 h. } Continent.
15th. 7 h. Deep depression centered over Iceland.
16th. 13 h. }
17th. 7 h. 18 h. } Shallow Low W. of Ireland.
18th. 7 h. }
18th. 18 h. Low centered near the Naze.
19th. 7 h. Deep depression centered near Christiania.
20th. 7 h. 13 h. Deep depression centered near the North Cape, Light gradient over the British Isles.
21st. 7 h. The Azores Anticyclone covering the British Isles.
22nd. 7 h. 13 h. 18 h. } Ridge over the British Isles extending from the Azores to the
23rd. 13 h. } Baltic.
27th. 13 h. }
28th. 13 h. } Anticyclone over the British Isles centered over the Baltic.

Notes on Ascents.

Aberdeen—
8th. 16 h. 0 m. Solar Halo at 18 h.

Eskdalemuir—
7th. 7 h. 30 m. Solar Halo.
10th. 17 h. 25 m. Solar Halo during ascent.
18th. 17 h. 20 m. Atmosphere exceptionally clear.
22nd. 7 h. 35 m. Low ground fog in patches.
22nd. 16 h. 40 m. Sheet of A.-Cu. formed on the North horizon and spread rapidly. At 19 h. more than half covered sky. Nephoscope gave speed as 3·7 mr/s from North.

Cahirciveen—
13th. 6 h. 30 m. Balloon lost behind high Cu.
13th. 16 h. 50 m. Balloon went into A.-Cu.
18th. 6 h. 45 m. Balloon lost behind St.
20th 7 h. 5 m. Balloon lost behind St.-Cu.

11. Nephoscope Observations.

Aberdeen.

Day and Hour. G.M.T.	Type of Cloud.	Velocity-height-ratio. Degrees from N.	Milliradians per Second.	Components. W.–E.	Components. S.–N.	Remarks.
3 13	Ci. ; Ci.-St.	293	3·6	+3·3	−1·4	Ci. to floccular Ci.-St., showing Radiant-pt. in N.W. ⊕ visible.
	Cu.	275	3·5	+3·5	−0·3	Cu. to Fracto-Cu.
4 13	Cu.	295	18·0	+16·0	−7·5	Low type of Cu. to Fr.-Cu. ; very squally.
6 13	St.-Cu.	310	8·0	+6·1	−5·1	Low St.-Cu., some Cu. below it and in contact with it.
8 8	St.-Cu.	265	3·9	+3·9	+0·3	St.-Cu. of high type.
8 13	St.-Cu.	235	4·2	+3·4	+2·4	Do.
	Fr.-St.	207	25·0	+11·0	+22·0	Thin films of St.
8 18	St.-Cu.	285	6·6	+6·4	−1·7	Low St.-Cu., different layer from the one previously measured.
10 11	A.-Cu.	290	3·8	+3·6	−1·3	A.-Cu. forming from False-Ci. sheets.
	Cu.	288	12·5	+11·9	−3·9	Cu. becoming Cu.-Nb. later.
10 13	Cu.-Nb.	278	5·8	+5·8	−0·8	Apical portion measured ; it had form of St.-Cu.
10 16	Cu.	283	10·0	+9·7	−2·2	Central mass of cloud measured.
11 13	Cu.	234	10·8	+8·8	+6·4	Cu. of low type.
13 13	Cu.	282	2·8	+2·7	−0·6	Cu. rapidly formed and massing together.
19 13	Cu.-Nb.	309	6·1	+4·7	−3·8	Cu. to Cu.-Nb.
22 17	Ci.-Cu.	33	5·0	−2·7	−4·6	"Speckle Cloud" becoming Ci.-Cu., which rapidly increased and became A.-Cu.
25 13	A.-Cu.	206	4·0	+1·8	+3·6	A.-Cu. to St.-Cu. in lenticular masses.
26 13	Ci.-Cu.	222	2·3	+1·5	+1·7	Ci. to Ci.-Cu. of "Speckle Cloud" type.
28 13	Fr.-St.	184	22·0	+1·5	+22·0	Small Fr.-St. sheets, dispersing.

Spell of indeterminate St. to Nb. Cloud from the 14th to the 18th.

12. Aurora.

Day.	a.m. or p.m.	Moon.	Magnetic Character. Eskdalemuir.	Magnetic Character. Richmond.	Aurora Observations. Stations.	Aurora Observations. Remarks.
8	p.	...	1, 1	2, 2	Aberdeen	21 h.—23 h. Rather faint arch-glow.
					Eskdalemuir	22 h., with streamers.
					Paisley	
					Baltasound	
10	p.	...	1, 1	1, 1	Aberdeen	22 h.—24 h. Moderately bright arch, faint greenish-yellow streamers.
					Eskdalemuir	21 h. 30 m., with faint streamers.
11	p.	...	1, 0	1, 0	Baltasound	
12	p.	●	..	..	..	
13	p.	...	0, 1	1, 1	Baltasound	
					Kirkwall	
					Deerness	
					Aberdeen	20 h.—23 h. Arch-glow, rather faint, greenish-white.
					Fort William	21 h.
					Paisley	
16	p.	...	1, 1	1, 1	Deerness	
17	p.	...	1, 0	1, 1	Inverness	
18	p.	...	0, 0	1, 1	Baltasound	
19	p.	...	0, 0	1, 0	Paisley	
20	p.	...	0, 0	0, 0	Aberdeen	21 h.—23 h. Faint glow, greenish-white.
					Paisley	
21	p.	...	0, 2	0, 2	Fort William	
					Paisley	
22	p.	...	2, 1	2, 1	Inverness	
					Aberdeen	21 h.—23 h. Moderately bright, arch-glow, with faint streamer activity, greenish-yellow.
					Paisley	
					Eskdalemuir	21 h., with faint streamers.
					Armagh	
					Valencia Observatory	21 h.—23 h. faint.
					Eskdalemuir	1 h. with strong streamers.
23	a.	...	2, 1	2, 1		
28	a.	○	..	..	..	
28	p.	...	2, 2	2, 2	Inverness	
					Paisley	
30	p.	...	1, 0	1, 2	Baltasound	

NOTE.—The two magnetic "characters" entered in each case refer to the two periods of 24 hours ending and beginning at midnight of the night in question.

METEOROLOGICAL OFFICE OBSERVATORIES—GEOPHYSICAL JOURNAL.

DAILY VALUES.—*Solar Radiation, Meteorology, Atmospheric Electricity, Terrestrial Magnetism, and Seismology.*
Tenth YEAR.—NO. 10. OCTOBER, 1920.] Units based on the C.G.S. System. [*Price* 1*s.* 6*d.*

1. SUNSHINE AND SOLAR RADIATION.

Day.	WESTMINSTER. Bright Sunshine.* Total.	Per cent. of Possible.	SOUTH KENSINGTON.—Lat. 51° 30′ N. Long. 0° 10′ W. Radiation received on Horizontal Surface by Callendar Radiograph. Daily Total.	Per cent. of Planetary.	Maximum. For Day. Amount.	Time.	11.30 h. to 12.30 h.	RICHMOND.—Lat. 51° 28′ N. Long. 0° 19′ W. Bright Sunshine.* Total.	Per cent. of Possible.	☼ Radiation at Noon by Ångström Pyrheliometer. Intensity.	Vertical Component.	Sky.	ESKDALEMUIR.—Lat. 55° 19′ N. Long. 3° 12′ W. Bright Sunshine.* Total.	Per cent. of Possible.	☼ Radiation by Ångström Pyrheliometer. Time.	Sky.	$\frac{p}{p_0}$ sec. Z.	Intensity.	CAHIRCIVEEN. Bright Sunshine.* Total.	Per cent. of Possible
	hr.	%	j/cm².	%	mw/cm².	h. m.	mw/cm².	hr.	%	mw/cm².	mw/cm².		hr.	%	h m.			mw/cm².	hr.	%
1	0·9	8	508	24	26	14 30	20	0·4	3	..	..	..	1·4	12	..	..	..	..	3·1	27
2	*x*7·6	66	*x*974	48	53	10 30	52	7·5	65	75	43	Clear	2·1	18	..	..	..	..	4·0	35
3	6·8	59	936	47	*x*54	13 15	49	6·3	55	..	..	..	4·2	37	..	..	..	..	4·3	37
4	0·3	3	319	16	48	10 25	15	0·0	0	..	..	..	0·0	0	..	..	..	..	5·1	45
5	7·0	62	886	45	49	10 55	48	6·2	55	25	14	Thro' Ci.	0·0	0	..	..	..	..	0·6	5
6	4·3	38	701	37	50	11 40	50	4·4	39	69	38	Clear	0·2	2	..	..	..	..	3·5	31
7	4·3	38	750	40	50	11 25	48	4·0	36	34	19	Cloudy	1·3	12	..	..	..	..	7·2	64
8	4·2	38	497	27	40	11 55	40	4·5	41	39	21	Hazy	9·5	86	..	..	..	..	*x*9·4	85
9	5·5	50	610	33	37	12 25	37	5·4	49	25	13	Hazy	5·7	52	..	..	..	..	2·7	24
10	1·2	11	269	15	41	11 50	41	0·8	7	39	21	Hazy	8·8	81	..	..	..	..	2·2	20
11	3·8	35	488	27	37	11 30	37	3·7	34	30	15	Hazy	0·9	8	..	..	..	..	1·4	13
12	5·7	52	665	38	37	12 28	37	5·8	53	56	29	Hazy	9·1	85	..	..	..	..	5·2	48
13	4·9	45	612	35	34	11 15	32	3·2	30	..	..	..	2·8	26	..	..	..	..	0·2	2
14	0·4	4	382	22	29	13 40	26	1·6	15	..	..	..	3·5	33	..	..	..	..	2·6	24
15	2·3	21	393	23	36	10 5	17	1·8	17	..	..	..	0·0	0	..	..	..	..	1·5	14
16	0·0	0	210	13	21	12 40	16	0·0	0	..	..	..	0·3	3	..	..	..	..	2·2	21
17	0·3	3	244	15	34	13 10	14	0·0	0	..	..	..	0·6	6	..	..	..	..	2·7	26
18	7·3	70	703	44	39	11 50	39	8·1	77	45	22	Hazy	1·3	13	..	..	..	..	5·2	50
19	5·6	53	613	39	32	10 50	31	5·8	55	36	17	Hazy	3·3	32	..	..	..	..	0·0	0
20	6·8	65	680	44	37	10 50	36	*x*8·4	81	54	25	Hazy	0·0	0	..	..	..	..	1·9	18
21	1·1	11	411	27	37	12 20	37	1·8	17	42	19	Misty	1·5	15	..	..	..	..	4·6	45
22	0·0	0	54	4	10	13 20	9	0·0	0	..	..	..	0·8	8	..	..	..	..	0·0	0
23	0·6	6	267	18	25	12 40	18	0·5	5	..	..	..	0·0	0	..	..	..	..	0·0	0
24	5·5	54	359	25	22	11 30	22	2·3	23	..	..	..	4·9	49	..	..	..	..	1·2	12
25	6·6	65	534	38	28	11 30	28	5·9	58	27	12	Hazy	8·8	90	..	..	..	..	5·7	57
26	5·0	50	429	31	27	11 50	27	3·8	38	31	13	Hazy	*x*8·9	92	..	..	..	..	0·0	0
27	0·4	4	285	21	18	13 5	8	0·0	0	..	..	..	8·8	92	..	..	..	..	0·9	9
28	5·0	50	316	24	26	12 20	26	6·0	61	55	23	Hazy	8·7	91	..	..	..	..	0·8	8
29	6·9	70	483	37	24	12 5	24	6·3	64	34	14	Hazy	8·0	84	..	..	..	..	4·5	46
30	6·9	70	558	43	26	12 0	26	7·9	81	59	25	Clear	2·4	26	..	..	..	..	0·0	0
31	0·9	9	206	16	28	12 0	28	0·2	2	..	..	..	4·7	51	..	..	..	..	3·2	33
Means	3·81	36	495	30	34	—	30	3·63	34	—	—	—	3·63	36	—	—	—	—	2·77	26
Normals	2·26	22	485	29	—	—	—	2·97	28	—	—	—	2·48	24	—	—	—	—	3·26	31
	←35 years→		←8 years→					←35 years→					←5 years→						←35 years→	

2. METEOROLOGY AND MAGNETISM :—CAHIRCIVEEN (VALENCIA OBSERVATORY).—Lat. 51° 56′ N. Long. 10° 15′ W.

Heights above M.S.L. :—H=9·1 m. H_b=13·7 m. H_a=26·4 m. Above Ground : h_t=1·3 m. h_r=0·56 m. h_s=12·8 m. h_a=13·9 m.

Day.	Air Pressure at Station Level. 9 h.	21 h.	Air Temperature in Degrees Absolute. 9 h.	21 h.	Max. 0 h. to 24 h.	Min. 0 h. to 24 h.	Humidity. Vapour Pressure. 9 h.	21 h.	Percentage. 9 h.	21 h.	Wind—Veer from North in degrees and Speed in metres per second. 9 h. °	m/s.	21 h. °	m/s.	Cloud Amount (0–10) and Weather. 9 h.	21 h.	Rain 0 h. to 24 h.	Min. Temp. on Grass. 18 h. to 9h.	REMARKS.	Magnetism. Horizontal Force, Declination West, and Inclination.
	9 h.	21 h.	9 h.	21 h.	0 h. to 24 h.		9 h.	21 h.	9 h.	21 h.	9 h.		21 h.		9 h.	21 h.	0 h. to 24 h.	18 h. to 9h.		
	mb.	mb.	*a* 200+	*a* 200+	*a* 200+	*a* 200+	millibar.		%	%	°	m/s.	°	m/s.	Tenths of Sky covered.		mm.	*a* 200+		
1	997·7	997·9	82·9	84·1	86·6	81.5	11·1	10·3	92	78	—	0	290	7	8	5	1·4	77	Fair early. p. *a.* c. *p.* p. *n.*	
2	995·8	988·6	82·5	83·0	84·6	79.5	10·3	10·5	87	86	—	0	170	6	8	9	3·0	77	p. *a.* Fair *p.*	
3	973·4	975·7	84·4	85·7	87·1	83·9	12·9	12·1	96	83	205	5	165	11	10●	7	43.0	79	●² early. ⫽ *a.* ● *p.* p.² *n.*	
4	982·0	992·0	86·9	87·6	89·0	85·8	13·4	12·9	85	78	165	13	140	10	8	7	1·4	83	p. *a.* Fair day.	
5	994·9	998·1	87·3	86·0	88·5	84·6	13·2	12·2	82	82	100	5	90	4	9	4	3·8	84	p. early. o. to ● *a.* Fine *n.*	
6	999·7	1002·1	86·6	86·3	*x*89·6	84·9	13·4	13·2	87	87	—	0	350	6	8	8	—	81	Fair day.	
7	1010·1	1016·0	86·2	83·5	88·0	81·0	13·6	11·6	90	92	350	4	—	1	7	0	—	81	Fair to fine day.	17834γ
8	1018·8	1017·9	82·0	81·5	87·6	79.4	10·5	10·3	92	93	—	0	95	2	1	0∞	0·1	77	☾ at first. Fine day. 8	19° 14′·9
9	1015·9	1016·6	86·8	84·3	89·1	80·2	14·9	11·8	95	89	155	4	—	1	9≡⁰	1	—	78	Fine ☾ early. o. ∞ *a.* Fair later.	68° 5′·7
10	1016·7	1015·7	87·4	84·9	89·5	82·4	13·7	12·8	84	93	10	2	—	0	9∞	6∞	—	80	Fine early. o. ∞ *a.* o. to b. *p.* & *n.*	
11	1012·2	1006·9	86·8	88·8	88·9	84·0	11·7	12·8	75	72	80	4	110	10	8∞	10∞	—	80	Fair ∞ *a.* and *p.* o. ∞ *n.*	
12	1006·7	1007·4	88·0	87·8	89·4	87·4	12·7	12·2	75	73	135	7	130	9	8	5	0·6	85	●⁰ *a.* Fair p⁰ later.	
13	1003·2	1003·7	88·0	87·3	88·5	86·7	14·5	13·8	86	85	165	10	160	8	8	4	10·6	84	p.² *a.* and *p.* bc. *n.*	
14	1003·9	1004·2	86·8	86·1	88·2	85·9	14·4	14·1	92	94	170	7	185	4	8	5	18·8	85	● early ; c. with frequent p.² after 9h.	
15	1004·3	1005·1	85·9	85·5	87·2	85.1	14·0	13·6	95	94	230	2	—	0	8	4	0·6	84	p.⁰ early. Fair day.	
16	1005·8	1008·4	84·4	86·4	88·0	83·0	12·0	13·1	90	86	—	1	55	2	8	7	—	81	o. to c. *a.* Fair *p.* and *n.*	
17	1013·6	1018·1	85·6	83·9	86·9	82·3	12·6	11·0	87	85	60	4	70	2	9	5∞	—	83	o. to c. *a.* Fair to fine ∞ *p.* and *n.*	
18	1017·2	1013·3	85·0	84·8	86·5	82·4	10·3	10·5	74	76	120	10	135	10	6	10	—	79	Fine day. o. *n.*	
19	1008·8	1006·1	85·4	87·0	87·2	85·3	12·4	14·7	87	93	140	12	145	9	10●	10●⁰	22·0	83	● *a.* and *p.* ●⁰ *n.* 19	17833γ
20	1004·9	1004·9	87·2	87·2	89·1	86·7	15·1	14·6	94	91	175	7	170	6	6	10	7·6	85	●⁰ or p.² early. Fair p. *a* and *p.* o. *n.*	19° 15′·0
21	1004·2	1009·9	87·1	85·5	88·7	84·5	14·5	13·7	91	95	170	8	180	4	8	5	4·7	82	☾ o h. Fair to fine day.	
22	1012·5	1014·0	85·7	87·4	88·6	84·7	13·8	15·1	95	93	170	8	175	9	10●⁰	10	2·0	82	Fair at first. ●⁰ *a.* o. *p.* and *n.*	
23	1010·7	1012·5	86·9	86·1	87·5	85·8	14·6	14·4	93	96	175	9	175	4	10●	10●	*x*45·3	86	●² to ● all day.	
24	1017·4	1022·2	85·5	83·8	87.9	80·4	13·1	10·1	91	78	100	4	—	1	10	0∞	7·1	84	●⁰ till 10½ h. bc. to c. *p.* : b. ∞ *n.*	
25	1021·7	1019·7	84·2	85·4	86·8	*n*78·6	10·3	11·1	78	78	95	5	130	8	6∞	7∞	—	*n*75	☾ early. b. ∞ *a.* and *p.* c. *n.*	
26	1017·6	1017·8	85·7	86·8	87·3	85·0	10·7	12·8	73	82	135	8	140	8	7∞	7∞	—	82	Fair and ∞ all day.	
27	1018·2	1015·2	87·0	86·3	88·2	86·2	12·8	11·9	81	79	145	7	145	8	8∞	8	—	84	c. to o., ∞ day. c. *n.*	
28	1014·2	1014·4	85·1	83·9	87·2	83·7	13·2	10·3	94	80	—	1	60	2	10∞	10	2.1	84	p. 5 h.–8 h. c. ∞ *a.* and *p.* bc. to o. *n.*	
29	1015·2	1012·0	82·2	83·0	85·8	79·9	9·6	9·3	83	76	45	4	135	3	8∞	5	—	77	Fair, ∞ day. bc. *n.*	17846γ
30	1000·2	989·6	85·1	84·3	85·5	81·5	11·1	12·8	79	96	175	8	230	5	10	10●	23·5	76	o. early : ● 11h.–18½h. & after 21h. 30	19° 14′·2
31	988·1	990·1	80·3	80·9	83·4	80·1	8·7	8·2	85	77	240	2	335	5	9 p	9	5·4	77	b. to o. early ; o. to c. *a.* & *p.* : o. ▲ p. *n.*	68° 3′·0
Means	1006·6	1007·0	85·5	85·3	87·6	83·3	12·6	12·2	87	85	—	5·1	—	5.3	8·1	6·4	203·0	81·1	Monthly Totals or Means.	17838γ
Normals	1010·7	1010·9	83·7	83·6	86·6	81·1	11·1	11·0	86	86	—	5·2	—	5·1	—	—	144·5	—	Normals.	19° 14′·7
	←45 years→						←30 years→				←35 years→						45 years			68° 4′·4

* By Campbell-Stokes Sunshine Recorder.

x denotes the maximum and *n* the minimum value in the column.

(4439) Wt.109/612/773 400 10/21 Harrow G.69/7

3. METEOROLOGY:—RICHMOND, SURREY (KEW OBSERVATORY).—Lat. 51° 28′ N. Long. 0° 19′ W.

Heights above Mean Sea Level:—Rain-gauge Site, H=5·5 m. Barometer, H_b=10·4 m. Cups of Anemometer, H_a=25 m.
Heights above Ground:—Thermometers, h_t=3·0 m. Rain-gauge, h_r=0·53 m. Sunshine Recorder, h_s=13·3 m. Cups of Anemometer, h_a=20 m.

Day.	Air Pressure at Station Level.		Air Temperature in Degrees Absolute.				Humidity.				Wind—Veer from North in degrees and Speed in metres per second.				Cloud Amount and Weather.		Rain 0 h. to 24 h.	Min. Temp. on Grass. 18 h. to 9 h.	Remarks.
					Max.	Min.	Vapour Pressure.		Percentage.										
	9 h.	21 h.	9 h.	21 h.	0 h. to 24 h.		9 h.	21 h.	9 h.	21 h.	9 h.		21 h.		9 h.	21 h.			
			a	*a*	*a*	*a*									Tenths of Sky covered.				
	mb.	mb.	200+	200+	200+	200+	millibar.		%	%	° m/s.		° m/s.				mm.	200+	
1	1002·3	998·9	86·6	85·0	88·5	80·6	12·7	13·4	82	96	155	5	—	1	10 ☂	9 ≡	*x*18·7	77	Dull with frequent showers. ▲⁰ *p*.
2	997·8	1002·5	86·4	82·1	88·8	80·7	13·1	10·5	86	91	180	3	—	1	2	5	1·4	79	Fine to overcast. Showery.
3	1002·2	1001·9	86·3	87·8	89·9	80·9	11·5	12·2	76	73	145	6	135	6	5	10 q	—	76	Fine to overcast. ● or d. *p*.
4	1004·7	1008·0	88·1	87·0	89·0	86·7	13·3	14·1	78	89	140	5	125	2	10	5	3·0	85	Dull. Showers. *a* ● *p*.
5	1006·4	1005·2	90·6	90·1	*x*94·7	87·1	14·1	15·7	71	81	90	4	—	1	6 ☂	9	—	84	☂ ≡⁰. Fine to cloudy.
6	1002·3	1005·2	89·2	85·9	93·2	84·4	15·9	13·3	87	90	100	2	—	0	10 ≡⁰	3 ☂	0·1	84	≡⁰, ☂. Fine mostly. ☾ *p* ☂.
7	1008·9	1012·5	88·2	88·8	94·0	83·1	14·7	15·5	86	87	—	1	—	1	4 ☂	9 ≡⁰	0·1	78	≡⋮ Fine to overcast. ∞ *p* ≡⁰ ☂ *n*.
8	1017·5	1019·8	88·8	88·8	94·1	87·5	15·8	15·8	89	89	60	5	65	5	10 ≡⁰	0 ≡⁰	—	86	≡⁰, ☂. Dull to fine. ∞ *p* ≡⁰ *n*.
9	1019·7	1018·9	88·7	87·7	94·0	87·6	17·0	13·6	96	82	50	3	50	7	10 ≡⋮⁰	0	—	86	≡⋮ early. Dull to fine. ∞.
10	1018·8	1018·4	86·8	86·4	88·4	86·3	12·2	12·8	78	84	35	7	50	4	10	4	—	86	Dull to cloudy. ∞.
11	1018·5	1017·0	86·6	85·4	90·7	83·3	13·1	12·9	85	90	55	4	65	3	9 ≡⁰	0	—	79	≡⁰, ☂. Fine after 10 h.
12	1017·2	1017·7	81·7	82·0	90·0	78·6	10·9	10·2	97	89	—	1	—	0	*10* ≡⋮	0 ≡	0·1	76	≡ till 10 h., fine after; ∞ ≡ *n*.
13	1018·5	1017·7	84·3	82·9	89·0	80·1	12·5	11·7	94	97	—	1	—	0	10 ≡	0 ≡⁰	0·8	76	≡ early. Overcast *a*. Fine. ∞ *p*.
14	1015·5	1013·9	83·2	82·6	91·1	79·5	11·9	11·5	96	97	—	1	—	1	8 ≡	0 ≡	6·8	77	≡, ☂. Overcast *a*. Fair to fine. *p*. ☇ p.●².
15	1010·9	1009·8	86·5	85·2	89·0	83·6	14·5	13·3	94	94	220	3	—	1	2 ☂	8	3·0	80	Fine at first, dull later. ● *n*.
16	1009·5	1010·3	86·3	86·2	88·2	84·5	14·1	13·1	93	87	—	1	60	4	10 ≡⁰	10 ●⁰	0·1	82	Dull. d. 16 h. ●⁰ *n*.
17	1013·0	1016·9	84·9	82·4	86·9	82·0	12·7	8·2	92	70	50	5	25	6	10 ●	10	4·9	84	● early. ≡⁰ *a*. Dull. Gloomy at times.
18	1018·8	1020·2	80·1	82·1	84·1	77·5	6·7	8·1	67	70	10	7	35	6	1	1	—	75	Fine. ⸝ (gusts) 15 h. 5 m.
19	1020·3	1019·8	81·5	80·0	84·6	79·0	8·4	8·6	76	86	85	5	—	0	6 ≡⁰	4 ≡⁰	—	77	≡⁰ early. Fine after 9 h. ≡⁰ *n*.
20	1018·5	1017·3	82·8	79·6	87·4	76·9	9·5	8·9	79	91	85	2	—	1	2 ≡⁰	2 ≡⁰	—	74	≡⁰ early. Fine. ≡⁰ ☂ *n*.
21	1015·1	1014·5	78·2	79·8	86·5	74·9	8·7	9·6	99	97	—	0	—	0	10 ≡	10 ≡	0·1	72	⌙. ≡ till 12 h. 15 m. Fine to cloudy. *p*. ≡.
22	1019·3	1022·8	80·3	82·9	85·9	76·9	9·8	11·6	96	96	—	0	—	1	10 ≡	*0* ≡	—	75	☂. ≡ *a*. Dull. ≡ *n*.
23	1023·0	1020·6	81·4	75·9	83·5	75·3	11·0	7·4	100	98	—	1	—	0	10 ≡⋮	9? ≡⋮	0·1	77	≡⋮² early. ≡ all day.
24	1020·9	1022·6	76·0	80·9	87·0	74·3	7·5	9·2	99	87	—	1	55	3	10 ≡⋮	0 ≡⁰	0·1	74	≡⋮² early. ≡ till 12 h. Fine later.
25	1025·1	1025·7	81·9	82·3	87·5	79·1	10·6	9·8	94	84	20	3	45	5	8 ≡⁰	0 ≡⁰	0·1	72	⌙. Fine after 9 h. 30 m. ≡⁰ *a* and *n*.
26	1026·7	1026·8	80·3	81·7	87·0	77·2	9·9	9·8	97	88	50	2	65	2	10 ≡	0 ≡	0·1	71	≡ 9 h. Dull to fine. ≡ *n*.
27	1026·4	1022·0	77·2	80·2	82·2	74·3	8·2	9·1	100	90	—	1	60	2	10 ≡	0 ≡⁰	0·1	71	≡² greater part of day. ≡⁰ *n*.
28	1019·6	1018·7	75·6	80·1	86·0	*n*72·9	7·1	8·9	96	88	60	2	65	5	0 ≡	0 ≡⁰	0·2	71	⌙. ≡² early. Fine. ∞. ≡⁰ *n*.
29	1019·0	1017·7	79·7	79·6	83·9	76·0	8·3	7·8	85	80	65	4	70	4	4 ≡⁰	0 ≡⁰	—	70	≡⁰ ⌙. Fine. ∞. ≡⁰ *n*.
30	1014·8	1008·1	77·9	75·1	84·1	74·2	7·6	5·8	88	82	70	3	120	2	0 ≡⁰	0 ≡⁰	—	68	≡⁰ ⌙. Fine. ∞. ≡⁰ *n*.
31	997·5	989·5	78·4	83·0	85·4	73·7	8·5	10·6	96	87	90	5	100	8	10 ≡⁰	10 ●	2·8	*n*67	≡⁰ ⌙. Dull. ● *n*.
Means	1014·5	1014·2	83·4	83·2	88·2	80·0	11·3	11·1	89	87	3·0		2·6		7·3	3·8	42·6	77·1	Monthly Totals or Means.
Normal	1012·9	1012·9	82·5	82·3	86·4	79·3	10·4	10·5	86	88	3·2		2·6		—	—	69·0 (45 years)	—	Normals.
	45 years.						30 years.				35 years.								

4. METEOROLOGY:—ESKDALEMUIR, DUMFRIESSHIRE.—Lat. 55° 19′ N. Long. 3° 12′ W.

Heights above Mean Sea Level:—Rain-gauge Site, H=242 m. Barometer, H_b=237·3 m. Vane of Anemometer, H_a=250 m.
Heights above Ground:—Thermometers, h_t=0·9 m. Rain-gauge, h_r=0·38 m. Sunshine Recorder, h_s=1·5 m. Vane of Anemometer, h_a=15 m.

																			Remarks.
1	972·9	967·7	84·6	83·5	87·6	82·1	12·1	10·0	89	79	130	2	120	8	10	9 q	2·5	83	● 5 h.–7 h.: o *a*: c to ● *p*: oq *n*.
2	969·9	969·4	81·9	80·8	86·2	80·4	9·9	9·7	88	92	—	1	—	0	10 ●⁰	10	1·4	79	o early: ●⁰ *a*: bc *p*: o, ● *n*.
3	970·4	969·3	83·0	84·2	86·4	79·4	9·3	11·2	76	85	130	8	120	11	3	10 ●	6·1	77	o early: bc *a*: cq *p*: ●≡⁰ q *n*.
4	973·7	979·8	85·0	85·2	85·7	84·2	12·5	12·9	90	91	120	9	130	5	10 ●	10 ●⁰	*x*24·5	83	●²≡⁰ q till 11 h. then o with frequent ●≡⁰.
5	980·5	978·5	86·1	86·8	90·1	84·4	13·0	13·3	87	85	110	5	—	0	10 ●	10 ●	8·1	83	●≡⁰ 8 h.–12 h.: o ≡⁰ *p*: ●≡⁰ 20 h.–23 h.
6	978·4	974·9	86·7	85·7	89·7	85·3	14·3	13·4	92	92	—	1	—	0	10	9 ≡⁰	2·1	85	●⁰ early: o≡⁰ *a* & *p*: p² 16 h.: o to c, ≡⁰ *n*.
7	979·3	987·6	85·3	77·3	87·4	76·6	12·5	7·8	88	94	180	7	—	0	10	1	2·5	83	o at first: ●⁰≡⁰ *a*: c *p*: b *n*.
8	992·9	994·2	83·3	80·5	89·6	75·6	11·9	9·6	96	93	—	1	—	1	5 ☂	0 ☂	—	73	Valley ≡⋮ ☂: very fine: valley ≡ *n*.
9	994·0	994·8	86·1	85·0	*x*92·9	78·8	13·0	13·2	87	95	360	2	10	3	9	10 ≡⋮	—	76	Valley ≡⋮ ☂: o till 10 h. then b ∞: ≡⋮ *n*.
10	996·0	995·0	84·0	81·2	88·3	79·5	11·3	9·5	87	88	30	3	60	4	1	4	0·2	79	Valley ≡⋮ early then very fine.
11	994·3	992·4	83·6	83·4	85·7	81·1	9·8	10·9	77	87	90	3	60	3	9 ≡⁰	10 ≡⁰	—	79	Overcast, ≡⁰ all day.
12	991·2	989·6	82·9	79·0	88·0	76·7	10·0	8·6	83	92	30	3	—	1	0 ≡⁰	0	—	76	≡⋮⁰ early: cloudless: ∞ *a*: valley ≡⋮ *n*.
13	988·5	988·7	78·6	80·9	87·3	73·6	8·9	9·9	98	94	—	0	—	1	10 ≡⋮⁰	10 ≡⁰	—	72	≡⋮⌙ at first: fine ∞ after 13 h.: valley ≡⋮ *n*.
14	987·2	985·6	84·0	84·6	88·9	78·6	11·8	11·4	91	4	—	1	—	1	3	10 ≡⁰	—	75	Valley ≡☂: bc to o *a* & *p*: o ≡⁰ *n*. [22 h.
15	983·0	983·5	82·2	82·1	83·9	80·5	11·0	11·0	95	96	40	5	60	5	10 ≡⋮⁰	10 ≡⁰	4·2	81	●⁰≡⁰ early: ≡⋮⁰ then ● ≡⁰ *a*: o≡⁰ *p* & *n*: d
16	986·5	988·4	80·6	75·6	81·8	74·4	8·6	6·4	83	87	30	5	—	1	9	6	—	80	o *a*: o to c *p*: c *n*.
17	991·4	997·1	79·0	76·8	82·5	73·9	7·7	6·9	83	87	40	4	40	3	10	4	0·1	71	c early: ●⁰ 10 h.–11 h. then o: bc 𝌆⁰ *n*.
18	999·0	998·7	77·5	75·5	81·5	71·9	7·1	5·9	84	81	60	5	—	0	10	2	—	69	b 1 h.: ⌙: o to c *a* & *p*: bc *n*.
19	993·9	990·8	73·9	76·7	82·8	70·6	5·8	7·1	88	89	—	1	—	1	9 ⌙	3	—	68	b ⌙² early: o to c, y *a* & *p*: bc *n*.
20	988·2	986·8	80·1	81·1	82·3	76·3	8·5	9·5	84	88	150	3	—	1	10 ≡⁰	10 ≡⁰	—	72	o ≡⁰ all day.
21	984·8	985·9	82·9	83·6	85·3	79·3	10·0	11·7	83	92	—	0	—	0	4 ≡⁰	10 ≡⁰	0·7	77	Variable cloud ≡⁰ till 11 h. then o ≡⁰: d⁰ *n*.
22	989·8	992·9	83·2	83·2	85·4	82·2	11·5	11·4	93	92	—	1	180	2	10 ≡⋮⁰	9	0·1	81	≡⋮ till 9 h. then o to c: ≡⁰ *a*: o *n*.
23	992·6	992·7	83·4	77·8	85·8	77·8	11·4	8·3	91	97	160	2	—	0	10 ≡⋮⁰	9 ≡⋮	0·3	82	d ⁰≡⁰ *a*: o ≡⁰ *p*: b to ≡⋮ *n*.
24	995·7	999·4	80·6	76·9	84·7	75·3	9·8	7·4	94	92	10	2	10	3	10 ≡⁰	7 ≡⁰	—	74	≡⋮ at first: bc ∞ *a* & *p*: bc ≡⁰ *n*.
25	1001·7	1002·2	79·8	76·9	85·2	74·6	8·6	7·0	87	87	10	5	360	4	1	0	—	72	≡⁰⌙ early: very fine: ∞⁰ *a* & *p*.
26	1001·2	1000·3	77·1	76·5	86·3	73·7	7·1	7·0	87	89	360	2	360	2	0	0	0·2	72	Cloudless: ⌙² early: ∞⁰ *a*.
27	998·7	994·9	74·6	74·9	86·4	70·5	5·8	5·8	86	82	—	0	—	1	0	0	0·1	67	⌙² early: cloudless.
28	992·3	992·0	75·1	74·4	84·0	*n*69·8	5·1	6·3	73	93	—	0	—	1	0	0 ≡⁰	0·1	*n*66	⌙² at first: cloudless: ≡⁰ *n*.
29	993·0	989·1	75·0	75·3	84·0	71·3	5·9	6·5	84	91	—	1	—	1	0 ≡⁰	3	0·1	66	⌙²: cloudless till 9 h. then fine.
30	981·7	972·7	78·4	80·0	83·7	74·0	7·1	7·5	80	75	170	5	160	8	10 ≡⁰	8 ∞	0·4	71	bc ⌙ early: o–b ∞ *a* & *p*: c *n*: p 22 h.
31	966·2	964·4	79·5	81·7	82·2	78·4	7·3	9·3	75	83	150	7	130	13	2 ∞	10	0·1	78	o early: b ∞ *a*: o ≡⁰ *p*: o *n*.
Means	987·4	987·0	81·2	80·2	85·9	77·1	9·6	9·2	86	89	3·0		2·6		6·6	6·3	53·8	75·8	Monthly Totals or Means.
Normal 1911-1915.	985·6	985·6	80·4	79·3	83·7	76·4	9·2	8·7	88	90	4·5		3·5		—	—	100·4	—	Normals.

Temperatures at or below the normal freezing point of water are printed in small type. *x* denotes the maximum, and *n* the minimum, value in the column.

5. GEOPHYSICS :—RICHMOND (KEW OBSERVATORY).

Day.	Earth Temperature at 9 h. 0.3 m.	Earth Temperature at 9 h. 1·2 m.	Height above M.S.L. of Surface of Underground Water. Daily Mean.	Height above M.S.L. of Surface of Underground Water. Extremes.	Terrestrial Magnetic Force. Horizontal Comp't. Mean Time.	Horizontal Comp't.	Declination. Mean Time.	Declination. West.	Inclination. Mean Time.	Inclination.	Magnetic Character of Day.	Electric Character of Day.	Charge per cc. × 10^{16}. +.	Charge per cc. × 10^{16}. −.	Air-Earth Current. × 10^{16}.	Potential Gradient, Volts per metre. Factor 2·36. 3 h.	9 h.	15 h.	21 h.
	0.3 m.	1·2 m.											About 15 h.		About 15 h.				
	a	*a*																	
	200+	200+	cm.	cm.	h m	γ	h m	° ′	h m	° ′			Coulomb.		Amp/cm².	v/m	v/m	v/m	v/m
1	87·0	86·3	208	..	..	..	..	..	..	..	2	1	..	..	..	215	345	z±	535
2	86·5	86·3	215	..	..	..	..	..	..	..	2	1	..	..	..	230	460	215	490
3	85·7	86·4	220	..	..	..	..	..	..	..	0	0	..	..	..	200	260	260	230
4	86·0	86·3	223	224	..	..	..	..	..	..	1	1	..	..	..	100	230	145	450
5	86·2	86·3	224	224	..	..	..	..	..	..	0	0	0·66	..	1·65	190	490	275	420
6	87·0	86·2	223	..	..	..	..	..	..	..	1	1	..	0·65	2·70	245	260	230	375
7	86·7	86·2	221	..	10 44	18380	14 26	14 33·8	14 40	67 0·3	1	0	0·53	..	0·90	305	475	275	245
8	87·2	86·2	219	..	..	..	..	..	..	..	1	0	..	0·31	0·65	260	275	305	305
9	87·7	86·2	218	..	..	..	..	..	..	..	1	0	..	..	..	260	160	460	275
10	87·7	86·2	218	..	..	..	..	..	..	..	2	0	..	..	..	175	230	290	305
11	86·8	86·3	218	..	..	..	..	..	..	..	0	0	0·39	..	0·75	290	320	375	320
12	86·0	86·4	218	..	..	..	..	..	..	..	1	0	..	0·17	1·45	230	710	245	320
13	85·7	86·4	217	..	..	..	..	..	..	..	0	1	0·29	..	0·70	345	390	290	70
14	85·4	86·3	216	..	10 49	18373	14 32	14 31·3	..	..	0	1	..	0·13	1·35	100	..	290	390
15	85·6	86·3	216	..	..	..	..	..	14 40	66 58·6	0	1	..	..	..	..	..	130	390
16	85·9	86·1	217	..	..	..	..	..	..	..	0	0	..	..	..	290	190	390	305
17	86·0	86·1	217	..	..	..	..	..	..	..	1	1	..	..	..	130	115	375	230
18	84·9	86·1	217	..	..	..	..	..	..	..	0	0	..	0·29	1·20	190	680	460	450
19	84·0	86·1	217	..	..	..	..	..	..	..	0	0	0·35	..	0·70	320	475	520	460
20	83·7	86·1	216	..	..	..	..	..	..	..	0	0	..	0·06	1·05	260	390	230	490
21	82·9	85·8	214	..	10 48	18388	14 25	14 31·8	14 39	66 57·0	0	1	0·30	..	1·45	345	405	345	0
22	82·7	85·7	212	..	..	..	14 23	14 33·1	..	..	1	1	..	0·10	0·60	580	390	520	85
23	83·0	85·5	210	..	..	..	..	..	..	..	1	1	..	..	..	190	665	460	635
24	82·0	85·3	208	..	..	..	..	..	..	..	1	0	..	..	..	1070	710	535	345
25	81·8	85·2	206	..	..	..	..	..	..	..	2	0	0·32	..	0·95	230	..	695	375
26	81·4	85·1	205	..	..	..	..	..	..	..	1	0	..	0·29	0·75	245	200	640	420
27	81·0	85·1	204	..	..	..	..	..	..	..	2	0	..	..	0·25	490	320	605	605
28	80·0	84·9	203	..	11 11	18375	..	..	14 34	66 58·6	1	0	0·41	..	1·85	520	665	710	475
29	80·0	84·7	203	202	..	..	14 35	14 33·2	..	..	1	0	..	0·30	0·70	..	..	520	520
30	79·4	84·5	204	202	..	..	..	..	..	..	0	0	..	..	..	375	505	330	590
31	78·9	84·2	205	..	..	..	..	..	..	..	1	2	..	..	..	360	305	145	−520
M.	84·3	85·8	214	—	—	—	—	—	—	—	0·77	0·42	0·41	0·26	1·09	†315	†395	†370	†322
	84·0	85·6																	
	— 12 years. —																		

† Mean for 26 days.

6. GEOPHYSICS :—ESKDALEMUIR, DUMFRIESSHIRE.

Day.	Terrestrial Magnetic Force. North Component. Maximum 15000 γ +. h m	γ	Minimum. 15000 γ +. γ	h m	Range. γ	West Component. Maximum. 4000 γ +. h m	γ	Minimum. 4000 γ +. γ	h m	Range. γ	Vertical Component. Maximum. 44000 γ +. h m	γ	Minimum. 44000 γ +. γ	h m	Range. γ	Magnetic Character of Day.	Electric Character of Day.	Potential Gradient, Volts per metre. Factor 6·08. 3 h.	9 h.	15 h.	21 h.
																		v/m	v/m	v/m	v/m
1	17 32	x1076	947	17 20	129	16 34	875	692	23 23	x183	17 40	x1186	1034	24 0	x152	1	2 *b*	255	260	195	220
2	0 2	1033	940	11 43	93	5 44	855	750	0 1	105	20 0	1096	1032	0 4	64	1	1 *b*	145	370	190	10
3	23 10	1019	963	12 38	56	14 5	845	798	23 28	47	17 12	1093	1077	24 0	16	0	2 *b*	305	290	220	−135
4	0 15	1019	939	9 39 / 10 58	80	14 42	866	783	17 6	83	17 0	1126	1060	6 14	66	1	2 *b*	825	−250	*z*+	−150
5	7 35	1013	946	13 52	67	13 49	860	787	0 22	73	16 35	1114	1073	7 30	41	1	1 *b*	300	−650	290	*z* ±
6	22 26	1006	946	12 40	60	14 12	856	752	21 44	104	17 59	1130	1070	24 0	60	1	1 *b*	‡	‡	330	420
7	7 0	1015	935	13 30	80	6 20	866	776	0 10 / 0 38	90	19 2	1131	1048	7 0	83	1	0 *a*	390	360	175	440
8	6 37	1005	954	14 27	51	14 17	850	776	0 18	74	19 0	1102	1075	4 10	27	0	0 *a*	175	225	310	435
9	22 38	1056	968	12 6	88	14 25	841	760	23 5	81	0 1	1089	1071	22 42	18	0	0 *a*	470	355	315	845
10	22 51	1047	n889	11 35	x158	4 0	861	766	16 25	95	16 22	1152	n1009	4 40	143	1	0 *a*	870	770	240	255
11	17 54	1012	959	10 32	53	13 15	846	793	18 49	53	19 32	1102	1069	0 1	33	0	0 *a*	145	210	225	475
12	22 22 / 22 27	1027	952	11 42	75	22 2	846	776	22 52	70	16 20	1100	1066	22 31	34	1	0 *a*	440	515	330	505
13	19 37	1016	967	11 9	49	13 21	847	799	8 33	48	15 35	1098	1079	0 1	19	0	0 *a*	625	335	365	440
14	22 43	1014	962	10 56	52	13 24	840	793	8 29	47	16 0	1094	1084	24 0	10	0	0 *a*	410	410	225	395
15	0 45 / 1 0	1010	949	11 29	61	13 9	850	780	22 10	70	16 29	1097	1075	5 18	22	0	1 *b*	190	205	270	190
16	20 3	1012	961	11 9 / 11 28	51	14 20	847	759	21 28	88	19 50 / 20 54	1095	1078	12 42	17	0	0 *a*	110	155	150	225
17	4 54	1014	941	19 24	73	13 28	849	756	22 33	93	20 0	1119	1076	12 40	43	1	1 *a*	150	105	105	150
18	23 43 / 23 52	1020	956	12 1 / 12 33	64	12 45	849	791	9 3	58	20 0	1102	1087	24 0	15	0	0 *a*	210	105	220	315
19	5 15	1020	955	13 24	65	12 40	849	784	21 30	65	19 50	1117	1085	0 45	32	0	0 *a*	150	265	265	330
20	18 38	1024	967	11 22	57	13 23	848	796	8 28	52	16 10	1096	1085	12 40	11	0	0 *a*	220	175	80	285
21	20 1 / 20 8	1014	965	12 20	49	14 3	842	793	8 38	49	8 20	1094	1082	13 0	12	0	0 *a*	280	330	325	180
22	5 4	1018	969	11 44	49	12 46	853	744	22 11	109	22 12	1111	1082	13 5	29	0	0 *a*	345	225	315	505
23	22 18	1053	948	23 33	105	15 41	844	n670	23 58	174	0 1	1099	1055	23 20	44	1	0 *a*	165	230	*	*
24	4 22	1051	955	3 50	96	13 10	833	674	0 1	159	20 8	1100	1036	4 16	64	1	0 *a*	*	405	600	1015
25	12 40	1017	939	14 48	78	14 6	x887	785	22 8	102	18 10	1154	1081	12 28 / 12 45	73	1	0 *a*	395	245	465	830
26	21 20	1037	960	19 52	77	18 11	854	788	. 25	66	20 0	1138	1086	9 55	52	1	0 *a*	500	505	320	720
27	16 55	1056	959	2 45	97	13 24	850	707	16 50	143	16 40	1125	1058	3 15	67	1	0 *a*	470	395	290	390
28	2 38	1016	953	17 11	63	1 54	856	773	2 42 / 2 54	83	16 49	1127	1058	2 20	69	1	0 *a*	440	395	255	370
29	1 10	1028	933	15 13	95	12 45	846	766	15 20	80	15 25	1139	1070	2 30	69	1	0 *a*	310	290	225	355
30	21 52	1001	973	10 53	n28	12 5 / 12 15	825	795	9 5	n30	2 10	1098	1089	13 0	n9	0	1 *b*	165	285	320	260
31	23 5	1030	962	11 38	68	13 6	835	731	20 50	104	20 50	1115	1068	23 11	47	1	1 *a*	250	250	270	125
M.	—	1025	952	—	73	—	851	764	—	86	—	1114	1068	—	46	0·55	0·42	†324	†309	†256	†351

x denotes the maximum and *n* the minimum value in the column. Potential gradient is reckoned as positive if the potential increases upwards. For indeterminate potential gradient the following notation is used : *z*+ Indeterminate, positive value ; *z*— Indeterminate, negative value ; *z*± Indeterminate in magnitude and sign.

* Clock stopped. † Mean for 26 days. ‡ Insulation faulty.

7. JERSEY (ST. LOUIS OBSERVATORY).—Lat. 49° 12′ N. Long. 2° 6′ W.

Heights above M.S.L.:—H = 54 m. H_b = 55 m. Above Ground:—h_t = 1·48 m. h_r = 1·72 m. h_a = 8 m.

Day.	Air Pressure at Station Level. 9 h.	14 h.	21 h.	Mean of 3 Readings.	Air Temperature in Degrees Absolute. 9 h.	14 h.	21 h.	Max.	Min.	Mean of 5 Readings.	Min. Temp. on Grass.	Percentage of Humidity. 9 h.	14 h.	21 h.	Mean.	Rain 0 h. to 24 h.	Remarks
	mb.	mb.	mb.	mb.	a 200+	a 200+	a 200+	a 200+	a 200+	a 200+	a 200+	%	%	%	%	mm.	
1	996·3	995·0	993·8	995·0	86·9	87·0	86·6	89·0	86·4	87·2	81·3	90	93	92	92	9·2	●² 5 h.—frequent showers.
2	995·8	996·5	996·8	996·4	86·6	88·3	85·6	88·7	84·3	86·7	82·7	74	64	78	72	2·4	●° 3 h. 45 m. to 9 h. ●² 14 h. 50 m.
3	994·4	993·4	993·4	993·7	86·1	87·9	88·4	88·7	84·3	87·1	80·6	88	88	72	83	0·3	
4	997·0	998·2	999·3	998·2	88·0	88·6	88·5	89·7	87·4	88·4	85·3	84	89	87	87	2·0	● 6 h. 30 m.—showers.
5	996·7	997·5	997·5	997·2	90·0	91·5	90·4	92·0	x88·3	90·4	86·7	74	72	78	75	—	●° 17 h.
6	994·2	996·3	998·6	996·4	89·3	91·3	89·0	91·9	88·1	89·9	86·0	84	69	78	77	1·0	● 6 h. ●° 17 h.
7	1002·6	1002·6	1005·5	1003·6	88·9	89·5	87·9	92·2	86·1	88·9	81·9	89	83	94	89	—	[horizon. ◠ 17 h. 35 m. ugly blue Cu.-Nb. at the
8	1010·0	1010·6	1012·8	1011·1	88·3	87·8	87·6	89·2	87·1	88·0	84·9	99	97	98	98	—	≡² early to 18 h.
9	1010·2	1006·7	1008·2	1008·4	88·5	92·4	89·8	92·2	86·5	89·3	84·9	93	71	83	82	—	≡² early to 6 h.
10	1008·9	1008·3	1009·4	1008.9	88·4	89·0	87·4	90·0	86·7	88·3	85·0	85	75	89	83	—	≡² 9 h. to 10 h. 45 m.—fair afterwards.
11	1010·5	1009·0	1008·7	1009·4	88·6	92·1	87·8	x92·3	85·6	89·3	82·0	85	68	90	81	—	4 h. 30 m.
12	1010·2	1010·6	1011·7	1010·8	88·0	88·7	86·9	91·3	85·5	88·1	78·6	88	87	96	90	—	4 h. 30 m. bright at the base. u.10h.
13	1013·0	1012·1	1010·9	1012·0	88·7	91·2	87·4	91·6	84·3	88·6	75·7	86	55	87	76	—	4 h. 30 m.
14	1009·9	1009·8	1009·8	1009·8	88·2	90·6	86·7	91·2	86·2	88·6	77·8	91	80	93	88	1·2	4 h. ● 4 h. 30 m.—some showers.
15	1007·1	1005·7	1004·3	1005·7	87·9	89·4	88·1	90·0	86·5	88·4	80·3	91	84	87	87	—	●⁰ 21 h.
16	1000·9	999·2	999·6	999·9	88·1	91·4	88·1	91·6	86·6	89·2	83·2	78	66	80	75	—	
17	1001·9	1002·5	1005·5	1003·3	86·6	87·1	86·3	87·7	85·7	86·7	84·9	91	91	80	87	4·8	●² the whole day.
18	1009·9	1010·5	1011·0	1010·5	84·4	84·0	83·8	85·6	83·0	84·2	82·4	74	65	75	71	—	
19	1012·0	1011·4	1012·2	1011·9	82·3	83·1	83·0	83·1	82·0	82·7	81·1	84	79	81	81	—	
20	1011·0	1010·2	1010·1	1010·4	84·1	86·0	85·2	87·0	82·0	84·9	80·3	74	69	83	75	—	
21	1008·2	1009·7	1007·8	1008·6	85·6	88·3	85·8	86·5	84·0	86·0	81·8	91	91	99	94	x6·3	●² 15 h. to 20 h.
22	1011·7	1015·4	1017·4	1014·8	86·5	87·8	83·7	88·6	82·7	85·9	77·6	97	80	96	91	1·7	4 h. 45 m. the apex near Regulus.
23	1015·8	1013·7	1012·8	1014·1	86·7	87·8	83·6	88·3	82·8	85·8	76·6	91	75	85	84	—	[●² 5 h. 30 m. and 10 h. 30 m.
24	1011·8	1010·2	1012·8	1011·6	84·3	87·9	85·0	88·0	81·2	85·3	75.0	77	50	74	67	—	4 h. 45 m.—fair.
25	1016·0	1013·4	1015·9	1015·1	85·9	89·1	85·0	89·2	83·0	86·4	76.4	86	63	82	77	—	4 h. 45 m.
26	1017·8	1017·5	1017·9	1017·7	83·8	87·1	82·9	87·2	80·5	84·3	76·3	81	64	81	75	—	Cloudless day.
27	1017·2	1014·6	1013·0	1014·9	82·6	85·8	83·5	86·1	n79·3	83·5	n73·6	77	56	71	68	—	Cloudless day.
28	1009·8	1007·9	1008·5	1008·7	81·9	85·5	82·9	86·0	79·4	83·1	74.0	74	61	70	68	—	Cloudless day.
29	1008·7	1008·2	1009·4	1008·8	80·7	83·6	82·6	84·0	79·5	82·1	74·5	83	69	91	81	—	Fine afternoon.
30	1007·0	1003·8	1000·6	1003·8	83·9	85·6	83·4	86·3	81·0	84·0	74.5	68	59	80	69	—	Cloudless day.
31	989·3	982·2	982·8	984·8	84·0	85·0	82·9	85·1	81·0	83·6	74·9	91	92	74	86	2·6	[showers. Overcast, morning. ●² Noon—some
Means	1006·6	1005·9	1006·4	1006·3	86·3	88·1	86·0	88·7	84·1	86·6	80·0	84	74	84	81	31·5	
Normal	1008·5	1007·9	1008·4	1008·4	85·3	86·9	85·0	87·7	83·1	85·6	79·6	?	73	81	?	89·6	
	←27 years→				←27 years→						24 years	←25 years→				27 years	

JERSEY (ST. LOUIS OBSERVATORY).

Day.	Wind Direction and Force (0-12 on the Beaufort Scale). 9 h.	14 h.	21 h.	Mean of Force.	Sunshine* Total.	Per cent. of Possible.	Cloud Amount (tenths of Sky covered), Type of Cloud, and Direction whence coming. Tenths.	Upper. Type.	Direction.	Lower. Type.	Direction.	Tenths.	Upper. Type.	Direction.	Lower. Type.	Direction.	Tenths.	Upper Type.	Direction.	Lower. Type.	Direction.	Mean Amount.
	9 h.	14 h.	21 h.		hr.	%	9h.	9 h.	9 h.	9 h.	9 h.	14 h.	14 h.	14 h.	14 h.	14 h.	21 h.	21 h.	21 h.	21 h.	21 h.	
	(Dir. 0-12)	(Dir. 0-12)	(Dir. 0-12)																			
1	203 6	180 2	247 5	4·3	0·3	2	8	..	..	{ Cu. Nb.	SW	8	A.-Cu	SW	Nb.	SW	10	..	..	..	..	8·7
2	225 5	225 4	203 4	4·3	7·8	67	4	Ci.	WSW	..	..	5	..	..	Cu.	SW	4	..	..	..	..	4·3
3	180 6	180 6	180 6	6·0	1·4	12	10	A.-Cu.	W	Nb.	..	10	..	..	Nb.	S	10	..	..	..	..	10·0
4	180 4	157 3	90 3	3·3	0·0	0	10	..	..	..	..	10	..	..	..	..	4	..	..	..	..	8·0
5	135 4	157 4	90 3	3·7	1·4	12	9	A.-Cu.	S	..	..	10	..	..	..	..	10	..	..	..	..	9·7
6	157 5	180 5	157 2	4·0	7·8	67	9	A.-Cu.	..	Nb.	SE	3	..	..	Cu.	SSW	1	..	..	..	..	4·3
7	135 1	360 4	45 3	2·7	1·7	15	6	A.-Cu.	SE	..	..	10	..	..	St.-Cu.	NE	6	..	..	..	..	7·3
8	45 2	90 1	45 2	1·7	0·6	5	10	..	..	≡	..	10	..	..	≡	..	8	..	..	..	..	9·3
9	23 4	67 5	67 5	4·7	0·2	73	1	..	..	..	..	0	..	..	..	..	0	..	..	..	..	0·3
10	67 5	67 5	67 4	4·7	6·6	59	6	..	..	Cu.-Nb.	ENE	3	Ci.	..	..	..	10	..	..	..	..	6·3
11	135 1	67 4	67 4	3·0	10·7	97	4	..	..	Cu.-Nb.	SSE	1	..	..	Cu.	..	7	..	..	..	..	4·0
12	157 1	157 2	calm 0	1·0	5·2	47	7	Ci.	SW	Cu.	SSW	9	..	..	St.-Cu.	SSW	1	..	..	..	..	5·7
13	157 2	157 2	67 3	2·3	10·1	93	0	..	..	..	..	3	A.-Cu.	SW	..	..	3	..	..	..	..	2·0
14	203 3	225 3	157 2	2·7	5·9	55	8	..	..	Cu-Nb, Nb.	SW	6	..	..	Cu.-Nb.	WSW	3	..	..	..	..	5·7
15	225 4	157 3	113 2	3·0	0·4	4	10	..	..	Nb	WSW	7	..	..	..	..	10	..	..	..	..	9·0
16	112 2	90 3	67 4	3·0	8·3	77	6	A.-Cu.	SW	..	..	3	Ci.	..	..	..	4	..	..	..	..	4·0
17	67 4	45 5	45 6	5·0	1·3	12	10	..	..	Nb	..	10	..	..	Nb.	..	10	..	..	..	..	10·0
18	23 4	23 5	23 5	4·7	0·0	0	9	..	..	Cu-Nb, Nb.	NE	10	..	..	..	..	10	..	..	..	..	9·7
19	90 2	90 2	180 2	2·0	0·5	5	1	..	..	Cu.-Nb.	ENE	10	..	..	..	..	10	..	..	..	..	7·0
20	157 3	180 2	135 1	2·0	7·5	71	6	..	..	Cu.-Nb.	S	6	..	..	Cu.	S	10	..	..	..	..	7·3
21	157 3	225 2	113 1	2·0	0·0	0	10	..	..	..	..	10	..	..	..	..	10	..	..	..	..	10·0
22	calm 0	315 2	337 1	1·0	1·9	19	8	A.-Cu.	N	Cu.-Nb.	N	6	..	..	Cu.-Nb.	NE	3	..	..	..	..	5·7
23	45 2	157 1	67 3	2·0	2·7	26	7	A.-Cu.	NE	Cu.-Nb.	E	4	..	..	Cu.	E	2	Ci.	..	..	..	4·3
24	45 3	67 3	67 4	3·3	10·3	100	0	..	..	..	..	0	..	..	..	..	0	..	..	..	..	0·0
25	67 5	67 6	67 4	5·0	9·9	96	4	Ci.	S	..	..	0	..	..	..	..	0	..	..	..	..	1·3
26	90 2	67 3	67 3	2·7	10·2	100	0	..	..	..	..	0	..	..	..	..	0	..	..	..	..	0·0
27	45 3	67 4	67 4	3·7	10·2	100	0	..	..	..	..	0	..	..	..	..	0	..	..	..	..	0·0
28	67 4	67 5	67 4	4·3	10·1	100	0	..	..	..	..	0	..	..	..	..	0	..	..	..	..	0·0
29	67 4	67 3	67 2	3·0	9·8	98	4	Ci,Ci.-Cu.	E	..	..	1	..	..	..	..	0	..	..	..	..	1·7
30	135 2	157 2	157 2	2·0	10·0	100	0	..	..	..	..	0	..	..	..	..	0	..	..	..	..	0·0
31	180 6	180 6	247 3	5·0	0·1	1	9	..	..	Cu.-Nb.	S	10	..	..	Nb.	S	5	..	..	..	..	8·0
Means	3·3	3·5	3·1	3·3	5·2	49	5·7	—	—	—	—	5·3	—	—	—	—	4·9	—	—	—	—	5·3
Normal	3·5	3·8	3·4	3·4	4·2	39	6·7	—	—	—	—	6·4	—	—	—	—	6·1	—	—	—	—	6·4
	←17 years→				23 years		←26 years→															

* For method of estimation see Introduction.

8. WIND COMPONENTS: Metres per second at fixed hours, together with the greatest mean hourly velocity, or the greatest velocity attained in a gust, and the time of its occurrence.

NORTH WALES:—HOLYHEAD.

Components from Cup. Anemometer: Gusts from Pressure Tube Anemometer.
Height of Head above—Roof 8·8 m., Ground 13·7 m., M.S.L. 19·2 m.
Height of Cups above—Roof 4·6 m., Ground 7·6 m., M.S.L. 15·2 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	h. m.
1	..	Ca	lm	..	0·9	..	..	2·4	..	8·5	4·9	..	..	..	1·6	..	12	15 20
2	..	..	2·0	..	..	Ca	lm	..	..	2·3	..	2·8	4·5	..	..	0·8	15	23 55
3	9·6	..	..	5·5	10·3	..	..	8·6	11·0	..	..	9·3	10·8	..	..	9·1	25	23 55
4	9·2	..	..	..	6·2	..	..	3·6	5·8	..	..	2·1	1·6	..	..	2·9	21	0 50
5	1·7	..	..	4·6	1·0	..	..	5·5	7·1	..	..	4·1	3·0	..	0·5	..	15	13 45
6	1·5	..	..	1·3	..	..	..	5·2	..	..	..	3·6	7·1	..	..	1·3	16	19 30
7	5·8	..	..	1·0	4·8	..	..	0·9	..	5·7	3·3	..	..	3·6	..	..	11	1 15
8	..	3·3	..	..	..	1·7	..	2·0	..	2·2	..	0·8	..	Ca	lm	..	6	12 20
9	..	Ca	lm	..	..	Ca	lm	..	..	2·3	1·3	..	..	Ca	lm	..	5	11 20
10	..	1·1	..	6·1	..	..	..	8·5	..	1·8	..	10·0	..	1·2	..	7·4	14	10 25
11	..	Ca	lm	..	..	0·9	..	4·8	..	0·5	..	3·0	..	0·5	..	3·0	8	8 0
12	..	1·4	..	8·1	..	0·9	..	4·8	1·9	..	..	0·7	2·3	..	..	0·4	10	2 50
13	3·0	..	..	0·5	4·7	..	..	4·0	5·8	..	..	2·1	4·6	..	..	1·7	13	12 10
14	4·2	..	..	2·4	4·7	..	..	4·0	4·9	..	..	1·8	3·4	..	..	1·2	11	11 25
15	5·3	..	..	1·9	3·1	..	..	1·1	2·6	..	0·5	..	1·8	..	..	3·1	9	1 20
16	..	..	..	3·0	..	1·5	..	8·4	..	..	..	10·5	..	..	..	11·1	15	22 35
17	..	..	..	11·5	..	..	..	9·5	..	2·8	..	7·7	..	1·9	..	10·6	16	20 45
18	..	..	..	7·2	..	..	..	5·9	1·4	..	..	7·8	0·5	..	..	3·0	14	10 20
19	0·5	..	..	3·0	..	Ca	lm	..	7·1	..	..	1·3	4·7	..	..	4·0	13	15 25
20	5·5	..	..	4·7	6·8	..	..	3·9	6·8	..	..	1·2	5·5	..	..	1·0	15	10 35
21	4·5	..	..	0·8	4·9	..	..	..	4·6	..	..	..	2·6	..	..	..	11	11 25
22	3·6	..	..	..	3·0	..	0·5	..	5·5	..	1·0	..	5·6	..	..	..	11	22 40
23	5·5	..	..	1·0	5·5	..	..	1·0	4·6	..	1·7	..	2·2	..	..	0·8	11	10 50
24	1·0	..	..	1·2	..	..	..	4·3	..	1·1	..	6·1	..	1·5	..	8·4	12	22 25
25	..	1·1	..	6·1	..	0·9	..	4·8	..	..	..	9·8	..	..	..	9·8	12	20 5
26	..	..	..	3·0	..	..	..	7·9	..	1·1	..	6·1	..	0·3	..	1·6	10	8 20
27	..	0·3	..	1·6	..	Ca	lm	..	..	Ca	lm	..	1·6	..	0·3	..	3	15 30
28	..	Ca	lm	..	..	Ca	lm	..	..	Ca	lm	..	0·5	..	..	1·5	5	19 45
29	0·7	..	..	1·9	0·9	..	..	2·4	..	Ca	lm	..	3·2	..	..	0·6	11	23 45
30	4·5	..	..	3·9	8·8	..	..	1·5	10·0	..	..	1·8	10·0	..	..	1·8	22	23 20
31	11·9	..	..	4·4	11·1	..	..	6·4	..	5·6	..	..	3·7	..	..	4·3	24	3 35
S+N & W+E	85·2		87·3		82·6		111·9		113·0		105·3		88·3		91·8			
S−N & W−E	70·8		−83·3		70·8		−110·9		45·2		−79·9		70·1		−87·0			

SCOTLAND N:—DEERNESS.

Cups. Anemometer.
Height of Cups above—Roof 1·5 m., Ground 4·9 m., M.S.L. 57·3 m.

Day.	3 h.				9 h.				15 h.				21 h.				Vel. in Max. Hourly Run.	Time of Max.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	hrs.
1	2·9	..	..	8·0	2·8	..	..	7·7	3·6	..	..	9·8	3·7	..	..	10·1	12·5	12
2	4·4	..	..	7·7	5·4	..	..	9·4	3·9	..	..	10·7	6·7	..	..	11·6	14·1	22
3	9·8	..	..	8·2	7·8	..	..	6·6	7·0	..	..	12·2	8·3	..	..	14·5	18·0	22
4	9·5	..	..	16·5	8·0	..	..	13·9	8·3	..	..	14·5	9·5	..	..	11·3	19·0	3
5	7·4	..	..	8·8	4·3	..	..	5·1	7·8	..	..	9·3	8·0	..	..	9·6	14·1	20, 22
6	9·8	..	..	8·2	7·4	..	..	4·2	4·8	..	..	2·8	4·7	..	..	5·5	13·1	2
7	6·3	..	..	5·3	4·9	..	..	1·8	..	..	11·5	..	..	0·6	3·5	..	11·5	15
8	0·6	..	3·2	..	0·6	..	3·2	..	4·9	..	..	..	3·6	..	..	..	5·9	13, 14
9	2·0	..	0·3	..	2·6	..	..	0·5	4·2	..	..	0·7	3·2	..	..	0·6	5·9	24
10	4·8	..	..	0·9	4·8	..	..	0·9	6·5	..	..	1·1	8·8	..	..	3·2	9·8	22
11	8·6	..	..	3·1	9·8	..	..	3·6	7·7	..	..	2·8	7·4	..	..	2·7	11·5	11
12	7·0	..	..	2·6	5·8	..	..	1·0	3·8	..	..	0·7	5·5	..	..	2·0	7·9	4
13	4·9	..	..	1·8	..	Ca	lm	..	..	Ca	lm	..	..	Ca	lm	..	5·2	1 to 4
14	..	Ca	lm	..	..	Ca	lm	..	..	Ca	lm	..	..	Ca	lm	..	Ca	lm
15	0·3	..	1·6	..	..	3·0	0·5	..	..	4·3	..	3·7	..	4·3	..	5·1	7·5	23
16	..	0·9	..	4·8	..	0·6	..	3·5	..	2·6	..	4·5	..	1·1	..	6·1	8·9	14
17	..	..	..	5·6	..	..	..	4·6	0·8	..	..	4·5	4·5	..	..	2·6	5·6	3, 10, 11
18	6·8	..	..	1·2	9·2	..	..	..	9·2	..	..	..	10·8	..	..	..	11·8	24
19	9·8	..	..	..	8·5	..	..	..	8·2	..	..	..	12·5	..	..	..	13·1	24
20	11·1	..	..	..	11·1	..	..	..	9·4	..	..	1·6	7·9	..	..	..	12·5	1
21	4·3	..	..	..	4·3	..	..	..	3·3	..	..	2·8	2·5	..	..	2·1	6·9	12
22	3·7	..	..	2·1	3·7	..	..	2·1	3·5	..	..	0·6	3·5	..	..	0·6	4·9	12
23	4·5	..	..	0·8	4·5	..	..	0·8	6·2	..	..	2·3	4·0	..	..	1·5	6·6	15
24	3·9	..	..	..	4·8	..	..	0·9	2·6	..	..	0·5	1·6	..	..	0·3	6·6	12
25	4·9	..	..	1·8	5·3	..	..	4·5	7·1	..	..	4·1	7·4	..	..	4·2	10·2	24
26	8·3	..	..	3·0	11·7	..	..	4·3	8·0	..	..	2·9	8·8	..	..	1·5	12·5	9
27	5·1	..	..	0·9	..	Ca	lm	..	4·3	..	..	1·6	5·5	..	..	2·0	7·2	23, 24
28	8·0	..	..	2·9	9·7	..	..	1·7	7·8	..	..	1·4	7·8	..	..	1·4	9·8	9
29	6·2	..	..	..	4·6	..	..	..	6·6	..	..	..	10·3	..	..	1·8	10·5	21
30	10·3	..	..	3·8	18·0	..	..	6·6	14·7	..	..	5·4	15·9	..	..	9·2	20·3	22, 24
31	14·6	..	..	12·2	18·1	..	..	15·2	12·0	..	..	10·2	10·4	..	..	12·3	23·6	9
S+N & W+E	180·7		115·3		181·3		102·6		173·1		122·2		188·8		125·3			
S−N & W−E	178·9		−105·1		174·1		−95·2		159·3		−99·2		176·8		−118·3			

ENGLAND S.W.:—SCILLY.

Components from Cup. Anemometer: Gusts from Pressure Tube Anemometer.
Height of Head above—Ground 9·8 m., M.S.L. 49·7 m.
Height of Cups above—Ground 5·8 m., M.S.L. 45·7 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	h. m.
1	1·3	..	3·6	..	..	1·2	2·2	..	3·5	..	..	..	..	Ca	lm	..		
2	..	4·6	5·4	..	..	2·3	4·0	..	3·2	..	3·8	..	4·3	..	2·5	..		
3	9·7	..	..	3·6	12·9	..	..	4·7	13·1	..	..	2·3	7·0	..	2·6	..		
4	7·9	..	..	..	7·9	..	..	..	8·9	..	..	3·3	8·0	..	..	4·6		
5	6·1	..	..	5·1	6·1	..	..	3·5	6·8	..	..	3·9	2·7	..	..	4·7		
6	1·2	..	..	6·6	0·8	..	..	4·5	4·5	..	0·8	..	2·7	..	..	1·0		
7	..	Ca	lm	..	..	1·1	1·3	..	..	4·1	0·7	..	..	5·1	..	1·8		
8	..	4·3	..	2·5	..	5·9	..	2·2	..	0·4	..	2·1	1·3	..	..	3·6		
9	2·2	..	..	1·2	1·6	..	..	1·3	0·3	..	..	1·7	..	3·6	..	2·1		
10	..	..	..	3·8	0·8	..	..	4·5	..	..	..	4·2	..	0·9	..	2·3		
11	0·7	..	..	4·1	3·0	..	..	3·5	5·1	..	..	4·4	6·1	..	..	5·1		
12	7·2	..	..	4·2	4·1	..	..	0·7	5·3	..	..	0·9	6·1	..	..	3·5		
13	8·6	..	..	3·1	8·7	..	..	1·5	7·8	..	..	2·8	6·3	..	..	2·3		
14	4·7	..	..	1·7	3·6	..	1·3	..	4·8	..	4·1	..	3·2	..	3·8	..		
15	..	..	4·2	..	2·7	..	3·2	..	2·0	..	..	0·7	4·1	..	..	4·8		
16	3·9	..	..	6·8	2·6	..	..	7·0	1·2	..	..	7·0	..	..	..	3·8		
17	..	0·9	..	5·3	..	..	..	2·5	..	2·5	..	2·1	1·4	..	..	3·9		
18	..	1·2	..	7·0	..	..	..	3·8	1·4	..	..	3·9	2·9	..	..	5·0		
19	4·4	..	..	3·8	5·8	..	..	3·3	6·8	..	..	3·9	10·9	..	..	4·0		
20	9·4	..	..	5·4	5·9	..	..	2·2	4·7	..	..	2·7	5·1	..	..	1·8		
21	2·5	..	..	0·4	3·6	..	..	1·3	..	Ca	lm	..	0·8	..	1·5	..		
22	..	0·4	2·5	..	..	Ca	lm	..	3·1	..	1·1	..	2·7	..	..	1·0		
23	4·7	..	..	1·7	6·8	..	..	3·9	5·5	..	..	3·1	3·8	..	..	4·4		
24	3·5	..	..	4·1	..	..	..	4·2	..	..	..	4·6	..	0·8	..	4·5		
25	..	0·9	..	5·3	..	..	..	5·4	1·4	..	..	8·2	..	..	..	5·4		
26	4·1	..	..	7·2	4·4	..	..	5·1	4·4	..	..	3·8	4·1	..	..	4·8		
27	2·1	..	..	2·5	1·7	..	..	4·7	4·6	..	..	5·4	3·1	..	..	5·5		
28	3·5	..	..	4·1	2·5	..	..	4·3	2·3	..	..	4·0	2·0	..	..	5·5		
29	1·3	..	..	3·0	..	0·9	..	5·3	1·1	..	..	3·1	4·3	..	..	2·5		
30	6·5	..	..	3·7	2·7	..	1·0	..	4·6	..	..	..	7·8	..	..	1·4		
31	9·2	..	..	..	..	8·7	5·0	..	..	3·9	0·8	..	..	1·1	8·2	..		
S−N & W+E	117·0		112·4		108·3		97·4		110·3		95·4		112·5		107·9			
S−N & W−E	92·4		−81·0		68·1		−61·4		94·5		−60·8		88·9		−70·7			

ENGLAND E.:—SHOEBURYNESS.

Pressure Tube Anemometer.
Height of Head above—Ground 27·4 m., M.S.L. 31·4 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	h. m.
1	1·6	..	4·5	..	8·1	..	1·4	..	11·6	..	..	..	8·1	..	..	1·4	16	12 55
2	9·8	..	..	..	7·9	..	4·5	..	10·0	..	3·7	..	4·2	..	..	0·7	13	10 25
3	2·8	..	..	1·0	10·0	..	..	5·9	10·5	..	..	3·9	8·2	..	..	3·0	14	15 55
4	5·5	..	..	3·2	7·0	..	..	5·9	4·2	..	..	0·7	..	0·8	..	2·3	14	7 10
5	2·8	..	..	2·4	4·4	..	..	5·1	3·8	..	..	4·4	2·4	..	..	4·2	10	10 45
6	4·2	..	..	4·9	1·0	..	..	2·8	5·7	..	2·1	..	2·4	..	..	2·8	12	13 20
7	3·5	..	1·3	..	..	Ca	lm	..	..	0·5	..	2·7	..	2·6	..	1·5	6	13 40
8	..	3·3	..	2·8	..	0·8	..	4·5	..	2·7	..	4·8	..	1·7	..	2·1	8	18 50
9	..	2·3	..	1·9	..	2·6	..	4·5	..	5·3	..	6·3	..	3·2	..	8·7	13	21 25
10	..	4·1	..	7·1	..	5·2	..	9·6	..	2·9	..	8·0	..	..	..	8·5	14	9 10
11	..	0·9	..	4·8	1·2	..	..	6·6	..	2·2	..	6·0	1·5	..	..	8·4	12	19 55
12	1·8	..	..	3·2	2·3	..	..	1·9	0·9	..	..	4·8	..	Ca	lm	..	9	0 5
13	..	Ca	lm	..	..	Ca	lm	..	..	Ca	lm	..	..	Ca	lm	..	Ca	lm
14	..	1·3	..	1·0	..	Ca	lm	..	0·6	..	..	1·7	..	Ca	lm	..	6	6 5
15	2·3	..	1·9	..	1·8	..	1·0	..	1·0	..	2·8	..	2·2	..	2·6	..	9	14 50
16	..	Ca	lm	..	..	Ca	lm	..	..	0·8	..	2·3	..	1·8	..	1·5	10	23 50
17	1·3	..	..	7·2	..	..	..	11·9	..	4·5	..	12·2	..	4·8	..	13·1	20	22 55
18	..	9·2	..	11·0	..	7·9	..	13·7	..	4·6	..	12·5	..	2·3	..	13·2	21	5 45
19	..	1·8	..	10·2	1·3	..	..	7·5	..	..	..	5·2	4·7	..	..	4·0	18	0 55
20	0·9	..	..	1·0	4·7	..	..	4·0	1·8	..	..	4·9	2·6	..	..	3·1	7	8 50
21	..	Ca	lm	..	..	Ca	lm	..	..	Ca	lm	..	..	Ca	lm	..	4	18 25
22	..	Ca	lm	..	..	Ca	lm	..	..	Ca	lm	..	..	Ca	lm	..	5	5 35
23	..	Ca	lm	..	..	Ca	lm	..	..	Ca	lm	..	..	2·0	..	0·7	5	23 0
24	..	3·3	..	0·6	..	2·8	..	1·0	..	3·1	..	3·8	..	3·6	..	0·6	8	12 35
25	..	4·8	..	0·9	..	2·6	..	7·1	..	3·6	..	6·3	..	1·6	..	9·4	13	21 50
26	..	2·2	..	0·6	..	1·2	..	6·9	..	2·4	..	4·2	..	1·0	..	2·8	9	10 40
27	0·7	..	..	4·2	..	Ca	lm	..	..	1·2	..	3·2	..	2·5	..	6·9	10	20 45
28	0·9	..	..	5·4	1·6	..	..	4·3	..	1·3	..	7·2	3·4	..	..	9·1	13	21 50
29	2·0	..	..	7·1	3·6	..	..	9·7	3·1	..	..	8·5	6·1	..	..	7·2	13	18 25
30	7·1	..	..	4·1	4·7	..	..	4·0	1·3	..	..	3·5	6·9	..	..	2·5	11	19 0
31	1·1	..	..	5·1	5·5	..	..	0·5	8·4	..	..	7·1	9·4	..	..	11·2	19	19 55
S+N & W+E	87·1		98·0		88·2		123·8		98·0		132·8		90·0		131·5			
S−N & W−E	20·7		−83·2		42·0		−110·0		27·8		−115·6		34·2		−126·3			

9. Seismological Diary.

The notation used is explained in the Introduction.

Earthquakes:—Eskdalemuir.

Day.	Phase.	Time. G.M.T.	Period.	Amplitudes. A_N.	Amplitudes. A_E.	Amplitudes. A_Z.	△.	Remarks.
		h m s	s	μ	μ	μ	km.	
7	e	21 7 0	..	..	..	..	..	
	S(?)	21 18 45	..	..	..	..	..	
	L	21 33	22	..	..	..	..	
	F	22 30	..	..	..	..	..	
8	e	16 59 42	..	..	..	..	..	
	e	17 2 39	..	..	..	..	..	
	S(?)	17 12 29	..	..	..	..	..	
	L	17 27	..	..	..	..	..	
	F	18	..	..	..	..	..	
12	i	7 12 48	..	..	..	..	..	
	L	7 23	24	..	..	..	..	

Microseisms of N. Component:—Eskdalemuir.

Day.	0 h. A_N.	0 h. T.	6 h. A_N.	6 h. T.	12 h. A_N.	12 h. T.	18 h. A_N.	18 h. T.
	μ	s	μ	s	μ	s	μ	s
1	1·1	4·5	0·8	5·5	1·0	5	0·9	4·5
2	1·0	4·5	1·1	4	1·1	5	1·4	5·5
3	1·7	5·5	1·7	5	1·6	6	2·4	6
4	2·2	7	3·4	6	3·0	5	2·7	5
5	1·6	6	2·3	5·5	1·4	6	1·2	5
6	1·0	5	0·8	4·5	0·9	5	0·9	4·5
7	0·5	3·5	0·2	4	0·5	4	0·1	4·5
8	0·1	4	0·1	6	0·0	0	0·0	0
9	0·2	6	0·5	6	0·7	5·5	1·0	4
10	0·8	5·5	0·9	5	0·6	6	0·7	4
11	..	..	..	..	0·3	5	0·1	4·5
12	0·8	4	0·7	4	0·5	5	0·8	4
13	0·5	6	0·6	5	..	..	..	..
14	..	..	..	..	0·4	5	..	..
15	0·1	5	..	..	0·3	4	..	..
16	0·3	4	..	..	..	..	..	..

Instrument out of action after October 16th.

Earthquakes:—Richmond (Kew Observatory).

Day.	Times, G.M.T. of Commencement. h. m.	Times, G.M.T. of Max. Phase. h. m.	Remarks.
7	21 19	21 49	Small.
12	..	7 29	Small.
18	8 33	9 4	
20	10 52	11 2	Amplitude on trace 1·3 mm.
20	..	20 15	Small.
21	..	19 13	Small.
22	..	13 7	Small.
28	13 14	13 51	Small.

The Galitzine Seismographs were out of action from October 16th to the end of the year, the clockwork and mechanism of the recording drums being under repair.

10. Soundings with Pilot Balloons.

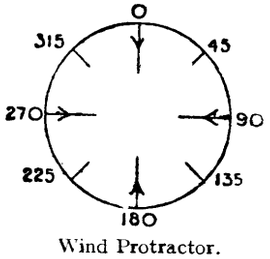
Day	Time of Start, G.M.T.	Horizontal Velocity of Wind. Geostrophic.*		By Anemometer.		At Heights above M.S.L. 500 m.		1000 m.		2000 m.		3000 m.		4000 m.		Cloud Observations. Time, G.M.T.	Type.	Deg. from N.	mr/s	Type.	Deg. from N.	mr/s
	h. m.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	h. m.						
									ABERDEEN.													
23	12 0	210	15	180	4·5	215	11·0	210	19·0	205	3·5	..	..	..	..	13 0	Fr.-St.	225	23·0	A.-Cu.	225	1·5
									ESKDALEMUIR.													
2	7 40	180	5	340	1·7	40	1·2	145	2·6	150	8·0	..	..	..	..	..	A.-St.	140	3·5	..	..	..
2	11 50	180	5	330	0·4	315	1·3	200	2·0	170	4·3	..	..	..	..	..	Cu.	215	3·3	A.-Cu.	180	2·0
2	17 15	180	7	180	2·5	190	3·6	180	3·0	205	9·0	170	9·0	..	..	..	Cu.; St.-Cu.	..	..	A.-Cu.	..	..
3	7 50	180	33	130	8·5	150	11·0	155	13·5	170	21·0	..	..	..	..	..	St.	155	..	Ci.	275	3·0
7	17 0	?	?	280	1·0	315	5·0	285	2·6	265	6·0	260	6·0	255	6·5	..	Cu.	..	..	Ci.	..	..
8	7 15	?	?	360	1·6	105	2·2	170	2·9	265	2·5	295	5·5	275	7·5	..	..	..	..	Ci.	360	2·0
8	11 0	?	?	145	1·3	145	3·1	155	3·4	210	3·4	220	3·3	275	6·5	10 55	..	..	..	Ci.	355	1·5
																..	Cu.	190	5·0	Ci.	15	1·5
8	17 25	200	6	Calm		165	1·9	155	5·5	200	7·5	..	..	..	..	..	..	..	..	Ci.	5	1·5
10	7 30	?	?	20	2·0	65	3·8	130	7·0	95	8·5	110	11·0	145	7·5	..	Cu.	..	..	..	..	..
10	12 30	140	9	40	4·0	65	3·9	125	8·0	135	10·5	120	8·0	140	8·0	..	..	..	..	Ci.	190	2·0
12	11 35	145	10	95	2·7	105	3·9	155	8·0	150	12·0	160	15·0	140	11·0	..	..	..	..	..	..	..
12	16 55	160	7	Calm		125	2·9	155	3·8	160	9·0	165	5·5	160	11·0		..	..	..	..	..	..
13	16 50	200	3	230	0·7	225	4·3	205	8·0	205	5·0	..	..	..	..	..	..	..	..	Ci.	180	1·5
																				Ci.-St.	180	..
14	16 55	?	?	85	1·5	110	5·0	130	7·5	165	7·0	180	5·0	..	..	..	Cu.; A.-Cu.	..	..	Ci.	..	..
17	7 40	110	9	50	5·0	95	8·5	105	13·0	270	0·2	..	..	..	..	..	St.-Cu.	120	11·5	Ci.	..	..
19	11 40	180	8	155	3·7	150	6·5	175	12·5	165	14·0	..	..	..	..	..	..	..	..	Ci.-St.	240	1·5
																				Ci.	200	1·5
24	12 5	?	?	55	3·4	60	2·8	130	4·6	140	5·5	170	7·5	170	11·0	..	..	..	..	Ci.-St.	..	..
	7 30	140	7	355	5·0	45	6·0	150	9·0	140	10·0	125	9·0	140	4·6	..	..	..	..	..	..	..
	12 15	150	7	30	3·4	75	5·0	150	9·0	145	9·0	145	7·0	175	5·0	..	..	..	..	..	..	..
	16 0	140	11	40	3·4	55	3·1	140	7·5	150	7·5	150	6·5	150	6·0	..	..	..	..	..	..	..
	7 25	160	8	360	4·6	115	2·9	155	10·0	145	11·5	150	7·5	145	6·0	..	..	..	..	..	..	..
26	1 15	?	?	180	0·9	130	2·3	170	13·0	155	12·5	185	4·3	165	5·5	..	..	..	..	..	..	..
26	16 35	?	?	Calm		140	5·5	180	9·5	160	10·0	..	..	..	..	..	..	..	..	..	..	..
27	7 30	?	?	70	0·2	195	2·1	195	7·5	175	6·0	170	7·0	180	8·0	..	..	..	..	..	..	..
27	10 45	?	?	360	0·2	155	3·2	175	7·0	165	7·0	180	7·0	180	9·5	..	..	..	..	..	..	..
27	15 55	180	3	155	1·6	150	4·6	175	7·0	180	7·0	180	5·5	210	6·0	..	..	..	..	..	..	..
28	7 30	170	8	360	0·9	160	4·8	170	6·0	195	9·5	180	8·0	185	11·0	..	..	..	..	..	..	..
28	11 35	170	9	170	2·7	150	3·7	185	8·5	185	6·0	185	12·0	185	7·0	..	..	..	..	..	..	..
28	15 50	165	9	175	1·9	155	4·3	190	6·3	190	10·5	175	11·5	..	..	..	..	..	..	..	..	..
29	7 35	180	7	355	1·5	130	5·5	165	6·0	175	12·0	190	9·5	190	10·0	..	..	..	..	..	..	..
29	11 40	?	?	140	3·0	140	3·8	180	8·0	180	15·5	..	..	..	..	..	Cu. A.-St.	..	..	..	..	..
29	15 50	195	9	160	3·5	150	6·5	185	6·5	185	10·5	180	10·5	..	..	15 0	..	..	..	Ci.	170	1·5
		5000 m.		6000 m.		7000 m.		8000 m.		9000 m.		10000 m.		11000 m.								
7	17 0	280	9·0	..	..	..	..	..	..	..	..	..	..	..	..	..	Cu.	..	..	Ci.	..	..
8	7 15	295	6·5	285	10·0	340	4·8	345	13·0	345	15·5	355	18·0	350	14·0	..	..	..	..	Ci.	360	2·0
8	11 0	295	3·2	245	7·5	340	3·0	345	5·5	10	9·0	15	13·5	25	13·5	10 55	..	..	..	Ci.	355	1·5
																..	Cu.	190	5·0	Ci.	15	1·5
10	12 30	175	11·5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	Ci.	190	2·0
12	11 35	145	16·5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
25	7 30	165	8·5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
25	12 15	175	8·5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
25	16 0	160	7·0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
26	7 25	145	12·5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
26	11 15	170	8·5	165	8·0	200	2·1	180	3·8	165	6·0	205	2·7	360	15·5	..	..	..	..	..	..	..
27	7 30	195	10·0	220	8·0	235	6·0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
27	10 45	215	8·0	250	10·0	255	8·0	255	7·5	235	11·0	270	0·5	15	7·5	..	..	..	..	..	..	..
28	7 30	180	12·0	185	12·0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
28	11 35	170	10·5	170	11·5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
29	7 35	195	12·0	210	10·0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
		(For observations at lower levels, see above.)																				
				12000 m		13000 m.		14000 m.		15000 m.		16000 m.		17000 m.								
5	11 15	..	..	5	9·0	355	11·0	15	15·0	40	9·5	160	17·0	140	20·0	..	..	..	..	..	..	..
27	10 45	..	..	285	4·4	245	6·5	240	12·5	..	..	..	..	..	..	..	..	..	..	..	..	..

10. Soundings with Pilot Balloons.

Day	Time of Start G.M.T.	Horizontal Velocity of Wind. Geostrophic.*		By Anemometer.		At Heights above M.S.L. 500 m.		1000 m.		2000 m.		3000 m.		4000 m.		Cloud Observations. Time. G.M.T.	Type.	Deg. from N.	mr/s.	Type.	Deg. from N.	mr/s.
	h. m.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	h. m.						
									SOUTH FARNBOROUGH.													
2	8 40	220	4	180	6·0	205	9·5	205	10·5	200	13·5	200	12·5	..	..	..	Cu.; Cu.-Nb	..	..	..	..	..
12	10 45	150	5	125	2·9	140	8·0	150	7·5	165	5·0	150	8·0	145	7·0	..	..	..	..	..	..	..
12	14 10	150	5	145	5·5	155	4·0	185	1·5	170	6·0	160	9·0	165	12·0	..	Cu.	..	..	..	..	..
13	14 25	210	6	235	3·7	230	3·5	240	4·5	255	7·0	230	5·0	..	..	..	Fr.-Cu.	..	..	..	..	..
18	7 45	80	13	40	10·0	60	18·0	65	18·5	55	13·0	..	..	..	..	..	..	..	..	Ci.; Ci.-St.	..	..
20	14 45	180	8	150	4·5	135	5·0	170	6·5	175	9·0	185	7·0	170	12·0	..	Cu.	..	..	..	..	..
28	11 50	125	9	105	4·5	115	9·5	115	8·5	135	7·5	160	5·5	95	3·5	..	St.	..	..	..	..	..
29	12 0	110	7	90	5·5	100	8·0	115	16·0	120	9·5	120	12·5	135	12·5	..	St.	..	..	..	..	..
30	9 45	160	10	140	4·9	135	9·5	170	6·0	170	8·0	155	10·5	..	..	..	St.; Fr.-Cu.	..	..	..	..	..
				5000 m.		6000 m.		7000 m.		8000 m.		9000 m.		10000 m								
12	10 45	(For		160	8·0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
12	14 10	observations		175	9·5	170	8·0	165	7·0	150	7·5	160	8·0	175	9·0	..	Cu.	..	..	..	..	..
20	14 45	at lower levels see above.)		180	12·5	..	..	..	..	..	..	..	..	..	..	..	Cu.	..	...	..	..	..
									CAHIRCIVEEN.													
1	6 50	?	?	50	1·9	20	0·9	20	1·3	225	0·4	..	..	..	..	..	St.	..	..	A.-Cu.; A.-St.	..	..
5	6 50	?	?	110	7·0	130	7·5	130	14·0	150	8·5	160	11·5	145	16·5	7 0	Cu.; St.-Cu.	135	..	A.-Cu.	170	3·5
6	7 0	?	?	Calm		40	4·2	40	3·0	100	2·7	..	..	..	..	..	St.-Cu.	135	..	..	..	..
6	10 50	60	12	40	2·0	15	4·5	5	6·5	15	4·7	45	4·1	65	3·8	12 20	A.-St.	..	..	Ci.-Cu.	170	1·0
7	15 5	?	?	325	6·0	330	5·0	325	3·8	310	7·0	310	5·5	300	6·5	15·50	St.-Cu.	340	..	Ci.-Cu. Ci.-St.	350 360	3·5 ..
8	7 0	?	?	55	1·7	..	..	270	0·1	25	2·2	15	2·8	70	4·0	..	..	..	..	Ci.-Cu.	20	..
8	16 15	?	?	185	3·5	175	3·5	160	6·5	160	4·9	170	3·2	125	6·5	..	Cu.	180	..	Ci.-St.	..	..
9	17 5	180	4	140	4·5	..	..	155	9·5	165	7·0	180	13·5	..	..	..	St.-Cu.	225	..	A.-St.	..	..
10	6 50	?	?	95	7·5	125	1·8	220	1·2	145	12·5	..	..	..	..	..	St.; St.-Cu.	270	..	A.-St.	..	..
11	6 45	?	?	75	5·5	125	7·0	130	11·5	110	11·0	..	..	..	..	7 20	Cu.; St.	110	..	Ci.	185	1·0
25	7 10	130	7	Calm		110	10·5	150	2·9	140	8·5	..	..	..	..	..	St.	110	..	..	..	..
26	17 10	180	12	125	5·5	130	13·5	150	22·5	170	12·5	..	..	..	..	..	Fr.-St.	135	..	A.-St.	..	..
27	7 20	180	4	140	9·5	155	15·5	155	14·0	175	11·0	..	..	..	..	7 45	St.; Fr.-St.	160	..	Ci.; Ci.-Cu.	160	1·5
28	17 10	180	7	120	5·0	90	2·3	70	0·9	180	4·4	..	..	..	..	..	St.-Cu.	160	..	A.-Cu.	70	..
29	11 40	180	5	Calm		185	1·2	260	0·6	170	4·8	170	5·5	190	10·0	..	Cu.; St.-Cu.	110	..	..	..	..
				5000 m.		6000 m.		7000 m.		8000 m.		9000 m.		10000 m.								
6	10 50	(For		80	5·5	30	4·7	90	4·8	..	..	..	..	..	..	12 20	A.-St.	..	..	Ci.-Cu.	170	1·0
7	15 5	observations		305	10·0	330	15·0	355	17·5	..	..	..	..	..	..	15 50	St.-Cu.	340	..	Ci.-Cu. Ci.-St.	350 360	3·5 ..
8	7 0	at lower levels,		85	4·4	40	7·0	50	5·5	25	12·0	15	15·0	15	15·0	..	..	..	..	Ci.-Cu.	20	..
8	16 15	see above.)		145	8·0	145	13·5	115	11·5	..	..	..	..	..	..	..	Cu.	180	..	Ci.-St.	..	..
29	11 40			185	13·0	195	15·0	..	..	..	..	..	..	..	..	..	Cu.; St.-Cu.	110	..	..	..	..
										11000 m.		12000 m.		13000 m.								
8	7 0									360	16·0	25	19·5	10	21·0	..	..	..	..	Ci.-Cu.	20	..

Height of Station above M.S.L. = H.
Anemometer above ground = h.

	H.	h.
Aberdeen - -	14 m.	22 m.
Eskdalemuir -	242 m.	15 m.
S. Farnborough -	70 m.	31 m.
Cahirciveen -	9 m.	13 m.



Wind Protractor.

Notes on Pressure Distribution.

October, 1920.

1st, 7 h. to 5th, 18 h. Deep depression centered in the neighbour of Ireland.
6th, 7 h. 13 h. Low over the British Isles; centered over the Bay of Biscay.
7th, 18 h.; 8th, 7 h. 13 h. 18 h. High over the British Isles and the Continent.
9th, 18 h. to 11th, 7 h. Extensive Anticyclone centered over Southern Scandinavia.
12th, 13 h. 18 h. / 13th, 13 h. 18 h.; 14th, 18 h. } Large shallow Low S.W. of Ireland.
17th, 7 h. Anticyclone centered between Iceland and Scandinavia. Low centered over the Bay of Biscay.
18th, 7 h. Anticyclone centered near Christiania. Low centered over France.
19th, 13 h. Anticyclone centered over the Baltic shallow Low over the Atlantic.
20th, 13 h. Southerly Type.
23rd, 13 h. Extensive Anticyclone centered over the Baltic; deep depression over Iceland.
24th, 13 h. Scandinavian Anticyclone covering the British Isles.
25th, 7 h. 13 h. 18 h. / 26th, 7 h. } Anticyclone over the British Isles centered over Denmark.
18 h. Anticyclone over the British Isles centered over Norway.
27th, 7 h. 13 h. 18 h. Scandinavian Anticyclone covering the British Isles.
28th, 7 h. 13 h. 18 h. Anticyclone over the British Isles, centered over the Baltic.
29th, 7 h. Anticyclone over the British Isles, centered over Germany.
29th, 13 h. 18 h. / 30th, 7 h. } Deep depression centered over Iceland; extensive Anticyclone centered over Poland.

Notes on Ascents.

Eskdalemuir—

2nd, 7 h. 40 m. Balloon entered A.-St.
10th, 7 h. 30 m. Ground fog lifting and blowing over.
26th, 11 h. 15 m. Atmosphere clear, balloon followed without the aid of light filter.
27th, 7 h. 30 m. Smoke lying in valley.

Cahirciveen—

1st, 6 h. 50 m. Balloon lost behind St.
5th, 6 h. 50 m. Balloon eclipsed by Cu. Cloud.
6th, 7 h. 0 m. Balloon went into St.-Cu.
6th, 10 h. 50 m. Balloon lost behind Ci.-Cu.
7th, 15 h. 5 m. Balloon went into Ci.-Cu.
10th, 6 h. 50 m. Balloon went into high St.
28th, 17 h. 10 m. Balloon lost behind high St.-Cu.
29th, 11 h. 40 m. Balloon lost behind Cu.-cloud.

11. Nephoscope Observations.

Aberdeen.

Day and Hour. G.M.T.	Type of Cloud.	Velocity-height-ratio.				Remarks.
		Degrees from N.	Milliradians per Second.	Components.		
				W.–E.	S.–N.	
7 9	St.-Cu.	218	3·8	+2·3	+3·0	Fused St.-Cu., high type.
7 11	St.-Cu.	217	3·8	+2·3	+3·0	Do.
7 13	A.-Cu.	220	3·6	+2·3	+2·8	Small A-Cu. cloudlets, forming the edge of the sheet of St.-Cu observed earlier.
7 15	St.-Cu.	230	5·2	+4·0	+3·3	St.-Cu. of lower type; an entirely different layer.
8 13	Fr.-St.	181	15·0	+0·3	+15·0	Small wisps of Fracto-stratus.
10 13	Ci.	168	2·1	−0·4	+2·1	"False" Cirrus of irregular structure.
12 13	St.	178	8·0	−0·3	+8·0	Massive heaps of low stratus—cumuliformis.
16 13	St.-Cu.	15	3·9	−1·1	−3·8	St.-Cu. formed from upper part of Cu.-Nb.
17 13	Ci.	129	0·8	−0·6	+0·5	True Ci., Radiant 130°.
	Cu.	125	7·8	−6·4	+4·5	Low Cu., eddy-type.
18 13	St.-Cu.	183	5·7	+0·3	+5·7	St.-Cu., with slight Cu. below it.
19 13	A.-Cu.	267	1·4	+1·4	+0·1	Banded A.-Cu., very small flakes in places, Radiant 295°.
	Fr.-St.	185	12·5	+1·1	+12·4	
21 13	Fr.-St.	183	25·0	+1·3	+25·0	Very loose indefinite clouds.
22 13	Ci.-Cu.; A-Cu.	192	7·1	+1·5	+7·0	A.-Cu. and low Ci.-Cu. in broad bands perpendicular to direction of motion.
	St.-Cu.	197	7·8	+2·3	+7·4	Fused St.-Cu., low type.
23 13	A.-Cu.	227	1·3	+0·9	+0·9	"False" Ci., changing into A.-Cu. in lenticular masses.
	Fr.-St.	226	23·0	+17·0	+16·0	
25 13	St.-Cu.	180	12·5	0·0	+12·5	St.-Cu. developing from stratus.
26 13	St.-Cu.	175	11·0	−1·0	+11·0	
30 13	St.-Cu.	185	14·0	+1·2	+14·0	Normal St.-Cu. but of low altitude.

N.B.—The first and last weeks of the month were characterised by indefinite Nb. and St. cloud, which could not be measured.

12. Aurora.

Day.	a.m. or p.m.	Moon.	Magnetic Character.		Aurora Observations.	
			Eskdalemuir.	Richmond.	Station.	Remarks.
6	p.	...	1, 1	1, 1	Dublin (City).	
10	p.	...	1, 0	2, 0	Deerness. Fort William. Paisley.	
12	a.	●	..	..	...	
12	p.	...	1, 0	1, 0	Deerness.	
16	p.	...	0, 1	0, 1	Deerness. Aberdeen.	20 h.—22 h. Faint yellowish glow seen occasionally.
17	p.	...	1, 0	1, 0	Baltasound Deerness Gordon Castle Inverness Aberdeen	19 h.—22 h. Moderately bright, yellowish glow, elevation 15° to 20°.
					Eskdalemuir	22 h. Faint glow.
26	p.	...	1, 1	1, 2	Deerness. Banff.	
27	p.	○	..	..	..	
29	p.	...	1, 0	1, 0	Nairn.	

Note.—The two magnetic "characters" entered in each case refer to the two periods of 24 hours ending and beginning at midnight of the night in question.

METEOROLOGICAL OFFICE OBSERVATORIES.—GEOPHYSICAL JOURNAL.

DAILY VALUES.—*Solar Radiation, Meteorology, Atmospheric Electricity, Terrestrial Magnetism, and Seismology.*
Tenth YEAR.—No. 8. NOVEMBER, 1920.] Units based on the C.G.S. System. [*Price* 1s. 6d.

1. SUNSHINE AND SOLAR RADIATION.

Day.	WESTMINSTER. Bright Sunshine.* Total.	Per cent. of Possible.	SOUTH KENSINGTON.—Lat. 51° 30′ N. Long. 0° 10′ W. Radiation received on Horizontal Surface by Callendar Radiograph. Daily Total.	Per cent. of Planetary.	Maximum. For Day. Amount.	Time. h.	m.	11·30 h. to 12·30 h.	RICHMOND.—Lat. 51° 28′ N. Long. 0° 19′ W. Bright Sunshine.* Total.	Per cent. of Possible.	Radiation at Noon by Ångström Pyrheliometer. Intensity.	Vertical Component.	Sky.	ESKDALEMUIR.—Lat. 55° 19′ N. Long. 3° 12′ W. Bright Sunshine.* Total.	Per cent. of Possible.	Radiation by Ångström Pyrheliometer. Time.	Sky.	$\frac{p}{p_0}$ sec. Z.	Intensity.	CAHIRCIVEEN. Bright Sunshine.* Total.	Per cent. of Possible.
	hr.	%	j/cm².	%	mw/cm².	h.	m.	mw/cm².	hr.	%	mw/cm².	mw/cm².		hr.	%	h. m.			mw/cm².	hr.	%
1	0·0	0	129	10	15	13	10	12	0·0	0	..	..	..	0·0	0	..	..	..	..	5·2	54
2	3·9	41	*x*509	41	*x*29	11	40	*x*29	6·1	64	..	..	..	0·1	1	..	..	..	..	0·0	0
3	0.4	4	366	30	27	11	5	15	1·5	16	..	..	..	0·0	0	..	..	..	..	1·1	12
4	0·0	0	138	12	8	10	20	4	0·0	0	..	..	..	0·0	0	..	..	..	..	0·0	0
5	0·0	0	203	17	12	12	50	7	0·0	0	..	..	..	7·0	78	..	..	..	..	4·4	47
6	0·0	0	156	14	18	11	35	18	2·5	27	21	8	Misty	0·0	0	..	..	..	..	1·5	16
7	0·0	0	—	—	—	—		—	0·2	2	..	..	..	0·0	0	..	..	..	..	0·0	0
8	0·0	0	230	21	23	12	50	18	1·1	12	29	11	Misty	0·0	0	..	..	..	..	0·0	0
9	0.0	0	122	11	14	12	28	14	0·0	0	..	..	..	0·0	0	..	..	..	..	0·0	0
10	0·0	0	212	20	18	14	22	14	0·0	0	..	..	..	3·7	42	12 15	Ci	3·28	71	1·2	13
11	0·8	9	348	33	27	10	58	17	3·5	38	15	5	Thro' Ci	3·0	35	..	..	..	..	0·2	2
12	0·2	2	195	19	13	12	55	12	1·1	12	..	..	..	0·0	0	..	..	..	..	0·2	2
13	0·7	8	102	10	15	14	15	8	1·5	17	..	..	..	3·4	40	..	..	..	..	1·2	13
14	0·0	0	291	29	18	11	55	18	0·0	0	..	..	..	0·5	6	..	..	..	..	0·0	0
15	0·0	0	108	11	16	13	5	8	0·0	0	..	..	..	1·5	18	..	..	..	..	1·6	18
16	*x*5·3	60	294	31	23	11	20	20	5·8	66	55	18	Clear	2·7	32	..	..	..	..	3·7	43
17	3·9	45	296	31	17	10	50	16	*x*6·7	77	53	18	Clear	4·3	52	12 1	Clear	3·68	69	1·8	21
18	0·0	0	260	28	15	12 13	10 0	15	0·5	6	..	..	..	0·0	0	..	..	..	..	0·0	0
19	4·9	56	249	27	17	12	14	17	6·1	70	40	13	Hazy	0·0	0	..	..	..	..	0·0	0
20	0·0	0	7	1	4	14	45	3	0·0	0	..	..	..	1·5	19	..	..	..	..	4·4	52
21	2·7	31	231	26	15	11	30	15	2·6	30	..	..	..	5·5	69	..	..	..	..	0·4	5
22	0·0	0	172	20	10	12	20	10	0·0	0	..	..	..	*x*7·2	91	11 58	Clear	4·05	77	5·8	69
23	2·5	29	195	23	13	12	15	13	1·7	20	12	4	Misty	7·0	89	..	..	..	..	*x*5·9	70
24	0·5	6	208	25	14	11	45	14	2·1	25	20	6	Misty	4·0	51	..	..	..	..	0·3	4
25	3·4	40	269	33	20	11	20	17	4·6	55	..	..	..	0·3	4	..	..	..	..	0·0	0
26	0·4	5	231	29	16	11	15	15	0·5	6	..	..	..	2·3	30	..	..	..	..	0·1	1
27	0·0	0	117	15	13	12	20	13	0·0	0	..	..	..	0·0	0	..	..	..	..	0·0	0
28	0·0	0	32	4	4	12	55	3	0·0	0	..	..	..	0·0	0	..	..	..	..	2·0	24
29	0·0	0	169	22	12	12	20	12	0·3	4	..	..	..	0·0	0	..	..	..	..	2·5	31
30	0·4	5	113	15	22	11	30	22	0·5	6	..	..	..	1·5	20	..	..	..	..	0·0	0
Means.	1·00	11	†205	†21	†16	—		†14	1·63	18	—	—	—	1·85	23	—	—	—	—	1·45	17
Normals.	1·00	12	227	23	—	—		—	1·73	20	—	—	—	1·83	23	—	—	—	—	2·17	25
	←—35 years—→		←—8 years—→						←—35 years—→					←—5 years—→						←—35 years—→	

2. METEOROLOGY AND MAGNETISM:—CAHIRCIVEEN (VALENCIA OBSERVATORY).—Lat. 51° 56′ N. Long. 10° 15′ W.

Heights above M.S.L.:—H=9·1 m. H_b=13·7 m. H_a=26·4 m. Above Ground: h_t=1·3 m. h_r=0·56 m. h_s=12·8 m. h_a=13·9 m.

Day.	Air Pressure at Station Level. 9 h.	21 h.	Air Temperature in Degrees Absolute. 9 h.	21 h.	Max. 0 h. to 24 h.	Min. 0 h. to 24 h.	Humidity. Vapour Pressure. 9 h.	21 h.	Percentage. 9 h.	21 h.	Wind—Veer from North in degrees and Speed in metres per second. 9 h. °	m/s.	21 h. °	m/s.	Cloud Amount (0–10) and Weather. 9 h.	21 h.	Rain 0 h. to 24 h.	Min. Temp. on Grass. 18 h. to 9 h.	REMARKS.	Magnetism. Horizontal Force, Declination West, and Inclination.
			a	*a*	*a*	*a*									Tenths of Sky covered.			*a*		
	mb.	21 b.	200+	200+	200+	200+	millibar.		%	%							mm.	200+		
1	992·1	1007·0	81·3	81·4	83·5	79·9	8·4	9·0	77	82	350	11	80	2	10p	0	14·4	77	p. ▲² q. early; ● T *a*; Fine *p. and n.*	
2	1011·4	1005·8	78·9	83·0	83·6	77·4	8·7	11·7	94	96	—	1	175	5	10∞	10●	8·9	75	o. ∞ till 15h., ● after.	
3	1004·3	1004·4	84·9	84·9	86·3	83·5	13·7	13·4	99	97	185	3	180	3	8	10●	9·5	82	● till 5h.; o. p.⁰ ⊕ *a*; c. *p.*; ● *n.*	3
4	1006·1	1014·6	84·0	83·9	85·5	82·8	12·5	11·0	96	85	—	1	25	7	10●	10	5·9	83	●⁰ *a.*; o, ●⁰ at times *p.*; o. *n.*	
5	1021·8	1023·2	83·0	83·5	84·7	81·1	9·4	11·5	77	91	10	2	—	1	8	10	—	77	bc. *a. and p.*; o., p⁰. *n.*	
6	1023·0	1021·4	83·4	83·3	85·3	82·5	11·6	11·4	93	92	270	2	—	1	8	10	0·5	80	c. to o. p. *a.*; c. *p.*; od. *n.*	
7	1020·5	1022·3	84·6	85·4	85·9	83·5	12·5	12·4	92	87	190	5	185	5	10	10	1·3	81	o. with d. at times.	
8	1025·0	1027·8	85·6	85·7	86·0	85·0	13·7	14·0	95	96	180	5	185	3	10●⁰	10	3·7	84	od. all day.	
9	1027·0	1023·0	85·0	85·0	86·0	84·2	11·1	13·1	80	94	180	5	210	6	10	10●	1·6	83	o, *a. and p.*; ●⁰ *n.*, o. after 22h.	
10	1023·8	1023·6	83·4	82·3	84·9	82·0	9·5	9·8	76	83	280	3	240	3	10	3	—	80	o. *a.*; bc. *p.*; b. *n.*	
11	1021·7	1017·6	80·9	83·1	84·5	80·2	9·7	10·7	92	87	—	1	180	5	9	8p	1·4	78	bc. early; o. *a. and p.*; o. to cp. *n.*	
12	1011·7	1003·7	84·9	85·8	86·0	84·0	12·3	13·8	89	94	190	6	190	10	9	10●	7·5	81	o. with frequent p. *a. and p.*; ● *n.*	
13	1010·8	1009·0	83·4	84·0	84·9	82·5	8·7	10·6	70	81	245	13	205	10	7	10	1·6	80	cp. *a. and p.*; bc. to. o. *n.*	
14	1006·0	994·3	85·0	87·0	*x*87·9	83·4	12·7	14·7	91	93	190	5	205	12	10	10	13·0	81	o. early; ● *a. and p.*; o. *n.*	
15	999·5	1006·0	83·0	81·8	86·6	80·8	9·4	8·0	77	71	240	14	245	15	8p	2	1·0	80	cp⁰., T < *a.*; c. to ▲ pq. *p. and n.*	
16	1011·4	1019·9	82·1	81·8	83·0	80.4	8·4	8·0	73	71	250	12	255	8	7	3	1·8	78	Fair with ▲ p. till 15h.; Fine later.	
17	1022·3	1010·4	80·3	84·2	84·6	*n*77·3	8·1	9·7	79	74	140	5	160	16	7	10	3·9	75	bc. to c. *a. and p.*; o. to ●⁰ *n.*	
18	1007·5	1008·3	86·4	86·4	86·8	84·5	13·9	13·4	91	88	175	13	175	13	10	10	9·7	83	o., intermittent ● all day.	18
19	1011·9	1013·4	82·5	86·5	86·7	82·2	11·3	14·5	96	94	—	1	175	10	10	10	9·8	82	o., some ● *a. and p.*; o. *n.*	19
20	1016·4	1018·2	86·0	85·7	87·2	85·4	12·5	11·4	84	78	160	11	145	9	7	9	—	84	o. early; c. to bc. *a. and p.*; o. *n.*	
21	1019·3	1020·4	85·5	84·3	85·9	83·4	11·0	10·4	76	78	145	9	120	7	7	7	—	84	c. *a.*; bc. to o. *p.*; c. *n.*	
22	1022·1	1021·9	82·6	80·8	84·4	80·5	8·8	8·2	74	78	120	6	90	5	0	3	—	79	b. all day.	
23	1016·5	1010·3	83·0	82·7	83·7	81·9	8·5	8·4	70	70	120	7	120	9	1	7∞	—	78	b. *a.*; b. ∞ *p.*; c. ∞ *n.*	
24	1003·9	999·9	80·8	78·5	82·1	78·3	7·6	7·0	72	77	30	3	90	3	7	0∞	—	78	o. to bc. *a.*; c. ∞ *p.*; b. ∞ *n.*	
25	1005·1	1004·8	81·5	79·4	83·1	77·4	8·9	8·2	81	86	230	3	—	1	9	4v	0·2	74	b. early; op. *a.*; o. *p.*; bc. v., ⋃ *n.*	
26	1001·0	1000·3	84·5	83·4	85·4	78·5	11·3	11·6	84	93	145	7	165	4	10	10●	14·1	74	od. early; c. *a. and p.*; ● *n.*	
27	1003·9	1012·8	80·3	79·7	82·0	78·9	8·4	7·6	82	78	350	6	330	10	10●	9p	20·0	79	● till 10h.; bc. to op. later; ▲p. *p.*	27
28	1019·8	1013·3	80·2	81·2	82·1	79·2	7·3	7·2	72	67	315	3	140	7	6	10	0·8	*n*74	p. 2h.; bc. *a.*; c. to o. *p. and n.*	
29	996·8	1006·0	84·6	82·3	85·2	81·9	13·1	10·4	97	89	180	6	190	4	10●	3	25·9	78	●² 2h.–9h.; Fair *p.*; b. *n.*	
30	988·3	1004.8	84·0	80·4	85·1	77·4	10·7	7·2	82	70	140	15	250	9	10●	10↖	*x*28·2	79	bc. to o., ⸗ 8h.; ●² *a.*; o, ● *p.*; bc. *n.*; [↖ ▲²q. 21h.	
Means.	1011·7	1012·3	83·2	83·2	85·0	81·3	10·5	10·6	84	84	—	6·0	—	6·7	8·3	7·6	184·7	79·4	Monthly Totals or Means	
Normals.	1013·4	1011·4	81·3	81·4	84·1	79·0	9·6	9·6	87	86	—	5·8	—	5·9	—	—	138.6	—	Normals	
	←45 years→						←30 years→				←35 years→						45 years			

* By Campbell-Stokes Sunshine Recorder. † Mean of 29 days. *x* denotes the maximum and *n* the minimum value in the column.

(140) Wt. 109/612/773 400 10/21 Harrow G 69/7

3. METEOROLOGY:—RICHMOND, SURREY (KEW OBSERVATORY).—Lat. 51° 28′ N. Long. 0° 19′ W.

Heights above Mean Sea Level:—Rain-gauge Site, H=5·5 m. Barometer, H_b=10·4 m. Cups of Anemometer, H_a=25 m.
Heights above Ground:—Thermometers, h_t=3·0 m. Rain-gauge, h_r=0·53 m. Sunshine Recorder, h_s=13·3 m. Cups of Anemometer, h_a=20 m.

Day.	Air Pressure at Station Level.		Air Temperature in Degrees Absolute.				Humidity.				Wind—Veer from North in degrees and Speed in metres per second.				Cloud Amount and Weather.		Rain o h. to 24 h.	Min. Temp. on Grass. 18 h. to 9 h.	Remarks.
					Max.	Min.	Vapour Pressure.		Percentage										
	9 h.	21 h.	9 h.	21 h.	o h. to 24 h.		9 h.	21 h.	9 h.	21 h.	9 h.		21 h.		9 h.	21 h.			
			a	*a*	*a*	*a*									Tenths of Sky covered.				
	mb.	mb.	200+	200+	200+	200+	millibar.		%	%	° m/s.		° m/s.				mm.	200+	
1	992·3	1003·3	81·8	80·1	82·5	77·8	10·1	8·5	89	84	65	5	30	6	10 ≡⁰	o	4·4	81	● early; Dull; ● *p and n.*
2	1009·2	1008·5	76·4	76·4	80·7	75·1	6·1	6·5	79	84	360	4	—	1	o ☽	o	—	72	☽. Fine to fair. ∞⁰
3	1008·7	1010·9	78·5	77·5	80·2	76·0	7·3	7·2	81	85	—	1	—	o	5 ≡⁰	8	—	69	O'cast to fine.
4	1010·7	1011·6	72·5	72·6	75·9	71·9	5·9	5·9	100	100	—	o	—	o	o ≡	10 ≡	—	68	≡² ⌙; ≡² most of day. ⌙.
5	1016·4	1019·6	72·8	77·4	80·7	72·2	5·9	8·2	98	99	—	1	—	1	10 ≡	o ≡	0·1	71	⌙. ≡ till 11h. then dull.
6	1023·3	1023·8	72·9	74·4	81·7	72·3	5·8	6·5	95	96	—	1	—	o	10 ≡	10 ≡	—	71	⌙. ≡ *a*; fine *p*; ≡ *n.*
7	1024·9	1026·2	76·6	81·3	83·0	73·6	7·5	10·3	95	95	—	o	—	1	10 ≡⁰	10 ≡⁰	—	71	≡. Dull. ≡⁰ later.
8	1029·7	1031·9	79·4	82·9	84·0	75·9	9·3	11·6	97	96	—	1	—	1	10 ≡	10 ≡⁰	—	73	☽. ≡ till 10h; c. to o. later.
9	1032·2	1027·9	83·0	83·5	85·5	81·9	11·0	11·1	90	88	—	1	225	3	10 ≡⁰	10	—	81	Dull with ≡⁰
10	1025·0	1022·6	83·4	83·5	86·0	82·9	10·3	10·7	82	93	225	3	230	4	10 ≡⁰	10	0·3	81	Dull; ●⁰ *n.*
11	1023·4	1024·0	79·9	75·3	83·5	73·0	9·4	7·0	95	97	—	1	—	1	8 ☽	o ≡	—	73	≡⁰ ☽. Fine to cloudy. ≡ *n.*
12	1023·2	1019·6	74·1	79·7	83·7	72·4	6·1	9·2	93	94	—	o	190	2	o ≡	1 ☽	0·1	71	≡ ⌙; ≡ *a.* Fine to dull *p.*
13	1013·4	1016·9	84·4	80·0	86·2	78·7	12·3	9·0	92	90	180	6	—	1	10 ●⁰	2 ☽	0·7	73	● *a.* Fine *p.*
14	1014·2	1006·5	81·9	85·1	86·7	76·6	9·9	13·2	88	94	200	4	180	12	9 ≡⁰	10 ●q	5·0	71	☽. Cloudy to o'cast; 🌂 (gusts) ● *n.*
15	1003·0	1007·8	87·1	83·9	x87·4	83·3	14·2	9·7	89	75	195	10	200	6	10dq	3	3·2	81	🌂 (gusts). Line q 12h. Dull.
16	1013·2	1020·5	80·4	79·9	83·8	79·3	8·3	7·7	81	78	210	5	220	3	o ☽	3	—	76	☽. Fine.
17	1028·3	1030·3	76·1	74·6	82·8	74·0	7·3	6·3	95	92	—	1	—	1	1 ≡⁰	o ≡	—	69	≡⁰ ⌙; Fine; ≡ ⌙ *n.*
18	1030·0	1027·7	80·6	78·2	83·5	73·9	9·3	8·3	89	94	130	2	130	2	10 ☽	o ☽	0·1	69	≡⁰ ⌙. Dull.
19	1027·0	1027·5	78·1	80·1	85·8	76·1	8·8	9·3	100	92	135	2	145	2	o ≡	10 ≡⁰	0·1	71	≡⁰ ⌙; ≡ 9h. Fine.
20	1029·0	1029·3	76·2	71·9	79·3	70·4	7·6	5·5	99	98	145	2	—	1	10 ≡⁰	o ≡	—	73	≡ ☽; Dull; ≡ ⌙ *n.*
21	1030·2	1029·5	73·5	75·6	77·7	69·4	5·6	5·7	88	78	125	3	70	2	o ≡⁰	o ⌙	—	67	≡ ⌙ most of day.
22	1030·2	1029·1	71·3	74·4	75·9	69·5	5·3	6·3	99	93	—	o	70	2	10 ≡	o ≡	0·2	n66	≡² most of day.
23	1025·5	1019·8	69·8	73·4	79·9	n68·7	4·7	5·6	98	89	—	o	70	2	10 ≡	o ≡	0·3	67	≡² *a.* Fine *p*; ≡ *n.*
24	1011·8	1010·7	74·8	78·4	80·9	70·3	5·3	8·0	77	90	70	3	90	3	8 ⌙	6 ≡⁰	0·1	67	≡ ⌙. Dull to fine. ⊔ 18h.
25	1016·4	1018·0	80·0	79·2	85·5	78·8	9·7	9·3	97	99	—	1	140	2	1 ☽	8 ≡⁰	—	72	Fine.
26	1015·1	1012·1	78·6	81·0	83·5	77·0	8·4	9·2	93	86	80	4	100	3	8 ≡	9 ≡⁰	0·2	71	≡ 9h. Dull to fair with ≡⁰.
27	1008·0	1004·7	82·0	82·9	85·2	80·0	9·9	11·6	87	96	100	3	130	2	10 ≡⁰	10 ●⁰	x7·8	74	Dull; ● *p and n.*
28	1006·9	1014·1	82·0	82·2	83·7	80·7	11·1	11·1	97	96	—	1	—	1	10 ≡⁰	10 ≡⁰	5·9	80	● early. Dull. ●⁰ *p.*
29	1016·7	1013·8	77·9	82·2	82·9	77·5	7·6	10·5	88	91	—	1	170	7	8 ☽	10	0·6	73	≡⁰ ☽; Fine early then o.; ● *p.*
30	1014·4	1007·0	81·7	83·2	84·5	81·3	10·9	10·6	97	86	—	1	190	6	10 ≡⁰	10	4·5	77	≡⁰; Dull to cloudy; ● *p.*
Means	1018·4	1018·5	78·3	79·0	82·8	75·7	8·4	8·7	92	91	—2·2		—2·6		6·9	5·3	33·6	72·6	Monthly Totals or Means.
Normal	1013·3	1013·2	77·2	77·5	79·9	75·1	8·4	8·5	88	87	—3·3		—3·2		—	—	56·5	—	Normals.
	45 years.						30 years.				35 years.						45 years.		

4. METEOROLOGY:—ESKDALEMUIR, DUMFRIESSHIRE.—Lat. 55° 19′ N. Long. 3° 12′ W.

Heights above Mean Sea Level:—Rain-gauge Site, H=242 m. Barometer, H_b=237·3 m. Vane of Anemometer, H_a=250 m.
Heights above Ground:—Thermometers, h_t=0·9 m. Rain-gauge, h_r=0·38 m. Sunshine Recorder, h_s=1·5 m. Vane of Anemometer, h_a=15 m.

1	972·9	983·9	77·9	78·2	81·1	77·8	7·3	7·6	84	86	60	13	30	4	10q	10 ≡⁰	0·5	77	o⁰ early: oq *a*: o ≡⁰ *p*: d⁰ ≡⁰ *n.*
2	985·7	983·2	77·6	77·3	79·0	76·3	6·7	6·8	80	82	60	3	—	1	10	10	—	74	o all day.
3	982·3	983·1	77·4	77·2	78·6	76·8	7·2	6·9	87	84	—	o	—	o	10	10	—	76	o all day.
4	983·6	984·7	77·3	77·6	79·6	76·1	6·7	8·0	81	94	—	o	—	1	10 ≡⁰	10 ●⁰	1·3	75	o *a and p*: ●⁰ ≡⁰ after 17h.
5	988·8	991·9	79·4	75·2	82·0	75·2	6·9	6·5	72	91	—	1	—	1	7	4	0·3	71	d⁰ ≡⁰ till 2h. then fine: ♕ *n.*
6	990·8	990·2	80·4	81·4	82·3	75·3	9·6	9·8	94	89	210	5	210	5	10 ≡⁰	4	0·3	73	d⁰ ≡⁰ or ≡⋮ *a*: o ≡⁰ *p*: o to c *n.*
7	990·7	992·3	81·7	83·1	83·5	81·0	10·3	11·7	92	95	220	7	220	8	10	10 ●⁰	0·5	73	d⁰ ≡⁰ 4h.–5h.: o *a*: ≡⋮⁰ *p*: d⁰ ≡⁰ *n.*
8	996·1	997·3	83·2	83·9	84·3	83·0	11·9	12·5	96	97	190	6	190	5	10 ●⁰	10 ●⁰	4·2	82	o with d ≡⁰ or ≡⋮⁰ all day.
9	997·9	991·7	83·7	82·4	84·5	82·0	12·6	10·1	98	86	200	6	210	11	10 ●⁰	9	4·6	83	≡⋮ or d ≡⁰ till 16h.: bc to o *n*: ● after 23h.
10	990·1	988·7	80·8	79·5	82·7	78·9	7·5	7·9	71	82	250	11	220	8	6	6	1·1	78	●⁰ ≡⁰ till 3h.: bc to c: q *a*: ⊕ 13h.
11	991·5	990·3	77·6	79·8	80·8	75·6	7·7	8·9	91	90	190	3	220	6	8	5	0·2	73	Changeable, some p⁰: ◬⁰p 15½h.
12	984·0	976·1	80·7	82·7	83·5	79·6	9·8	11·1	94	93	190	10	200	17	10 ●	10 ≡⁰	8.9	77	● ≡⁰ 8h.–16h. then o ≡⁰: 🌂 21h.–24h.: ●² *n.*
13	975·2	979·4	79·6	78·6	83·5	78·1	7·6	7·2	78	80	230	10	200	5	2	10 p⁰	16·8	78	🌂●²≡⁰ early: b to o ◬pq *a*: < 18h.: c to o *n.*
14	974·1	959·4	79·0	84·3	x85·8	78·6	7·5	12·8	81	96	220	8	200	15	10	10 ●	x32.7	76	🌂●²q till 4h.: o ⊕⁰ *a*: ●² ≡⁰ after 15h.
15	957·5	962·8	81·0	79·0	85·5	76·4	6·4	6·0	60	65	220	19	240	20	10q	5q	12·0	78	●² ≡⁰ till 2h.: o to c with ◬● pq: 🌂 oh.–22h.
16	973·1	982·5	77·2	76·5	78·9	75·5	6·7	6·8	82	86	230	9	220	7	7	2	4·8	75	c < 1h.: ●⁰ 7h.: bc *a*: ◬●✲p² *p*: b to o *p*
17	993·5	996·9	75·8	75·3	79·5	73·5	6·9	6·7	93	93	240	5	190	3	8	10	1·2	72	●⁰ ≡⁰ early: bc *a*: o *p and n* [< ♕ *n.*
18	992·7	991·4	79·7	80·6	81·6	75·3	7·8	9·0	80	86	170	10	160	7	10	10	1·1	72	bc 1h.: o *a*: d ≡⁰ at times.
19	990·6	993·1	82·1	82·3	84·2	79·7	10·5	10·0	91	86	180	10	180	5	10 ≡⁰	10	—	79	o ≡⁰ early: o all day.
20	996·7	998·7	82·2	76·5	84·1	75·6	10·1	7·3	88	93	210	9	—	o	10	10 ≡⁰	—	81	bc to o *a*: o ≡⁰ *p*: b to o ≡⁰ *n.*
21	1000·2	1000·8	77·0	71·3	80·8	69·1	7·4	2·9	91	53	—	1	—	1	8 ≡⁰	o ⌙	—	72	o ≡⁰ early: cloudless: y ∞ after 10h.: ⌙ *n.*
22	1002·0	1002·1	69·8	68·0	80·3	n67·7	3·3	2·6	69	63	—	o	—	o	o ⌙	o ⌙	—	65	⌙ early: cloudless: y ∞ *a and p*: ⌙ *n.*
23	1000·1	996·6	74·2	73·6	81·4	68·3	4·8	3·8	72	60	360	2	360	3	o ⌙	o ∞	—	n63	⌙ early: cloudless ∞ all day.
24	989·0	983·8	76·9	77·5	80·1	71·9	7·2	6·7	89	80	30	5	90	5	3	5 ≡⁰	—	69	b to o *a and p*: bc ≡⁰ ⊔ *n.*
25	983·2	987·0	77·8	79·8	81·3	76·3	7·8	8·9	91	90	—	1	180	3	9 ≡⁰	8 ≡⁰	0·1	75	o ≡⁰: d⁰ at times *a and p*: o to c ≡⁰⊔² *n.*
26	986·8	983·4	78·0	80·6	81·0	76·0	7·2	8·7	83	84	—	1	—	1	10 ≡⁰	10 ≡⁰	—	73	⊔² 1h.: c to o: ≡⁰ all day.
27	979·0	977·2	80·7	80·4	82·4	80·0	9·6	9·4	92	92	—	1	—	o	10 ●	10 ≡⁰	6·5	78	● ≡⁰ *a and p*: o ≡⁰ *n.*
28	982·8	985·2	80·2	79·3	81·0	79·0	9·4	8·6	93	90	—	1	360	5	10 ≡⁰	10	0·1	78	o ≡⁰ *a and p*: occasional d⁰ n.
29	982·9	977·6	79·3	79·2	80·8	77·3	9·4	9·0	99	96	160	3	150	5	10 ≡⋮	10 ●⁰	4·3	78	≡⋮ or d⁰ ≡⁰ o till 11h. then o: o ≡⁰ 15h–23h.
30	981·4	971·8	79·0	80·3	81·2	78·5	9·0	9·6	97	94	—	1	160	7	10 ≡⋮⁰	10 ≡⁰	5·0	77	≡⋮ early: bc *a*: ⊕ o *p*: ● ≡⁰ *n.*
Means	986·5	986·1	78·9	78·7	81·8	76·5	8·1	8·1	86	85	—5·3		—5·3		8·3	7·6	106·5	75·0	Monthly Totals or Means.
Normal 1911-1915	980·5	980·7	76·6	76·4	79·7	73·7	7·1	7·0	86	86	—5·7		—5·6		—	—	165·0	—	Normals.

Temperatures at or below the normal freezing point of water are printed in small type. *x* denotes the maximum, and *n* the minimum, value in the column.

5. GEOPHYSICS:—RICHMOND (KEW OBSERVATORY).

Day.	Earth Temperature at 9 h. 0·3 m.	Earth Temperature at 9 h. 1·2 m.	Height above M.S.L. of Surface of Underground Water. Daily Mean.	Height above M.S.L. of Surface of Underground Water. Extremes.	Terrestrial Magnetic Force. Horizontal Comp't. Mean Time.	Horizontal Comp't.	Declination. Mean Time.	Declination. West.	Inclination. Mean Time.	Inclination.	Magnetic Character of Day.	Electric Character of Day.	Charge per cc. × 10^{16}. +. About 15 h.	Charge per cc. × 10^{16}. −. About 15 h.	Air-Earth Current. × 10^{16}. About 15 h.	Potential Gradient, Volts per metre. Factor 2·38. 3 h.	9 h.	15 h.	21 h.
	a	*a*											Coulomb.		Amp/cm².	v/m.	v/m.	v/m.	v/m.
	200+	200+	cm.	cm.	h m	γ	h m	° ′	h m	° ′									
1	80·2	84·0	204	205	..	..	..	..	..	..	1	1	0·37	..	0·55	0	425	525	525
2	79·9	83·9	203	..	..	..	..	..	..	..	1	0	..	0·16	0·70	365	455	335	465
3	79·3	83·8	203	..	..	..	..	..	..	..	1	0	0·31	..	0·75	160	265	305	275
4	78·8	83·5	204	..	11 37	18375	..	..	14 34	66 58·9	1	0	..	..	0·55	335	745	440	670
5	78·0	83·4	204	..	..	..	14 19	14 31·6	..	..	1	0	..	..	0·60	995	1065	320	395
6	78·1	83·2	202	..	..	..	..	..	..	..	1	1	..	..	..	630	760	425	205
7	78·0	83·0	202	..	..	..	..	..	..	..	1	0	..	..	..	275	365	350	235
8	78·7	82·9	201	..	..	..	..	..	..	..	0	0	..	..	0·35	..	..	..	..
9	79·9	82·7	200	..	..	..	..	..	..	..	0	0	..	..	0·50	175	320	320	335
10	80·8	82·7	199	..	..	..	..	..	..	..	0	0	..	0.18	0·90	175	380	250	350
11	81·2	82·7	199	..	10 49	18401	12 24	14 31·9	14 28	66 57·0	0	1	0·30	..	1·25	145	305	510	205
12	80·0	82·6	199	..	..	..	..	..	..	..	1	0	..	0·30	0·55	775	540	425	540
13	80·2	82·6	199	..	..	..	..	..	..	..	0	0	..	..	..	145	265	410	600
14	80·0	82·5	198	..	..	..	..	..	..	..	0	1	..	..	..	440	410	380	−115
15	81·7	82·6	198	..	..	..	..	..	..	..	1	1	..	..	..	30	100	350	525
16	81·7	82·7	197	..	..	..	14 31	14 28·1	..	..	0	0	0·80	..	1·15	220	540	425	685
17	80·3	82·7	196	..	..	..	..	..	..	..	2	1	..	0·33	0·95	440	655	425	275
18	79·0	82·7	197	..	10 52	18384	14 34	14 30·0	..	..	1	0	0·21	..	0·90	350	440	465	440
19	78·8	82·6	197	..	..	..	..	..	14 35	66 57·6	0	0	..	0·30	0·90	395	465	440	380
20	79·2	82·5	196	..	..	..	..	..	..	..	1	0	..	..	..	235	465	365	820
21	78·0	82·3	195	..	..	..	..	..	..	..	2	0	..	..	..	760	525	685	730
22	76·8	82·2	193	..	..	..	..	..	..	..	1	0	..	..	0·25	480	540	1110	700
23	76·0	82·2	193	..	..	..	..	..	..	..	0	0	0·57	..	0·55	..	..	..	..
24	75·6	81·8	192	..	..	..	..	..	..	..	0	0	..	0·64	0·35	700	830	685	495
25	75·6	81·6	192	..	10 52	18405	14 39	14 28·1	..	..	0	0	0·38	..	0·70	250	630	250	365
26	76·5	81·4	191	..	..	..	..	..	14 23	66 58·5	2	0	..	0·46	0·85	410	290	655	640
27	77·3	81·2	191	191	..	..	..	..	..	..	2	2	..	..	..	480	365	100	235
28	78·0	81·1	191	191	..	..	..	..	..	..	0	2	..	..	..	− 570	130	75	395
29	79·2	81·1	192	..	..	..	..	..	..	..	0	0	0·36	..	0.65	290	570	335	235
30	79·6	81·1	193	..	..	..	..	..	..	..	0	1	..	..	..	130	365	190	75
M.	78·9	82·5	197	—	—	—	—	—	—	—	0·67	0·37	0·41	0·34	0·70	329†	472†	413†	417†
	79·8	83·0	— 12 years —																

† Mean for 28 days.

6. GEOPHYSICS:—ESKDALEMUIR, DUMFRIESSHIRE.

Day.	Terrestrial Magnetic Force. North Component. Maximum. 15000 γ +. h m	γ	Minimum. 15000 γ +. γ	h m	γ	Range.	West Component. Maximum. 4000 γ +. h m	γ	Minimum. 4000 γ +. γ	h m	γ	Range.	Vertical Component. Maximum. 44000 γ +. h m	γ	Minimum. 44000 γ +. γ	h m	γ	Range.	Magnetic Character of Day.	Electric Character of Day.	Potential Gradient, Volts per metre. Factor 6·00. 3 h.	9 h.	15 h.	21 h.
	h m	γ	γ	h m	γ		h m	γ	γ	h m	γ		h m	γ	γ	h m	γ				v/m	v/m	v/m	v/m
1	5 14	1012	957	19 51	55		12 46	832	784	0 1	48		19 15	1124	1083	5 10, 5 20	41		0	1 *b*	60	105	110	110
2	0 36	1028	946	17 39	82		0 32	847	773	22 3	74		18 0	1127	1080	0 50	47		1	0 *a*	150	130	150	150
3	21 40	1021	959	12 49	62		12 53, 13 13	837	763	21 34	74		20 50	1121	1088	5 0	33		1	0 *a*	105	140	125	260
4	5 10	1016	928	13 8	88		12 55	*x*875	784	3 56	91		16 35	1141	1074	6 38	67		1	1 *a*	75	160	150	120
5	22 45, 22 50, 22 53	1043	936	17 54	107		13 28	842	*n*707	17 2	*x*135		17 0	1160	1073	23 30	87		1	1 *a*	280	115	285	360
6	18 35	1075	*n*901	10 9	*x*174		13 24	844	736	18 19	108		16 25	1162	1054	5 15	108		1	1 *a*	−10	360	220	340
7	22 0	1003	939	10 57	64		12 20	825	756	22 18	69		16 12	1115	1090	1 50	25		1	*	180	145	50	*
8	19 4	999	955	12 8	44		12 37	826	777	0 15	49		14 58	1110	1094	3 20	16		0	*	*	*	145	220
9	22 8	1018	973	13 49	45		11 53	830	777	20 45	53		15 6	1110	1090	8 0	20		0	0 *a*	245	250	225	220
10	21 28	1009	971	12 49	38		12 18	830	795	19 55	35		15 10, 15 50	1104	1091	8 0	13		0	1 *b*	80	105	105	180
11	1 39, 1 55	1009	974	16 42	35		1 26	835	798	2 28	37		16 50	1107	1087	1 55	20		0	1 *b*	150	250	225	320
12	6 37	1015	923	17 30	92		13 23, 13 28	835	754	23 4	81		17 43	1131	1087	9 57	44		1	1 *b*	125	110	125	75
13	4 35, 4 41	1027	972	10 52	55		13 10	826	787	5 7	39		15 23	1104	1075	4 36	29		1	2 *b*	−850	175	290	290
14	0 40	1015	978	12 0	37		13 8	821	790	0 1	31		15 20	1098	1077	0 55	21		0	2 *c*	80	160	−55	−1380
15	5 45	1010	952	17 25	58		16 49	856	781	20 0, 20 15	75		18 29	1147	1087	9 46	60		1	2 *c*	35	115	130	140
16	4 31	1008	967	17 33	41		13 0	819	787	0 45	32		17 38	1108	1087	11 10	21		0	2 *b*	65	125	140	250
17	6 36	1013	912	17 45	101		15 51	861	750	19 39	111		17 59	1161	1087	8 30	74		1	1 *b*	270	220	395	660
18	19 54	1007	942	13 41	65		13 33	834	750	0 6	84		18 0	1124	1085	1 9	39		1	0 *a*	350	220	250	235
19	5 43	1004	967	13 10	37		16 42	830	796	8 25	34		13 55, 16 18, 17 22	1110	1094	5 0	16		0	0 *a*	345	210	255	415
20	24 0	1045	981	13 23, 14 10	64		13 3	830	755	24 0	75		23 40	1102	1094	8 10	8		0	0 *a*	190	275	480	850
21	20 58	*x*1104	936	21 36	168		15 30	835	730	21 40	105		19 35	1133	1075	21 18	58		2	0 *a*	285	335	430	430
22	21 37	1024	960	2 40	64		2 8	833	756	21 30	77		22 6	1111	1067	2 26	44		1	0 *a*	235	395	395	540
23	6 41	1005	979	11 20	26		13 7	823	797	4 19, 22 2	*n*26		21 3	1103	1096	2 8, 12 30	*n*7		0	0 *a*	300	515	290	675
24	23 27	1008	987	10 56	21		12 55	820	790	23 46	30		0 1	1101	1093	12 0	8		0	0 *a*	775	255	305	360
25	19 33	1004	989	10 33	*n*15		13 41	821	782	0 34	39		0 1	1102	1093	10 0	9		0	1 *a*	370	360	385	455
26	*	*	*	*	*		*	*	*	*	*		20 0	*x*1208	1082	24 0	126		2	0 *a*	390	380	280	260
27	*	*	*	*	*		*	*	*	*	*		15 50	1105	*n*967	0 27	*x*138		2	2 *b*	140	−35	−395	285
28	16 12	1001	973	10 58	28		13 17	818	783	22 4	35		17 35	1107	1095	10 40	12		0	2 *b*	140	−95	75	− 20
29	5 56	1003	970	15 39	33		14 32	821	786	19 45	35		16 0	1111	1096	8 42	15		0	2 *a*	55	225	340	100
30	23 44	1006	977	10 38, 15 0	29		14 50	821	793	24 0	28		19 17	1108	1097	11 30	11		0	2 *b*	310	305	210	z—
M.	—	§1019	§957	—	§62		—	§833	§772	—	§61		—	1122	1081	—	41		0·60	§0·89	†164	†206	†211	†247

x denotes the maximum and *n* the minimum value in the column. Potential gradient is reckoned as positive if the potential increases upwards. For Indeterminate potential gradient the following notation is used: z+ Indeterminate, positive value; z— Indeterminate, negative value; *z* ± Indeterminate in magnitude and sign.

† Mean for 27 days. § Mean for 28 days. * Light failed.

7. JERSEY (ST. LOUIS OBSERVATORY).—Lat. 49° 12′ N. Long. 2° 6′ W.

Heights above M.S.L.:—H = 54 m. H_b = 55 m. Above Ground:—h_t = 1·48 m. h_r = 1·72 m. h_a = 8 m.

Day.	Air Pressure at Station Level. 9 h.	14 h.	21 h.	Mean of 3 Readings.	Air Temperature in degrees Absolute. 9 h.	14 h.	21 h.	Max.	Min.	Mean of 5 Readings.	Min. Temp. on Grass.	Percentage of Humidity. 9 h.	14 h.	21 h.	Mean.	Rain 0 h. to 24 h.	Remarks.
	mb.	mb.	mb.	mb.	a 200+	a 200+	a 200+	a 200+	a 200+	a 200+	a 200+	%	%	%	%	mm.	
1	984·1	985·9	993·1	987·7	80·6	83·4	83·5	84·2	79·5	82·2	76·3	87	79	89	85	12·9	●² early to noon and at 21h.
2	1000·7	1001·4	1003·1	1001·7	81·9	82·4	81·0	83·4	80·0	81·7	78·2	78	70	72	73	—	
3	1004·2	1003·7	1004·7	1004·2	81·0	82·8	80·8	83·0	79·6	81·4	74·7	79	72	80	77	—	⊔ 4h. 30m.
4	1003·1	1002·6	1003·9	1003·2	81·0	81·2	82·0	82·3	80·0	81·3	78·3	81	78	85	81	—	⊕ 13h. 30m.
5	1008·6	1010·1	1013·4	1010·7	82·3	82·9	82·6	83·8	81·5	82·6	74·9	72	75	79	75	—	≡⁰ early; ≡² 9h. to 12h.
6	1016·2	1015·9	1016·2	1016·1	83·2	84·4	80·8	85·0	80·8	82·8	79·5	81	69	71	74	—	
7	1019·8	1019·9	1021·5	1020·4	81·4	84·4	82·9	85·4	78·9	82·6	73·4	93	75	74	81	—	
8	1024·3	1024·9	1026·3	1025·2	82·6	85·1	82·0	85·2	80·8	83·1	79·0	90	81	76	82	1·0	●² 4h. 30m.
9	1026·6	1024·3	1023·3	1024·7	81·3	84·9	78·9	85·2	78·5	81·8	71·5	76	65	88	76	—	4h. 45m. Cloudless day.
10	1022·3	1020·0	1019·4	1020·6	81·0	84·4	80·8	85·5	77·3	81·8	70·1	82	64	84	77	—	4h. 45m. ⎵ early.
11	1018·7	1017·5	1018·1	1018·1	80·9	82·2	81·4	82·5	80·9	81·7	73·3	98	93	89	93	0·6	≡² ●⁰ 9h. to 11h.
12	1018·5	1017·3	1016·9	1017·6	80·2	81·4	77·7	81·7	77·6	79·7	72·1	89	68	93	83	—	[to 17h.
13	1013·3	1012·5	1013·8	1013·2	84·0	85·9	84·5	86·0	78·3	83·7	77·2	92	93	97	94	4·7	●⁰ 9h. 30m.; ●² 15h. to 21h.; ≡² 15h.
14	1013·6	1013·0	1009·7	1012·1	85·0	86·0	86·1	86·7	83·2	85·4	78·5	90	80	96	89	2·5	Frequent ●⁰; ≡² ●² n.
15	1006·9	1005·9	1007·5	1006·8	87·5	87·4	86·4	x88·3	86·3	87·2	84·2	87	91	85	88	2·5	●² 5h. to 8h. and *n*.
16	1012·6	1014·9	1017·9	1015·1	85·0	85·4	84·0	86·6	83·5	84·9	78·5	64	53	70	62	0·8	
17	1023·1	1023·0	1023·2	1023·1	82·1	85·4	82·3	86·6	79·5	83·2	73·5	79	71	80	77	—	
18	1021·2	1020·6	1020·3	1020·7	81·3	84·3	82·8	84·6	79·2	82·4	72·2	84	69	78	77	—	
19	1020·1	1019·4	1020·4	1020·0	82·3	84·7	81·8	84·1	81·2	82·8	76·6	92	82	100	91	—	4h. 45m.; ≡² 20h.
20	1021·0	1019·9	1020·1	1020·3	79·6	82·4	79·6	82·9	79·0	80·7	76·0	100	87	100	96	—	≡² 4h.; thick 9h.; clearing 11h.
21	1020·5	1018·7	1019·0	1019·4	77·0	78·3	76·2	79·2	75·5	77·2	75·2	91	82	83	85	—	
22	1020·4	1019·4	1019·5	1019·8	76·3	80·4	78·0	80·6	n73·8	77·7	n 67·9	62	51	70	61	—	4h. 45m.; ⎵ early; cloudless day.
23	1015·3	1012·6	1010·5	1012·8	76·2	77·2	76·4	77·9	74·6	76·5	69·2	77	64	74	72	—	4h. 45m.; cloudless day.
24	1000·1	999·0	1003·8	1001·0	78·3	82·4	83·3	83·7	75·0	80·5	71·8	78	78	90	82	—	
25	1010·2	1008·7	1008·3	1009·1	82·2	85·2	82·2	85·6	81·0	83·2	78·1	95	67	59	74	—	⊕ 21h.
26	1006·2	1004·2	1002·5	1004·3	81·9	84·3	85·0	85·7	80·3	83·4	76·4	87	66	81	78	—	●⁰ 16h.
27	999·4	998·0	996·9	998·1	83·9	84·5	83·7	85·8	83·4	84·3	80·1	86	88	95	90	1·4	●² 20h. 30m.
28	1002·7	1007·0	1012·0	1007·2	82·8	84·0	82·9	84·2	81·5	83·1	80·8	95	90	80	88	x8·3	●² all day.
29	1012·5	1009·9	1009·3	1010·6	81·9	82·5	83·3	83·7	79·9	81·3	71·3	73	77	97	82	3·2	●² 15h.
30	1009·4	1004·3	1006·6	1006·8	82·3	83·7	83·0	84·6	81·9	83·1	79·9	97	95	86	93	3·5	●² 15h.
Means	1012·5	1011·8	1012·7	1012·3	81·6	83·5	81·9	84·1	79·8	82·1	75·6	85	76	83	81	41·4	
Normals	1009·4	1008·6	1009·1	1009·0	82·0	83·2	81·9	84·1	80·1	82·3	76·2	?	75	80	?	89·2	
	◄27 years►				◄27 years►						24 years	◄25 years►				27 years	

JERSEY (ST. LOUIS OBSERVATORY).

Day.	Wind Direction and Force (0-12 on the Beaufort Scale). 9 h.	14 h.	21 h.	Mean of Force.	Sunshine.* Total.	Per cent. of Possible.	Cloud Amount (tenths of Sky covered), Type of Cloud, and Direction whence coming. Tenths. 9 h.	Upper. Type. 9 h.	Upper. Direction. 9 h.	Lower. Type. 9 h.	Lower. Direction. 9 h.	Tenths. 14 h.	Upper. Type. 14 h.	Upper. Direction. 14 h.	Lower. Type. 14 h.	Lower. Direction. 14 h.	Tenths. 21 h.	Upper. Type. 21 h.	Upper. Direction. 21 h.	Lower. Type. 21 h.	Lower. Direction. 21 h.	Mean Amount.
	Dir(0-12)	Dir(0-12)	Dir(0-12)		hr.	%																
1	23 3	360 2	67 3	2·7	1·1	11	10	..	..	Nb.	E	7	..	..	Cu.-Nb.	SE	10	..	..	Nb.	..	9·0
2	23 6	23 5	360 2	4·3	6·3	65	5	..	..	Cu.-Nb.	NE	3	Ci.	..	..	..	10	..	..	..	..	6·0
3	45 1	360 1	45 2	1·3	0·1	1	10	..	..	St.-Cu.	..	8	..	..	St.-Cu.	N	10	..	..	..	..	9·3
4	90 2	135 2	67 4	2·7	0·3	3	10	..	..	..	..	4	Ci.-St.	..	..	..	0	..	..	..	..	4·7
5	45 2	45 5	23 4	3·7	5·8	61	10	..	..	≡²	..	6	Ci.-Cu.	..	Cu.-Nb.	NE	10	..	..	..	..	8·7
6	23 4	23 4	23 2	3·3	6·3	68	5	..	..	Cu.	NE	3	Ci.	..	..	..	0	..	..	..	..	2·7
7	135 1	247 1	calm 0	0·7	3·9	41	7	Ci.	N	..	..	8	A.-Cu.	W	..	..	10	..	..	..	..	8·3
8	180 2	calm 0	45 3	1·7	0·0	0	10	..	..	Nb.	..	10	..	..	..	..	0	..	..	..	..	6·7
9	67 2	45 3	45 2	2·3	8·3	89	0	..	..	..	..	0	..	..	..	..	0	..	..	..	..	0·0
10	203 1	225 2	247 1	1·3	7·3	83	4	Ci.	SW	..	..	4	Ci.	SW	..	..	6	..	..	..	..	4·7
11	180 3	180 2	180 3	2·7	0·2	2	10	..	..	≡²	..	9	..	..	..	..	10	..	..	..	..	9·7
12	180 3	180 4	180 4	3·7	8·7	72	7	..	..	..	..	2	Ci.	..	..	..	10	..	..	..	..	6·3
13	203 6	225 5	225 3	4·7	0·0	0	10	..	..	Nb.	SW	10	..	..	Nb.	SW	10	..	..	..	..	10·0
14	247 4	225 5	225 6	5·0	3·9	42	9	..	..	..	..	6	..	..	..	..	10	..	..	Nb.	..	8·3
15	225 7	225 6	247 5	6·0	0·1	1	10	..	..	Nb.	WSW	10	..	..	Nb.	..	10	..	..	..	..	10·0
16	270 4	270 5	247 5	4·7	6·0	66	4	..	..	Cu.	W	6	A.-Cu.	W	Cu.-Nb.	WNW	3	..	..	..	..	4·3
17	calm 0	180 2	135 2	1·3	8·5	95	2	..	..	Cu.	..	3	..	..	Cu.	S	0	..	..	..	..	1·7
18	135 4	135 3	157 3	3·3	6·0	60	6	..	..	Cu.-Nb.	SSE	3	A.-Cu.	S	..	..	0	..	..	..	..	3·0
19	180 4	157 3	180 2	3·0	8·9	100	4	..	..	Cu.-Nb.	S	0	..	..	..	..	10	..	..	≡²	..	4·7
20	113 2	90 3	90 3	2·7	2·7	30	10	..	..	≡²	..	0	..	..	..	..	10	..	..	..	..	6·7
21	113 3	90 3	67 3	3·0	2·4	27	10	..	..	..	..	4	..	..	Cu.-Nb.	E	0	..	..	..	..	4·7
22	90 4	67 5	45 6	5·0	8·7	99	0	..	..	..	..	0	..	..	..	..	0	..	..	..	..	0·0
23	90 5	90 4	90 4	4·3	8·7	99	0	..	..	..	..	0	..	..	..	..	0	..	..	..	..	0·0
24	113 5	157 5	180 6	5·3	1·1	12	10	..	..	..	..	9	Ci.	SW	Cu.-Nb.	S	3	..	..	Cu.	S	7·3
25	157 3	157 3	90 4	3·3	6·3	73	7	..	..	Cu.-Nb.	S	0	..	..	..	..	4	Ci.	..	..	..	3·7
26	90 3	135 2	113 3	2·7	0·3	4	7	A.-Cu.	S	..	..	10	A.-Cu.	S	..	..	10	A.-Cu.	..	..	..	9·0
27	157 4	135 4	157 2	3·3	1·3	14	9	A.-Cu.	S	Cu.-Nb.	S	10	..	..	..	..	10	..	..	Nb.	..	9·7
28	270 3	315 5	293 3	3·7	1·0	12	10	..	..	Nb.	WNW	10	..	..	Nb.	N	10	..	..	..	..	10·0
29	203 5	180 6	203 5	5·3	0·5	6	7	A.-Cu.	NW	..	..	10	..	..	Nb.	SSW	10	..	..	Nb.	..	9·0
30	180 5	180 6	247 5	5·3	0·1	1	10	..	..	..	..	10	..	..	..	..	10	..	..	..	..	10·0
Means	3·4	3·5	3·3	3·4	3·8	41	7·1	—	—	—	—	5·5	—	—	—	—	6·2	—	—	—	—	6·3
Normal	3·6	4·0	3·7	3·8	2·9	32	7·4	—	—	—	—	6·9	—	—	—	—	6·4	—	—	—	—	6·9
	◄17 years►				23 years							◄26 years►										

* For method of estimation see Introduction.

8. WIND COMPONENTS: Metres per second at fixed hours, together with the greatest mean hourly velocity, or the greatest velocity attained in a gust, and the time of its occurrence.

NORTH WALES:—HOLYHEAD.

Components from Cup Anemometer: Gusts from Pressure Tube Anemometer.
Height of Head above—Roof 8·8 m., Ground 13·7 m., M.S.L. 19·2 m.
Height of Cups above—Roof 4·6 m., Ground 7·6 m., M.S.L. 15·2 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	h. m.
1	2·0	..	..	5·5	..	1·8	..	10·3	..	..	..	8·2	..	1·7	..	9·7	17	18 40
2	..	..	..	7·2	..	..	..	4·3	..	2·6	..	4·5	..	1·0	..	5·5	12	0 5
3	..	0·7	..	3·8	..	..	..	4·3	..	..	..	5·6	..	..	..	5·6	8	17 0
4	3·5	..	..	0·6	1·5	..	..	4·0	..	Ca	lm	..	..	Ca	lm	..	8	0 50
5	..	8·8	1·5	..	..	6·8	1·2	..	..	5·5	2·0	..	..	3·1	1·8	..	12	3 35
6	..	0·6	3·2	..	1·1	..	3·1	..	2·8	..	4·8	..	2·3	..	4·0	..	9	13 15
7	1·6	..	2·9	..	2·5	..	3·0	..	4·7	..	4·0	..	3·3	..	2·8	..	11	13 30
8	2·5	..	2·1	..	4·7	..	4·0	..	6·8	..	2·5	..	6·2	..	2·3	..	13	23 35
9	5·7	..	3·3	..	6·2	..	3·6	..	5·1	..	4·3	..	5·7	..	4·8	..	14	22 5
10	4·4	..	7·7	..	1·4	..	7·8	..	..	..	7·5	..	1·4	..	8·1	..	14	1 55
11	..	1·6	9·1	..	..	..	3·3	..	2·8	..	3·3	..	2·5	..	3·0	..	12	0 50
12	7·4	..	2·7	..	9·7	..	1·7	..	11·7	..	4·3	..	11·6	..	2·0	..	23	16 35
13	8·5	..	7·1	..	5·2	..	9·1	..	4·7	..	8·2	..	6·8	..	5·8	..	21	0 5
14	9·3	..	7·8	..	7·1	..	8·5	..	8·6	..	3·1	..	11·6	..	6·7	..	24	0 10
15	10·0	..	8·4	..	7·5	..	13·1	..	4·9	..	13·4	..	7·5	..	13·1	..	26	3 20
16	6·7	..	11·6	..	4·3	..	11·7	..	12·1	..	2·2	..	3·5	..	9·5	..	22	13 5
17	1·6	..	9·4	..	..	..	3·9	..	4·8	..	2·8	..	9·1	..	..	3·4	19	22 0
18	11·3	..	..	4·1	11·6	..	..	2·0	11·6	..	..	2·0	10·9	..	..	1·9	23	12 55
19	9·8	..	..	..	9·1	..	..	1·6	9·1	..	..	1·6	8·9	..	..	..	17	12 40
20	6·6	..	..	..	5·9	..	..	..	5·2	..	..	..	3·2	..	0·6	..	14	0 20
21	..	Ca	lm	..	..	Ca	lm	..	..	Ca	lm	..	..	Ca	lm	..	4	0 30
22	1·1	..	..	3·1	..	Ca	lm	..	0·8	..	..	2·2	0·7	..	..	1·9	6	11 15
23	..	Ca	lm	..	0·7	..	..	1·9	3·0	..	..	8·3	2·5	..	..	6·8	12	14 10
24	1·5	..	..	8·8	..	..	..	11·5	..	1·6	..	9·1	1·1	..	..	6·1	20	6 0
25	6·1	..	1·1	..	7·7	..	..	2·8	4·9	..	..	..	..	..	..	6·2	17	0 20
26	..	..	..	5·2	..	..	..	4·3	..	..	..	2·6	..	..	..	3·6	11	3 30
27	..	..	..	2·6	..	..	..	1·6	..	..	..	6·6	..	..	..	1·6	17	23 20
28	..	13·2	4·8	..	..	9·8	3·6	..	..	7·5	6·4	..	..	3·9	6·8	..	20	1 50
29	0·5	..	3·0	..	7·1	..	..	1·3	11·3	..	..	4·1	1·1	..	3·1	..	21	14 35
30	1·6	..	2·9	..	6·8	..	..	2·5	12·0	..	..	6·9	2·7	..	15·5	..	23	15 45
S+N & W+E	126·6		129·5		118·5		130·3		144·1		130·5		112·3		142·2			
S−N & W−E	76·8		47·7		81·7		24·9		109·7		7·1		92·9		37·6			

SCOTLAND N.:—DEERNESS.

Cup Anemometer.
Height of Cups above—Roof 1·5 m., Ground 4·9 m., M.S.L. 57·3 m.

Day.	3 h.				9 h.				15 h.				21 h.				Vel. in Max. Hourly Run.	Time of Max.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	hrs.
1	11·0	..	..	13·0	10·8	..	..	12·8	8·0	..	..	9·6	10·0	..	..	8·4	19·7	1
2	9·1	..	..	5·2	10·2	..	..	5·9	9·6	..	..	5·5	11·6	..	..	6·7	13·4	22, 23
3	10·0	..	..	8·4	9·3	..	..	7·8	9·1	..	..	5·2	7·0	..	..	6·0	13·8	5, 7
4	6·5	..	..	5·5	9·1	..	..	3·4	10·3	..	..	1·8	3·4	..	1·2	..	11·5	10, 17
5	..	1·6	4·3	..	..	..	4·3	..	0·7	..	3·8	..	1·7	..	2·0	..	6·9	6
6	1·8	..	1·5	..	9·1	..	3·4	..	2·9	..	5·1	..	4·3	..	3·7	..	9·8	9
7	5·4	..	3·1	..	5·5	..	2·0	..	5·8	..	1·0	..	2·6	..	7·0	..	10·2	12
8	..	1·4	0·8	..	4·0	..	..	4·7	4·6	..	..	1·7	2·0	..	..	..	9·8	24
9	4·4	..	7·7	..	1·9	..	2·3	..	4·0	..	1·5	..	7·7	..	2·8	..	9·8	6, 22, 24
10	5·4	..	9·4	..	16·6	..	19·8	..	..	2·2	12·6	..	..	Ca	lm	..	25·9	9
11	..	6·2	7·3	..	..	..	5·6	..	6·3	..	5·3	..	2·9	..	8·0	..	9·5	3
12	8·3	..	3·0	..	13·9	..	2·4	..	5·4	..	3·1	..	11·3	..	2·0	..	14·1	9
13	4·5	..	3·9	..	7·8	..	6·6	..	9·6	..	8·0	..	8·5	..	4·9	..	14·4	24
14	9·5	..	3·5	..	..	..	10·5	..	2·0	..	5·5	..	12·2	..	..	7·0	18·4	23
15	9·7	..	11·6	..	17·2	..	6·3	..	11·0	..	13·0	..	..	..	..	15·7	24·9	13
16	..	3·9	10·7	..	..	2·6	7·0	..	..	..	8·2	..	..	1·4	8·1	..	15·1	1
17	1·4	..	7·8	..	..	1·1	6·1	..	2·4	..	4·2	..	5·5	..	1·0	..	11·8	24
18	14·4	..	..	5·3	14·7	..	..	5·4	14·7	..	..	5·4	15·3	..	..	5·6	19·7	12
19	16·5	..	..	6·1	5·4	..	3·1	..	1·9	..	2·3	..	3·4	..	..	1·2	17·7	1 to 5
20	4·8	..	..	0·9	8·9	..	..	..	5·1	..	0·9	..	6·1	..	1·1	..	8·9	9
21	4·6	..	..	..	2·0	..	..	..	1·6	..	..	0·3	4·8	..	..	0·9	4·9	19, 21
22	4·3	..	..	..	3·0	..	..	..	4·0	..	1·5	..	..	Ca	lm	..	4·6	5, 14
23	..	Ca	lm	..	..	0·3	1·6	..	3·0	..	..	..	3·7	..	..	2·1	4·6	24
24	4·2	..	..	2·4	2·5	..	..	3·0	4·6	..	..	8·0	7·1	..	..	8·5	12·1	24
25	7·8	..	..	9·3	8·8	..	..	7·4	9·6	..	..	5·5	8·1	..	..	1·4	13·1	5, 14
26	9·4	..	..	1·6	11·7	..	..	4·3	13·8	..	..	5·1	13·2	..	..	4·8	15·7	18
27	13·6	..	..	7·8	12·8	..	..	7·4	11·8	..	..	10·0	10·8	..	..	9·1	16·4	2
28	8·1	..	..	1·4	..	12·2	4·5	..	..	9·8	..	..	..	2·1	..	2·5	13·1	9
29	0·9	..	..	4·8	2·6	..	..	7·0	4·8	..	..	5·7	8·0	..	..	4·6	11·8	23
30	9·8	..	..	3·6	3·6	..	..	..	8·5	..	..	4·9	12·0	..	..	10·2	16·7	24
S+N & W+E	198·5		149·9		207·6		154·6		187·1		144·7		186·7		136·5			
S−N & W−E	172·3		−0·7		175·2		16·4		163·1		7·3		179·7		−21·5			

ENGLAND, S.W.:—SCILLY.

Components from Cup Anemometer: Gusts from Pressure Tube Anemometer.
Height of Head above—Ground 9·8 m., M.S.L. 49·7 m.
Height of Cups above—Ground 5·8 m., M.S.L. 45·7 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	h. m.
1	..	4·3	2·5	..	..	Ca	lm	..	..	4·3	..	2·5	..	2·5	..	1·4		
2	..	3·5	..	4·1	..	1·9	..	3·3	..	3·2	0·6	..	..	Ca	lm	..		
3	1·6	..	0·6	..	1·7	..	..	..	3·6	..	..	2·1	6·1	..	..	3·5		
4	5·4	..	..	6·4	5·1	..	..	6·1	1·7	..	..	4·7	..	0·8	..	4·5		
5	..	4·8	..	4·1	..	5·1	..	1·8	..	5·5	..	3·1	..	5·5	..	2·0		
6	..	4·1	..	0·7	..	1·8	..	1·0	..	2·1	..	..	..	Ca	lm	..		
7	..	..	2·1	..	1·4	..	2·5	..	1·3	..	3·6	..	..	..	1·7	..		
8	1·3	..	1·1	..	..	Ca	lm	..	1·1	..	1·3	..	..	Ca	lm	..		
9	..	Ca	lm	..	..	Ca	lm	..	..	Ca	lm	..	1·9	..	1·6	..		
10	1·9	..	2·2	..	1·2	..	2·2	..	3·2	..	3·8	..	..	2·1	0·4	..		
11	..	1·7	..	..	..	Ca	lm	..	1·6	..	..	1·3	4·2	..	..	..		
12	5·4	..	..	..	7·0	..	1·2	..	7·4	..	..	1·3	8·9	..	3·3	..		
13	6·0	..	7·0	..	..	..	6·3	..	..	0·5	2·9	..	0·7	..	4·1	..		
14	2·8	..	7·8	..	3·1	..	5·5	..	8·0	..	6·7	..	6·4	..	11·2	..		
15	6·2	..	10·8	..	..	..	11·3	..	1·3	..	7·4	..	..	1·7	9·8	..		
16	..	..	10·8	..	..	3·7	10·1	..	2·4	..	6·7	..	..	2·6	7·0	..		
17	..	1·0	2·7	..	..	Ca	lm	..	7·8	..	..	2·8	10·8	..	..	6·2		
18	12·0	..	..	6·9	9·7	..	..	3·6	9·3	..	..	3·4	9·7	..	..	3·6		
19	8·9	..	..	3·3	8·9	..	..	3·3	7·0	..	..	2·6	6·3	..	..	2·3		
20	7·2	..	..	4·1	6·1	..	..	3·5	4·3	..	..	2·5	5·0	..	..	2·9		
21	4·1	..	..	3·5	4·1	..	..	3·5	2·7	..	..	4·7	4·4	..	..	5·1		
22	2·9	..	..	5·0	4·4	..	..	5·1	4·1	..	..	7·2	4·8	..	..	8·3		
23	5·0	..	..	8·7	4·6	..	..	8·0	4·3	..	..	11·7	6·6	..	..	11·5		
24	5·4	..	..	9·4	4·3	..	..	11·7	2·5	..	..	2·1	4·6	..	..	..		
25	6·5	..	3·7	..	6·5	..	..	3·7	8·3	..	..	6·9	8·3	..	..	6·9		
26	6·8	..	..	3·9	7·0	..	..	2·6	6·1	..	..	3·5	5·4	..	..	6·4		
27	2·4	..	..	2·9	5·7	..	..	1·0	..	12·8	10·8	..	..	14·8	8·5	..		
28	..	15·5	8·9	..	..	13·2	4·9	..	..	5·8	3·3	..	..	0·9	2·3	..		
29	6·3	..	2·3	..	7·4	..	..	1·3	..	..	5·4	..	2·9	..	5·0	..		
30	5·7	..	..	1·0	12·3	..	..	7·1	4·3	..	11·7	..	..	4·9	13·2	..		
S+N & W+E	138·7		126·5		126·2		110·6		126·5		126·6		132·8		132·7			
S−N & W−E	68·9		−1·5		74·8		−22·6		58·1		1·8		61·2		3·5			

Defective Records.

Defective Records.

ENGLAND, E.:—SHOEBURYNESS.

Pressure Tube Anemometer.
Height of Head above—Ground 27·4 m., M.S.L. 31·4 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	h. m.
1	8·0	..	..	9·6	4·0	..	..	10·8	..	1·8	..	9·9	..	2·8	..	7·7	18	0 25
2	..	6·0	..	1·1	..	6·1	..	..	..	3·2	..	1·2	..	3·5	1·3	..	11	9 25
3	..	3·2	1·8	..	..	1·6	1·3	..	..	Ca	lm	..	..	3·5	2·0	..	6	0 5
4	..	2·3	1·3	..	..	Ca	lm	..	..	Ca	lm	..	..	3·9	..	0·7	6	21 45
5	..	2·4	..	..	..	Ca	lm	..	..	Ca	lm	..	..	1·6	0·9	..	5	22 0
6	..	2·2	2·6	..	..	2·1	1·2	..	..	Ca	lm	..	0·5	..	2·7	..	6	6 10
7	0·4	..	2·1	..	..	Ca	lm	..	2·1	..	1·2	..	..	Ca	lm	..	5	13 5
8	..	Ca	lm	..	..	Ca	lm	..	..	Ca	lm	..	2·1	..	1·2	..	3	19 25
9	1·2	..	1·4	..	2·5	..	0·9	..	2·8	..	2·4	..	2·9	..	1·7	..	5	11 5
10	..	Ca	lm	..	3·1	..	2·6	..	2·2	..	2·6	..	0·6	..	3·3	..	8	21 55
11	..	1·1	2·9	..	..	Ca	lm	..	..	Ca	lm	..	..	Ca	lm	..	7	0 5
12	..	Ca	lm	..	..	Ca	lm	..	4·0	..	3·4	..	6·3	..	1·1	..	15	23 50
13	9·3	..	5·3	..	11·1	..	4·1	..	0·8	..	2·3	..	2·2	..	2·6	..	17	2 35
14	3·1	..	3·8	..	3·6	..	4·2	..	7·2	..	6·1	..	2·2	..	5·4	..	20	23 45
15	8·4	..	10·0	..	11·6	..	9·8	..	3·8	..	10·2	..	4·8	..	5·6	..	20	11 10
16	3·3	..	5·8	..	5·6	..	4·8	..	1·9	..	5·3	..	1·1	..	2·0	..	12	11 40
17	0·6	..	1·8	..	0·7	..	3·7	..	..	Ca	lm	..	2·1	..	0·4	..	6	9 5 / 9 45
18	5·8	..	..	3·3	9·3	..	..	1·6	4·4	..	..	3·8	7·7	..	..	6·6	13	19 55
19	5·5	..	..	2·0	4·6	..	..	1·7	4·0	..	..	1·5	3·9	..	..	0·7	9	1 50
20	2·1	..	..	0·4	4·9	..	..	1·8	0·5	..	..	3·1	6·1	..	..	5·1	7	9 0
21	3·5	..	..	3·0	3·6	..	..	4·2	0·9	..	..	5·1	3·8	..	..	6·6	10	20 45
22	2·1	..	..	3·7	..	..	..	6·1	..	2·3	..	4·0	..	1·2	..	6·6	9	19 45
23	..	1·8	..	4·9	1·3	..	..	7·2	..	1·3	..	7·5	1·2	..	..	6·9	12	18 25
24	0·9	..	..	5·4	6·7	..	..	8·0	3·8	..	..	6·6	5·6	..	..	4·8	12	8 45
25	6·9	..	..	2·5	6·6	..	..	1·2	5·5	..	..	2·0	..	Ca	lm	..	8	11 40
26	2·2	..	..	6·0	4·2	..	..	7·4	0·9	..	..	5·4	1·3	..	..	3·5	11	10 30
27	3·8	..	..	6·6	3·8	..	..	6·6	7·6	..	..	..	7·3	..	..	..	11	15 20
28	7·4	..	..	4·2	..	Ca	lm	..	1·3	..	1·6	..	1·0	..	1·8	..	10	2 40
29	0·4	..	2·1	..	0·7	..	4·2	..	5·7	..	..	1·0	8·2	..	..	..	13	22 35
30	7·8	..	..	1·4	1·9	..	2·3	..	8·4	..	..	1·5	10·8	..	..	1·9	15	19 15
S+N & W+E	101·7		95·0		99·6		95·7		76·4		87·7		110·8		83·1			
S−N & W−E	63·7		−13·2		80·0		−17·5		59·2		−17·5		77·8		−19·1			

9. Seismological Diary.

The Seismographs at Eskdalemuir were out of action from October 16th to the end of the year.

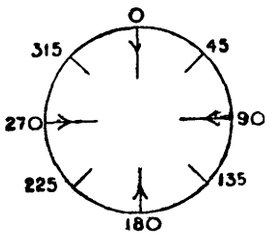
Earthquakes :— Richmond (Kew Observatory).

Date.	Times G.M.T. of Commencement.		Times G.M.T. of Maximum Amplitude.		Remarks.	Date.	Times G.M.T. of Commencement.		Times G.M.T. of Maximum Amplitude.		Remarks.
Nov.	h.	m.	h.	m.		Nov.	h.	m.	h.	m.	
3	—	—	16	43	Very small.	16	—	—	9	3	Small.
12	5	56	6	23	Small.	26	8	55	9	4	Amplitude on trace 1·4 mm.

10. Soundings with Pilot Balloons.

Height of Station above M.S.L. = H.
Anemometer above ground = h.

	H.	h.
Aberdeen	14 m.	23 m.
Eskdalemuir	242 m.	15 m.
S. Farnborough	70 m.	31 m.
Cahirciveen	9 m.	13 m.



Wind Protractor.

Notes on Pressure Distribution.

November, 1920.

1st 18 h. } High over the Azores and Scandinavia, Low over Iceland and
2nd 7 h. } France.
4th 7 h. 13 h. The Scandinavian Anticyclone extending to the British Isles.
5th 7 h. 13 h. 18 h. The Azores Anticyclone extending to the British Isles.
6th 13 h. Ridge from the Azores to the British Isles.
10th 7 h. 13 h. Deep depression centered N of Scotland, straight isobars.
11th 7 h. 13 h. 18 h. The Azores Anticyclone extending to the British Isles and the Continent.
12th 7 h. 13 h. } Deep depression centered near Iceland.
13th 7 h. }
16th 7 h. 13 h. Deep depression centered over Scandinavia.
17th 7 h. 13 h. 18 h. Continental Anticyclone covering the British Isles.
18th 13 h. } Deep depression centered NW of Iceland, extensive Anticyclone
19th 13 h. } centered over the Baltic.
22nd 7 h. 13 h. 18h. } Anticyclone over the British Isles centered over
23rd 7 h. 13 h. 18h. } Germany.
24th 18 h. Shallow Low centered SW of Ireland, Anticyclone centered near Christiania.
25th 7 h. 18 h. } Southerly Type.
26th 13 h. }
29th 7 h. Shallow Low W of Ireland.
30th 13 h. Deep depression W of Ireland.

Notes on Ascents.

Aberdeen—
17th, 15 h. 30 m. Solar halo.

Eskdalemuir—
4th, 7 h. 45 m. St. amount 10 to St.-Cu. amount 9. Barometer rising slowly. Balloon lost in cloud.
30th 11 h. 0 m. Solar halo.

Cahirciveen—
7th, 12h. 20m. Balloon eclipsed by Cu.
11th, 7h. 40m. Balloon went into High St.
17th, 9 h. 5 m. Balloon was lost behind Cu.
24th, 15h. 35m. Balloon eclipsed by St.-Cu.
25th, 9 h. 30 m. Balloon eclipsed by St.-Cu.

10. Soundings with Pilot Balloons—*cont.*

Day	Time of Start, G.M.T.	Horizontal Velocity of Wind. Geostrophic.		By Anemometer.		At Heights above M.S.L. 500 m.		1,000 m.		2,000 m.		3,000 m.		4,000 m.		Cloud Observations. Time, G.M.T.	Type.	Deg. from N.	mr/s.	Type.	Deg. from N.	mr/s.
	h. m.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	h. m.						
									ABERDEEN.													
5	12 30	270	7	300	4.5	300	6.0	310	10·0	290	14.5	..	..	..	..	13 0	..	..	..	Ci.	290	2·0
10	12 30	280	15	240	7.5	260	16.0	265	20.0	280	20.5	..	..	..	..	13 0	..	..	..	Ci.-Cu.	230	6.0
11	15 30	240	11	190	1.5	230	10.5	255	14.0	260	11.0	265	23.0	..	..	13 0	St.-Cu.	270	5.0	..	..	..
																	St.-Cu.	270	..	Ci., Ci.-Cu.	270	..
17	15 30	240	7	250	3·5	280	7.5	295	9.5	270	8.5	320	5.0	..	..	..	..	..	..	Ci.-St.	325	..
22	15 30	210	10	200	2.0	210	13.0	195	10·5	175	17·0	..	..	..	..	..	..	..	..	..	..	..
									ESKDALEMUIR.													
4	7 45	170	7	Calm.		135	3.7	240	1·9	285	7·5	..	..	..	..	..	St., St.-Cu.	..	..	..	..	..
5	7 30	320	10	Calm.		315	4.3	315	13·0	320	6.0	..	..	..	..	8 15	A.-Cu.	300	4.0	..	..	..
5	15 45	305	7	Calm.		300	6.0	320	7.5	330	5.0	300	13.0	310	10.0	16 0	..	..	..	Ci.	315	2.5
10	7 45	260	17	250	10.0	255	11·5	265	14.5	260	23.0	..	..	..	..	..	Cu.	260	..	Ci.	230	5·5
13	7 40	250	13	225	9·0	245	11.5	250	20.0	245	23.0	..	..	..	..	..	St.	..	..	Ci.-St.	..	..
22	11 55	200	11	170	0.8	185	5.5	195	11.0	165	10.5	165	12.5	170	10.0	..	..	..	..	..	..	..
22	15 50	200	11	350	1.5	195	3.5	200	11.5	195	12.5	180	11.0	..	..	..	..	..	..	..	..	..
23	7 40	?	?	360	2.0	90	3.6	150	7.5	155	11·5	..	..	..	..	..	..	..	..	..	..	..
30	11 20	140	15	360	0.5	140	3.2	135	10.0	135	13·0	125	10·5	140	13·0	..	..	..	..	..	..	..
	11 0	180	20	160	4.0	165	8.5	175	10.0	180	14.0	180	14·0	..	..	..	..	..	..	Ci.	245	3·5
														5,000 m.								
22	11 55	..	..	..	..	For observations at lower levels, see above								160	10.5	..	..	..	..	..	..	..
									SOUTH FARNBOROUGH.													
4	11 55	70	10	70	2.0	150	2.0	215	2.0	170	1·5	220	4·5	215	5.0	..	..	..	..	..	..	..
11	7 20	280	6	280	4·0	345	4·5	350	3·5	275	5·5	..	..	..	..	..	St.-Cu.; A.-St.	..	..	..	..	..
11	9 45	280	6	290	3·0	20	2·5	30	2.5	250	5.0	270	8.0	275	13.0	..	..	..	..	Ci.; Ci.-St.	..	..
11	11 30	?	?	320	3·5	310	2·0	235	0·5	270	7·0	260	8.0	..	..	..	Cu.; A.-St.	..	..	Ci.	..	..
12	7 35	240	13	190	4.0	215	8.0	250	8·5	240	6·5	..	..	..	..	..	St.	..	..	..	..	..
12	10 30	230	11	225	5.0	210	6·0	255	9.0	230	10.0	..	..	..	..	..	A.-Cu.; A.-St.	..	..	Ci.	..	..
16	7 25	260	13	235	7.5	265	14.0	270	18.5	265	24.5	..	..	..	..	..	..	..	..	..	..	..
16	10 55	280	16	255	10.5	260	9.5	270	15.0	260	21.0	..	..	..	..	..	..	..	..	..	..	..
17	7 25	270	15	250	6·5	295	8.0	295	9.5	290	6.0	275	11.5	285	15.5	..	..	..	..	..	..	..
17	10 15	?	?	265	3.0	305	5.5	295	6.5	270	6.5	280	9.0	280	16.0	..	..	..	..	..	..	..
17	14 45	?	?	250	3.0	275	3.0	260	2.5	260	5.0	280	6.0	285	12·5	..	..	..	..	Ci.-St.	..	..
18	12 20	195	12	160	7.5	170	12.5	180	16.5	205	13.0	..	..	..	..	..	A.-St.	..	..	Ci.-St.	..	..
18	14 20	195	12	160	8.0	160	13.0	175	10.5	200	12.5	..	..	..	..	..	..	..	..	Ci.; Ci.-St	..	..
																				Ci.-Cu.	..	..
19	11 55	195	12	160	7.0	190	11.0	185	11.0	195	14.5	..	..	..	..	..	..	..	..	Ci.-St.	..	..
23	15 30	130	12	85	8.0	95	10.0	110	17.5	110	13.0	..	..	..	..	..	..	..	..	..	..	..
25	15 0	180	10	155	7.5	170	8.5	175	9·0	190	7·0	180	10.0	..	..	..	St.-Cu.	..	..	Ci.; Ci.-Cu.	..	..
26	10 45	175	9	110	7.0	160	11.0	165	12.5	180	10.5	..	..	..	..	..	..	..	..	Ci.; Ci.-St	..	..
																				Ci.-Cu.	..	..
29	7 55	225	9	240	4.0	245	7.5	225	12·5	205	12.5	..	..	..	..	..	St.; A.-Cu.	..	..	..	..	..
				5,000 m.		6,000 m.		7,000 m.		8,000 m.		9,000 m.		10,000 m.								
4	11 55	(For observations at lower levels, see above.)		220	6.5	290	5·0	345	4·5	345	6.0	295	6.5	290	8.5	..	..	..	..	..	..	..
11	9 45			280	14.0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	Ci.; Ci.-St.	..	..
17	14 45			270	19.0	300	18.0	..	..	..	..	..	..	..	..	..	..	..	..	Ci.-St.	..	..
				..	..	..	..	..	..	..	..	11,000 m.		12,000 m.								
4	11 55			..	..	..	..	..	..	..	..	310	13.0	305	18·5	..	..	..	..	..	..	..
									CAHIRCIVEEN.													
1	16 20	?	?	60	7·0	65	8.0	45	4·4	50	13.0	40	18.0	40	15.0	..	Cu.	360	..	..	..	..
																	A.-St.	..	..	..	..	..
2	7 20	?	?	60	2.2	200	3.5	240	3·1	230	3.6	270	6.0	280	4.0	8 20	A.-Cu.	320	3.0	Ci.-St.	..	..
6	12 20	?	?	245	4.7	255	6.0	260	7·5	270	8.0	..	..	..	..	12 50	Cu.; Fr.-Cu.	225	..	Ci.; Ci.-Cu.	315	2.0
																	A.-Cu.	315	...	..	..	..
11	7 40	260	10	Calm		225	4.3	240	7·0	230	7.0	..	..	..	..	..	Fr-Cu; Fr-St.	225	..	..	..	..
																	A.-St.	225	..	..	..	..
16	9 20	260	25	235	7·0	265	17·0	265	14·0	270	22.0	..	..	..	..	..	Cu.; St.-Cu.	245	..	..	..	..
																	Fr.-St.	270	..	..	..	..
17	9 5	220	6	155	5·0	180	8.5	195	10.5	205	9.5	255	10.0	..	..	..	Cu.	180	..	Ci.-Cu.	245	..
22	9 15	180	8	120	5.5	150	11·0	160	2.1	180	2.4	175	7.0	160	11.0	..	Cu.; Fr.-Cu.	135	..	..	..	..
23	9 10	145	13	110	7.0	140	8.0	145	22.0	145	16.0	..	..	..	..	..	Cu.	135	..	..	..	..
24	15 35	?	?	70	5.0	135	8.0	125	9.5	80	6.0	135	5·5	240	1.6	..	St.-Cu.	115	..	..	..	..
																	A.-Cu.	135	..	..	..	..
25	9 30	195	10	190	4.0	240	10.5	245	7.5	215	5.5	195	12.5	200	13.5	..	St.-Cu.	250	..	..	..	..
																	A.-St.	..	..	..	..	..
						5,000 m.		6,000 m.		7,000 m.		8,000 m.		9,000 m.								
1	16 20	(For observations at lower levels, see above.)				45	18.0	35	23·5	..	..	..	..	..	..	..	Cu.	360	..	..	..	..
																	A.-St.	..	..	..	..	..
2	7 20					285	7·5	340	18·0	..	..	..	..	..	..	8 20	A.-Cu.	320	3.0	Ci.-St.	..	..
22	9 15					170	12·0	185	12.5	165	11·0	175	10.0	175	20·0	..	Cu.; Fr.-Cu.	135	..	..	..	..
24	15 35					320	3.9	..	..	..	..	..	..	..	..	..	St.-Cu.	115	..	..	..	..
																	A.-Cu.	135	..	..	..	..

11. Nephoscope Observations.

Aberdeen.

Day and Hour G.M.T.	Type of Cloud.	Velocity-height-ratio.				Remarks.
		Degrees from N.	Milliradians. per Second.	Components.		
				W.-E.	S.-N.	
5 13	Ci.	290	2·1	+ 2·0	− 0·7	Trace of True Ci.
5 15	A.-Cu.	285	3·6	+ 3·5	− 0·9	Flotillæ of A.-Cu., changing to high St.-Cu., arranged in lenticular sheets.
10 13	Ci.-Cu.	229	6·1	+ 4·6	+ 4·0	"Speckle-cloud" type of Ci.-Cu., massing into lenticular patches.
11 13	St.-Cu.	268	4·8	+ 4·8	− 0·2	Small high St.-Cu.
13 13	False Ci.	246	7·8	+ 7·1	+ 3·2	False Ci., changing into thin high St.-Cu.
14 13	Ci.-St.	288	8·9	+ 8·5	− 2·7	Ci.-St. to Ci.-Cu. of "speckle-cloud" type. Radiant N.W., sharply defined edge to N. Unusually high velocity.
16 15	False Ci.	255	2·3	+ 2·2	+ 0·6	Sheets of indefinite false cirrus, becoming thin high St.-Cu.
20 13	A.-Cu.	245	1·7	+ 1·5	+ 0·7	A.-Cu. in sheets of lenticular form.
24 13	St.	97	17·0	−17·0	+ 2·0	Long rolls of St.-cumuliformis.
30 13	St.	182	17·0	+ 0·6	+17·0	Heavy irregular masses of St.-cumuliformis.

Note.—For a large part of the month the skies were covered with uniform stratus, or else had no cloud whatever visible.

12. Aurora.

Day.	a.m. or p.m.	Moon.	Magnetic Character.		Aurora Observations.	
			Eskdalemuir.	Richmond.	Station.	Remarks.
4	p.	..	1, 1	1, 1	Wick, Nairn, Leith, Holyhead	Bright.
5	p.	..	1, 1	1, 1	Baltasound, Deerness, Aberdeen, Eskdalemuir	Faint glow, yellowish-white, 18h. to 19h. Glow 19h. to 21h.
6	p.	..	1, 1	1, 1	Deerness	
10	p.	●	..	..	..	
15	p.	..	1, 0	1, 0	Aberdeen	Moderately bright arch, greenish white, 18h. to 22h.
16	p.	..	0, 1	0, 2	Baltasound, Eskdalemuir	Strong glow in N. 19h
26	a.	○	..	..	..	
26	p.	..	2, 2	2, 2	Wick	

Note.—The two magnetic "characters" entered in each case refer to the two periods of 24 hours ending and beginning at midnight of the night in question.

METEOROLOGICAL OFFICE OBSERVATORIES—GEOPHYSICAL JOURNAL.

DAILY VALUES.—*Solar Radiation, Meteorology, Atmospheric Electricity, Terrestrial Magnetism, and Seismology.*
Tenth YEAR.—NO. 12. DECEMBER, 1920.] Units based on the C.G.S. System. [*Price* 1*s.* 6*d.*

1. SUNSHINE AND SOLAR RADIATION.

Day.	WESTMINSTER. Bright Sunshine.* Total.	Per cent. of Possible.	SOUTH KENSINGTON.—Lat. 51° 30′ N. Long. 0° 10′ W. Radiation received on Horizontal Surface by Callendar Radiograph. Daily Total.	Per cent. of Planetary.	Maximum. For Day. Amount.	Time.	11.30 h. to 12.30 h.	RICHMOND.—Lat. 51° 28′ N. Long. 0° 19′ W. Bright Sunshine.* Total.	Per cent. of Possible.	° Radiation at Noon by Ångström Pyrheliometer. Intensity.	Vertical Component.	Sky.	ESKDALEMUIR.—Lat. 55° 19′ N. Long. 3° 12′ W. Bright Sunshine.* Total.	Per cent. of Possible.	° Radiation by Ångström Pyrheliometer. Time.	Sky.	$\frac{p}{p_0}$ sec. Z.	Intensity.	CAHIRCIVEEN. Bright Sunshine.* Total.	Per cent. of Possible
	hr.	%	j/cm².	%	mw/cm².	h. m.	mw/cm².	hr.	%	mw/cm².	mw/cm².		hr.	%	h. m.			mw/cm².	hr.	%
1	2·9	35	248	33	22	11 45	22	*x*5·1	62	53	15	Hazy	4·2	57	11 59	Clear	4·42	64	0·0	0
2	0·0	0	74	10	6	10 05	4	0·0	0	..	..	..	0·0	0	..	..	..	..	0·0	0
3	1·0	12	143	20	14	12 25	14	1·3	16	..	..	..	0·0	0	..	..	..	..	2·1	26
4	0·1	1	138	19	14	11 55	14	0·6	7	..	..	..	*x*6·2	84	..	..	..	..	1·0	13
5	0·0	0	165	23	10	12 25	10	0·0	0	..	..	..	3·7	51	..	..	..	..	*x*6·4	81
6	0·0	0	61	9	11	9 55	4	0·0	0	..	..	..	2·4	33	..	..	..	..	5·9	75
7	0·0	0	75	11	8	13 05	4	0·0	0	..	..	..	1·7	23	..	..	..	..	0·0	0
8	0·0	0	47	7	8	12 45	7	0·0	0	..	..	..	0·3	4	..	..	..	..	0·0	0
9	0·0	0	147	21	13	12 54	13	0·2	3	..	..	..	3·9	54	..	..	..	..	3·8	49
10	0·2	3	129	19	12	12 00	12	1·8	23	..	..	..	0·0	0	..	..	..	..	0·0	0
11	0·0	0	111	16	13	10 42	11	0·0	0	..	..	..	0·0	0	..	..	..	..	2·5	32
12	0·0	0	100	15	12	10 58	9	0·0	0	..	..	..	0·7	10	..	..	..	..	6·0	77
13	0·0	0	48	7	4	11 00	3	0·0	0	..	..	..	0·0	0	..	..	..	..	6·3	82
14	0·0	0	41	6	3	9 40	2	0·0	0	..	..	..	0·0	0	..	..	..	..	5·8	75
15	0·0	0	27	4	3	12 10	3	0·0	0	..	..	..	0·0	0	..	..	..	..	5·7	74
16	0·0	0	122	18	11	11 20	10	0·6	8	44	12	Misty	0·4	6	..	..	..	..	0·2	3
17	0·0	0	—	—	—	— —	—	0·0	0	..	..	..	5·5	79	12 3	Hazy	5.13	55	0·5	6
18	0·0	0	66	10	7	12 10	7	0·0	0	..	..	..	0·0	0	..	..	..	..	2·2	29
19	0·0	0	50	8	7	11 45	7	0·0	0	..	..	..	0·0	0	..	..	..	..	2·0	26
20	0·2	3	117	18	12	12 50	10	0·7	9	31	8	Misty	0·0	0	..	..	..	..	0·0	0
21	0·0	0	50	8	8	11 30	8	0·0	0	..	..	..	0·0	0	..	..	..	..	0·3	4
22	*x*4·8	62	233	36	17	13 07	16	4·6	59	53	14	Hazy	5·0	71	..	..	..	..	0·3	4
23	0·0	0	187	29	12	12 20	12	3·0	38	23	6	Misty	3·2	46	12 11	Hazy	5.01	52	0·0	0
24	0·0	0	158	24	12	11 55	12	0·0	0	..	..	..	0·0	0	..	..	..	..	0·1	1
25	0·0	0	135	21	12	11 55	12	0·0	0	..	..	..	0·0	0	..	..	..	..	0·0	0
26	2·2	28	204	31	13	10 53	12	3·5	45	37	10	Misty	0·5	7	..	..	..	..	0·1	1
27	2·2	28	188	28	18	12 00	18	2·6	33	..	..	..	0·0	0	..	..	..	..	1·1	14
28	1·9	24	167	25	17	12 25	17	2·0	26	..	..	..	0·0	0	..	..	..	..	2·5	32
29	0·0	0	68	10	5	11 20	4	0·0	0	..	..	..	0·0	0	..	..	..	..	0·0	0
30	1·6	21	*x*258	39	*x*24	10 55	23	2·3	29	22	6	Thro Ci.	2·3	32	..	..	..	..	0·0	0
31	0·0	0	77	12	5	11 40	5	0·0	0	..	..	..	0·0	0	..	..	..	..	3·4	44
Means	0·55	7	121†	18†	11†	—	10†	0·91	12	—	—	—	1·29	18	—	—	—	—	1·88	24
Normals	0·52	7	130	19	—	—	—	1·19	16	—	—	—	0·68	10	—	—	—	—	1·32	17
	←35 years→		←8 years→					←35 years→					←5 years→						←35 years→	

2. METEOROLOGY AND MAGNETISM:—CAHIRCIVEEN (VALENCIA OBSERVATORY).—Lat. 51° 56′ N. Long. 10° 15′ W.

Heights above M.S.L.:—H=9·1 m. H_t=13·7 m. H_a=26·4 m. Above Ground: h_t=1·3 m. h_r=0·56 m. h_s=12·8 m. h_a=13·9 m.

Day.	Air Pressure at Station Level. 9 h.	21 h.	Air Temperature in Degrees Absolute. 9 h.	21 h.	Max. 0 h. to 24 h.	Min. 0 h. to 24 h.	Humidity. Vapour Pressure. 9 h.	21 h.	Percentage. 9 h.	21 h.	Wind—Veer from North in degrees and Speed in metres per second. 9 h. °	m/s.	21 h. °	m/s.	Cloud Amount (0–10) and Weather. 9 h.	21 h.	Rain 0 h. to 24 h.	Min. Temp. on Grass. 18 h. to 9h.	REMARKS.	Magnetism. Horizontal Force, Declination West, and Inclination.
	mb.	mb.	*a* 200+	*a* 200+	*a* 200+	*a* 200+	millibar.		%	%					Tenths of Sky covered.		mm.	*a* 200+		
1	1009·7	1003·3	80·2	81·4	83·0	78.1	8·3	10·4	82	95	190	4	175	5	10	10●	16·9	75	●^{0} 1h.; ▯ 7h.; o. *a.*; ● after 15h.	
2	1014·6	1003·3	81·3	85·5	*x*86·1	80.4	8·1	13·9	74	96	275	4	175	12	9	10●	8·1	78	p^0 3h.; c. to o. *a.*; op. *p.*; ●*n.* 20h.	
3	1016·0	1028·1	81·5	83·3	85·9	80·4	8·2	9·1	74	73	295	15	300	14	9	9	4·9	79	●till 2h.; cp.▲^{0}*a.&p.*; ▲p. 18h, p.after	
4	1034·3	1035·0	82·8	82·8	84·1	82·1	10·8	8·9	89	74	345	9	25	3	10d	4	0·6	81	pq. early; o. to c. *a.* & *p.*; bc. *n.* [21h.	
5	1035·3	1033·9	81·3	76·3	82·9	75·5	8·9	6·7	82	87	55	2	—	1	3	1	—	78	o. early; Fine after 9h.; ⌙^{0} *n.*	
6	1030·2	1024·4	74·8	79·0	80·7	74·5	5·9	6·7	85	72	—	1	85	3	1	8	—	71	b. ⌙ at first; b. *a. and p.*; c. *n.*	
7	1016·9	1011·2	79·5	80·7	81·2	78·6	6·7	8·4	69	80	100	5	140	5	10	10	—	75	o. all day.	
8	1014·7	1024·3	80·5	80·4	81·4	76.9	8·9	7·7	86	75	5	6	10	3	10●^{0}	8	15·8	79	●^{2} early; o. ●^{3} *a.*; c. *p. and n.*	
9	1027·4	1027·0	75·1	76·3	80·1	74·0	6·4	6·9	90	89	60	2	—	1	3	1	—	72	Fine day.	178547
10	1023·8	1021·8	79·4	80·2	81·2	74·5	7·4	7·5	77	74	140	4	145	6	9	4	—	72	b ⌙ to o.; cv. *a. and p.*; bc. *n.*	19° 16′·3
11	1020·4	1020·0	80·3	79·8	81·5	78·8	7·8	8·2	76	83	120	5	—	1	3	8d^0	0·2	77	b. *a.*; c. to o.; *p. and n.*	68° 3′·7
12	1019·8	1018·9	76·2	74·4	78·8	74·0	5·8	5·0	76	74	65	2	65	4	6	o ⌐	0·1	74	p^0 early; o. to b. *a.*; b. *p.*; ⌙ *n.*	
13	1017·8	1017·8	73·2	72·4	77·1	72·0	4·5	3·8	73	66	70	4	—	1	1	2 ⌐	—	70	⌙; very fine day; ⌙ *n.*	
14	1020·6	1024·4	70·5	74·1	75·7	*n*70·2	4·1	5·2	80	79	—	0	—	0	1	2 ⌐	—	*n*67	⌙; very fine, ∞^{0}; ⌙ *n.*	
15	1027·5	1028·5	71·4	72·7	76·1	70.9	4·2	4·9	77	82	—	1	—	1	o∞	o ⌐	—	68	⌙; very fine, ∞; ⌙ *n.*	
16	1026·9	1025·5	76·4	78·9	80·1	72·0	6·0	7·2	77	77	140	4	140	7	7	10	—	70	⌙; bc. *a.*; o. ∞ *p.*; o. *n.*	
17	1023·0	1022·0	80·4	78·4	80·7	78·3	7·6	6·2	74	69	145	7	120	6	7	6	—	77	o. ∞ early; c. *a.*; c. to o. *p.*: bc. *n.*	
18	1024·3	1022·1	77·8	78·8	79·3	76·4	6·0	7·4	70	81	105	4	120	3	2	10	—	73	b. at first; bc. to c. ∞ *p.*; o. *n.*	
19	1015·9	1008·9	79·5	80·7	81·1	78·8	7·0	8·8	72	84	135	7	160	9	8	10	4·6	77	Fair *a.*; c. to o. *p.*; op. to ● *n.*	
20	1004·8	993·5	81·9	83·0	83·4	80·9	10·8	10·6	96	87	220	3	175	9	10d	10p	10·2	79	● early; o. ●^{0} *a. and p.*; ● *n.*	68° 4′·6
21	984·6	989·1	81·9	81·1	83·4	79·3	8·7	7·6	77	70	235	14	295	12	9	7	4·6	80	5h.; c. to o. with frequent ▲^{2}pq.; c.*n.*	
22	996·4	988·2	79·6	78·1	80·5	77·5	7·2	7·9	74	90	280	6	70	5	4	10	11·8	76	▲^{0}p. early; bc.*a.*; ●after 15h. then b.*n.*	
23	1001·1	991·7	73·3	83·1	83·6	73·2	5·7	11·9	91	97	80	2	175	7	9	10●	12·5	70	b. ⌙; o. after 9h.; ●14h.–19h.; o. *n.*	
24	995·2	997·5	84·8	84·8	85·2	83·5	13·3	13·0	97	95	190	6	155	6	10●	10●	9·2	80	o. with ●^{0} at times *a*; o, *p.*; ● *n.*	178707
25	989·6	992·7	84·7	83·2	85·9	82·3	12·4	10·9	91	88	160	14	180	6	10●	9	3·0	83	o. occasional ● or p. *a.* & *p.*; 17h.;	19° 16′·8
26	1000·8	984·7	83·2	84·2	85·7	82·1	11·1	11·1	90	84	170	7	145	13	9	10	13.9	80	c. to o. *a. and p.*; ●^{2} *n.* 20h. [op. *n.*	
27	991·0	994·1	82·6	82·8	84·4	80·5	9·8	10·8	82	89	210	6	155	2	7	8	5·5	80	● early; bc. p. *a.*; c. to o.; *p.* & *n.*	
28	992·3	998·1	82·8	83·5	84·3	81·4	11·0	10·9	91	86	175	6	180	7	10	10	19.8	76	b.early. ●^{2}6-7h.c.*a.*&*p.*o<*n.*▲^{2}pq.22h.	178417
29	1001·6	995·8	82·3	81·3	83·5	80·7	10·8	10·1	93	93	175	2	160	6	10	9	10·2	79	c.to o.; ●13-16h. then o.; ● after 18h.	19° 13′·9
30	1000·1	990·4	82·2	84·3	84·6	80·6	10·7	12·8	93	96	175	4	175	11	8	10	*x*20·0	83	op. at first; c. to o. *a.*; ● after 15 h.	
31	990·7	1000·9	84·0	83·5	85·4	82·6	11·7	10·8	90	85	210	7	190	6	10	2	11·2	81	● till 5h.; o. to bc. *a.*; bc. *p. and n.*	178557
Means	1011·8	1010·2	79·5	80·3	82·2	77·8	8·3	8·8	82	83	— 5·2		— 5.6		6·9	7·0	183·1	76·1	Monthly Totals or Means.	19° 15′·6
Normals	1009·5	1009·7	80·2	80·4	82·9	77·9	9·1	9·2	88	88	— 6·3		— 6·5		—	—	165·1	—	Normals.	68° 4′·1
	←45 years→						←30 years→				←35 years→						45 years			

* By Campbell-Stokes Sunshine Recorder. *x* denotes the maximum and *n* the minimum value in the column. † Mean for 30 days only.

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3. METEOROLOGY:—RICHMOND, SURREY (KEW OBSERVATORY).—Lat. 51° 28′ N. Long. 0° 19′ W.

Heights above Mean Sea Level:—Rain-gauge Site, H=5·5 m. Barometer, H_b=10·4 m. Cups of Anemometer, H_a=25 m.
Heights above Ground:—Thermometers, h_t=3·0 m. Rain-gauge, h_r=0·53 m. Sunshine Recorder, h_s=13·3 m. Cups of Anemometer, h_a=20 m.

Day.	Air Pressure at Station Level.		Air Temperature in Degrees Absolute.				Humidity.				Wind—Veer from North in degrees and Speed in metres per second.				Cloud Amount and Weather.		Rain 0 h. to 24 h.	Min. Temp. on Grass. 18 h. to 9 h.	Remarks.
					Max.	Min.	Vapour Pressure.		Percentage.										
	9 h.	21 h.	9 h.	21 h.	0 h. to 24 h.		9 h.	21 h.	9 h.	21 h.	9 h.		21 h.		9 h.	21 h.			
	mb.	mb.	*a* 200+	*a* 200+	*a* 200+	*a* 200+	millibar.		%	%	°	m/s.	°	m/s.	Tenths of Sky covered.		mm.	*a* 200+	
1	1019·0	1019·0	77·7	79·1	82·7	76·2	7·2	8·1	84	86	—	1	170	3	3≡⁰	0☌	—	71	≡⁰☌. Mostly fine. ∞ *p*.
2	1012·8	1022·8	78·1	78·5	82·2	78·0	8·2	8·5	93	94	80	5	70	2	10d≡⁰	10≡⁰☍	5·2	71	● early. Dull. Gloomy *p*.
3	1008·4	1012·9	85·4	80·1	86·2	78·4	13·6	6·2	94	62	185	8	250	8	10●⁰	0	2·0	75	Dull to fine. Line q 11 h. 🌂 (gusts).
4	1013·9	1017·8	80·9	80·4	81·5	79·0	6·3	7·3	59	71	295	9	340	11	10q	9q	0·4	76	Dull to fine. 🌂 (gusts).
5	1028·0	1028·2	80·1	79·0	80·9	77·9	8·7	8·0	86	86	360	5	360	6	10	10	1·8	77	Dull and showery. 🌂 (gust) 0 h. 30 m.
6	1027·2	1023·1	77·8	77·1	78·8	76·9	6·9	7·5	81	92	10	5	15	4	10≡⁰	10●	0·6	77	Dull. Showers.
7	1018·3	1015·9	78·0	77·8	78·6	77·2	7·8	7·6	90	89	30	2	—	1	10≡⁰	10≡⁰	0·1	75	Dull. ●⁰ early.
8	1018·7	1022·5	73·0	75·1	75·7	72·4	5·8	6·9	95	97	—	1	—	1	10≡🌓	10≡☍	—	71	🌓. Dull with ≡ all day.
9	1024·5	1025·1	72·8	74·3	77·6	72·5	5·6	5·8	94	87	—	1	20	2	10≡	0🌓	—	73	☌. ≡ till 12 h. fine *p*.
10	1025·0	1024·2	72·3	75·5	77·6	71·7	5·2	6·6	90	90	20	2	—	1	9≡🌓	0≡⁰	—	67	≡ till 12 h.-fine *p*.
11	1021·8	1016·8	74·3	73·1	75·6	72·0	6·1	5·8	91	95	—	1	80	2	10≡⁰	10✻≡⁰	4·9	69	✻⁰ 8 h. Dull. ✻ *p*.
12	1018·0	1018·3	70·6	68·9	72·3	67·8	4·6	3·5	89	77	—	1	80	3	8≡⁰	0≡	—	72	⊠ Dull. ≡ *p*.
13	1018·8	1018·8	68·1	71·8	73·1	*n*66·7	3·4	4·5	81	81	80	2	80	3	10≡	10≡⁰	0·2	*n*61	⊠. 🌓, ≡ till 12 h. Dull. ✻⁰ *p*.
14	1020·3	1022·6	74·4	75·3	75·6	72·4	5·3	5·9	79	82	80	3	50	7	10≡⁰	10≡⁰	0·2	70	⊠. Dull. ●⁰ *p*.
15	1027·0	1029·2	73·4	72·6	75·0	71·0	4·9	4·3	79	72	30	7	20	5	10≡⁰	9	—	73	Dull with ≡⁰.
16	1028·9	1027·9	72·8	74·2	74·4	70·6	4·9	5·7	82	85	360	4	350	5	9≡⁰	10✻⁰	—	67	≡⁰. ✻⁰ at times. Dull to cloudy.
17	1025·3	1024·3	75·1	75·8	75·9	74·2	5·8	6·8	82	91	350	5	355	3	10≡⁰	10	0·4	71	●, ✻⁰ *a*. Dull. ● d. *p*.
18	1024·1	1022·7	76·2	77·2	77·9	75·6	7·3	7·3	95	89	355	2	360	3	10≡⁰	10d≡⁰	—	74	Dull. ● d. 13 h. & 21 h.
19	1019·3	1016·2	75·6	75·8	76·6	75·4	6·8	6·7	93	90	360	3	360	2	10d≡⁰	10≡⁰	1·3	75	Dull and wet.
20	1013·7	1008·2	75·7	79·4	79·8	75·4	7·2	9·2	96	96	360	2	205	6	10d≡⁰	10d	—	75	≡. Dull to fine. ●⁰ d. at times.
21	997·5	990·9	79·8	79·1	81·5	78·9	8·9	8·5	90	90	180	7	195	5	10d≡⁰	1	1·2	74	● *a*. Dull.
22	993·7	996·7	77·2	76·8	80·6	76·3	7·5	7·1	91	89	245	5	—	1	1	9≡⁰	—	74	Fine to overcast.
23	999·7	1010·3	77·7	75·3	78·3	74·9	7·3	6·9	85	95	10	4	—	1	9≡⁰	10≡	*x*11·1	73	● early. Dull to fine. ≡ 18 h. ● *n*.
24	1004·7	1010·1	83·9	84·9	85·1	76·9	12·9	12·8	100	93	215	6	205	8	10	10	9·2	72	● early. Dull.
25	1012·8	1011·0	82·9	81·9	85·0	80·9	10·6	9·5	88	84	170	5	170	2	8	8	—	78	Cloudy to dull.
26	1014·1	1007·2	81·3	81·0	85·0	80·3	10·1	9·7	93	91	—	1	110	3	9≡⁰	9≡⁰	—	75	☌. Fine to overcast. ∞⁰.
27	1002·3	1003·9	83·2	82·7	84·8	79·9	11·4	11·0	92	92	190	6	190	3	10	10	0·6	75	● early. Dull to fine.
28	999·2	1008·6	83·3	83·1	85·6	82·3	10·2	10·7	82	87	215	8	215	5	10	1	2·1	80	● early. Dull to fine.
29	1010·8	1005·0	83·2	85·2	85·7	82·1	11·9	12·6	96	89	190	3	200	8	10d⁰	10	3·3	79	Dull and wet. 🌂 (gust) 23 h. 30 m.
30	1006·7	1010·6	83·0	81·4	85·6	80·7	9·6	10·4	79	95	215	8	220	2	7	10	—	80	Fine *a*—dull to cloudy *p*.
31	1004·1	1007·9	83·8	85·4	*x*86·3	82·3	11·7	12·1	91	85	170	8	215	6	10●	9	4·8	76	Dull and wet.
Means	1014·8	1015·4	77·8	78·0	80·0	76·0	7·9	7·9	88	87		4·1		3·9	9·1	7·6	49·4	73·4	Monthly Totals or Means.
Normal	1012·9	1012·9	77·2	77·5	79·9	75·1	7·4	7·5	87	87		3·7		3·7	—	—	56·8 (45 years)	—	Normals.
	45 years.						30 years.				35 years.								

4. METEOROLOGY:—ESKDALEMUIR, DUMFRIESSHIRE.—Lat. 55° 19′ N. Long. 3° 12′ W.

Heights above Mean Sea Level:—Rain-gauge Site, H=242 m. Barometer, H_b=237·3 m. Vane of Anemometer, H_a=250 m.
Heights above Ground:—Thermometers, h_t=0·9 m. Rain-gauge, h_r=0·38 m. Sunshine Recorder, h_s=1·5 m. Vane of Anemometer, h_a=15 m.

																			Remarks.
1	982·5	984·6	74·1	76·7	79·6	73·9	5·9	7·6	89	95	200	3	180	3	2	7≡⁰	2·9	73	● till 1½ h.: Fair *a and p*: p² 20 h., c ≡⁰ *n*.
2	984·6	988·5	77·8	77·8	78·6	77·3	8·1	8·3	94	97	180	4	160	3	10●≡⁰	10≡⁰	7·5	72	●≡⁰ till 15 h. then o ≡⁰.
3	959·8	976·2	81·4	77·2	*x*83·5	74·6	9·4	5·8	86	71	200	17	310	13	10q≡⁰	6q	*x*27·2	74	●²≡⁰ till 16 h.: ✻ ● 🌂 *p*: bcq *n*.
4	992·6	1002·1	77·6	75·9	79·0	75·5	5·5	5·9	66	77	360	13	10	5	1q	1	—	75	Very fine: q *a and p*: ♊² *n*.
5	1006·8	1007·5	77·6	77·1	79·2	74·5	6·8	6·3	81	77	10	5	20	5	8	6	—	72	♊ 1 h.: Fair or fine.
6	1005·5	1001·0	72·4	75·2	78·2	71·0	5·4	6·4	92	90	20	2	50	4	6🌓	6	—	68	🌓 early: bc *a*: d⁰≡⁰ *p*: b after 21 h.
7	994·2	987·9	73·7	75·5	76·3	71·9	6·3	6·7	98	91	40	5	—	0	4	8	—	69	b 🌓 early: o to b *a*: o *p*: c to o. *n*.
8	988·9	992·1	71·0	74·4	74·8	67·9	5·3	6·4	100	95	—	0	—	0	10≡⋮	9≡⁰	0·4	65	≡⋮ 🌓 *a*: c to o *p*: ●≡⁰ 19 h. then o≡⁰ *n*.
9	996·2	998·4	73·0	73·7	77·1	70·9	5·8	6·2	95	96	140	2	—	0	6v	9d⁰	0·6	70	≡⋮ ∼ early: bc v *a*: c *p*: d⁰ after 21 h.
10	997·2	997·3	74·9	76·1	76·3	73·8	6·8	7·4	98	97	—	0	—	0	10d⁰≡⁰	10≡⁰	3·4	72	o. with d⁰≡⁰ *a and p*: o ≡⁰ *n*.
11	998·1	996·1	71·6	73·8	76·0	71·5	4·6	5·5	83	86	—	1	40	4	6	10	—	72	c to o *a*: o *p and n*.
12	994·9	992·2	72·2	74·7	75·1	69·9	4·9	6·5	84	94	20	7	40	10	1	3	1·7	68	Variable cloud, ✻⁰ or ●⁰≡⁰ at times.
13	992·2	992·4	74·5	74·2	75·4	73·9	6·6	6·4	96	96	50	4	50	3	10d⁰≡⁰	10d≡⁰	2·7	73	o. with ●⁰✻⁰≡⁰ or ●⁰≡⁰ at times.
14	997·9	1000·5	72·5	73·8	75·0	72·1	5·3	5·3	90	83	—	0	50	3	10	2	0·8	70	✻⁰●⁰≡⁰ till 2 h.: o ≡⁰ *a and p*: bc *n*.
15	1003·9	1004·1	73·7	73·0	74·6	72·5	4·8	5·4	75	89	100	4	—	1	10	10≡⁰	—	70	c early then o all day.
16	1003·8	1003·5	72·7	66·4	74·1	64·7	6·0	3·7	100	100	—	0	—	1	10	0🌓	—	69	o ✻⁰≡⁰ *a*: bc ≡⁰ *p*: b. 🌓 *n*.
17	1001·7	999·5	63·8	64·8	71·4	*n*63·3	2·8	2·9	97	91	—	0	—	0	1🌓	0🌓	—	*n*60	Very fine: 🌓² all day.
18	999·0	996·0	67·6	71·1	73·7	64·0	3·8	5·1	94	97	—	0	—	0	1🌓	10≡⁰	—	61	b 🌓² early then o all day.
19	990·9	986·2	73·0	73·5	74·5	71·9	5·5	6·1	91	96	00	2	170	3	9	10d≡⁰	0·6	69	o *a*: o ≡⁰ *p*: d⁰≡⁰ *n*.
20	977·9	967·9	73·0	80·1	80·1	72·3	5·7	9·7	93	96	170	5	210	8	10✻⁰	10d≡⁰	12·3	72	≡⋮⁰ early: ✻⁰ *a*: ●≡⁰ *p and n*.
21	953·6	948·6	80·0	78·2	80·2	77·2	8·8	7·7	88	88	190	15	200	11	9	10●q	19·1	79	●≡⁰ *a*: ● 🌂 *p*: ●▲✻⁰p *n*.
22	955·2	965·4	75·5	72·1	77·5	71·0	6·6	5·0	90	89	270	9	—	0	7	7	0·9	74	● early: Fair *a*: Fine *p and n*.
23	975·1	979·1	67·0	69·5	73·0	66·6	3·2	3·7	85	79	—	0	—	0	0🌓	8🌓	—	63	🌓 b *a*: c *p*: ⊔ 18 h. bc 🌓 *n*.
24	971·2	974·2	74·6	80·7	80·9	72·2	6·4	10·1	94	97	—	1	210	5	10●⁰	10≡⁰	9·1	65	o ≡⁰ early: ●≡⁰ *a and p*: o ≡⁰ *n*.
25	977·4	972·3	82·2	83·1	83·2	79·9	11·1	10·5	96	85	190	8	180	12	10≡⁰	9≡⁰	5·9	75	●≡⁰ 5 h.–8 h. then o *a and p*: ●≡⁰ *n*.
26	976·9	978·8	81·1	76·9	82·3	75·7	9·9	7·2	92	89	210	11	10	2	9	7	0·8	80	●⁰≡⁰ early. o≡⁰ *a and p*: b to o *n*.
27	968·1	971·8	80·1	79·9	80·8	77·4	8·9	9·3	88	93	—	1	200	6	10	8	7·6	73	●≡⁰ till 15 h. then c ≡⁰
28	972·1	972·6	77·8	78·1	79·7	76·9	7·9	8·5	92	97	10	2	—	1	10	10	13·2	75	≡⋮⁰ 1 h.: ☐ 7 h.: o ≡⁰ *a*: ●≡⁰ 14 h.–20 h.
29	976·9	972·9	80·4	78·9	81·0	77·7	9·2	8·8	90	95	220	8	60	4	10	10	3·4	74	d⁰≡⁰ 7 h.: o ≡⁰ till 23 h. then ●².
30	971·2	978·8	77·6	76·4	80·2	75·2	7·1	7·5	84	97	360	3	—	0	9	10	21·7	75	●²≡⁰ till 8 h.: c *a and p*: o ≡⁰ *n*.
31	966·2	970·1	79·4	79·3	83·1	78·0	8.9	8·3	93	87	140	10	230	9	10	3	15·7	74	●≡⁰ 2 h.–15 h. then bc.
Means	984·9	985·8	75·0	75·4	77·9	72·7	6·6	6·8	90	91		4·6		3·8	7·4	7·4	157·5	71·0	Monthly Totals or Means.
Normal 1911-1915.	975·1	975·1	75·8	76·1	78·4	73·4	6·8	6·9	89	89		6·3		6·5	—	—	217·8	—	Normals.

Temperatures at or below the normal freezing point of water are printed in small type. *x* denotes the maximum, and *n* the minimum, value in the column.

5. GEOPHYSICS :—RICHMOND (KEW OBSERVATORY).

Day.	Earth Temperature at 9 h. 0·3 m.	Earth Temperature at 9 h. 1·2 m.	Height above M.S.L. of Surface of Underground Water. Daily Mean.	Height above M.S.L. of Surface of Underground Water. Extremes.	Terrestrial Magnetic Force. Horizontal Comp't. Mean Time.	Horizontal Comp't.	Declination. Mean Time.	Declination. West.	Inclination. Mean Time.	Inclination.	Magnetic Character of Day.	Electric Character of Day.	Charge per cc. × 10^{16}. +. About 15 h.	Charge per cc. × 10^{16}. −. About 15 h.	Air-Earth Current. × 10^{16}. About 15 h.	Potential Gradient, Volts per metre. Factor 2·14. 3 h.	9 h.	15 h.	21 h.
	a 200+	*a* 200+	cm.	cm.	h m	γ	h m	° ′	h m	° ′			Coulomb.		Amp/cm².	v/m	v/m	v/m	v/m
1	79·8	81·2	194	194	..	..	..	..	..	..	0	1	..	0·19	0·20	105	575	120	605
2	79·0	81·2	195	..	10 54	18405	..	..	14 11	66 59·3	1	2	..	..	0·35	−105	−445	470	500
3	79·2	81·2	197	..	..	..	11 46	14 28·1	..	..	1	1	0·41	..	0·25	155	40	155	185
4	79·1	81·2	199	..	..	..	..	..	..	..	2	1	..	..	..	90	145	80	65
5	79·0	81·2	201	..	..	..	..	..	..	..	1	2	..	..	..	105	170	235	0
6	78·9	81·2	202	..	..	..	..	..	..	..	1	1	..	..	..	145	550	550	300
7	78·5	81·1	204	..	..	..	..	..	..	..	1	0	0·23	0·25	0·60	235	575	445	300
8	78·2	81·2	205	..	..	..	..	..	..	..	1	0	..	..	0·15	510	745	485	380
9	78·0	81·2	205	..	11 9	18392	12 36	14 30·7	14 29	66 59·8	1	0	0·49	0·35	0·50	605	775	695	655
10	76·7	81·0	205	..	..	..	..	..	..	..	0	0	0·39	0·34	0·65	460	630	720	630
11	76·0	80·8	205	..	..	..	..	..	..	..	0	1	..	..	..	420	405	420	*z* ±
12	76·0	80·8	205	..	..	..	..	..	..	..	0	0	..	..	..	430	340	510	525
13	75·5	80·7	206	..	..	..	..	..	..	..	1	0	1·08	0·35	0·45	..	510	655	355
14	75·2	80·5	205	..	..	..	..	..	..	..	1	0	..	..	..	260	210	470	550
15	75·1	80·2	205	..	..	..	..	..	..	..	0	0	0·55	0·34	0·60	315	525	470	720
16	75·0	80·1	204	..	10 51	18391	12 34	14 28·1	14 28	66 58·1	0	0	0·29	0·33	0·90	260	510	470	365
17	74·9	79·8	203	..	..	..	..	..	..	..	0	0	..	..	..	195	365	210	705
18	75·0	79·8	202	..	..	..	..	..	..	..	0	0	..	..	..	395	775	775	775
19	75·8	79·6	202	..	..	..	..	..	..	..	0	2	..	..	..	260	−365	105	290
20	76·0	79·5	201	..	..	..	..	..	..	..	1	1	0·43	0·31	0·45	145	355	460	..
21	76·7	79·5	201	..	..	..	..	..	..	..	0	1	..	..	..	..	..	340	550
22	77·0	79·5	200	..	..	..	..	..	..	..	0	0	0·47	0·38	0·65	195	470	275	670
23	76·9	79·5	198	..	10 58	18410	14 33	14 26·4	14 28	66 57·0	1	2	0·32	..	0·65	*z* ±	720	575	500
24	76·9	79·6	199	..	..	..	..	..	..	..	1	2	..	..	..	−105	275	130	90
25	79·1	79·3	202	..	..	..	..	..	..	..	1	0	..	..	..	50	210	260	365
26	79·0	79·4	205	..	..	..	..	..	..	..	2	0	..	..	..	120	315	380	340
27	79·0	79·5	211	..	..	..	..	..	..	..	2	1	..	..	..	145	185	260	290
28	79·5	79·7	221	..	..	..	..	..	..	..	0	1	..	..	..	65	130	185	275
29	80·0	79·8	234	..	..	..	..	..	..	..	0	0	..	..	..	155	315	145	105
30	80·8	80·0	244	..	10 43	18409	12 24	14 28·7	14 20	66 56·2	0	0	0·25	0·22	0·70	50	..	340	525
31	80·6	80·1	251	253	..	..	..	..	..	..	1	1	..	..	..	105	80	..	185
M.	77·6	80·3	207	—	—	—	—	—	—	—	0·65	0·65	0·45	0·31	0·51	210†	334†	358†	403†
	78·4	80·9	— 12 years. —																

27th to 31st Slight floods on Park.

† Mean for 24 days.

6. GEOPHYSICS :—ESKDALEMUIR, DUMFRIESSHIRE.

Day.	Terrestrial Magnetic Force. North Component. Maximum 15000 γ +. h m	γ	Minimum. 15000 γ +. γ	h m	Range. γ	West Component. Maximum. 4000 γ +. h m	γ	Minimum. 4000 γ +. γ	h m	Range. γ	Vertical Component. Maximum. 44000 γ +. h m	γ	Minimum. 44000 γ +. γ	h m	Range. γ	Magnetic Character of Day.	Electric Character of Day.	Potential Gradient, Volts per metre. Factor 6·01. 3 h.	9 h.	15 h.	21 h.
1	0 27	1007	978	12 30	29	12 58	827	782	0 57	45	20 10	1107	1093	11 22	14	0	1 *b*	v/m 60	v/m 250	v/m 160	v/m 250
2	21 34	1046	944	14 28	102	13 27 / 14 10	833	732	22 1	101	19 20	1118	1085	23 49	33	1	2 *b*	200	−1170	200	535
3	23 4	1025	959	12 58	66	7 6	830	760	22 14	70	17 32	1109	1068	1 10	41	1	2 *c*	−1475	10	‖	150
4	23 1	1052	913	24 0	139	6 39	847	*n*673	18 13	174	18 8	*x*1187	*n*1003	23 18	*x*184	2	0 *a*	115	130	150	290
5	21 20	1040	912	0 1	128	19 48	825	731	0 5	94	14 3	1106	1040	0 1	66	1	0 *a*	200	100	185	300
6	18 6	1064	941	15 0	123	12 19	825	744	18 2	81	15 26	1134	1086	22 22 / 22 46	48	1	1 *b*	140	120	−70	230
7	23 55	1027	945	12 21	82	13 36	829	760	18 19	69	13 38	1118	1089	24 0	29	1	1 *a*	115	160	180	215
8	23 39	1034	923	16 10	111	13 16	835	750	16 22	85	16 22	1131	1083	1 45	48	1	1 *a*	340	215	325	460
9	6 0	1015	956	16 44	59	14 47	832	753	20 28	79	17 27	1122	1076	4 40	46	1	1 *a*	325	390	280	320
10	4 37	999	965	10 4 / 10 14	34	11 28	818	753	19 33	65	16 10	1106	1095	2 2	11	0	1 *a*	225	95	130	265
11	6 0	1010	976	13 3	34	13 26	819	795	20 31	24	15 45	1101	1095	7 0	6	0	0 *a*	415	385	540	140
12	13 48	1005	989	¶	16	13 50	818	787	23 17	31	0 1	1100	1093	11 42	7	0	1 *b*	80	90	160	130
13	8 20	1014	956	15 33	58	12 0	836	772	21 46	64	16 15	1116	1087	11 0	29	1	*	80	80	*	*
14	22 14	1032	950	13 32	82	2 36	830	775	23 0	55	14 0	1111	1088	3 0	23	1	*	*	*	375	300
15	4 45	1019	964	19 10	55	12 0	831	767	19 13	64	19 26	1113	1087	7 23	26	1	0 *a*	195	140	310	325
16	21 32	1012	974	15 26	38	2 45	840	787	0 1	53	20 42	1100	1083	3 8	17	0	0 *a*	355	185	210	385
17	23 20	1005	974	14 17	31	13 0	820	788	23 32	32	15 45	1099	1088	10 35	11	0	0 *a*	170	285	435	270
18	23 20	1021	983	12 42	38	8 16	831	782	19 12	49	19 20	1098	1079	8 35	19	0	0 *a*	150	355	230	345
19	22 0	1027	988	0 26	39	12 46	817	776	22 5	41	20 52	1092	1080	23 22 / 23 40	12	0	0 *a*	180	360	360	115
20	8 24	1028	970	19 4	58	15 26	833	771	20 0	62	21 20	1100	1075	10 29	25	1	1 *b*	190	105	160	−175
21	5 5	1008	988	14 48	20	11 38	808	797	1 50	*n*11	0 1	1085	1081	5 8	*n*4	0	2 *c*	70	105	§	§
22	6 20 / 13 32	1008	996	15 37	*n*12	11 18	818	798	23 22	20	23 15	1086	1078	6 10	8	0	§	§	§	190	565
23	22 40	1042	986	23 29	56	12 31	816	755	23 1	61	23 20 / 23 30	1088	1078	23 58	10	1	0 *a*	565	285	400	240
24	0 1	1021	961	23 53	60	10 42	819	764	22 4	55	22 2	1094	1074	8 30	20	1	*	310	−30	*	*
25	10 24	1025	936	12 57	89	11 0	838	771	23 10	67	18 10	1102	1070	6 5	32	1	§	§	§	385	215
26	6 8	1022	*n*882	14 19	*x*140	9 1	*x*863	685	20 51	*x*178	16 56	*x*1187	1027	23 9	160	2	1 *a*	135	110	320	395
27	22 30	*x*1065	940	9 44	125	6 5	825	722	22 0	103	19 46	1121	1056	0 1	65	1	2 *b*	170	−65	−5	250
28	22 57	1010	969	16 11	41	22 57	824	781	22 11	43	16 30	1093	1071	4 50	22	1	2 *c*	290	350	−780	−180
29	7 9	1001	976	10 32	25	12 45	819	782	16 48	37	17 10 / 17 50	1093	1082	12 0	11	0	2 *b*	250	245	510	320
30	13 6	1008	991	19 20	17	12 0	822	797	21 40	25	20 30	1088	1078	9 30	10	0	2 *c*	*z*−	265	665	480
31	5 0	1019	957	17 19	62	13 10	829	789	16 52	40	17 10	1105	1068	20 28	37	0	2 *b*	−535	−890	−70	175
M.	—	1023	959	—	64	—	828	764	—	64	—	1110	1075	—	35	0·65	‡0·96	†188	†97	†188	†243

The letter *x* and *n* denotes the maximum and minimum values in the column in which they occur. The potential gradient is reckoned as positive if the potentia increases upwards. *z* Indeterminate. * Light failed. † Mean for 23 days. ‡ Mean for 26 days. § Clock stopped. ‖ Earthed in gale. ¶ From 23h. 11m. to 23h. 17m.

7. JERSEY (ST. LOUIS OBSERVATORY).—Lat. 49° 12′ N. Long. 2° 6′ W.

Heights above M.S.L.:—H = 54 m. H_b = 55 m. Above Ground:—h_t = 1·48 m. h_r = 1·72 m. h_a = 8 m.

Day.	Air Pressure at Station Level. 9 h.	14 h.	21 h.	Mean of 3 Readings.	Air Temperature in Degrees Absolute. 9 h.	14 h.	21 h.	Max.	Min.	Mean of 5 Readings.	Min. Temp. on Grass.	Percentage of Humidity. 9 h.	14 h.	21 h.	Mean.	Rain 0 h to 24 h.	Remarks.
	mb.	mb.	mb.	mb.	a 200+	a 200+	a 200+	a 200+	a 200+	a 200+	a 200+	%	%	%	%	mm.	
1	1016·8	1016·7	1012·4	1015·3	82·6	84·0	83·0	84·2	80·6	82·9	73·3	70	73	85	76	0·8	●² 1 h. 40 m.; ●° 9 h.; ⊕ 15 h.
2	1006·3	1015·0	1018·9	1013·4	85·0	84·8	84·0	85·4	80·3	83·9	79·9	84	75	84	81	3·7	●² early. [●² 4 h. 10 m.—8 h.;
3	1004·0	1012·5	1017·5	1011·3	85·1	84·1	81·4	x86·0	79·0	83·1	81·7	98	68	69	78	6·0	≡² ●² 9 h. 30 m.; squalls 13 h. 10 m.—
4	1017·1	1016·5	1015·4	1016·3	82·4	83·0	81·4	83·4	81·2	82·3	77·7	61	58	58	59	—	✻ Flakes *p*. [15 h. 15 m.; ●² 21 h.
5	1017·8	1019·4	1019·8	1019·0	81·0	81·8	81·0	82·0	79·3	81·0	78·1	79	64	75	73	1·4	✻ 5 h. 30 m.; ●⁰ 13 h.; ●² 22 h.
6	1017·4	1016·3	1015·3	1016·3	79·6	77·7	77·6	80·5	77·4	78·6	77·8	70	79	85	78	0·7	●² showers before noon.
7	1012·2	1010·2	1010·6	1011·0	77·0	78·0	78·0	78·3	76·4	77·5	75·8	90	77	81	83	0·5	●² early; ●⁰ 4 h.
8	1012·0	1012·9	1016·1	1013·7	78·0	79·9	76·7	80·2	76·4	78·2	71·0	87	75	87	83	—	
9	1017·4	1016·9	1018·4	1017·6	78·5	81·5	79·1	82·0	74·8	79·2	68·4	92	76	75	81	0·9	●² 6 h. 30 m. to 10 h.
10	1018·5	1016·6	1016·7	1017·3	78·0	79·8	78·8	80·4	77·3	78·9	71·8	88	58	68	71	—	5 h. [red; ✻ flakes
11	1015·8	1012·7	1010·6	1013·0	74·8	75·5	74·6	78·5	73·8	75·4	70·2	62	56	92	70	0·7	5 h.; ✻ 15 h.; 16 h. 10 m. sun setting
12	1007·7	1005·8	1006·3	1006·6	74·6	73·8	73·9	75·0	73·0	74·1	70·7	94	97	86	92	x18·0	⊠; ● ✻ to 18 h.
13	1007·9	1007·1	1008·5	1007·8	71·8	73·5	72·5	n73·8	72·0	72·7	72·5	96	80	87	88	2·0	✻ at night; ⊠ 4 h. ✻ 8 h. to 10 h.
14	1010·1	1009·3	1011·7	1010·4	75·1	75·5	76·0	76·6	71·4	74·9	69·0	79	90	81	83	1·3	⊠ 4 h.; ●² 13 h.
15	1016·2	1017·7	1019·5	1017·8	76·9	75·6	75·2	77·2	74·1	75·8	74·2	73	70	70	71	—	
16	1021·7	1021·0	1021·2	1021·3	75·9	75·4	76·2	76·6	71·3	75·1	n67·9	59	57	65	60	0·3	✻ in grains 8 h. 30 m.
17	1018·2	1016·2	1016·5	1017·3	77·3	75·6	73·9	78·0	73·0	75·6	72·0	68	94	92	85	0·7	●² 6 h.; ●° 13 h., 14 h.; ●² 18 h. 30 m.
18	1017·4	1015·4	1019·8	1017·5	71·9	72·9	76·0	77·0	n70·9	73·7	69·6	78	90	97	88	0·8	≡⁰ 11 h.; ≡² noon to 16 h.; ●² aft'wds.
19	1011·3	1008·9	1010·2	1010·1	76·0	76·0	76·3	78·0	74·0	76·1	73·2	91	80	78	83	3·2	●² 4 h. 30 m.
20	1010·1	1008·2	1006·2	1008·2	76·0	77·7	76·8	78·0	75·0	76·7	68·7	81	81	91	84	—	⊔ 18h.
21	995·1	991·3	990·1	992·2	79·9	82·4	81·3	82·5	75·3	80·3	72·9	97	90	79	89	9·0	●² 12 h. 30 m.; ≡² 9 h.; ●² p 17 h. 20 m.
22	994·7	996·6	990·4	993·9	81·0	81·6	80·2	83·2	79·1	81·0	75·3	76	77	97	83	11·0	●² sh'w'rs 3 h. & 4 h.; 6 h.; ●² q. aft.
23	995·6	1001·8	1004·3	1000·6	80·0	80·1	80·8	83·3	79·1	80·7	77·7	81	80	81	81	2·0	●² showers 4 h.; 6 h.; ●² p 7 h.
24	1005·1	1006·3	1009·1	1006·8	83·8	84·3	83·9	85·0	81·8	83·8	75·4	96	95	94	95	1·8	●⁰ frequently. [⊕ 14 h.; ●² 20 h.
25	1007·4	1006·7	1007·4	1007·2	82·0	82·4	81·9	83·5	81·5	82·3	78·1	92	86	88	89	—	⊔ 4 h.
26	1009·0	1005·4	997·9	1004·1	81·5	83·6	83·5	83·9	81·0	82·7	77·3	94	80	74	83	—	⊔ 4 h. [20 h. 40 m.
27	1001·3	1007·2	995·2	1001·2	82·7	84·2	82·6	84·4	82·3	83·2	78·8	91	89	96	92	4·9	●⁰ 4 h.; ⊔ 4 h. 45 m.; ●² 16 h. to
28	1000·7	1003·8	1007·5	1004·0	84·7	85·2	83·0	85·2	82·4	84·1	80·7	93	89	95	92	2·3	●² ≡⁰ 15 h.
29	1005·6	1005·8	1003·3	1004·9	84·4	85·4	85·6	x86·0	82·6	84·8	77·1	94	88	69	83	6·1	●² early to 8 h.; ●² in the night.
30	1007·0	1005·3	1005·9	1006·1	82·5	82·9	83·5	84·5	82·4	83·2	79·6	93	98	95	95	9·1	●² 10 h. to 14 h. 30 m.
31	1002·6	1002·4	1007·0	1004·0	83·3	84·5	84·4	85·1	x82·8	84·0	81·0	92	96	94	94	4·3	●² began 4 h. and continued to night.
Means	1009·7	1009·9	1010·0	1009·9	79·5	80·1	79·5	81·2	77·5	79·5	74·8	84	79	83	82	91·5	
Normal	1007·5	1007·0	1007·5	1007·3	80·5	81·1	80·4	82·0	78.6	80·5	75·3	?	80	82	?	98·4	
	←27 years→				←27 years→						24 years	←25 years→				27 years	

JERSEY (ST. LOUIS OBSERVATORY).

Day.	Wind Direction and Force (0-12 on the Beaufort Scale). 9 h.	14 h.	21 h.	Mean of Force.	Sunshine* Total.	Per cent. of Possible.	Cloud Amount (tenths of Sky covered), Type of Cloud, and Direction whence coming. Tenths.	Upper. Type.	Direction.	Lower. Type.	Direction.	Tenths.	Upper. Type.	Direction.	Lower. Type.	Direction.	Tenths.	Upper. Type.	Direction	Lower. Type.	Direction.	Mean Amount.
	9 h.	14 h.	21 h.				9h.	9 h.	9 h.	9 h.	9 h.	14 h.	14 h.	14 h.	14 h.	14 h.	21 h.	21 h.	21 h.	21 h.	21 h.	
	(Dir. 0-12)	(Dir. 0-12)	(Dir. 0-12)		hr.	%																
1	225 3	203 5	180 5	4·3	5·8	68	7	A.-Cu.	W	Nb.	W	4	..	..	Cu.-Nb.	..	10	..	..	..	..	7·0
2	293 6	293 4	203 4	4·7	2·2	26	10	..	..	Nb.	..	6	..	..	Cu.-Nb.	NW	10	..	..	..	..	8·7
3	203 7	293 5	293 6	6·0	0·6	7	10	..	..	Nb.	SW	7	Ci.-Cu.	SW	Cu.-Nb.	NW	5	..	..	..	..	7·3
4	315 6	337 6	337 6	6·0	5·0	60	5	..	..	Cu.	NNW	7	..	..	Cu. Nb.	N	10	..	..	..	..	7·3
5	45 5	45 5	23 5	5·0	1·3	16	9	..	..	Nb.	NE	8	..	..	Cu.-Nb.	NE	9	..	..	..	..	8·7
6	67 4	67 4	calm 0	2·7	0·0	0	10	..	..	Cu.-Nb.	NE	10	..	..	Nb.	NE	10	..	..	..	..	10·0
7	113 1	180 2	180 2	1·7	0·0	0	10	..	..	..	..	10	..	..	..	..	10	..	..	..	..	10·0
8	157 3	203 3	135 1	2·3	7·1	86	5	A.-Cu.	E	Cu.	SSE	3	..	..	Cu.	SW	0	..	..	..	..	2·7
9	45 1	23 3	45 4	2·7	2·0	24	10	..	..	Nb.	NNE	6	..	..	..	..	4	..	..	..	..	6·7
10	45 3	45 4	45 3	3·3	0·5	6	7	Ci.-Cu.	NE	Cu.	NE	10	..	..	Cu.-Nb.	NE	3	..	..	..	..	6·7
11	90 4	135 2	270 1	2·3	4·8	58	10	..	..	..	..	10	..	..	..	..	5	..	..	..	..	8·3
12	45 3	157 4	157 5	4·0	0·2	2	9	..	..	Cu.-Nb.	ENE	10	..	..	Nb.	..	10	..	..	..	..	9·7
13	90 4	113 2	67 4	3·3	0·2	2	10	..	..	Nb.	..	8	..	..	Cu.-Nb.	E	0	..	..	..	..	6·0
14	67 5	45 4	67 4	4·3	0·0	0	8	..	..	..	..	10	..	..	Nb.	..	10	..	..	..	..	9·3
15	45 5	23 6	23 6	5·7	0·7	8	10	..	..	Cu.-Nb.	NE	10	..	..	Cu.-Nb.	NE	10	..	..	..	..	10·0
16	23 5	23 5	23 4	4·7	0·3	3	8	..	..	Cu.-Nb,Nb.	NE	10	..	..	Cu.-Nb,Nb.	NE	10	..	..	..	..	9·3
17	23 4	67 4	67 2	3·3	1·3	15	10	..	..	Cu.-Nb.	NNE	10	..	..	Nb.	NE	10	..	..	Nb.	..	10·0
18	135 1	calm 0	67 2	1·0	0·0	0	10	..	..	..	..	10	..	..	≡²	..	10	..	..	Nb.	..	10·0
19	67 3	113 1	90 2	2·0	0·0	0	10	..	..	Nb	E	10	..	..	..	..	10	..	..	..	..	10·0
20	203 3	225 3	203 4	3·3	0·4	5	8	..	..	Cu.	NE	8	..	..	St.-Cu.	WSW	6	..	..	..	..	7·3
21	203 6	225 4	225 5	5·0	0·2	3	10	..	..	≡²	..	10	..	..	Nb.	W	6	A.-Cu.	W	Cu.-Nb.	..	8·7
22	180 5	270 5	180 5	5·0	3·4	42	6	..	..	Cu.-Nb.	WNW	6	..	..	Cu. Nb.	WNW	10	..	..	Nb.	..	7·3
23	315 5	360 1	157 3	3·0	5·8	71	5	..	..	Cu.	NW	4	Ci, A.-Cu.	W	..	..	10	..	..	Nb.	..	6·3
24	203 5	203 6	203 4	5·0	0·0	0	10	..	..	..	..	10	..	..	Nb.	..	10	..	..	Nb.	..	10·0
25	180 4	157 3	180 4	3·7	0·1	1	10	..	..	..	..	9	Ci.-Cu.	..	St.-Cu.	..	7	..	..	..	..	8·7
26	157 2	113 3	157 4	3·0	4·7	57	3	A.-Cu.	SW	..	..	6	Ci, A.-Cu.	SW	..	..	8	..	..	..	..	5·7
27	203 5	203 5	157 4	4·7	3·2	39	7	Ci.	WSW	Cu.-Nb.	WSW	5	Ci.-Cu.	WSW	..	..	9	A.-Cu.	..	..	..	7·0
28	225 5	225 3	225 3	3·7	0·3	3	10	..	..	Nb	..	10	..	..	..	..	4	..	..	..	..	8·0
29	203 6	203 5	203 6	5·7	0·3	4	10	..	..	..	..	10	..	..	..	..	10	..	..	..	..	10·0
30	225 4	90 1	203 4	3·0	0·0	0	9	A.-Cu.	..	Nb.	WSW	10	..	..	Nb.	..	10	..	..	..	..	9·7
31	203 6	203 7	203 5	6·0	0·1	1	10	A.-Cu.	SW	Nb.	SW	10	..	..	Nb.	WSW	10	..	..	..	..	10·0
Means	4·2	3·7	3·8	3·9	1·6	20	8·6	—	—	—	—	8·3	—	—	—	—	7·9	—	—	—	—	8·3
Normal	4·0	4·0	3·9	4·0	2·0	24	7·8	—	—	—	—	7·4	—	—	—	—	7·8	—	—	—	—	7·7
	←17 years→				23 years		←26 years→															

* For method of estimation see Introduction.

8. WIND COMPONENTS: Metres per second at fixed hours, together with the greatest mean hourly velocity, or the greatest velocity attained in a gust, and the time of its occurrence.

NORTH WALES:—HOLYHEAD.

Components from Cup. Anemometer: Gusts from Pressure Tube Anemometer.
Height of Head above—Roof 8·8 m., Ground 13·7 m., M.S.L. 19·2 m.
Height of Cups above—Roof 4·6 m., Ground 7·6 m., M.S.L. 15·2 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	h. m.
1	3·4	..	6·0	..	3·3	..	5·7	..	6·0	..	3·4	..	7·7	..	..	2·8	19	16 20
2	5·4	..	..	3·1	4·9	..	..	..	..	..	3·3	..	4·9	..	..	1·8	20	23 55
3	12·1	..	..	..	6·3	..	17·2	..	..	3·8	21·3	..	..	6·0	16·3	..	32	12 0
4	..	11·2	13·3	..	..	10·8	6·2	..	..	13·2	2·3	..	..	13·4	..	4·9	28	0 35
5	..	11·1	..	6·4	..	5·1	..	4·3	..	6·1	..	5·1	..	3·4	..	4·0	17	2 30
6	..	3·4	..	4·0	..	1·2	..	3·4	..	1·8	..	4·9	..	0·9	..	5·1	11	11 30
7	..	0·5	..	2·6	..	0·9	..	4·8	..	..	..	3·0	1·3	..	..	3·7	10	7 25
8	1·5	..	..	2·6	1·1	..	..	2·0	1·1	..	..	2·0	..	..	3·3	..	10	23 55
9	..	3·7	2·1	..	..	4·0	3·4	..	..	2·8	2·3	..	..	1·8	1·5	..	10	0 25
10	..	Ca	lm	..	..	1·5	1·3	..	..	Ca	lm	..	..	1·8	1·5	..	4	23 35
11	..	3·0	..	3·5	..	..	..	6·9	..	2·8	..	4·8	..	3·9	..	6·8	12	18 10
12	..	3·3	..	5·7	..	4·1	..	7·1	..	0·8	..	4·5	..	1·8	..	10·0	16	19 45
13	..	..	..	4·9	..	1·1	..	6·1	..	1·0	..	5·5	1·1	..	..	6·1	11	6 40
14	..	..	..	5·2	..	..	..	5·2	..	2·9	..	5·1	..	2·4	..	6·5	10	23 35
15	..	1·6	..	9·4	..	1·4	..	8·1	..	4·6	..	5·4	..	1·6	..	4·3	13	10 30
16	..	0·3	..	1·9	..	0·3	..	1·5	1·1	..	..	2·0	0·8	..	..	1·4	6	12 50
17	0·8	..	..	1·4	0·8	..	..	1·4	..	Ca	lm	..	1·9	..	..	3·4	5	20 40
18	..	Ca	lm	..	..	Ca	lm	..	0·8	..	..	1·4	1·9	..	..	3·4	6	22 30
19	1·8	..	..	3·1	1·3	..	..	2·3	4·3	..	..	1·6	4·6	..	..	1·7	9	23 0
20	6·2	..	..	2·3	8·2	..	..	..	6·1	..	5·1	..	6·8	..	3·9	..	17	11 15
21	10·2	..	..	..	9·6	..	5·5	..	8·0	..	9·6	..	8·3	..	6·9	..	23	8 55
22	2·5	..	14·2	..	..	..	16·1	..	..	3·7	10·1	..	..	0·4	2·3	..	22	8 10
23	..	3·3	..	2·8	..	2·0	..	1·7	0·6	..	..	3·2	2·1	..	..	5·8	15	21 10
24	..	..	..	4·3	5·8	..	2·1	..	4·3	..	3·7	..	5·1	..	2·9	..	16	3 50
25	6·8	..	1·2	..	8·5	..	..	..	9·8	..	..	3·6	10·5	..	..	..	18	16 50
26	8·4	..	1·5	..	5·1	..	4·3	..	4·5	..	..	0·8	1·5	..	..	4·0	16	5 20
27	5·3	..	..	6·3	9·8	..	3·6	..	4·5	..	3·9	..	3·9	..	..	..	18	6 25
28	0·8	..	..	4·5	..	Ca	lm	..	6·2	..	7·4	..	5·1	..	1·8	..	14	15 25
29	6·2	..	2·3	..	3·5	..	2·0	..	0·6	..	..	3·4	7·0	..	1·2	..	22	23 55
30	5·0	..	8·7	..	0·6	..	3·2	..	3·1	..	1·8	..	6·8	..	..	1·2	21	0 10
31	10·6	..	..	1·9	9·1	..	1·6	..	5·7	..	4·8	..	4·5	..	3·9	..	23	4 10
S+N & W+E	128·4		125·2		110·3		127·0		110·2		135·3		123·2		122·4			
S−N & W−E	45·6		−26·6		45·5		17·4		23·2		22·7		48·4		−31·4			

SCOTLAND N.:—DEERNESS.

Cup. Anemometer.
Height of Cups above—Roof 1·5 m., Ground 4·9 m., M.S.L. 57·3 m.

Day.	3 h.				9 h.				15 h.				21 h.				Vel. in Max. Hourly Run.	Time of Max.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	hrs.
1	12·3	..	..	10·4	5·7	..	3·3	..	10·0	..	1·8	..	9·1	..	1·6	..	16·1	1, 3
2	13·8	..	..	5·1	11·9	..	..	2·1	4·8	..	2·8	..	4·0	..	2·3	..	16·1	5 to 8
3	5·3	..	..	1·9	6·9	..	..	8·3	..	10·7	..	3·9	..	14·9	2·6	..	16·1	20
4	..	10·9	1·9	..	..	9·8	3·6	..	..	7·4	1·3	..	..	3·0	0·5	..	15·1	5
5	..	Ca	lm	..	..	..	2·0	..	..	Ca	lm	..	1·8	..	1·5	..	3·0	24
6	4·8	..	0·9	..	8·5	..	..	..	8·9	..	..	..	7·9	..	..	..	10·2	17
7	7·9	..	..	..	8·2	..	..	..	6·2	..	..	2·3	6·8	..	..	2·5	9·2	1
8	5·5	..	..	1·0	5·5	..	..	1·0	4·5	..	2·6	..	4·5	..	5·3	..	7·2	17
9	..	..	8·2	..	..	1·2	6·8	..	..	Ca	lm	..	..	..	..	2·3	8·5	1
10	4·8	..	..	2·8	9·1	..	..	3·4	5·8	..	..	1·0	6·1	..	..	1·1	9·8	9
11	6·8	..	..	2·5	9·4	..	..	1·6	7·7	..	..	4·4	5·3	..	..	4·5	9·8	13
12	3·6	..	..	6·2	4·7	..	..	5·5	2·1	..	..	3·7	2·4	..	..	6·5	8·9	23
13	1·2	..	..	6·5	2·7	..	..	7·4	6·0	..	..	7·0	4·7	..	..	8·2	12·1	24
14	8·0	..	..	9·6	8·4	..	..	10·0	8·5	..	..	4·9	9·4	..	..	5·4	13·4	8
15	10·1	..	..	3·7	10·3	..	..	3·8	9·5	..	..	..	7·9	..	..	..	11·8	2
16	8·5	..	..	..	9·8	..	..	..	12·6	..	..	2·2	11·6	..	..	2·0	13·1	14
17	6·5	..	1·1	..	8·1	..	1·4	..	5·5	..	1·0	..	3·1	..	1·8	..	8·9	1
18	1·3	..	1·5	..	..	..	6·9	..	..	..	4·6	..	0·7	..	1·9	..	7·9	12
19	2·0	..	1·7	..	1·3	..	1·5	..	2·3	..	1·3	..	2·0	..	1·7	..	4·9	22
20	4·8	..	2·8	..	9·5	..	..	..	9·7	..	1·7	..	5·7	..	3·3	..	11·5	11
21	7·8	..	1·4	..	7·4	..	1·3	..	12·2	..	..	4·5	4·5	..	5·3	..	14·4	14
22	3·9	..	4·5	..	..	15·3	5·6	..	..	10·5	6·0	..	..	7·0	6·0	..	16·4	9
23	..	1·2	3·4	..	..	Ca	lm	..	2·0	..	1·7	..	4·0	..	2·3	..	5·9	24
24	7·1	..	1·3	..	8·8	..	..	1·5	9·1	..	..	3·4	1·1	..	2·0	..	10·2	12, 14
25	..	1·9	2·3	..	..	3·7	..	2·1	3·7	..	..	10·1	8·0	..	..	13·9	16·1	21
26	13·9	..	..	2·4	6·1	..	1·1	..	3·5	..	3·0	..	1·7	..	1·0	..	14·1	3
27	1·5	..	..	4·0	4·6	..	..	8·0	3·9	..	..	10·7	5·5	..	..	6·5	11·8	17
28	..	Ca	lm	..	..	Ca	lm	..	1·9	..	0·7	..	2·4	..	..	0·9	5·2	24
29	4·5	..	..	2·6	2·6	..	..	..	3·3	..	..	..	2·0	..	0·3	..	5·2	2 to 5
30	2·6	..	..	1·5	0·5	..	..	2·6	1·0	..	..	2·8	5·3	..	..	1·9	7·9	24
31	9·1	..	..	5·2	11·6	..	..	9·7	6·0	..	..	16·3	2·3	..	4·0	..	18·0	16
S+N & W+E	171·5		96·4		191·6		100·5		179·3		105·7		154·7		99·1			
S−N & W−E	143·5		−34·4		131·6		−33·5		122·1		−48·7		104·9		−12·3			

ENGLAND S.W.:—SCILLY.

Components from Cup. Anemometer: Gusts from Pressure Tube Anemometer.
Height of Head above—Ground 9·8 m., M.S.L. 49·7 m.
Height of Cups above—Ground 5·8 m., M.S.L. 45·7 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	h. m.
1	3·1	..	8·6	..	3·2	..	3·8	..	6·7	..	..	..	17·6	..	..	6·4		
2	..	8·1	14·1	..	..	6·5	7·7	..	..	Ca	lm	..	7·2	..	4·1	..		
3	10·8	..	6·2	..	..	8·3	14·5	..	..	11·3	13·4	..	..	9·8	17·0	..		
4	..	12·8	10·8	..	..	14·0	2·5	..	..	12·9	..	..	..	11·3	..	..		
5	..	8·6	..	3·1	..	*3·1*	..	*5·5*	..	..	..	*5·0*	..	..	..	*4·6*		
6	..	..	..	*5·0*	*1·1*	..	..	*6·2*	..	1·2	..	6·6	..	..	..	4·6		
7	0·4	..	..	2·5	..	Ca	lm	..	..	Ca	lm	..	..	..	..	1·7		
8	..	Ca	lm	..	1·4	..	..	2·5	..	Ca	lm	..	..	5·1	..	1·8		
9	..	3·8	..	3·2	..	1·0	..	2·7	..	3·5	..	4·1	..	1·6	..	2·9		
10	0·5	..	..	2·9	0·4	..	..	2·5	0·4	..	..	2·1	0·7	..	..	3·7		
11	0·5	..	..	2·9	0·8	..	..	4·5	..	..	..	3·8	..	..	..	3·8		
12	..	1·0	..	2·7	..	3·5	..	3·0	..	2·9	..	1·6	..	Ca	lm	..		
13	..	Ca	lm	..	..	5·8	..	10·1	..	2·8	..	7·8	..	2·4	..	6·7		
14	..	3·5	..	6·1	..	1·8	..	5·1	..	3·7	..	6·5	..	4·1	..	3·5		
15	..	1·9	..	3·3	..	1·7	..	4·7	..	1·6	..	4·3	..	1·9	..	3·3		
16	..	..	..	1·7	..	Ca	lm	..	..	..	..	2·5	..	..	..	2·1		
17	0·9	..	..	2·3	1·3	..	..	3·6	..	0·4	..	2·5	..	..	..	3·8		
18	..	..	..	4·2	..	..	..	5·0	..	0·6	..	3·2	..	..	..	3·3		
19	..	..	..	4·2	..	..	..	3·8	..	..	..	1·7	1·9	..	..	1·6		
20	4·2	..	..	..	5·1	..	4·4	..	7·0	..	6·0	..	9·7	..	3·6	..		
21	9·7	..	3·6	..	..	..	11·3	..	2·4	..	13·6	..	..	..	14·2	..		
22	..	7·1	12·3	..	..	3·7	10·1	..	3·1	..	5·5	..	..	3·6	20·6	..		
23	..	4·1	11·3	..	..	Ca	lm	..	4·7	..	..	1·7	8·3	..	..	..		
24	5·2	..	9·0	..	7·0	..	6·0	..	5·1	..	6·1	..	8·7	..	5·0	..		
25	9·5	..	..	1·7	11·9	..	..	2·1	13·6	..	2·4	..	8·9	..	3·3	..		
26	6·5	..	3·7	..	4·1	..	..	0·7	7·8	..	..	9·3	10·9	..	..	4·0		
27	5·2	..	9·0	..	5·8	..	3·3	..	6·6	..	..	1·2	7·9	..	..	..		
28	..	..	6·3	..	4·8	..	4·1	..	2·4	..	6·7	..	4·8	..	4·1	..		
29	6·3	..	..	..	3·3	..	..	1·9	9·5	..	1·7	..	4·2	..	8·3	..		
30	3·9	..	6·8	..	4·1	..	3·5	..	6·7	..	..	..	8·8	..	..	..		
31	12·3	..	2·2	..	7·4	..	6·2	..	3·3	..	8·9	..	5·1	..	4·4	..		
S+N & W+E	129·9		149·7		111·1		141·3		120·2		128·2		145·1		142·4			
S−N & W−E	28·1		58·1		12·3		13·5		38·4		0·4		65·5		26·8			

Defective Records.

ENGLAND E.:—SHOEBURYNESS.

Pressure Tube Anemometer.
Height of Head above—Ground 37·4 m., M.S.L. 31·4 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	h. m.
1	0·9	..	5·1	..	3·1	..	2·6	..	4·0	..	3·4	..	5·1	..	0·9	..	11	4 5
2	7·4	..	..	2·7	10·7	..	..	9·0	1·5	..	..	2·6	..	Ca	lm	..	18	8 30
3	7·7	..	..	2·8	12·5	..	4·6	..	1·6	..	9·0	..	..	..	12·2	..	23	3 55
4	..	2·3	12·9	..	..	9·0	10·7	..	..	12·6	7·3	..	..	11·9	..	..	27	12 30
5	..	8·2	..	3·0	..	5·7	..	1·0	..	5·7	..	2·1	..	6·3	..	1·1	13	13 30
6	..	5·8	..	10·0	..	5·6	..	9·8	..	4·4	..	5·1	..	3·0	..	8·2	18	3 45
7	..	4·4	..	5·1	..	3·8	..	4·4	..	Ca	lm	..	..	Ca	lm	..	9	7 35
8	..	Ca	lm	..	..	Ca	lm	..	..	Ca	lm	..	..	Ca	lm	..	3	14 40
9	..	1·6	1·3	..	..	1·3	2·3	..	..	2·9	1·7	..	..	3·5	2·0	..	7	23 45
10	..	3·5	3·0	..	..	3·7	2·1	..	..	3·0	..	..	2·4	..	..	4·2	9	15 40
11	..	Ca	lm	..	..	2·8	3·3	..	..	Ca	lm	..	5·0	..	..	2·9	9	11 20
12	..	Ca	lm	..	..	Ca	lm	..	..	Ca	lm	..	2·6	..	..	3·1	5	20 50
13	..	Ca	lm	..	..	2·5	0·9	..	..	1·8	0·3	..	6·3	..	..	2·3	9	21 25
14	..	3·3	0·6	..	..	..	..	9·1	..	1·6	..	9·3	..	1·8	..	10·2	13	22 0
15	..	2·9	..	8·0	..	4·1	..	7·1	..	3·7	..	10·0	..	2·4	..	2·8	15	14 25
16	..	5·5	..	6·5	..	6·0	..	1·1	..	4·0	1·5	..	..	3·6	0·6	..	13	2 35
17	..	5·4	0·9	..	..	3·5	..	1·3	..	4·5	..	0·8	..	2·8	..	1·0	9	3 35
18	..	3·2	..	1·2	..	4·0	..	2·3	..	3·5	..	1·3	..	4·0	..	1·5	7	8 10
19	..	4·8	..	0·9	..	3·2	..	1·2	..	3·5	..	2·0	..	Ca	lm	..	8	7 15
20	..	Ca	lm	..	..	Ca	lm	..	2·8	..	2·4	..	3·8	..	3·1	..	11	23 50
21	8·5	..	4·9	..	9·3	..	1·6	..	9·0	..	5·2	..	6·8	..	3·9	..	15	13 35
22	7·9	..	4·5	..	2·6	..	4·5	..	2·1	..	5·7	..	2·8	..	2·4	..	14	13 20
23	..	0·9	..	4·8	..	5·1	..	0·9	..	1·8	0·3	..	..	Ca	lm	..	9	7 25
24	4·2	..	..	4·9	3·6	..	4·2	..	6·5	..	5·5	..	4·4	..	5·1	..	13	13 50
25	4·0	..	4·7	..	7·9	..	..	..	7·5	..	1·3	..	4·3	..	..	..	12	15 35
26	8·5	..	3·1	..	2·3	..	1·3	..	3·5	..	..	1·3	1·5	..	..	4·0	13	0 25
27	7·2	..	1·3	..	5·7	..	2·1	..	4·0	..	4·7	..	6·0	..	1·1	..	12	3 25
28	4·6	..	..	5·4	3·9	..	6·8	..	4·4	..	5·1	..	1·7	..	4·6	..	14	6 40
29	3·4	..	4·0	..	5·1	..	0·9	..	6·1	..	..	..	6·1	..	5·1	..	15	23 40
30	2·5	..	6·9	..	4·5	..	7·9	..	2·4	..	4·2	..	1·6	..	1·3	..	19	0 50
31	5·2	..	..	1·8	12·2	..	..	..	4·9	..	5·8	..	3·2	..	5·5	..	16	9 55
S+N & W+E	123·8		110·3		143·7		103·0		113·3		97·9		102·9		89·1			
S−N & W−E	20·2		−3·9		23·1		8·6		7·3		28·9		24·3		6·5			

Defective Records.

SEISMOLOGICAL DIARY.

The Seismographs at Eskdalemuir were out of action from October 16th to the end of the year.

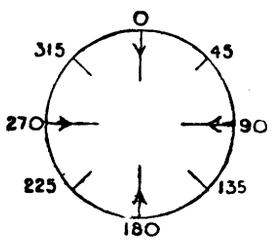
EARTHQUAKES:—RICHMOND (KEW OBSERVATORY).

Day.	Times, G.M.T. of Commencement.	Times, G.M.T. of Maximum Amplitude.	Remarks.
	h. m.	h. m.	
4	..	6 44	Small.
5	..	0 4	Small.
5	10 23	10 37	
6	..	2 27	Very small.
10	4 52	5 40	Amplitude on trace 1·1 mm.
11	..	22 16	Succession of very small waves.
16	12 16	..	Limits of registration (17·0 mm.) exceeded from 12h. 43m. to 12h. 53m. and again about 12h. 55m. Disturbance visible until after 16h. 30m.
17	..	20 8	Small.
18	..	2 15	Small.
19	..	21 6	Small.
25	12 1	12 27	Amplitude on trace 1·5 mm.

10. SOUNDINGS WITH PILOT BALLOONS.

Height of Station above M.S.L. = H.
Anemometer above ground = h.

	H.	h.
Aberdeen	14 m.	22 m.
Eskdalemuir	242 m.	15 m.
S. Farnborough	70 m.	31 m.
Cahirciveen	9 m.	13 m.



Wind Protractor.

Notes on Pressure Distribution.

December, 1920.

1st, 7 h. 13 h. Deep depression near Iceland extending from the Azores to Spitzbergen.

5th, 7 h. } Ridge from the Azores to Scandinavia.
6th, 7 h. 13 h. }

9th, 7 h. 13 h. 18 h. Anticyclone centered S.W. of Ireland and over Finland.

10th to 17th, The British Isles lying under the influence of Scandinavian Anticyclone.

18th, 7 h. Anticyclone centered over England.

20th, 13 h. Deep depression centered over the Faröe Islands.

22nd, 7 h. Deep depression with two centres, one over the Orkneys and the other near Bodö.

18 h. Deep depression centered over Southern Norway, Secondary over Cahirciveen.

23rd, 7 h. 13 h. High over Spain, Low over Scandinavia, irregular isobars over the British Isles.

28th, 7 h. 13 h. } Extensive shallow Low W. of Ireland.
29th, 13 h. }

Notes on Ascents.

Aberdeen—

9th, Gi.-St. from N.W. after 16
10th, 12 h. 0 m. Temporary f interval in cloudy day. L St.-Cu. layer from S. in t afternoon.
17th, 15 h. 20 m. Cu.-Nb. bank l in E.
29th, 15 h. 0 m. Slight Ci. traces S.W.

Cahirciveen—

6th, 14 h. 55 m. Two Theodol Fine and clear during asce
9th, 9 h. 15 m. Balloon went i Ci.-Cu.
11th, 9 h. 20 m. Balloon went i St.-Cu.
11th, 15 h. 45 m. Balloon went i St.-Cu. sheet.
14th, 9 h. 15 m. The components 5 km. are very likely genuine. The balloon this stage started to lea
15th, 15 h. 25 m. Atmosphere h at surface.
16th, 15 h. 5 m. Balloon went i A.-St. and A.-Cu.
22nd, 9 h. 15 m. Balloon was eclip by Cu.-cloud.
23rd, 9 h. 20 m. Balloon went i A.-St. A fairly good nep scope observation was at 10 h. 15 m. of A.-St. a A.-Cu. moving at 4·0 m from about 280° from N., that it appears that velocities are genuine.

10. SOUNDINGS WITH PILOT BALLOONS—*cont.*

Day	Time of Start, G.M.T.	Horizontal Velocity of Wind. Geostrophic		By Anemometer.		At Heights above M.S.L. 500 m.		1,000 m.		2,000 m.		3,000 m.		4,000 m.		Cloud Observations. Time, G.M.T.	Type.	Deg. from N.	mr/s	Type.	Deg. from N.	mr/s
	h. m.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	Deg. from N.	m/s.	h. m.						
									ABERDEEN.													
9	12 0	300	4	280	3·5	310	9·5	330	10·5	300	8·5	315	21·0	..	..	..	..	..	..	..	..	..
10	12 0	?	?	190	1·0	190	7·5	Calm		350	7·0	360	8·5	..	..	..	..	..	..	..	..	..
17	15 20	?	?	220	3·0	210	12·5	200	3·5	350	1·5	50	6·0	..	..	..	..	..	..	..	..	..
29	15 0	220	6	220	0·5	250	5·5	265	5·0	245	7·5	250	13·0	..	..	..	..	..	..	Ci.	..	..
									ESKDALEMUIR.													
17	12 20	?	?	Calm		225	2·8	180	3·4	105	3·0	70	6·5	40	11·0	..	St.-Cu.	..	..	..	..	..
17	12 20	(For observations at lower levels, see above.)												5000 m. 30	12·0	..	St.-Cu.	..	..	..	..	..
									SOUTH FARNBOROUGH.													
1	7 50	265	12	230	7·5	255	15·0	250	15·5	250	14·0	..	..	..	..	..	St.; A.-St. Cu.-Nb.	..	..	..	..	..
1	12 10	250	9	225	6·5	240	14·0	245	15·0	245	14·0	250	18·0	..	..	..	Cu.; St.-Cu. A.-Cu.	..	..	False Ci.	..	..
9	15 35	30	7	330	2·5	15	12·5	20	13·0	25	10·5	..	..	..	..	..	..	..	..	..	..	..
10	15 5	?	?	325	2·5	25	9·0	25	8·0	25	10·5	..	..	..	..	..	..	..	..	Cloudless	..	..
20	12 10	230	9	250	4·0	265	7·0	260	17·0	275	8·0	270	10·5	..	..	..	A.-Cu.	270	..	Ci.	320	..
22	8 10	270	24	240	10·5	275	15·5	275	20·0	270	14·5	..	..	..	..	..	Cu.-Nb.	..	..	Ci.-St.	..	..
22	15 35	250	12	265	10·0	275	17·5	280	23·0	290	16·0	275	18·0	..	..	..	Cu.	..	..	Ci.-St.	..	..
23	11 25	?	?	355	6·0	35	9·0	40	8·5	320	13·0	290	18·5	..	..	..	..	..	..	..	..	..
28	10 45	260	14	235	10·0	265	14·5	260	23·0	265	27·5	..	..	..	..	..	..	..	..	Ci.	..	..
									CAHIRCIVEEN.													
5	9 15	?	?	35	1·2	55	7·5	60	6·5	30	11·0	30	12·5	15	16·5	9 55	..	..	..	Ci.-Cu. Ci.	340 340	1·0 ..
6	9 15	135	4	Calm		135	3·7	160	3·2	70	5·5	60	4·8	30	6·5	..	Cu.	..	..	..	..	..
6	14 55	145	5	110	4·5	135	6·0	155	4·2	80	5·0	70	5·0	50	5·5	..	St.-Cu.	160	..	..	..	..
9	9 15	?	?	55	2·7	325	2·8	330	3·7	30	6·5	5	10·5	350	10·0	10 20	Cu.; St.-Cu. A.-Cu.	340 345	.. 3·5	Ci.-Cu.	360	..
11	9 20	150	6	110	5·5	160	10·0	155	13·0	60	3·3	..	..	..	..	..	Cu.; St.-Cu.	180	..	Ci.	70	..
11	15 45	?	?	85	1·0	90	6·0	95	2·6	105	4·7	..	..	..	..	..	St.-Cu.	135	..	..	..	..
12	9 10	65	5	60	2·3	55	7·5	45	7·5	10	17·5	..	..	..	..	9 40	St.-Cu.	360	..	Ci.-Cu.	360	4·5
13	9 10	80	6	85	4·5	80	7·5	75	10·5	55	14·0	..	..	..	..	..	Cu.	..	..	..	..	..
13	15 20	75	11	80	2·4	80	3·3	55	4·6	60	4·3	40	17·0	35	22·5	..	Cu.	..	..	..	..	..
14	9 15	150	5	55	1·0	155	1·6	50	1·6	15	7·5	40	8·0	20	16·0	..	St.	..	..	..	..	..
14	14 40	75	9	55	4·9	?	?	175	1·2	110	3·5	35	6·0	360	13·0	15 30	A.Cu.; A.-St.	350	7·0	Ci.	360	7·0
15	9 30	125	5	Calm		155	2·0	?	?	120	2·0	..	..	..	..	..	..	..	..	..	..	..
15	15 25	140	4	Calm		200	2·2	245	1·9	15	5·0	125	2·3	10	10·0	16 10	..	..	..	Ci. Ci.-St.	330 ..	3·0 ..
16	9 10	170	7	135	5·0	165	13·0	175	18·0	175	10·0	335	1·9	40	4·9	..	A.-St.	..	..	..	..	..
16	15 5	?	?	140	7·0	160	9·0	180	10·0	240	1·2	295	4·6	..	..	15 40	Fr. Cu.; A.-St. A-Cu.	315	1·0	Ci.-St.	160	..
18	9 20	160	3	90	4·5	150	7·5	90	2·9	135	4·4	150	3·5	75	5·5	..	Cu.; St.-Cu.	110	..	..	..	..
22	9 15	285	18	285	5·0	285	7·5	280	10·5	280	10·5	..	..	..	..	9 35	Cu.; St.-Cu. A.-Cu.	270 280	.. 5·0	..	..	..
23	9 20	?	?	60	1·0	160	6·0	140	6·0	255	7·5	260	13·5	275	23·5	.. 10 15	St.-Cu. A.-St.; A.-Cu.	135 280	.. 4·0	..	..	..
28	9 35	220	12	215	8·5	240	15·0	250	14·0	240	17·0	..	..	..	..	9 50	St.-Cu. A.-Cu.	200 160	.. 4·5	..	..	..
				5,000 m.		6,000 m.		7,000 m.		8,000 m.		9,000 m.		10,000 m.								
6	9 15			25	5·5	20	6·5	15	7·0	25	4·7	5	8·5	355	9·0	..	Cu.	..	..	..	..	..
6	14 55	(For		25	8·0	5	7·5	360	9·5	360	7·0	30	8·0	10	9·0	..	St.-Cu.	160	..	..	..	..
9	9 15			335	8·5	340	12·0	360	9·5	5	14·5	10	17·0	..	..	10 20	Cu.; St.-Cu. A.-Cu.	340 345	.. 3·5	Ci.-Cu.	360	..
13	15 20	observations		25	23·0	20	29·0	..	..	..	..	..	..	..	..	..	Cu.	..	..	..	..	..
14	9 15			5	27·0	..	..	..	..	..	..	..	..	..	..	..	St.	..	..	..	..	..
18	9 20	at lower levels,		60	11·5	45	10·0	60	13·0	50	17·5	55	20·0	75	23·0	..	Cu.; St.-Cu.	110	..	..	..	..
23	9 20	see above.)		275	22·0	..	..	..	..	..	..	..	..	..	..	.. 10 15	St.-Cu. A.-St.; A.-Cu.	135 280	.. 4·0	..	..	..
				11,000 m.		12,000 m.		13,000 m.		14,000 m.		15,000 m.		16,000 m								
6	14 55			350	9·5	340	6·0	340	8·0	350	2·3	215	2·9	345	5·5	..	St.-Cu.	160	..	..	..	..

11. Nephoscope Observations.

Aberdeen.

Day and Hour. G.M.T.	Type of Cloud.	Velocity-height-ratio.				Remarks.
		Degrees from N.	Milliradians per Second.	Components.		
				W.–E.	S.–N.	
1 13	A.-Cu.	225	2·5	+1·8	+1·8	False Ci., massing into A.-Cu.
2 15	Ci.	292	7·4	+6·9	−2·8	Coarse Ci. to Ci.-Cu. Radiant WNW.
4 13	Nb.	2	16·0	−0·6	−16·0	Low Nb. in cumuliform masses.
7 13	St.-Cu.	105	3·6	−3·9	+0·9	St.-Cu. layer, cloudlets much fused.
11 13	St.-Cu.	92	2·2	−2·2	+0·1	Very low cloud, really St.-cumuliformis.
15 13	St.-Cu.	150	7·1	−3·6	+6·1	Heavy sheet of fused St.-Cu.
21 13	St.-Cu.	210	8·1	+4·1	+7·0	Degraded low St.-Cu. layer.
22 13	Cu.-Nb.	332	9·3	+4·4	−8·2	Small Cu.-Nb. clouds; upper part, which later became St.-Cu., was measured.
28 13	St.-Cu.	192	6·3	+1·3	+6·2	Thin fused St.-Cu. sheet.
30 13	St.-Cu.	326	5·5	+3·1	−4·6	Low Type of fused St.-Cu.

Note:—Much stratus of uniform appearance, and clear sky during month.

12. Aurora.

Day.	a.m. or p.m.	Moon.	Magnetic Character.		Aurora Observations.	
			Eskdalemuir.	Richmond.	Station.	Remarks.
2	p.	..	1, 1	1, 1	Baltasound	
					Baltasound	
					Aberdeen	Moderately bright glow and multiple arcs, greenish-white 18h.—23h., showing a marked minimum of activity at 19h.
4	p.	..	2, 1	2, 1	Eskdalemuir	21h., glow not continuous. From 23h.—24h. bright auroral arch and bunches of short streamers of a slight greenish hue. Maximum brilliancy of arch was to NNE.
					And at numerous other Scottish stations.	
					Bidston	18h.
5	a.	..	2, 1	2, 1	Eskdalemuir	Glow at times, 1h.
8	p.	..	1, 1	1, 1	Baltasound	
9	p.	..	1, 0	1, 0	Baltasound	
10	a.	●	..	..	..	
15	p.	..	1, 0	0, 0	Baltasound	
25	p.	○	..	..	..	

Note:—The two magnetic " characters " entered in each case refer to the two periods of 24 hours ending and beginning at midnight of the night in question.

BRITISH METEOROLOGICAL AND MAGNETIC YEAR BOOK, 1920.

PART III, SECTION 2.

GEOPHYSICAL JOURNAL, 1920.

ANNUAL SUPPLEMENT.

CONTENTS.

Upper Air Temperatures.

(a) *Soundings with Registering Balloons*, 1920.

During 1920, eighteen registering balloons were sent up from Benson, Mr. W. H. Dines's station in Oxfordshire, close to the Thames and at the foot of the Chiltern Hills. In nine cases the instruments were returned ; of these only one had failed to reach the stratosphere, but as a rule the maximum height did not exceed 12 kilometres.

(b) *Statistical Results of the Soundings*, 1915-1920.

Since the year 1915 the difficulty of obtaining reliable balloons has prevented there being sufficient records to form yearly mean values as the practice was before the war, but since there are now 38 observations available for the years 1915-1920 inclusive, it has seemed well to give means and to form the correlation coefficients. To equalize the number of summer and winter ascents, two observations made in January 1921 have been utilized. The means, standard deviations and correlation coefficients, both total and partial, agree well with those previously obtained. (W. H. Dines: *The Characteristics of the Free Atmosphere, Geophysical Memoirs, No.* 13.)

MEAN TEMPERATURE AT EACH HEIGHT, 1915–1920.

Degrees Absolute above 200 a.

Ground	1 km.	2 km.	3 km.	4 km.	5 km.	6 km.	7 km.	8 km.	9 km.	10 km.	11 km.	12 km.	13 km.	14 km.
82·3	76·9	72·2	66·7	60·4	53·4	46·4	39·2	32·2	26·3	21·7	18·8	18·2	18·6	18·6

	Symbol.	Suffix used in correlation coefficients.	1915–1920. Mean Value.	1915–1920. Standard Deviation.
Surface Pressure at M.S.L.	P_s	1	1013 mb.	12·9 mb.
Mean Temperature from 1 to 9 km.	T_m	2	254 a.	6·4 a.
Pressure at 9 km.	P_9	3	303 mb.	11·3 mb.
Height of Tropopause	H_c	4	10·3 km.	1·37 km.
Temperature at Tropopause	T_c	5	216 a.	6·4 a.

CORRELATION COEFFICIENTS.

r_{12}	r_{13}	r_{14}	r_{15}	r_{23}	r_{24}	r_{25}	r_{34}	r_{35}	r_{45}
·53	·72	·59	−·35	·94	·77	−·12	·83	−·15	−·62

PARTIAL CORRELATION COEFFICIENTS.

$r_{23\cdot4} = ·85$	$r_{34\cdot2} = ·49$	$r_{42\cdot3} = -·04$

PARTIAL REGRESSION EQUATIONS.

$$\left.\begin{aligned} \delta H_c &= ·91\ \delta P_9 - ·06\ \delta T_m \\ \delta P_9 &= ·26\ \delta H_c + ·74\ \delta T_m \\ \delta T_m &= -·03\ \delta H_c + ·96\ \delta P_9 \end{aligned}\right\} \text{Standard deviations as units.}$$

The regression equation giving the most probable value of H_c in terms of P_g and T_m shows as usual how closely dependent H_c is upon the value of P_g and how independent it is of T_m.

(c) *Aeroplane Ascents.*

Temperatures recorded at South Farnborough.—The observations utilised in preparing the Tables on pp. 103, 104, were made in aeroplanes by the Experimental Pilots of the Royal Aircraft Establishment and reported to the Branch Meteorological Office at South Farnborough.

Temperature is measured with an open scale " spiral bulb " spirit thermometer, mounted on wood, with a bright brass screen shielding the front of the bulb from direct radiation. The thermometer, which is mounted so as to ensure good ventilation, is supported on a wing strut about 6 ft. from the body of the machine. Temperature observations are made when the aeroplane is climbing or flying level to minimise the error due to temperature-lag, which would be serious in a rapid descent.

The data supplied to the Meteorological Office are actual temperatures in degrees Centigrade and corresponding altimeter readings in feet. Surface temperature at the time of ascent is usually noted by the observer, but in a few instances screen-thermograph readings have been utilised.

The altimeters used are provided with what has been called the Trade Scale*, *i.e.*, they are designed to be accurate in an atmosphere with the uniform temperature 283a. Corrections are applied to the altimeter readings on account of the divergence of air temperatures aloft from 283a. It may be noted here that in the altimeters which were in use up to 1918 the zero of the scale was fixed so that a definite isobaric surface corresponded with a definite nominal height, the index pointing to zero of the scale when the pressure was equal to 29.90 in. of mercury. It was therefore necessary to correct altimeter readings both for zero-setting and air-temperature. The practice was changed at the beginning of 1919, and in the ascents here tabulated the altimeter was set with ground level as zero. Corrections have been applied for temperature deviations and for the height of the starting point above sea level.

The heights of the levels at which readings have been reported are corrected and the temperatures are plotted against these corrected heights. Temperatures corresponding with steps of half a kilometre are then obtained by interpolation from a smooth curve through the plotted points. All temperatures are given to the nearest half degree.

The monthly averages for the various heights have been set out in a separate table.

The yearly averages which are the means of the values tabulated for the several months have been quoted at the bottom of the table. The total number of observations at any level throughout the whole year is also given. The mean surface temperature at South Farnborough for each month, as published in *The Monthly Weather Report*, is quoted in the table for comparison with the mean of the surface temperatures at the times of ascent. As might be expected, the aeroplane ascents being in the day time, the temperature at the time of ascent was generally above the mean for the day at ground level.

Averages for the four years 1917-1920 have been computed and are given on p. 105. They have been obtained from values at Martlesham Heath for 1917 and 1918, and at South Farnborough for 1918, 1919 and 1920, each ascent being given equal weight. It may be noted that the values obtained are in general higher than those computed by Mr. W. H. Dines and given in *The Characteristics of the Free Atmosphere.*

It is to be noted that upper air temperatures determined from observations in aeroplanes are not to be published in the Annual Supplement to the *Geophysical Journal* for 1921. Such observations will be found in the Upper Air Supplement of the *Daily Weather Report.*

* *See* M.O. 228, " The Estimation of Height from readings of an Altimeter."

Upper Air Temperatures.—Soundings with Registering Balloons, 1920.

BENSON.—Lat. 51° 37′ N. Long. 1° 7′ W.

Height above Mean Sea Level :—57 m.

No.	352.	353.	355.	361.	362.	363.	364.	365.	366.
Day.	Feb. 5.	Mar. 3.	Apr. 8.	July 8.	Aug. 28.	Sept. 2.	Oct. 6.	Oct. 7.	Nov. 4.
Start G.M.T.	16 h. 7 m.	16 h. 14 m.	17 h. 40 m.	18 h. 30 m.	8 h. 53 m.	17 h. 42 m.	16 h. 43 m.	16 h. 37 m.	15 h. 35 m.
H'=Greatest Height ..	12 km.	12·6 km.	12·1 km.	20·2 km.	18·6 km.	11·7 km.	9 km.	12·2 km.	10·5 km.
T_t=Corresponding Temp. .	212 a.	209 a.	204 a.	228 a.	225 a.	214 a.	230 a.	218 a.	214 a.
P_t=Corresponding Pressure	188 mb.	185 mb.	184 mb.	58 mb.	74 mb.	206 mb.	309 mb.	191 mb.	241 mb.
Place of Fall ..	Birdbrook, Halstead, Essex.	Islip, Oxford.	Stow-market, Suffolk.	Danton, Basset, Lutterworth, Leicestershire	*Near* Stock-bridge, Hants.	Lindfield, Sussex.	Cockburns-path, Dunbar.	Boston, Lincs.	Wanstead, London, N.E.
Distance	124 km.	23 km.	156 km.	90 km.	63 km.	98 km.	504 km.	167 km.	79 km.
Bearing	73°	340°	67°	358°	207°	142°	350°	26°	95°
Geostrophic Wind— Time G.M.T.	18 h.	18 h.	18 h.	18 h.	7 h.	18 h.	18 h.	18 h.	18 h.
Speed	8 m/s.	16 m/s.	11 m/s.	17 m/s.	4 m/s.	9 m/s.	8 m/s.	?	?
Deg. from N.	140°	270°	200°	210°	40°	240°	180°	?	?
Wind (Anemometer)— Speed	2·5 m/s.	6 m/s.	4·5 m/s.	8 m/s.	1 m/s.	6 m/s.	5 m/s.	Calm.	2 m/s.
Deg. from N.	120°	250°	190°	165°	20°	250°	210°		30°
Relative Humidity ..	95%	50%	94%	88%	85%	86%	74%	80%	78%
Tropopause Type*	I.	I.	I.	I.	I.	I.	I.	I.	I.
H_c=Height	10·0 km.	12·5 km.	11·6 km.	8·6 km.	11·9 km.	11·3 km.	9·0 km.	11·3 km.	10·0 km.
P_c=Pressure	260 mb.	188 mb.	199 mb.	321 mb.	209 mb.	219 mb.	309 mb.	221 mb.	260 mb.
T_c=Temp.	211 a.	209 a.	203 a.	231 a.	216 a.	214 a.	230 a.	215 a.	213 a.
(P_9) Pressure at 9 km. ..	304 mb.	320 mb.	302 mb.	302 mb.	323 mb.	311 mb.	309 mb.	314 mb.	303 mb.
(P_s) Pressure at M S.L. ..	1034 mb.	1034 mb.	1002 mb.	1004 mb.	1031 mb.	1016 mb.	1004 mb.	1014 mb.	1012 mb.
(T_m) Mean Temp. 1 to 9 km.	252 a.	264 a.	258 a.	258 a.	266 a.	261 a.	263 a.	262 a.	257 a.

* For the definition of the Types of Tropopause, see *Annual Supplement*, 1913, p. 92; or "The Characteristics of the Free Atmosphere," M.O., 220, c. *Geophysical Memoirs*, No. 13, p. 59.

NOTES.

352. Isothermal at 261 a. from 3·3 km. to 3·7 km. Inversion of 1 a. at 2·5 km. Light S.E. wind; hazy, with some upper cloud. Balloon lost in haze in three minutes. Very pronounced katabatic wind at 20 h.
Pressure Distribution. Anticyclone over England, centered over Denmark.

353. Practically isothermal up to 2·5 km. A difference of 5 a. between the up and down traces at about 6 km. and near the ground; from 1 km. to 3 km. practically no difference. Clear, with some fog and a little cirrus. Balloon followed for 97 minutes. A rapid fall of temperature at 18 h.
Pressure Distribution. Wedge of high pressure over the southern British Isles.

355. Overcast.
Pressure Distribution. Shallow "low" to the south-west of the British Isles.

361. Balloon went north, lost in cloud in two minutes. Well marked thunder-cumulus all the afternoon and evening. Thunder reported on that day, but none heard at Benson.
Pressure Distribution. Shallow "low" covering the British Isles.

362. Isothermal at 276 a. from 3·2 km. to 3·4 km. Inversion of 1 a. between 1·1 km. and 1·3 km. Low clouds, clearing later. Balloon went west at a good angle.
Pressure Distribution. Anticyclone covering the British Isles. centered north of Scotland.

363. Overcast, a little rain during day. Wind W.S.W. Clouds at 8 km.
Pressure Distribution. The Azores anticyclone covering the southern half of the British Isles.

364. Some cirrus in N.E., sky clear in S.W. Balloon lost in cirrus in 17 minutes.
Pressure Distribution. "Low" centered to the south-west of the British Isles, "high" over the Baltic.

365. Overcast. Balloon rose nearly vertically. Clouds at 3 km.
Pressure Distribution. "Low" over Iceland and shallow "trough" extending from the Mediterranean to the south of England.

366. Clear, some cirrus coming from west. Light N. wind. Inversion of 3 a. between 0·9 km. and 1·2 km., 275 a. to 278 a.
Pressure Distribution. "Lows" centered over Ireland and over Sardinia, "high" over the Baltic.

SOUNDINGS WITH REGISTERING BALLOONS. BENSON, 1920.

T = Temperature in Degrees Absolute. P = Pressure in millibars. H = Height in kilometres above M.S.L.

No.	352		353		355		361		362		363		364		365		366	
Day.	Feb. 5.		Mar. 3.		Apr. 8.		July 8.		Aug. 28.		Sept. 2.		Oct. 6.		Oct. 7.		Nov. 4.	
HEIGHTS AND TEMPERATURES CORRESPONDING WITH ISOBARIC SURFACES.																		
Pressure.	*H.*	*T.*	*H.*	*T.*	*H.*	*T.*	*H.*	*T.*	*H.*	*T.*	*H.*	*T.*	*H.*	*T.*	*H.*	*T.*	*H.*	*T.*
Millibars.	km.	a.	km.	a.	km.	a.	km.	a.	km.	a.	km.	a.	km.	a.	km.	a.	km.	a.
100	..	..	..	..	..	..	16·55	228	16·65	223	..	..	..	..	..	..	..	..
200	11·63	212	12·13	213	11·59	203	11·83	233	12·18	216	11·88	214	..	..	11·87	218	..	..
300	9·11	218	9·47	232	9·05	225	9·06	232	9·50	233	9·23	229	9·15	229	9·26	229	9·09	221
400	7·19	234	7·41	247	7·08	241	7·09	238	7·46	247	7·22	245	7·18	244	7·28	245	7·12	239
500	5·62	247	5·80	257	5·49	254	5·49	251	5·80	259	5·60	257	5·56	256	5·63	256	5·54	251
600	4·23	257	4·39	266	4·09	263	4·12	260	4·40	269	4·20	265	4·18	266	4·23	264	4·17	261
700	3·05	262	3·18	274	2·90	270	2·92	268	3·17	276	3·03	271	2·99	274	3·02	270	2·97	269
800	2·03	266	2·09	278	1·83	274	1·85	274	2·09	280	1·94	275	1·85	279	1·97	277	1·91	275
900	1·10	271	1·15	277	0·88	277	0·91	281	1·13	281	1·00	280	0·92	285	1·01	285	0·96	276
1000	0·27	277	0·28	279	0·02	..	0·03	..	0·26	286	0·13	287	..	..	0·12	290	0·11	279
PRESSURES AND TEMPERATURES AT GIVEN HEIGHTS.																		
Heights.	*P.*	*T.*	*P.*	*T.*	*P.*	*T.*	*P.*	*T.*	*P.*	*T.*	*P.*	*T.*	*P.*	*T.*	*P.*	*T.*	*P.*	*T.*
Kilometres.	mb.	a.	mb.	a.	mb.	a.	mb.	a.	mb.	a.	mb.	a.	mb.	a.	mb.	a.	mb.	a.
20·0	..	..	..	..	..	..	59	228	..	..	..	..	..	..	..	..	..	..
19·0	..	..	..	..	..	..	69	228	..	..	..	..	..	..	..	..	..	..
18·0	..	..	..	..	..	..	80	228	81	224	..	..	..	..	..	..	..	..
17·0	..	..	..	..	..	..	93	228	95	223	..	..	..	..	..	..	..	..
16·0	..	..	..	..	..	..	108	228	111	221	..	..	..	..	..	..	..	..
15·0	..	..	..	..	..	..	126	228	129	220	..	..	..	..	..	..	..	..
14·0	..	..	..	..	..	..	145	229	151	219	..	..	..	..	..	..	..	..
13·0	..	..	..	..	..	..	168	231	176	218	..	..	..	..	..	..	..	..
12·0	188	212	204	213	187	204	195	233	206	216	..	..	..	..	196	218	..	..
11·0	221	213	238	221	220	207	226	232	240	222	230	216	..	..	230	217	..	..
10·0	260	211	277	228	259	217	262	232	279	230	269	223	..	..	268	223	260	213
9·0	304	219	322	236	302	226	302	232	323	237	311	231	310	230	312	231	303	222
8·0	355	227	371	243	351	234	350	233	372	244	361	239	358	238	360	239	352	231
7·0	410	236	425	249	406	242	406	239	427	250	415	247	411	246	415	247	408	239
6·0	474	244	487	259, 254	465	249	466	247	489	258	475	254	473	253	476	254	470	248
5·0	543	250	556	263	533	257	534	254	557	264	544	260	539	259	543	260	537	254
4·0	621	259	631	268	608	263	610	261	632	273	619	266	614	267	620	265	613	262
3·0	706	263	717	275	691	269	693	268	717	277	703	271	697	274	704	270	698	269
2·5	755	264	762	277	736	272	739	270	762	278	747	273	743	277	750	273	743	272
2·0	805	266	810	278, 278	783	273	787	273	809	280	797	275	789	279	798	277	791	275
1·5	858	269	862	279, 279	834	275	837	277	860	282	846	278	840	281	848	280	842	277
1·0	914	272	917	279, 278	888	277	890	280	915	281	900	280	892	284	902	285	896	277
0·5	973	276	973	280, 275	943	278	947	285	972	285	957	283	946	287	957	288	953	277
G.L. 0·06	1027	279	1027	279, 276	995	284	997	287	1023	288	1009	289	997	289	1008	290	1006	280
LAPSE RATE OF TEMPERATURE BETWEEN GIVEN HEIGHTS. Degrees Absolute per kilometre																		
Kilometres.																		
19 to 20	..		..		..		0		..		..		..		..		..	
18 to 19	..		..		..		0		..		..		..		..		..	
17 to 18	..		..		..		0		− 1		..		..		..		..	
16 to 17	..		..		..		0		− 2		..		..		..		..	
15 to 16	..		..		..		0		− 1		..		..		..		..	
14 to 15	..		..		..		1		− 1		..		.		..		..	
13 to 14	..		..		..		2		− 1		..		..		..		..	
12 to 13	..		..		..		2		− 2		..		..		..		..	
11 to 12	1		8		3		− 1		6		..		..		− 1		..	
10 to 11	− 2		7		10		0		8		7		..		6		..	
9 to 10	8		8		9		0		7		8		..		8		9	
8 to 9	8		7		8		1		7		8		8		8		9	
7 to 8	9		6		8		6		6		6		8		6		8	
6 to 7	8		10, 5		7		6		8		7		7		7		9	
5 to 6	6		4, 9		8		7		6		6		6		6		6	
4 to 5	9		5		6		7		9		6		8		5		8	
3 to 4	4		7		6		7		4		5		7		5		7	
2·5 to 3	2		4		6		4		2		4		6		6		6	
2 to 2·5	4		2, 2		2		6		4		4		4		8		6	
1·5 to 2	6		2, 2		4		8		4		6		4		6		4	
1 to 1·5	6		0, 2		4		6		− 2		4		6		10		0	
·5 to 1	8		2, − 6		2		10		8		6		6		6		0	
·06 to ·5	7		0, 2		9		2		5		11		9		4		4	

Upper Air Temperatures—Aeroplane Ascents, 1920.

SOUTH FARNBOROUGH.—Lat. 51° 15′ N. Long. 0° 45′ W.

Height above Mean Sea Level: 71·5 m.

Date.	Time of Start. G.M.T.	Pressure M.S.L.	Geostrophic Wind. Deg. from N.	Geostrophic Wind. Speed in m/s.	Ground.	Heights in Kilometres above M.S.L. 0·5.	1·0.	1·5.	2·0.	2·5.	3·0.	3·5.	4·0.
	h. m.	mb.			Temperatures in Degrees Absolute above 200 a.								
Jan. 2	9 30	1012	320	5	73·0	75·0	71·0	67·5	65·5	..	..	..	..
7	10 10	1016	300	5	67·5	77·5	79·5	79·5	75·5	73·5	..	..	..
7	11 30	1015	260	10	68·0	79·5	77·5	77·0	75·0	73·0	69·5	66·5	64·5
9	10 0	1006	310	15	75·0	73·0	67·5	66·5	63·5	59·0	56·0	51·0	47·0
13	11 15	1013	270	10	82·0	79·0	77·0	74·0	70·0	68·0	65·0	62·5	59·5
21	10 30	1018	320	15	82·0	78·5	75·0	72·0	71·0	71·5	68·5	63·5	60·0
30	15 30	1012	270	10	79·5	76·0	72·5	69·5	66·5	65·0	64·5	63·5	63·0
												4·5 km	5·0 km
7	11 30	(For temperatures at lower levels, see above.)										63·0	..
13	11 15											56·5	55·0
21	10 30											55·0	51·5
30	15 30											59·0	..
Feb. 5	16 0	1035	150	10	79·5	77·5	76·0	73·5	71·5	67·5	67·0	64·5	..
17	11 0	1011	130	15	83·5	81·5	79·5	78·0	75·0	72·5	69·5	64·5	60·5
23	14 30	1030	110	5	83·5	78·0	78·0	76·5	73·5	72·5	..	..	..
23	15 30	1030	110	5	83·5	78·0	78·0	76·0	74·5	73·0	..	..	..
											4·5 km	5·0 km	5·5 km
17	11 0	(For temperatures at lower levels, see above.)									56·0	53·0	47·5
Mar. 1	16 0	1015	210	5	86·0	82·5	82·0	81·0	80·5	78·0	75·0	70·5	65·5
4	17 0	1021	?	?	83·0	84·5	83·0	81·5	79·5	76 0	74·0	70·5	66·0
8	16 30	1026	360	15	78·0	74·5	70·0	65·5	62·0	56·5	52·0	47·0	44·5
19	10 30	1032	310	10	82·5	80·0	76·0	73·0	74·0	73·5	71·5	68·0	66·0
19	17 0	1033	?	?	85·5	81·0	75·0	77·0	76·5	..	..	..	..
20	10 25	1033	300	5	85·0	83·5	81·0	79·0	80·0	78·0	74·0	70·5	..
21	12 0	1032	?	?	91·5	85·0	83·0	82·0	81·0	77·0	72·5	70·5	67·5
24	10 0	1018	250	5	83·5	80·5	78·0	77·5	76·5	74·5	72·0	70·0	67·0
30	11 30	1000	100	15	83·0	86·0	86·0	82·5	79·5	77·5	75·0	71·0	68·0
31	18 0	1000	190	10	88·0	81·5	76·5	73·5	70·5	..	..	..	..
								4·5 km	5·0 km	5·5 km	6·0 km	6·5 km	7·0 km
1	16 0	(For temperatures at lower levels, see above.)						62·0	59·5	54·5	51·0	..	..
4	17 0							62·0	57·5	54·0	51·5	45·5	40·5
8	16 30							43·0	42·5	45·0	42·0	40·0	36·0
21	12 0							64·0	..	..	..	..	..
24	10 0							63·0	..	..	..	..	..
30	11 30							63·5	..	..	..	..	..
Apr. 17	9 30	1010	?	?	83·0	81·0	78·0	75·5	72·5	70·0	68·0	65·0	..
20	10 15	1000	220	20	83·0	76·5	73·0	71·0	67·0	65·0	60·0	56·5	53·5
21	9 30	1014	300	15	81·0	78·0	74·5	71·5	68·0	64·5	61·0	57·5	52·5
28	15 30	1005	310	10	82·0	80·0	75·5	71·5	67·0	62·5	59·0	55·5	51·0
29	10 30	1010	310	15	91·0?	78·5	73·0	67·5	65·5	62·5	59·0	55·0	50·5
30	8 30	1015	260	10	82·0	77·5	72·0	69·5	67·0	62·5	..	..	..
													4·5 km
20	10 15	(For temperatures at lower levels, see above.)											50·5
21	9 30												49·5
28	15 30												47·0
29	10 30												47·5
May 4	6 0	1027	300	10	79·5	76·5	73·5	69·0	65·5	..	..	..	..

Date.	Time of Start. G.M.T.	Pressure M.S.L.	Geostrophic Wind. Deg. from N.	Geostrophic Wind. Speed in m/s.	Ground.	Heights in Kilometres above M.S.L. 0·5.	1·0.	1·5.	2·0.	2·5.	3·0.	3·5.	4·0.
	h. m.	mb.			Temperatures in Degrees Absolute above 200 a.								
May 4	7 10	1028	300	10	81·5	76·0	73·0	69·0	65·5	..	..	..	..
5	7 30	1037	?	?	81·5	79·0	74·5	75·0	73·0	72·0	69·5	67·0	63·5
7	9 30	1017	290	20	83·5	80·5	78·0	73·5	71·0	68 0	64·0	61·5	58·0
11	16 0	1014	320	15	93·0	88·0	85·0	82·5	80·5	78·5	77·0	73·5	63·0
14	14 0	1025	?	?	82·5	80·5	79·0	75·5	74·0	73·0	71·0	69·5	66·0
										4·5 km	5·0 km	5·5 km	6·0 km	6·5 km	7·0 km
5	7 30	(For temperatures at lower levels, see above.)						62·0	59·0	..	..	..	..
7	9 30							54·5	50·5	48·0	44·0	..	..
11	16 0							64·5	61·5	59·5	56·5	53·0	48·5
14	14 0							63·0	59·0	57·5	55·0	..	..
June 9	5 0	1017	120	10	79·0	79·0	78·5	78·5	79·0	76·5	..	..	..
9	6 15	1013	120	10	81·0	78·5	78·5	79·0	79·0	76·0	74·5	71·0	..
22	5 5	1026	230	5	84·5	84·5	81·0	78·5	77·0	75·5	..	..	..
22	6 10	1026	230	5	88·0	84·5	81·0	78·5	77·0	75·0	73·5	..	..
22	10 0	1027	250	5	82·0?	88·0	84·0	80·0	79·0	77·0	75·0	..	..
24	5 50	1027	330	5	87·0	83·5	82·0	79·0	79·5	77·5	75·0	72·0	..
25	4 55	1021	300	5	85·5	85·0	82·5	81·5	79·5	76·5	74·0	..	..
25	5 55	1021	300	5	85·5	84·5	83·0	81·5	79·0	77·0	73·5	71·0	..
30	5 55	1013	250	15	87·5	83·5	79·5	77·5	77·0	73·0	..	..	..
30	11 0	1014	260	10	87·5	90·0	84·0	79·5	77·0	74·0	72·0	..	..
													4·5 km
July 13	10 30	(For temperatures at lower levels, see above.)											66·0
14	6 0	1023	240	10	88·5	83·5	79·0	83·5	80·0	77·0	..	..	..
20	4 50	1027	250	10	83·5	83·5	84·0	83·0	82·5	80·5	78·0	..	..
27	10 30	1018	330	5	87·0	82·0	77·5	74·0	71·0	67·5	..	..	..
Aug. 3	10 0	1013	310	5	88·0	84·0	81·5	77·0	74·0	73·0	..	..	..
20	7 5	1019	340	10	81·5	81·0	77·0	74·0	70·5	..	..	..	..
21	6 30	1022	330	15	82·5	81·5	78·0	78·5	78·5	..	..	..	..
21	7 40	1022	330	15	81·0	81·0	77·0	79·0	78·5	..	..	..	..
27	9 45	1028	?	?	82·5	86·0	84·5	83·0	82·5	81·0	81·0	..	..
Sept. 10	6 10	1021	350	10	83·5	81·0?	79·0?	78·0	76·5	..	..	..	..
10	9 0	1023	350	10	88·0	83·0	80·0	79·5	76·0	75·0	..	..	..
11	6 35	1029	?	?	86·5	83·5	80·0	79·0	79·0	75·0	72·5	69·5	68·0
11	8 35	1028	?	?	79·0	79·0?	81·5	80·0	78·5	..	..	..	..
11	9 50	1027	?	?	87·0	85·5	82·0	80·0	79·5	77·0	73·5	..	..
13	8 55	1017	?	?	88·5	86·5	85·0	83·5	80·5	..	..	..	..
14	11 20	1021	320	5	91·5	86·0	82·0	79·0	78·0	77·0	76·0	72·5	70·0
17	6 0	1005	250	15	82·0	82·0	78·5	74·5	72·0	69·5	..	..	..
20	8 15	1014	?	?	85·0	81·5	78·5	75·0	72·0	70·0	66·0	63·5	60·0
20	9 20	1015	?	?	86·5	81·5	78·5	75·5	72·5	..	..	..	..
22	14 10	1021	50	10	88·0	83·5	81·0	78·0	75·0	..	..	..	..
23	9 40	1025	?	?	89·0	84·5	81·0	78·0	76·0	..	..	..	..
24	10 30	1024	?	?	88·0	85·0	82·5	82·5	81·5	..	..	..	..
27	10 15	1022	?	?	91·5	90·5	84·5	81·0	78·5	77·0	..	..	..
30	15 0	1009	160	5	91·5	88·0?	85·5?	83·5	81·5	78·0	75·0	73·0	67·5
													4·5 km
11	6 35	(For temperatures at lower levels, see above.)											64·5
20	8 15												55·0
30	15 0												66·0

UPPER AIR TEMPERATURES. SOUTH FARNBOROUGH, 1920.

Date.	Time of Start. G.M.T.	Pressure M.S.L.	Geostrophic Wind.		Ground.	Heights in Kilometres above M.S.L.							
			Deg. from N.	Speed in m/s.		0·5.	1·0.	1·5.	2·0.	2·5.	3·0.	3·5.	4·0.
	h. m.	mb.			Temperatures in Degrees Absolute above 200 a.								
Oct. 5	13 30	1006	160	10	92·5	89·0	88·0	84·5	81·5	78·5	..	..	..
7	9 25	1010	180	5	89·0	87·0	85·5	81·0	78·0	75·0	..	..	..
7	14 30	1010	?	?	93·0	91·0	87·0	84·0	81·0	77·0	74·0	71·0	68·0
18	10 15	1020	80	20	81·5	77·0	74·0	75·0	74·5	73·0	70·5	67·5	..
19	16 10	1021	140	5	83·0	81·0	77·0	80·0	77·5	..	..	..	..
													4·5 km
			(For temperatures at lower levels, see above.)										
7	14 30												64·5
Nov. 11	11 0	1024	?	?	81·5	79·5	77·0	75·0	74·0	71·0	69·5	66·0	..
11	12 10	1024	?	?	84·5	80·0	76·5	75·5	73·0	..	..	..	..
11	14 10	1025	?	?	85·0	82·5	78·0	75·0	73·5	72·0	68·5	..	..
11	15 20	1025	?	?	84·0	80·0	75·5	73·5	72·5	70·0	68·0	64·0	60·0
12	10 10	1023	240	10	82·0	81·5	78·5	74·0	72·0	72·5	69·5	67·5	64·0
16	11 40	1016	270	10	83·5	81·5	76·5	72·0	69·0	65·5	62·5	58·5	55·0
17	8 35	1029	250	10	78·0	78·0	75·5	72·5	69·0	66·0	62·5	..	..
17	9 50	1029	250	10	79·5	79·0	74·5	71·5	69·5	65·0	62·5	60·5	..
17	11 20	1029	?	?	82·0	79·0	74·5	72·0	70·0	65·5	63·0	..	..
19	15 50	1027	200	15	84·0	83·5	84·0	84·0	82·0	78·5	74·5	..	..
												4·5 km	5·0 km
			(For temperatures at lower levels, see above.)										
11	15 20											56·5	52·5
12	10 10											60·5	..
16	11 40											51·0	..

Date.	Time of Start. G.M.T.	Pressure M.S.L.	Geostrophic Wind.		Ground.	Heights in Kilometres above M.S.L.							
			Deg. from N.	Speed in m/s.		0·5.	1·0.	1·5.	2·0.	2·5.	3·0.	3·5.	4 0
	h. m.	mb.			Temperatures in Degrees Absolute above 200 a.								
Dec. 16	10 40	1030	40	10	71·5	70·0	67·0	63·5	60·5	58·5	54·5	..	..
16	15 55	1030	40	15	74·0	69·0	65·5	61·5	60·0	59·0	62·5	59·0	55·0
20	12 0	1013	230	10	78·0	75·5	72·5	72·5	70·5	..	..	..	..
20	13 25	1013	230	10	78·0	75·5	73·0	72·0	71·5	68·5	..	..	..
20	15 0	1011	230	15	78·0	76·5	74·5	71·0	71·0	68·5	66·0	..	..
22	11 30	995	270	20	79·0	76·5	72·5	71·0	67·5	63·5	59·5	..	..
22	15 10	998	240	10	80·0	77·0	73·5	70·5	67·0	64·0	60·5	57·5	..
30	11 0	1009	270	10	83·5	82·5	78·0	75·5	74·0	72·5	68·5	65·5	62·0
													4·5 km
			(For temperatures at lower levels, see above.)										
30	11 0												58·0

UPPER AIR TEMPERATURES AT SOUTH FARNBOROUGH—MONTHLY AVERAGES, 1920.

T=Temperature in Degrees Absolute above 200 *a*. N=Number of Observations.

1920.	Surface.		Height in Metres above Mean Sea Level.													
			500 m.	1000 m.	1500 m.	2000 m.	2500 m.	3000 m.	3500 m.	4000 m.	4500 m.	5000 m.	5500 m.	6000 m.	6500 m.	7000 m.
	½ (Max. + Min.)	T. N.	T. N.	T. N.	T. N.	T. N.	T. N.	T. N.	T. N.	T. N.	T. N.	T. N.	T. N.	T. N.	T. N.	T. N.
	a	*a*	*a*	*a*	*a*	*a*	*a*	*a*	*a*	*a*	*a*	*a*	*a*	*a*	*a*	*a*
January ..	78·0	75·5 7	77·0 7	74·5 7	72·5 7	69·5 7	68·5 6	64·5 5	61·5 5	59·0 5	58·5 4	53·5 2	.. ..	.. ..	.. ..	.. ..
February ..	78·0	82·5 4	79·0 4	78·0 4	76·0 4	73·5 4	71·5 4	68·5 2	64·5 2	60·5 1	56·0 1	53·0 1	47·5 1	.. ..	.. ..	.. ..
March	80·5	84·5 10	82·0 10	79·0 10	77·5 10	76·0 10	74·0 8	71·0 8	67·5 8	63·5 7	59·5 6	53·0 3	51·0 3	48·0 3	43·0 2	38·5 2
April	82·0	83·5 6	78·5 6	74·5 6	71·0 6	68·0 6	64·5 6	61·5 5	58·0 5	52·0 4	48·5 4	.. ..	.. ..	.. ..	.. ..	.. ..
May	85·5	83·5 6	80·0 6	77·0 6	74·0 6	71·5 6	73·0 4	70·5 4	68·0 4	64·0 4	61·0 4	57·5 4	55·0 3	52·0 3	53·0 1	48·5 1
June	88·0	85·0 10	84·0 10	81·5 10	79·5 10	78·5 10	76·0 10	74·0 7	71·5 3	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
July	88·0	87·0 4	84·0 4	81·0 4	79·5 4	77·5 4	75·5 4	76·0 2	71·0 1	68·5 1	66·0 1	.. ..	.. ..	.. ..	.. ..	.. ..
August	86·5	83·0 5	82·5 5	79·5 5	78·5 5	77·0 5	77·0 2	81·0 1	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
September ..	86·5	87·0 15	84·0 15	81·5 15	79·0 15	77·0 15	75·0 8	72·5 5	69·5 4	66·5 4	62·0 3	.. ..	.. ..	.. ..	.. ..	.. ..
October ..	84·0	88·0 5	85·0 5	82·5 5	81·0 5	78·5 5	76·0 4	72·5 2	69·5 2	68·0 1	64·5 1	.. ..	.. ..	.. ..	.. ..	.. ..
November ..	78·5	82·5 10	80·5 10	77·0 10	74·5 10	72·5 10	69·5 9	66·5 9	63·5 5	59·5 3	56·0 3	52·5 1	.. ..	.. ..	.. ..	.. ..
December ..	77·5	78·0 8	75·5 8	72·0 8	69·5 8	68·0 8	65·0 7	62·0 6	60·5 3	58·5 2	58·0 1	.. ..	.. ..	.. ..	.. ..	.. ..
Year ..	83·0	83·5 90	81·0 90	78·0 90	76·0 90	74·0 90	72·0 72	70·0 56	66·0 42	62·0 32	59·0 28	54·0 11	51·0 7	50·0 6	48·0 3	43·0 3

UPPER AIR TEMPERATURES—AVERAGES FOR SOUTH-EAST ENGLAND, 1917 to 1920.

T=Temperature in Degrees Absolute above 200 *a*. N=Number of Observations.

Month.	Height in Metres above Mean Sea Level.																		
	Surface	500m.	1000m.	1500m.	2000 m.	2500 m.	3000 m.	3500 m.	4000 m.	4500 m.	5000 m.	5500 m.	6000 m	6500 m	7000 m	7500 m	8000 m	8500 m
	T. N.	T. N.	T. N.	T. N.	T. N.	T. N.	T. N.	T. N.	T. N.	T. N.	T. N.	T. N.	T. N.	T. N.	T. N.	T. N.	T. N.	T. N.
	a	*a*	*a*	*a*	*a*	*a*	*a*	*a*	*a*	*a*	*a*	*a*	*a*	*a*	*a*	*a*	*a*	*a*
January ..	77·0 68	75·5 68	73·0 68	70·5 68	68·0 68	65·5 67	63·0 63	60·5 59	57·0 52	55·5 43	52·5 12	46·5 5	38·0 1	.. ..	.. ..	.. ..	.. ..	.. ..
February ..	78·5 50	76·5 50	74·5 50	72·5 50	70·5 50	68·0 48	65·0 41	62·5 40	60·0 28	56·5 22	52·0 9	50·5 5	46·5 2	42·0 1	.. ..	.. ..	.. ..	.. ..
March	81·0 60	78·0 60	75·0 60	72·0 60	70·0 60	67·0 52	64·5 50	61·5 49	59·0 41	56·0 38	50·5 18	45·0 12	44·0 7	39·0 5	36·0 3	.. ..	.. ..	.. ..
April	82·0 49	78·5 49	75·0 49	71·5 49	68·5 49	66·0 44	63·0 41	60·0 39	57·0 34	53·5 27	51·0 9	47·0 5	42·5 2	38·5 2	.. ..	.. ..	.. ..	.. ..
May	88·5 99	86·5 99	83·5 99	80·5 99	77·5 99	75·5 94	72·5 91	69·5 87	66·5 82	63·5 67	59·5 47	56·0 26	49·5 18	50·0 6	47·0 5	47·5 1	.. ..	.. ..
June	88·5 77	86·0 77	83·0 77	80·0 77	77·5 77	75·0 73	72·5 67	69·5 57	66·5 49	63·0 42	60·5 18	57·0 7	54·5 6	51·5 4	47·5 4	42·0 2	.. ..	.. ..
July	90·5 82	87·5 82	84·5 82	82·0 82	79·5 82	77·0 78	74·5 73	71·5 62	68·5 59	65·5 52	62·0 27	58·0 12	53·5 7	51·5 5	50·0 3	47·5 2	.. ..	.. ..
August	91·0 86	88·0 86	85·0 86	82·0 86	79·5 86	77·0 81	75·0 76	72·0 68	69·0 65	66·5 56	64·5 23	61·5 11	58·5 5	53·5 2	52·5 2	48·0 2	43·0 1	38·5 1
September ..	88·5 90	85·5 90	82·5 90	80·5 90	78·0 90	75·5 81	73·0 76	70·5 69	67·0 65	64·0 53	62·5 19	59·0 5	54·5 3	.. ..	.. ..	.. ..	.. ..	.. ..
October ..	83·0 63	80·5 63	77·5 63	75·0 63	72·5 63	69·5 59	66·5 49	63·5 44	60·0 40	58·5 32	56·5 15	51·5 8	53·5 1	.. ..	.. ..	.. ..	.. ..	.. ..
November ..	81·0 58	78·5 57	76·0 57	74·0 57	71·5 57	69·5 54	67·0 51	64·0 40	61·0 36	59·0 31	55·5 13	52·5 6	50·0 5	49·0 2	46·5 2	.. ..	.. ..	.. ..
December ..	78·5 52	76·5 52	73·5 52	71·0 52	69·0 52	66·0 50	63·0 46	60·5 34	57·5 31	55·0 29	53·5 11	49·5 3	46·0 3	33·0 1	29·0 1	.. ..	.. ..	.. ..
Year ..	85·0 834	82·5 833	79·5 833	77·0 833	74·5 833	72·0 781	69·5 724	66·5 648	63·5 582	61·0 492	58·0 221	54·0 105	51·0 60	47·0 28	45·5 20	46·0 7	43·0 1	38·5 1

Notes on Seismological Work at Eskdalemuir Observatory, 1920.

Equipment.—The instrumental equipment consisted of three Galitzin pendulums, arranged to record displacements in the north, east, and vertical directions. The weakest part of the installation has always been the clockwork for driving the recording drums. During 1920, parts of this, made of insufficiently hard metal, had worn out, and recording had to be stopped during the last three months of the year while repairs were being effected. The seismograph pendulums remained in good order and their constants showed no appreciable change.

Earthquakes.—Excluding disturbances of very faint character, the number of earthquakes recorded from 1st January to 16th October was 101. Epicentral distances were determined in 16 cases, in 2 of which they exceeded 10,000 kilometres. Epicentral distances are only assigned in those cases where the traces are free from the disturbing effects of wind pressure on the Observatory building and of large microseismal effects, and the frequency of these at Eskdalemuir limits the number of determinations thus made.

Microseisms.—The amplitude and period of microseisms recorded by the North-south seismograph were tabulated as heretofore, the results being as shown below, where a comparison is made with the mean results obtained during the previous nine years. The unit for amplitude is 1 micron (·001 mm.=μ).

MICROSEISMS. MONTHLY MEANS.

		Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1920.	Amplitude (μ)	3·6	3·0	2·6	1·3	0·9	0·4	0·4	0·4	0·8	—	—	—
1911–19	Amplitude (mean) ..	2·4	2·4	1·8	1·2	0·6	0·5	0·3	0·5	0·8	1·3	1·9	2·2
1920.	Period (secs.)	6·1	6·3	6·2	5·4	4·2	3·9	3·7	3·9	5·2	—	—	—
1911–19	Period (mean)	6·0	5·9	5·9	5·3	4·7	4·5	4·1	4·4	4·9	5·2	5·7	5·8

The Water Level Recorder at Kew Observatory, Richmond.

A description of the apparatus will be found in the *Annual Supplement* for 1914. Regular observations commenced in July 1914. The values of the mid-height for each day have appeared in the monthly numbers of the Journal, along with the extreme values recorded during the month and the dates on which these presented themselves. The general nature of the variation will be readily derived from the diagram, in which the graph A A shows the fluctuations in water level. The integrated rainfall (*i.e.*, the total fall up to any assigned date) at Kew Observatory is represented by the graph B B, whilst the general rainfall in the Thames Valley* (obtained from twenty-four stations above Teddington) is integrated in the graph C C. The rainfall scale is five times that for the height of the water in the well.

In reading the graph C C, 10 mm. is to be *subtracted* from the amount indicated by the scale on the right of the diagram.

The correlation between the Thames Valley and Kew rainfalls is very close, the ratio between the two being about 5 : 4.

*A Chart showing the Rainfall of the Thames Valley is published monthly in *The Meteorological Magazine*.

The response of the well to variations in the height of the barometer and to the tide in the neighbouring river have been discussed by E. G. Bilham.* The effect of the alternation of spring and neap tides can be easily recognised in the diagram.

The observatory is situated in the Old Deer Park, which lies within a bend of the River Thames and is not far from Richmond Lock. This lock is half-tidal, *i.e.*, at high water there is no obstruction to the flow of the river, at half-tide the sluices come into operation, so that the water above the lock does not fall below the half-tide level, whereas below lock at low tide there is very little water—at any rate in a dry season.

A discussion of the graphs for the period 1914-1919 was printed in the 1919 *Supplement.*

Table of Monthly Means of Magnetic Data for Eskdalemuir, 1920.

The following table gives the mean monthly values of daily maximum and minimum and of the corresponding daily range of the magnetic elements at Eskdalemuir Observatory.

Month.	North Component.			West Component.			Vertical Component.		
	Max. 15000 γ +	Min. 15000 γ +	Range.	Max. 4000 γ +	Min. 4000 γ +	Range.	Max. 44000 γ +	Min. 44000 γ +	Range.
January	1015	956	58	892	824	67	1079	1051	27
February	1021	954	66	904	823	82	1084	1041	43
March ..	1042+	898—	144+	914+	784—	130+	1115	1017—	98+
April ..	1027	925	102	899	806	93	1061	1000	61
May ..	1032	937	95	890	812	78	1041	991	50
June ..	1041	958	83	877	799	78	1059	1020	39
July ..	1046	963	84	874	792	82	1073	1030	42
August ..	1045	952	93	865	782	84	1079	1031	48
September	1047+	921—	126+	862	752—	109+	1101	1009—	92+
October	1025	952	73	851	764	86	1114	1068	46
November	1018	958	60	833	774	59	1122	1081	41
December	1023	959	64	828	764	64	1110	1075	35
Year ..	1032+	944—	87+	894+	790—	84+	1087	1035—	52+

The traces passed the limits of registration on the North Component trace on three days, the West on three days, and the Vertical on four days. The value accepted for the maximum or minimum in such a case represents the upper or lower edge of the photographic sheet. Such values have been excluded in the calculation of the monthly means published in the Geophysical Journal, Table 6, but are used in obtaining the figures entered in the table above. The mean values of the daily range for the months affected are still underestimated, but the differences from the true values are probably small.

The extreme values recorded during the year and the corresponding annual ranges were as follows, the signs > or < indicating that the trace passed the limits of registration :—

	Maximum.	Date.	Minimum.	Date.	Range.
North Component. ..	> 16236 γ	March 22, between 15h. 50m. and 20h. 10m.	< 15528 γ	March 23, between 0h. 20m. and 2h. 0m.	> 708
West Component ..	5027 γ	March 14, 14h. 22m.	< 4363 γ	March 23, between 0h. 40m. and 3h. 0m.	> 664
Vertical Component ..	45419 γ	February 24, 19h. 34m.	< 44768 γ	September 28, between 20h. 0m. and 20h. 20m.	> 651

* *Roy. Soc. Proc.*, A94, 1918, p. 165 ; and *Q.J.R. Met. Soc.*, Vol. XLIV, 1918, p. 171.

Table of Monthly Means of Electrical Data for Kew Observatory, Richmond, 1920.

The following table gives mean values of positive and negative charges obtained with the Ebert apparatus. The observations are made only on certain days, and so the figures do not necessarily represent true means for the months. The number of days utilised for computing the respective means are given in the table.

Charge per cc. at about 15 h. G.M.T. at Kew Observatory, Richmond. Unit 1×10^{-16} *coulomb.*

Year.	Sign of Charge	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
1920	+	0·25	0·39	0·49	0·63	0·58	0·82	0·60	0·58	0·56	0·41	0·41	0·45	0·50
	−	0·23	0·21	0·33	0·62	0·46	0·39	0·52	0·27	0·39	0·26	0·34	0·31	0·34
No. of Days.		12	8	11	3	8	9	6	9	10	8	8	11	103
		13	8	10	3	6	10	7	9	8	9	7	10	100

A popular account of the method ot measurement of positive and negative charges will be found in a paper* by Mr. C. D. Stewart. For a comparison of the units used in corresponding tables elsewhere reference may be made to the Introduction. Mean values of potential gradient at Kew Observatory will be printed in *Hourly Values*.

A discussion by Dr. Chree of the effects of deterioration of the Ebert apparatus in use at Kew Observatory was published in the Annual Supplement to the *Geophysical Journal* for 1919.

In the means for the year equal weight has been assigned to each individual observation independently of the month it occurs in, as the number of days available was unduly low for some of the months.

ERRATA FOR 1918.

Page 124. Table of Monthly Means, North Component Minimum, *for* 929 *read* 919.
Page 124. North Component Range, *for* 95 *read* 105.
Page 89. West Component, Minimum on 29th, *for* 972 *read* 770.
Page 89. West Component, Mean Minimum, *for* 858 *read* 851.

ERRATA FOR 1919.

Page 17. Table 2. Magnetism. *For* 19° 32′·8 on (22nd) *read* (21st).
For 68° 9′·8 on (24th) *read* (22nd).
For 17833γ on (26th) *read* (24th).
Page 79. Table 6. Time of occurrence of West Minimum on 5th. *For* 6h. 52m. *read* 16h. 52m.

ERRATA FOR 1920.

Page 25. Table 2. Magnetic Observation on 18th, *for* 18th *read* 8th.
Declination 19° 23′·0 on 23rd, *for* 23rd *read* 24th.
Page 34. Table 3. Rainfall on 26th, *for x* 5·0 *read x* 21·8.
Total for month, *for* 21·5 *read* 38·3.
Page 43. Table 5. Water Level extremes, *for* 233 on 20th and 21st *read* 232 on 23rd.
For 214 on 3rd and 4th *read* 216 on 30th.
Page 51. Table 5. Water Level extremes, *for* 236 on 5th and 6th *read* 233 on 20th.
For 213 on 31st *read* 214 on 3rd and 4th.

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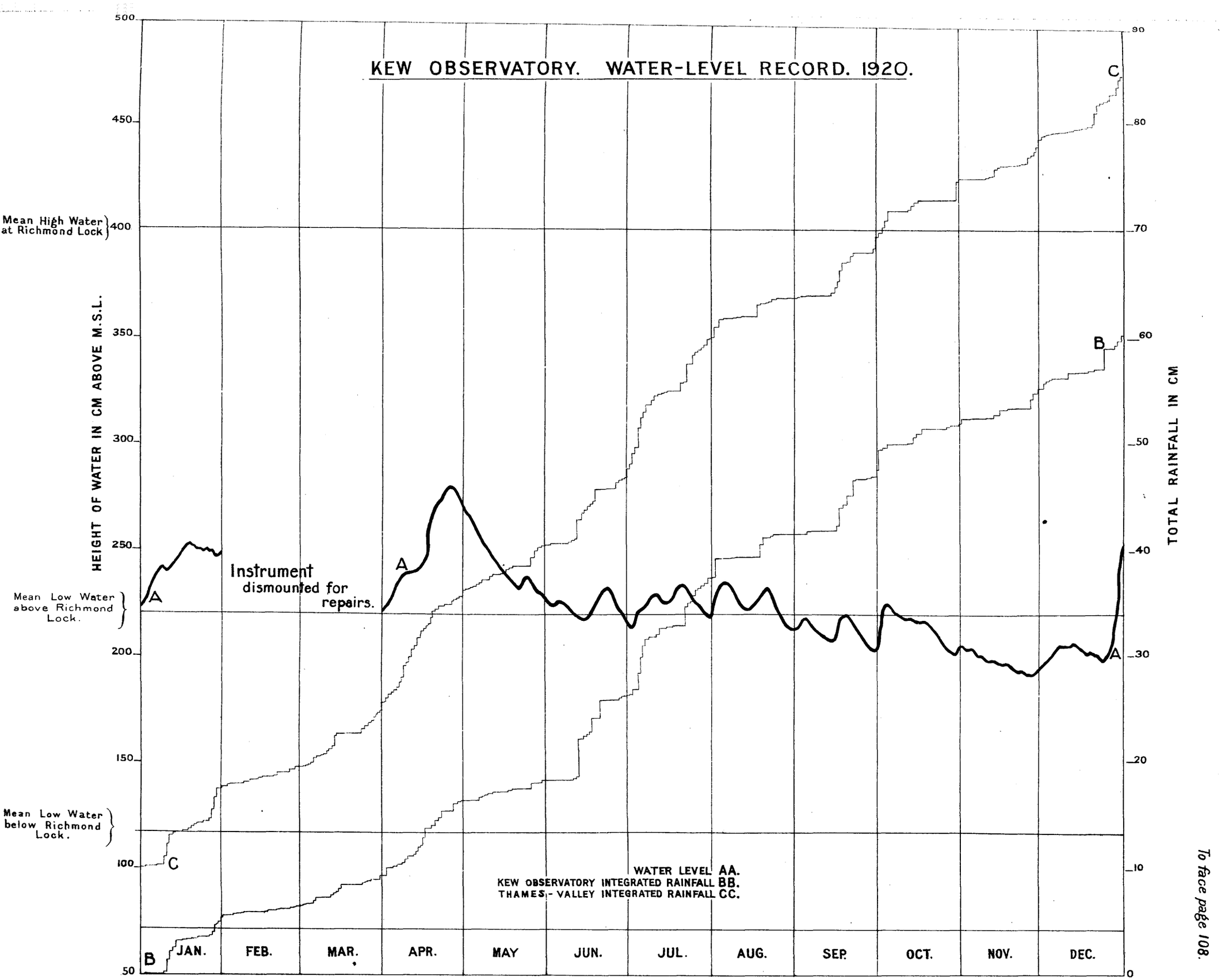
* *Q.J.R. Met. Soc.*, Vol. XLIII, 1917, p. 409.



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