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Robert Henry Scott,

Dublin, 28th January, 1833—London, 18th June, 1916.

(For portrait see frontispiece.)

THE death of Dr. R. H. Scott at the age of 83 removes a remarkable landmark in the history of official meteorology. Even after he retired from the Meteorological Office in 1900 Dr. Scott continued to be the most regular and punctual attendant at the meetings of the Royal Meteorological Society, and the oldest Fellows of the Society, as well as those elected only a few years ago, can hardly picture the Secretary's table at the evening meetings without his familiar presence. Dr. Scott was a most conscientious meteorological official who made it his duty to master all the developments of the science which it was his business to apply to the public service, and he always maintained at home and abroad the high character of British Meteorology. His biography is to a great extent the history of the Meteorological Office up to the close of the nineteenth century, and probably no one had a larger share than he in shaping the development of meteorology in England through his administration of the Meteorological Office, and his influence on the Council of the Royal Meteorological Society.

Dr. Scott was the younger son of Mr. James Smyth Scott, Q.C., his mother being a daughter of the Archbishop of Cashel. He was educated at Rugby and at Trinity College, Dublin. He spent some time at the University of Berlin, studying chemistry and physics and attending the meteorological lectures of Prof. H. Dove, and for a short time he was at Munich. He graduated as M.A. of Trinity College, Dublin in 1859, and received the degree of D.Sc. from the same University thirty-nine years later. In 1863 he translated Dove's famous volume on "The Law of Storms." From an early period Scott was interested in mineralogy, and retained this interest throughout his life. In 1862 he was appointed Keeper of Minerals to the Royal Dublin Society, and held this office until 1867, when he received the appointment of Director of the Meteorological Office, newly organised by a Committee of the Royal Society, which had taken over the control of what was formerly the Meteorological Department of the Board of Trade. Admiral FitzRoy, who had

introduced storm warnings when in charge of the old "Department," had been dead for nearly two years, and in that interregnum the change of the management in the Meteorological Office had been brought about, and incidentally the storm warnings had been stopped by the Royal Society on the ground that FitzRoy's method was largely empirical. The storm warnings were speedily resumed on a scientific footing, and as land meteorology was added to the functions of the new office in supplement to marine meteorology and storms, the scope of the work was greatly extended, and the new director had his hands full in organising the new work.

After a few years another Government Committee of Inquiry sat in 1874, and, as a result, the Meteorological Office was re-constituted in 1877 under the charge of a Meteorological Council with a salaried chairman and members appointed by the Royal Society, and Mr. Scott, with the designation of Secretary of the Meteorological Council, remained in charge of the Office, which was then moved to Victoria Street. He was elected a Fellow of the Royal Society in 1870, and joined the Royal Meteorological Society in the following year, acting as Foreign Secretary for forty-five years, except for two breaks when he was Secretary in 1880 and 1881 and President in 1884 and 1885.

He was a leading member of the International Meteorological Committee instituted by the Meteorological Congress at Vienna, 1874, at which he took part, and he held the position of honorary secretary to the committee for twenty-five years. The value of the work of this Committee in securing uniform conditions and hours for observations cannot be over-rated, and the system of weather forecasting by means of synoptic maps which resulted, was carried out with great success by Dr. Scott in the Meteorological Office. He did good service also in making the methods he followed accessible to the public and comprehensible by persons of ordinary intelligence. In this way his two books "Weather Charts and Storm Warnings," published in 1876, and "Elementary Meteorology," published in the International Science Series in 1883, were of real value. The latter book has gone through five editions in England, and has been translated into French and Italian. He took a large share in the authorship of the very numerous official publications of the Meteorological Office, and contributed several papers, mainly on weather forecasting and wind-force, to the Royal Meteorological Society. In conjunction with Mr. W. Galloney he investigated the relations between colliery explosions and the weather, and gave the result in a series of papers, the first of which was published in the *Proceedings* of the Royal Society, and the later in the *Quarterly Journal* of the Royal Meteorological Society.

While Dr. Scott was not great as an original investigator or theorizer he had a remarkably firm, practical grasp of the principles of synoptic meteorology, and he made the weather forecasts for the

United Kingdom as trustworthy as the methods available in his time permitted. Personally Dr. Scott had a full share of the characteristic Irish kindness of heart, and often gave way to impulsive generosity. His conversation was full of humour which often tended towards the grimmer quality. He did not readily accept views put forward by those with whom he was not in sympathy, nor would he patiently consider criticism of his habitual beliefs. But he was for half a century a typical exponent of the meteorological triumphs of the Victorian period.

THE COLDNESS OF JUNE, 1916.

IN our last number we gave a comparison of the mean temperature of January 1st and June 4th at Camden Square, in which it was shown that the mean temperature of the latter day was half a degree lower than that of New Year's day. A much more striking contrast would have been afforded by a comparison with June 12th as will be seen from the following values :—

1916.	Max.	Min.	9 hr.	21 hr.	Mean of Day.
January 1	57·2	47·2	52·8	51·4	52·2
June 12	53·6	44·5	48·8	46·3	48·3
Difference—					
June-Jan.	—3·6	—2·7	—4·0	—5·1	—3·9

Thus the 12th of June was four degrees colder on the whole than the 1st of January.

At Dorman's Park, Surrey, the following is a comparison of the shade maximum and minimum temperatures, and the grass minimum temperatures for two three-day groups comprising January 1st to 3rd, and June 12th to 14th :—

1916.		Mean Max.	Mean Min.	Mean Grass Min.
January 1 to 3	..	52·5	45·5	37·7
June 12 to 14	..	51·3	44·3	36·2
Difference—				
June-Jan.	.. ..	—1·2	—1·2	—1·5

Thus the three June days under consideration were colder than the three January days by more than a degree.

The actual values for certain days in January and June were:—

1916.		Max.	Min.	Mean.	Grass.
January 1	..	54	45	49·5	39
January 7	..	51	48	49·5	42
June 8	..	57	40	48·5	31
June 12	..	48	43	45·5	40

A further comparison of the values during the first week of January with June gives the following results :—

		Mean Max.	Mean Min.	Mean.
January 1 to 7	..	52·2	44·5	48·3
June 1 to 7	..	58·0	42·7	50·3

The low June and high January night values are the most striking.

For the whole month of June the Camden Square temperature values were exceedingly low as will be seen from the following table, in which a comparison is made with June, 1909,* the coldest observed in the long record commenced by Mr. Symons in 1858. The mean temperature is the average of the highest, lowest, 9 a.m. and 9 p.m.

June.		Mean Max.	Mean Min.	Mean Temp.
1909	.. ..	63·9	48·5	55·6
1916	.. ..	65·0	47·9	55·7
Average—				
1860-1909	..	70·8	50·7	60·1

Thus the mean temperature of June was 4°·4 below the average, the only colder month of the name occurring in 1909. The mean maximum temperature was 5°·8 under the average, and was lower 63°·9 in 1909, and 64°·7 in 1860. The mean minimum temperature was 2°·8 under the normal, and only one June—that of 1869—had a lower mean minimum value of 46°·9. During the first 22 days of June, 1916, the minima were low, the average being 45°·9, but from the 22nd to the 30th the mean minima rose to 53°·2.

The absolute maximum of 73°·6 recorded on the 22nd was the lowest in the past fifty-nine years except in 1860 when it was 71°·9. The absolute minimum was 40°·3 on the 17th, lower values having been recorded on twelve occasions. The coldness of the month was due to the small amount of sunshine, only 138 hours being noted, and only one day (the 17th) with more than ten hours. In June, 1909, only 92 hours sunshine were registered, and there were seven sunless days against three in the month that has just closed.

The coldness of June has been equally remarkable in the north of the British Isles. At Gordon Castle in Banff, the mean temperature was 50°·6 or 4°·4 below the average of the 152 years 1764-1915. In this long period only one colder June—that of 1797—was experienced, with a temperature 0°·4 lower. It is of interest to note that the departure of the Gordon Castle mean temperature from the normal during June, 1916, is exactly the same as that of the surface sea temperature at Wick, in Caithness, where the sea has been abnormally cold for some months. At Edinburgh during the last century and a half six colder Junes were recorded, all between the years 1830 and 1888, the coldest of all being June, 1860, with a mean of 51°·5, or 1°·4 below the mean of last month.

* See *Met. Mag.*, Vol. 44, p. 108.

THE PHYSICAL CONDITIONS OF THE WEDDELL SEA.

At a meeting of the Royal Geographical Society, held on June 15th, Mr Douglas Freshfield, President, in the chair, Mr. R. C. Mossman, F.R.S.E., read a paper on the "Physical Conditions of the Weddell Sea." After a brief summary of the work carried out by the various expeditions to this area a resumé was given of the oceanography, meteorology, etc., of the region south of lat. 60° S., between the meridian of Greenwich and 70° W. The depth of the Weddell Sea away from land is about 2,500 fathoms. Shallower water is found between the South Sandwich Group and the South Orkneys, and close to Coats Land soundings of 161 and 159 fathoms were recorded two miles from the shore, while close to Luitpold's Land soundings of 62 and 99 fathoms were obtained. On the meridian 30° W. the continental shelf extends as far north as 74½° S. The deep sea deposits south of lat. 60° were either blue mud approximating to red clay, or blue mud and terrigenous matter thus consisting of the material carried off Antarctic lands and deposited through gradual dissolution of icebergs. The surface currents indicate a general circulation clockwise round a barometric minimum in the middle of the Weddell Sea central near the Antarctic Circle in harmony with the prevailing winds. This is well shown from the drift of the "Deutschland" and "Endurance," whose course beset in the ice entirely corroborated the scheme of atmospheric and oceanic circulation deduced from the observations taken on the "Scotia" expedition. It is probable that the sea to the east of the land explored by Nordenskjöld and Larsen is very shallow and full of shoals, as in spite of strong south-west winds the pack is singularly inert, being held up largely by stranded icebergs. It is not unlikely that a chain of islands stretching to the south of where Ross reported an "appearance of land," in lat. 65° S., long. 48° W., contributes to this congestion of the ice. A discussion of the serial sea temperatures taken on the "Endurance" would clear up this point. The series of serial sea temperatures taken by the Scottish Expedition show that from the surface down to about 120 fathoms there is a layer of cold water due to ice melting, but in from about 200 to 700 fathoms a warm wedge, in which the water temperature varies from 32°·5 to 33°·5, is met with. As a general rule below 700 fathoms temperature falls slowly down to about 1,500 fathoms where the mean is 31°·5, but in the next 1,000 fathoms down to the bottom, the curve is isothermal no further fall in temperature being recorded. The paper concluded with a general summary of the meteorological conditions, and some interesting correlations were referred to which suggest that the long series of observations taken at the South Orkneys can now be turned to practical purposes for long range weather forecasting in South America and South Africa.

SYSTEM OF LUNAR WEATHER TYPES AT STOCKHOLM.

PROF. OTTO PETERSSON has sent us the following scheme of the winter climate of Stockholm in relation to lunar periods which presents some features of interest. The whole scheme is interwoven with 9 years and 8 years, and 10 years periods—all of them moon periods. Thus the 9 years period refers to the node-apside., the 8 years period is that of

$$\begin{aligned} 107 \text{ tropical months} &= 2923.45 \text{ days,} \\ 99 \text{ synodical months} &= 2923.52 \text{ days} \end{aligned}$$

while the 10 years period is that of

$$\begin{aligned} 133.68 \text{ tropical months} &= 3652.40 \text{ days} \\ 123.68 \text{ synodical months} &= 3651.80 \text{ days} \end{aligned}$$

There are also "catastrophal epochs" of 93 years as 1763 and 1856, 1796 and 1889.

In the following table the 8 years period is well shown in the mean winter temperature of Stockholm.

Showing the Departure from the Normal in 0° F. of the Mean Winter Temperature of Stockholm.

Mean Winter Temperature (Dec., Jan., Feb.) = $26^{\circ} 2$ F.

NOTE.—The figures on the top line indicate the number of years to be added to those given in the left hand column, *e.g.*, line beginning 1769 +4 = 1773, the value for which is $+1^{\circ} 3$.

	0	1	2	3	4	5	6	7	8
Year.									
1760 ..	—	—	—	—1.1	+3.6	—0.5	—2.0	—7.2	—1.6
1769 ..	+4.1	—0.5	—4.7	—4.5	+1.3	—4.5	—0.2	—0.4	—1.3
1778 ..	+0.2	+5.4	—3.1	—1.6	—1.3	—0.9	—3.4	—3.2	—3.4
1787 ..	+1.8	—4.0	—8.1	+8.8	+6.5	—1.1	+3.1	+2.5	—3.8
1796 ..	+3.8	+2.5	+1.6	—4.7	—5.2	+0.9	—2.3	—5.8	—5.6
1805 ..	—7.2	—0.2	+2.2	—0.5	—11.5	+3.4	—0.4	+1.3	—0.9
1814 ..	—9.0	+1.4	—2.5	+5.2	—2.2	+7.0	—3.2	—1.1	+7.7
1823 ..	—0.2	+7.7	+3.4	+2.5	—1.6	+1.1	—5.6	—5.2	—4.0
1832 ..	+3.8	+3.2	+2.5	+3.8	—0.7	+0.2	—7.0	+0.7	0.0
1841 ..	—4.1	+5.9	+5.0	—2.9	—2.2	0.0	—3.6	+4.1	+0.4
1850 ..	—2.2	+3.4	+2.3	+1.1	0.0	—5.6	—3.2	+0.2	+4.7
1859 ..	+3.6	—0.9	—3.2	—2.5	+5.9	+2.2	—1.4	+5.6	—2.5
1868 ..	—3.1	+3.6	+0.5	—8.8	+3.2	+4.7	+5.9	—6.3	—1.3
1877 ..	—4.1	+4.5	—3.1	+1.6	—5.8	+6.5	+1.1	+3.6	+1.6
1886 ..	+1.6	+4.1	—2.0	+1.6	+4.7	—1.4	+0.2	—7.6	+5.4
1895 ..	—1.6	+3.8	—0.2	+6.1	+2.7	+1.4	—0.2	—0.5	+2.0
1904 ..	+2.9	+2.0	+5.4	+0.5	+1.8	+1.8	+4.3	—4.1	+1.4
1913 ..	+5.0	+3.8							

Practically similar results are derived for the climate of Berlin Copenhagen, etc., whether temperature, pressure, or rainfall is employed. "For other meridians there will be other numbers, other years, but the same great moon periods will prevail."

METEOROLOGICAL OBSERVATIONS AT NOTRE DAME DES PINS, MANCHURIA, for 1914.

By REV. J. DE MOIDREY, S.J.

NOTRE DAME DES PINS is the central mission of the Belgian Fathers of Schent and is located in lat. $41^{\circ} 23' N.$, long. $120^{\circ} 37' E.$, at an altitude of 106 metres above sea-level. The meteorological installation was presented by the Chinese monks. An electrically recording Richard anemometer is placed on a tower, and on another tower is the wind vane. A Newton sunshine recorder and a sun dial stand upon pillars in a position where the exposure is good. In the screen are dry and wet bulb thermometers, maximum and minimum also a Richard thermograph and hygrograph. The barometer, by Tonnelet has a compensated scale, and there is a Richard barograph. The observations from 1900 to 1910 are summarised in the annual calendar of Zi-ka-wei for 1912, pp. 141-163. From 1911 to 1913 the data are given in the "Meteorologische Zeitschrift."

I.—Barometric Pressure. Millimetres.

II.—Relative Humidity.

	2 hr. mm.	8 hr. mm.	14 hr. mm.	20 hr. mm.	Max. mm.	8 hr.	14 hr.	20 hr.
Jan. ..	756.97	757.91	756.52	757.20	757.15	57.5	24.4	41.0
Feb. ..	59.70	60.00	58.52	58.99	59.30	30.3	6.5	21.3
March ..	54.63	54.95	53.17	53.17	53.98	25.0	6.6	24.4
April ..	51.73	52.32	51.07	51.33	51.61	53.6	39.5	43.4
May ..	48.15	48.58	46.92	47.28	47.73	39.2	31.0	38.2
June ..	43.41	43.46	42.34	42.71	42.98	59.6	44.8	58.0
July ..	43.18	43.50	42.58	42.54	42.95	78.5	63.8	81.0
August ..	45.55	46.05	45.21	45.54	46.40	72.4	56.7	76.6
Sept. ..	50.67	51.34	50.29	50.89	50.80	73.9	52.1	74.4
Oct. ..	54.95	55.31	53.79	54.64	54.67	74.0	45.0	64.7
Nov. ..	57.94	57.85	56.81	56.06	57.17	78.1	64.1	72.1
Dec. ..	59.01	59.08	57.81	59.04	58.73	87.4	51.9	65.9
Year ..	752.16	52.53	51.25	51.62	51.96	60.8	40.5	55.1

III.—Temperature, ° Centigrade.

Daily Range.

	Min.	Max.	20 hr.	Mean.	Min.	Max.	Mean.
Jan. ..	—15.4	5	—7.4	—7.1	8.2	26.1	16.9
Feb. ..	—12.8	3.5	—4.5	—4.6	5.2	23.5	16.3
Mar. ..	—5.7	9.2	1.9	1.8	3.9	23.1	14.9
April ..	2.9	19.3	11.0	11.1	5.4	28.6	16.4
May ..	11.2	28.9	19.7	19.9	3.2	27.4	17.6
June ..	15.5	30.2	22.4	22.7	4.5	23.4	14.7
July ..	20.1	31.2	24.8	25.4	3.1	21.0	11.1
Aug. ..	18.3	31.6	23.6	24.4	5.8	23.3	13.3
Sept. ..	11.5	25.3	16.9	17.9	4.0	21.6	13.8
Oct. ..	5.4	20.0	11.9	12.4	4.4	22.5	14.6
Nov. ..	—6.9	3.5	—2.8	—2.1	1.0	21.0	10.1
Dec. ..	—15.5	—0.5	—9.2	—8.4	9.1	22.3	14.3
Year ..	2.4	17.0	9.0	9.5	1.0	28.6	14.5

IV.—*Number of Days of*

	Thunder.	Light- ning.	Thunder- storms.	Hail.	Fog.	Dew.	Hoar. Frost.	Rain.	Snow.
Jan. ..	0	0	0	1	0	0	0	0	2
Feb. ..	0	0	0	3	0	0	0	0	1
Mar. ..	0	0	0	3	0	0	4	1	6
April ..	0	0	0	3	0	0	2	2	1
May ..	2	0	0	2	0	0	0	5	0
June ..	3	0	1	0	1	1	0	12	0
July ..	0	1	3	0	2	0	0	14	0
Aug. ..	0	0	3	0	3	0	0	10	0
Sept. ..	0	0	6	1	2	0	0	9	0
Oct. ..	0	0	0	5	2	1	2	6	0
Nov. ..	0	0	0	0	0	0	12	4	1
Dec. ..	0	0	0	2	0	0	12	0	1
Year	5	1	13	20	10	2	32	63	12

V.

	CLOUD %.			SUNSHINE. Hours per day.	RAIN. mm.	DRY PERIODS of 10 days or more.		
	Bright.	Cloudy.	Overcast.			Began.	Ended.	Lasted.
Jan.	77	5	18	6·24	1·8	Jan. 8	Feb. 4	28 days
Feb.	79	3	18	6·80	0·5	Feb. 6	Mar. 4	27
Mar.	62	9	29	6·95	28·6	Apr. 17	May 17	32
April	65	9	26	6·99	1·1	Dec. 3	Jan. 6,	35
May	66	11	23	7·65	21·7		1915	
June	56	9	35	6·73	94·6			
July	38	15	44	5·01	132·9			
Aug.	54	15	31	7·83	103·8			
Sept.	58	12	30	7·26	195·7			
Oct.	66	5	29	6·94	26·9			
Nov.	68	7	25	6·00	50·5			
Dec.	81	4	15	6·13	2·0			
Year 64	9	24	6·71	658·1				

The highest reading is in heavy type, the lowest in italic.

VI.—*Wind Velocity.**Frequency of Wind in Percentages.*

	Kms. per hour.	Frequency of Wind in Percentages.								
		N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	
Jan. ..	4·4	9	50	1	0	5	17	5	12	
Feb. ..	4·8	4	71	2	0	2	13	2	7	
Mar. ..	8·6	5	51	1	0	1	30	1	11	
April ..	8·8	11	44	1	0	6	22	13	2	
May ..	9·0	10	24	0	0	1	50	9	7	
June ..	7·2	13	15	1	2	3	50	6	9	
July ..	3·4	3	39	0	3	2	44	4	3	
August ..	4·8	7	46	0	2	3	35	4	3	
Sept. ..	4·6	2	41	0	0	6	40	0	11	
Oct. ..	4·4	8	43	0	0	1	41	1	6	
Nov. ..	5·1	11	66	0	0	0	15	1	7	
Dec. ..	3·7	5	70	4	0	0	8	5	8	

Correspondence.

To the Editor of Symons's Meteorological Magazine.

COLD JUNE AT TOTLAND BAY.

I HAVE taken the meteorological readings at Totland Bay during the past 30 years. This year's June gave us a mean temperature of $54^{\circ}\cdot7$ F. Only one preceding June, that of seven years ago, was colder, with a mean temperature for the June month of $54^{\circ}\cdot3$ F. The warmest day June, 1916, gave us a true shade temperature of only $65^{\circ}\cdot4$ F. This is a striking figure compared with all the preceding 29 years of which I give you the following table of the warmth of the hottest day of each, entered to the nearest whole number thus $65^{\circ}\cdot5$ up to $66^{\circ}\cdot4$ is entered as 66° .

Hottest Day of June.

1887 .. 79	1897 .. 75	1907 .. 67
1888 .. 76	1898 .. 75	1908 .. 82
1889 .. 79	1899 .. 77	1909 .. 67
1890 .. 73	1900 .. 76	1910 .. 72
1891 .. 74	1901 .. 78	1911 .. 80
1892 .. 73	1902 .. 77	1912 .. 72
1893 .. 84	1903 .. 80	1913 .. 78
1894 .. 80	1904 .. 72	1914 .. 76
1895 .. 77	1905 .. 75	1915 .. 72
1896 .. 79	1906 .. 73	1916 .. 65

JOHN DOVER.

Aston House, Totland Bay, Isle of Wight.

SUMMER TIME.

FROM the letters in your esteemed Magazine it appears that Summer Time has created something of a stir among meteorologists. Many of the remarks, however, seem to be based on a wrong supposition as to what time, or rather the time of day, really is.

The difference in time between one place and another, whether true time or mean time, depends on the difference in longitude, 4 minutes of time for each degree. Taking the longitudes from your rainfall tables for May, I find that the longitude of Geldeston, in Norfolk is $1^{\circ} 31'$ E., and that of Islay is $6^{\circ} 15'$ W., so that the difference in time between these two stations is just about 31 minutes. In the days when travelling was slow and infrequent, these differences due to longitude were not of much importance, but with the introduction of railways it became necessary to establish a standard time and then, by Act of Parliament, Greenwich Mean Time was fixed

for the whole of Great Britain. I should like to emphasise the fact that Greenwich Mean Time was fixed by *Act of Parliament*, for it is this time which your correspondents are treating as immutable, and one has even questioned the right of Parliament to alter it.

For meteorological purposes it strikes me that Greenwich Mean Time is an anomaly, for the sun certainly plays the most important part in all matters meteorological, and Greenwich Mean Time takes no account of the position of the sun at the place of observation. To be consistent, meteorologists ought certainly to revert to apparent time. In addition to this it seems to me that in order to be of the greatest practical use, observations ought to be taken at periods which are equal subdivisions of the time between sunrise and sunset on each day in the year, one of which should end at midday. Of course this would be somewhat irksome to many of your Observers, but I should like to convince a few of them that Greenwich Mean Time does not possess those virtues which are apparently attributed to it. Naturally my remarks do not apply to rainfall observations, for the total rainfall is the main consideration, no matter when the partial falls are measured during the day.

JOSEPH HARRY FRY.

64, Craven Park, Willesden, N.W.

ROYAL METEOROLOGICAL SOCIETY.

THE final meeting of this Society for the present Session was held on Wednesday afternoon, the 21st June, at 70, Victoria Street, Westminster, Major H. G. Lyons, D.Sc., F.R.S., President, in the chair.

Mr. J. E. Clark and Mr. H. B. Adams presented their "Report on the Phenological Observations for 1915." The year did not depart appreciably from the mean for the 25 years record, being, on the whole, a shade earlier. 1914 was seven days earlier than 1915, of which the outstanding features were the mild and very wet winter the following drought, interrupted in most parts through July and early August, in others almost continuous through October; the genial conditions, as a whole, in April and June, but with cold spells and frosts in May and June; the cold, sunless, wet July followed by a mild Autumn ending in the unprecedented November frosts. Speaking generally, garden and field came through fairly well, the hay and strawberry crops being the chief exceptions, and large proportion of apples malformed from the May set-back. Roses and herbaceous flowers were above the average in summer and autumn. The cold periods in spring affected migrants adversely, the mean date being April 26th compared with April 24th in 1914, and April 23rd for the 20 years' mean of the records, 1877 to 1896.

The President (Major H. G. Lyons) said the Society was greatly indebted to Mr. Clark for contributing this report which had the great advantage of being dealt with in successive years by the

same author. Col. Rawson, C.B., referred to the relation between the swaying of the anticyclonic belt of the Northern Hemisphere, and the variation from year to year in the dates of flowering.

A paper by Messrs. Miller Christy, and W. Marriott, dealing with the "Audibility of the Gun Firing in Flanders over the South-east of England, September, 1914-April, 1916," was also read. The sound of the firing in Flanders has been repeatedly heard in many parts of the south-east of England since an early period of the war. Mr. Christy says that the sound varies considerably; sometimes, slow and deliberate firing is heard, at the rate of 3 to 12 shots a minute, each shot being quite loud and distinct. This is probably the firing of the monitors and other warships bombarding the German positions on the Belgian coast. Usually, however, the firing has been much more rapid, much less distinct, and apparently more distant. This is no doubt the sound of the firing further inland, say, around Ypres, Dixmude or Arras; it varies in rapidity from perhaps four or five shots to the minute up to more than 100. This sound is, as a rule, quite faint, though easily perceptible and quite unmistakeable; it resembles more nearly a dull and distant thud, which is rather felt than heard. From the records collected it appears that the gunfiring has been heard at one time or another over the counties, Essex, London, Kent, Surrey and Sussex; the most distant place being about 150 miles from Ypres. Mr. Marriott has discussed the meteorological conditions under which the gunfiring was heard. On days of marked audibility there was generally a cloudy or overcast sky, thus lending support to the view that the sound travelled better then than when the sky was clear. The weather charts show in general a somewhat irregular, or not definitely defined, distribution of barometric pressure, but mostly with a region of high pressure-wedged in between areas of slightly lower pressure. These conditions are such as to produce light winds at the surface, mostly between north and east, over the neighbourhood of the North Sea. Aspect and elevation are also important factors for the hearing of the firing.

The President referred to the occurrence of an intermediate silent zone where the explosions are not often heard, and an outer zone of abnormal audibility where they are heard generally. Distances up to 200 miles were none too great for violent explosions to be heard.

Mr. Charles Harding, M. Carvalho, Mr. W. W. Byrant, Dr. H. R. Mill and others also spoke.

A third paper, by Lieut. E. H. Chapman, R.E., on "The Relation between Atmospheric Pressure and Rainfall at a Single Station," which, but for the lateness of the hour would have given rise to a lively discussion, was summarised by Mr. Whipple.

The following gentlemen were elected Fellows of the Society, Prof. C. M. de Carvalho, J. M. Dyer, M.A., H. Norman Edge, A. H. Goodhall, J. Boon Hugh, J. H. Pease, J.P., Prof. H. H. Turner, F.R.S.

RAINFALL TABLE FOR JUNE, 1916.

STATION.	COUNTY.	Lat. N.	Long. W. [*E.]	Height above Sea. ft.	RAINFALL OF MONTH.	
					Aver. 1875— 1909. in.	1916. in.
Camden Square.....	London.....	51 32	0 8	111	2'28	2'19
Tenterden.....	Kent.....	51 4	*0 41	190	2'03	2'36
Arundel (Patching).....	Sussex.....	50 51	0 27	130	2'13	2'98
Fordingbridge (Oaklands)...	Hampshire.....	50 56	1 38	135	1'93	2'45
Oxford (Magdalen College)...	Oxfordshire.....	51 45	1 15	186	2'27	1'61
Wellingborough (Swanspool)...	Northampton.....	52 18	0 41	155	2'14	1'69
Bury St. Edmunds (Westley)...	Suffolk.....	52 15	*0 40	226	2'21	2'21
Geldeston [Beccles].....	Norfolk.....	52 27	*1 31	38	1'77	...
Polapit Tamar [Launceston]...	Devon.....	50 40	4 22	315	2'18	1'67
Rousdon [Lyme Regis].....	".....	50 41	3 0	516	2'18	1'68
Stroud (Field Place).....	Gloucestershire..	51 44	2 13	226	2'43	1'81
Church Stretton (Wolstaston)...	Shropshire.....	52 35	2 48	800	2'59	2'42
Boston.....	Lincolnshire.....	52 58	0 1	11	1'95	2'65
Worksop (Hodsock Priory)...	Nottinghamshire	53 22	1 5	56	2'06	1'83
Mickleover Manor.....	Derbyshire.....	52 54	1 32	280	2'55	1'69
Macclesfield.....	Cheshire.....	53 15	2 7	501	2'85	3'13
Southport (Hesketh Park)...	Lancashire.....	53 39	2 59	38	2'26	2'10
Arnccliffe Vicarage.....	Yorkshire, W.R.	54 8	2 6	732	3'63	...
Goldsborough Hall.....	".....	54 0	1 25	119	2'22	1'98
Hull (Pearson Park).....	"..... E.R.	53 45	0 20	6	2'09	3'05
Newcastle (Town Moor).....	Northumberland	54 59	1 38	201	2'04	2'03
Borrowdale (Seathwaite)...	Cumberland.....	54 30	3 10	423	6'94	7'22
Cardiff (Ely).....	Glamorgan.....	51 29	3 13	53	2'55	4'28
Haverfordwest.....	Pembroke.....	51 48	4 58	90	2'74	2'16
Aberystwyth (Gogerddan)...	Cardigan.....	52 26	4 1	83	2'97	2'80
Llandudno.....	Carnarvon.....	53 20	3 50	72	1'97	2'24
Cargen [Dumtries].....	Kirkcudbright...	55 2	3 37	80	2'84	1'95
Marchmont House.....	Berwick.....	55 44	2 24	498	2'38	2'08
Girvan (Pinmore).....	Ayr.....	55 10	4 49	207	3'04	2'68
Glasgow (Queen's Park).....	Renfrew.....	55 53	4 18	144	2'41	...
Islay (Ballabus).....	Argyll.....	55 47	6 15	68	2'80	1'60
Mull (Quinish).....	".....	56 34	6 13	35	3'30	2'13
Balquhiddier (Stronvar).....	Perth.....	56 21	4 23	422	4'07	2'45
Dundee (Eastern Necropolis)...	Forfar.....	56 28	2 57	199	2'06	2'89
Braemar.....	Aberdeen.....	57 0	3 24	1114	2'18	2'19
Aberdeen (Cranford).....	".....	57 8	2 7	120	2'02	4'57
Gordon Castle.....	Moray.....	57 37	3 5	107	2'13	6'08
Drumnadrochit.....	E. Inverness.....	57 20	4 29	138	2'26	4'75
Fort William.....	".....	56 49	5 6	171	3'77	1'84
Loch Torridon (Bendamph)...	W. Ross.....	57 32	5 32	20	4'07	5'43
Dunrobin Castle.....	Sutherland.....	57 59	3 56	14	2'10	2'99
Killarney (District Asylum)...	Kerry.....	52 4	9 31	178	2'92	3'24
Waterford (Brook Lodge)...	Waterford.....	52 15	7 7	104	2'79	3'39
Nenagh (Castle Lough).....	Tipperary.....	52 54	8 24	120	2'70	3'03
Ennistymon House.....	Clare.....	52 57	9 18	37	3'18	2'84
Gorey (Courtown House).....	Wexford.....	52 40	6 13	80	2'59	2'30
Abbey Leix (Blandsfort).....	Queen's County..	52 56	7 17	532	2'58	3'00
Dublin (Fitz William Square)...	Dublin.....	53 21	6 14	54	2'00	2'36
Mullingar (Belvedere).....	Westmeath.....	53 29	7 22	367	2'72	2'73
Crossmolina (Enniscoe).....	Mayo.....	54 4	9 16	74	3'17	2'76
Cong (The Glebe).....	".....	53 33	9 16	112	3'18	2'57
Collooney (Markree Obsy.)...	Sligo.....	54 11	8 27	127	3'11	3'19
Seaforde.....	Down.....	54 19	5 50	180	2'88	2'35
Ballymena (Harryville).....	Antrim.....	54 52	6 13	150	2'89	2'30
Omagh (Edenfel).....	Tyrone.....	54 36	7 18	280	2'82	2'36

RAINFALL TABLE FOR JUNE, 1916—continued.

RAINFALL OF MONTH (con.)					RAINFALL FROM JAN. 1.				Mean Annual 1875-1909.	STATION.
Diff. from Av. in.	% of Av.	Max. in 24 hours. in.	No. of Days	Date.	Aver. 1875-1909. in.	1916. in.	Diff. from Aver. in.	% of Av.		
- '09	96	'34	10	16	10'96	14'81	+3'85	135	25'11	Camden Square
+ '33	116	'42	26	15	11'44	14'84	+3'40	130	27'64	Tenterden
+ '85	140	'61	4	16	12'46	17'08	+4'62	137	30'48	Patching
+ '52	127	'48	10	14	13'04	15'39	+2'35	119	31'06	Fordingbridge
- '66	71	'26	11	16	10'60	14'37	+3'77	136	24'58	Oxford
- '45	79	'26	8	19	11'22	13'94	+2'72	124	25'20	Swanspool
'00	100	'47	12	16	10'76	14'80	+4'04	137	25'40	Westley
...	...	...	...	...	9'61	...	...	...	23'73	Geldeston
- '51	77	'34	29	18	15'88	17'45	+1'57	110	38'27	Polapit Tamar
- '50	77	'40	27	13	14'33	15'00	+ '67	105	33'54	Rousdon
- '62	74	'45	11	17	13'08	15'27	+2'19	117	29'81	Stroud
- '17	93	'90	4	15	14'30	16'27	+1'97	114	32'41	Wolstaston
+ '70	136	'47	9	18	9'86	15'01	+5'15	152	23'35	Boston
- '23	89	'73	29	15	10'80	13'40	+2'60	124	24'46	Hodsock Priory
- '86	66	'48	4	15	11'77	16'76	+4'99	143	26'65	Mickleover
+ '28	110	1'37	4	14	14'76	18'17	+3'41	123	34'73	Macclesfield
- '16	93	'76	4	13	12'96	13'29	+ '33	103	32'70	Southport
...	...	...	...	...	27'22	...	...	...	61'49	Arncliffe
- '24	89	'90	4	17	11'93	14'25	+2'32	120	27'29	Goldsborough Hall
+ '96	146	'55	10	15	11'08	14'60	+3'52	132	26'42	Hull
- '01	100	'31	24	18	11'55	13'60	+2'05	118	27'94	Newcastle
+ '28	104	1'69	4	14	56'38	66'20	+9'82	117	129'48	Seathwaite
+1'73	168	'84	4	21	17'22	23'34	+6'12	136	42'28	Cardiff
- '58	79	'44	4	13	19'45	17'84	-1'61	92	46'81	Haverfordwest
- '17	94	'78	4	15	18'12	23'03	+4'91	127	45'46	Gogerddan
+ '27	114	'50	6	15	12'37	15'53	+3'16	125	30'36	Llandudno
- '89	69	'35	1	17	19'06	21'48	+2'42	113	43'47	Cargen
- '30	87	'78	24	14	14'38	18'73	+4'35	130	33'76	Marchmont
- '36	88	'60	1	17	21'10	24'32	+3'22	115	49'77	Girvan
...	...	...	...	...	15'51	...	...	...	35'97	Glasgow
-1'20	57	'38	3	15	20'39	27'01	+6'62	132	48'79	Eallabus
-1'17	65	'62	3	13	23'55	22'14	-1'41	94	56'57	Quinish
-1'62	60	'55	22	10	33'41	40'94	+7'53	123	73'77	Stronvar
+ '83	140	'86	24	15	12'02	15'36	+3'34	129	28'64	Dundee
+ '01	100	'35	6	17	15'15	21'31	+6'16	140	34'93	Braemar
+2'55	226	1'29	24	20	14'02	15'49	+1'47	111	32'73	Aberdeen
+3'95	285	1'31	24	18	12'27	20'08	+7'81	164	30'34	Gordon Castle
+2'49	210	'81	24	18	16'05	27'80	+11'75	174	36'13	Drumnadrochit
-1'93	49	'40	24	18	33'79	39'35	+5'56	117	75'80	Fort William
+1'36	134	1'31	6	18	37'55	46'17	+8'62	123	83'93	Bendamp
+ '89	142	'78	24	14	14'28	19'32	+5'04	135	31'90	Dunrobin Castle
+ '32	111	'50	30	18	24'87	27'09	+2'22	109	54'81	Killarney
+ '60	122	'68	21	16	17'40	18'24	+ '84	105	39'57	Waterford
+ '33	112	'56	3	17	17'51	20'58	+3'07	118	39'43	Castle Lough
- '34	89	'85	3	14	19'67	23'33	+3'66	118	46'52	Ennistymon
- '29	89	'48	30	15	15'42	17'67	+2'25	115	34'99	Courtown Ho.
+ '42	116	'63	14, 30	14	15'34	19'43	+3'59	123	35'92	Abbey Leix
+ '36	118	'63	30	18	12'15	17'00	+4'85	140	27'68	Dublin
+ '01	100	'65	3	14	16'01	21'64	+5'63	135	36'15	Mullingar
- '41	87	'68	22	15	23'38	28'92	+5'54	124	52'87	Ennisceoe
- '61	81	'48	3	17	21'41	25'31	+3'90	118	48'90	Cong
+ '08	103	'39	3	17	18'83	24'34	+5'51	130	42'71	Markree
- '53	82	'37	3	14	17'42	19'44	+2'02	112	38'91	Seaforde
- '59	80	'60	1	16	18'09	23'29	+5'20	129	40'84	Ballymena
- '46	84	'45	22	15	17'10	21'71	+4'61	127	39'38	Omagh

SUPPLEMENTARY RAINFALL, JUNE, 1916.

Div.	STATION.	Rain inches.	Div.	STATION.	Rain inches.
II.	Warlingham, Redvers Road ..	3.87	XI.	Lligwy	1.28
„	Ramsgate	1.72	„	Douglas	2.79
„	Hailsham	2.93	XII.	Stoneykirk, Ardwell House ..	2.02
„	Totland Bay, Aston House ..	2.27	„	Carsphain Shiel	3.99
„	Stockbridge, Ashley	1.86	„	Beattock, Kinnelhead	2.56
„	Grayshott	2.38	„	Langholm, Drove Road ..	2.88
III.	Harrow Weald, Hill House ..	3.09	XIII.	Selkirk, The Hangingshaw ..	1.68
„	Pitsford, Sedgebrook	1.23	„	North Berwick Reservoir ..	3.47
„	Woburn, Milton Bryant	2.97	„	Edinburgh, Royal Observatory.	3.01
„	Chatteris, The Priory	1.94	XIV.	Maybole, Knockdon Farm ..	1.55
IV.	Elsenham, Gaunts End	2.71	XV.	Buchlyvie, The Manse	2.11
„	Shoeburyness	1.72	„	Ballachulish House	3.27
„	Chester, Hill Ho., Lexden ..	2.65	„	Oban	2.25
„	Ipswich, Rookwood, Copdock ..	3.72	„	Campbeltown, Witchburn ..	1.41
„	Aylsham, Rippon Hall	3.70	„	Holy Loch, Ardnadam	2.85
„	Swaffham	2.26	„	Tiree, Cornaigmore	1.02
V.	Bishops Cannings	2.46	XVI.	Dollar Academy .....	...
„	Wimborne, St. John's Hill ..	2.22	„	Glenlyon, Meggernie Castle ..	2.93
„	Ashburton, Druid House	2.77	„	Blair Atholl	1.55
„	Cullompton	2.77	„	Coupar Angus	2.38
„	Lynmouth, Rock House	1.76	„	Montrose, Sunnyside Asylum.	3.66
„	Okehampton, Oaklands	2.54	XVII.	Alford, Lynturk Manse	3.85
„	Hartland Abbey	1.83	„	Fyvie Castle	5.58
„	Probus, Lamellyn .....	...	„	Keith Station	7.17
„	North Cadbury Rectory	1.89	XVIII.	Rothienurachus	4.07
VI.	Clifton, Stoke Bishop	3.53	„	Loch Quoich, Loan	5.05
„	Ledbury Underdown	1.80	„	Skye, Dunvegan	2.81
„	Shifnal, Hatton Grange	1.50	„	Lochmaddy, Bayhead .....	...
„	Droitwich	1.81	„	Fortrose	4.24
„	Blockley, Upton Wold	2.07	„	Glencarron Lodge	4.78
VII.	Grantham, Saltersford	1.47	XIX.	Altnaharra	5.13
„	Market Rasen	2.98	„	Melvich	4.01
„	Bawtry, Hesley Hall	1.26	„	Loch More, Achfary	7.11
„	Derby, Midland Railway	1.28	XX.	Dunmanway, The Rectory ..	2.77
„	Buxton	3.82	„	Glanmire, Lota Lodge	2.66
VIII.	Nantwich, Dorfold Hall	1.91	„	Mitchelstown Castle	2.64
„	Chatburn, Middlewood	2.75	„	Darrynane Abbey .....	...
„	Lancaster, Strathspey	2.38	„	Clonmel, Bruce Villa	2.84
IX.	Langsett Moor, Up. Midhope ..	2.54	„	Broadford, Hurdlestown	3.38
„	Scarborough, Scalby	2.26	XXI.	Enniscorthy, Ballyhyland ..	3.53
„	Ingleby Greenhow	2.17	„	Rothnen, Clonmannon	2.00
„	Mickleton	2.50	„	Ballycumber, Moorock Lodge ..	...
X.	Bellingham, High Green Manor ..	3.32	„	Balbriggan, Ardgillan	2.47
„	Ilderton, Lilburn Cottage	2.76	„	Castle Forbes Gardens	2.46
„	Thirlmere, The Bank	3.58	XXII.	Ballynahinch Castle	3.13
XI.	Llanfrehfa Grange	3.32	„	Woodlawn	2.81
„	Treherbert, Tyn-y-waun	5.82	„	Westport, St. Helens	3.13
„	Carmarthen, The Friary	3.28	„	Dugort, Slievemore Hotel	4.94
„	Fishguard, Goodwick Station ..	1.85	XXIII.	Enniskillen, Portora	3.13
„	Crickhowell, Tal-y-maes	3.50	„	Dartrey [Cootehill]	2.45
„	New Radnor, Ednol	2.41	„	Warrenpoint, Manor House ..	2.30
„	Birmingham WW., Tyrmynydd ..	3.01	„	Belfast, Cave Hill Road	2.30
„	Lake Vyrnwy .....	...	„	Glenarme Castle .....	...
„	Llangynhafal, Plas Drâw	1.34	„	Londonderry, Creggan Res ..	2.66
„	Dolgelly, Bryntirion	3.72	„	Dunfanaghy, Horn Head	1.90
„	Bettws-y-Coed, Tyn-y-bryn ..	2.78	„	Killybegs	3.78

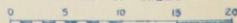
THAMES VALLEY RAINFALL — JUNE, 1916.



ALTITUDE
SCALE

Below 250 feet 250 to 500 feet 500 to 1000 feet Above 1000 feet

SCALE OF MILES



THE WEATHER OF JUNE.

THE characteristic features of the weather of June, speaking generally, were an exceptionally low mean temperature, scanty sunshine, and moderate precipitation. The mean temperature was low everywhere, the general value for the whole country being $3^{\circ}\cdot6$ F. under the average, the defect being greatest $4^{\circ}\cdot5$ in the south-east of England and $4^{\circ}\cdot3$ in the midlands, and least $2^{\circ}\cdot5$ in the north of Scotland, and $2^{\circ}\cdot9$ in the south of Ireland. Nowhere did the temperature, except in one or two favoured localities, exceed the normal for the month for even a few days, and the absence of high maxima was a noticeable feature. Until after the middle of the month maximum readings over 70° were practically absent, and the absolute maximum of the month nowhere exceeded 75° , which was the value recorded at Little Massington on the 25th, and at Killarney on the 15th. Until about the 24th the exposed thermometer in many districts fell frequently below the freezing point, and even frost in shade was not uncommon. Winds from the north and east were frequent, and were often associated with low pressure areas over the North Sea. The cyclonic centres were particularly well developed on the 2nd, 5th to 10th, 12th, 13th and 24th. On no occasion, however, were these depressions associated with general gales, strong winds being of brief duration and restricted to the more exposed parts of our coasts.

In a month characterised by such a monotonous uniformity of cold, cheerless weather, it is desirable to generalise instead of giving a running commentary of the weather conditions from day to day. For this reason our usual method of treating the data in this manner is dispensed with.

Sunshine was very scanty in most parts, the daily deficit being nearly three hours in the east of Scotland, and over two and a half hours in the eastern part of England. On the other hand in the west of Scotland, and north of Ireland the deficiency was slight, and in the south of Ireland there was a daily excess of about half an hour. Expressed as a percentage of the possible the amount varied from 42 per cent. in the Channel Islands and 40 per cent. in the south of Ireland to 18 per cent. in Scotland north and 20 per cent. in Scotland east. The weather was exceptionally dull on the whole eastern and south-eastern coast, where less than a quarter of the possible was recorded, but relatively sunny conditions prevailed in the west. The durations at individual stations were as follows :—Haverfordwest, 227 hours ; Totland Bay, 200 hours ; Sidmouth, 193 hours ; Southport, 185 hours ; Paisley, 176 hours ; Camden Square, 138 hours ; Copdock, 134 hours ; Perth, 132 hours ; Bolton, 127 hours ; Swinton, 119 hours ; Loch More, 94 hours ; Hull, 88 hours.

Rainfall in general was under the average, particularly on the west and south coasts of the whole country. For the third month in succession a marked deficit prevailed from the Isle of Wight to Torquay, where a narrow strip contiguous to the coast, had less than two inches. Some places on the west of Scotland and in Co. Antrim had also less than two inches. The month was very wet in the north and north-east of Scotland, particularly in Banff and Aberdeenshire, where some stations had three times the normal. The west coast areas where the heaviest rains are usually experienced had all less than their average fall. A dry spell lasting ten days prevailed pretty generally from about the 10th to the 20th, and heavy daily falls were uncommon.

In the Thames Valley more than three inches fell around Cirencester, Brackley, and on the Chilterns and North Downs, and slightly under two inches in the Thames Estuary and in the Wey Valley.

The general rainfall expressed as a percentage of the average was :—England and Wales, 101 per cent. ; Scotland, 112 ; Ireland, 97 ; British Isles, 103 per cent. In London (Camden Square) the mean temperature was $55\cdot7$ or $4\cdot4$ below the average. Duration of rainfall, $30\cdot3$ hours. Evaporation, $2\cdot20$ in.

Climatological Table for the British Empire, January, 1916.

STATIONS. (Those in italics are South of the Equator.)	Absolute.				Average.				Absolute.		Total Rain		Aver.
	Maximum.		Minimum.		Max.	Min.	Dew Point.	Humidity.	Max. in Sun.	Min. on Grass.	Depth.	Days.	
	Temp.	Date.	Temp.	Date.									
London, Camden Square	57.2	1	32.2	23	59.7	40.7	41.9	87	75.7	26.8	1.30	13	7.1
Malta	61.7	9	48.1	15	58.7	52.0	...	86	108.0	...	3.42	5	2.2
Lagos	90.3	25	65.4	8	87.8	73.8	70.4	71	140.2	61.0	.06	1	6.3
Cape Town	100.0	25	54.1	19	79.5	61.4	56.8	64	...	...	.43	3	3.4
Johannesburg	86.0	28	46.8	21	76.6	55.6	54.2	75	...	46.5	4.37	9	4.8
Mauritius	87.3	5, 24	69.3	6	83.8	73.4	71.2	80	...	60.4	11.36	27	7.7
Bloemfontein	92.6	29	45.2	21	83.9	57.1	52.1	55	...	...	3.97	10	1.8
Calcutta	82.9	22	49.4	6, 7	77.6	54.9	53.1	64	...	37.7	.00	00	1.1
Bombay	88.7	13	64.5	3	84.2	69.3	64.9	68	136.5	46.4	.00	0	0.6
Madras	86.5	30	62.6	19	85.1	66.4	64.7	71	152.3	58.4	.04	1	2.1
Colombo, Ceylon	90.5	21	64.3	8	87.2	69.4	66.2	71	162.0	56.1	.31	2	2.2
Hongkong	75.1	2	39.3	24	65.5	56.3	52.4	72	...	...	4.08	7	5.2
Sydney	97.0	11	61.0	30	80.7	66.4	60.8	65	156.2	49.2	1.47	7	5.1
Melbourne	104.2	16	50.0	26	78.5	58.2	58.2	57	160.0	39.1	4.42	10	4.9
Adelaide	107.5	5	48.8	12	86.3	61.5	52.6	44	168.4	42.6	.70	5	3.6
Perth	97.3	19	51.9	6	80.9	62.4	56.2	58	169.0	44.0	1.19	8	4.3
Coolgardie	104.0	13	50.8	9	89.6	61.9	51.9	41	157.2	43.0	1.36	7	2.4
Hobart, Tasmania	95.4	23	44.0	26	70.2	53.7	50.2	65	151.2	35.0	5.22	11	6.0
Wellington	85.0	30	47.8	10	70.2	57.2	53.4	69	138.6	36.6	.58	7	6.4
Auckland	78.0	21	53.0	1, 9	71.8	59.3	58.4	79	155.0	48.0	2.04	15	5.5
Jamaica, Kingston	87.9	2	64.1	23	85.9	67.1	65.7	72	...	...	.09	2	...
Grenada	86.0	27	70.0	*	82.0	72.0	...	75	135.0	...	4.20	24	2.5
Toronto	53.2	31	0.9	14	37.2	23.0	24.4	85	...	...	...	...	...
Fredericton	47.0	22, 23	15.0	19	26.7	5.8	12.3	81	...	...	2.43	15	5.2
St. John, N.B.	44.9	22	9.0	18	29.0	12.0	18.2	71	...	9.0	2.80	18	5.2
Alberta, Edmonton ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...
Victoria, B.C.	47.8	22	15.0	11	33.8	25.2	24.0	76	100.0	10.5	4.21	15	7.0

* Various.

Johannesburg.—Bright sunshine, 277.0 hours.*Mauritius.*—Mean temp. 1°.4 above, dew point 1°.1 below, and R 3.60 in. above averages.

COLOMBO, CEYLON.—Mean temp 78°-3, or 0°-6 below, dew point 3°-5 below, and R 2.64 in. below, averages. Mean hourly velocity of wind, 7.2 miles.

HONGKONG.—Mean temp. 60°-7, mean hourly velocity of wind 10.6 miles. Bright sunshine 170.9 hours.

Melbourne.—Mean temp. 1°-0 above and R 2.61 in. above, averages*Adelaide.*—Mean temp. 0°-2 above and R .02 in. below, averages*Perth*—Rainfall in excess of average.*Coolgardie.*—Temp. 1°-6 below and R above averages.*Hobart.*—Rainfall 3.47 in. above averages.*Wellington.*—Mean temp. 0°-8 above, and R 2.88 in. below, averages Bright sunshine 263.5 hours; T and L and H on 3rd,*Auckland*—Bright sunshine 197.5 hours.