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EXTREMES OF TEMPERATURE IN LONDON AND ITS NEIGHBOURHOOD FOR 104 YEARS.

ON February 10th the shade temperature at Camden Square rose to 64°·8; this was much above any temperature previously recorded in February, either at Camden Square or at Greenwich, for at least fifty years.

It led us to look farther back, and finally we have prepared the following little table, which we hope will be generally acceptable.

Absolute Maxima.

Reference.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
A	57°·7 1843	61°·0 1821	66°·0 1803 1820 1822	77°·0 1807	84°·0 1807	87°·5 1826	93°·5 1808	89°·0 1800	83°·0 1810	75°·0 1802	63°·0 1821	58°·0 1821
B	57·0 1843	62·3 1846	71·5 1848	81·5 1865	87·0 1868	94·5 1858	97·1 1881	94·2 1884	92·1 1868	81·0 1859	67·3 1847	62·4 1848
C	56·4 1877	62·5 1868	70·1 1858	81·4 1865	87·6 1868	92·6 1858	94·6 1881	93·6 1893	91·0 1868	80·9 1859	63·9 1894	58·9 1888

Absolute Minima.

A	7·0 1795	17·7 1830	23·0 1800	27·0 1808	31·0 1802	40·0 1797 1802	44·5 1796	45·4 1839	37·0 1824	30·0 1796 1810 1836	23·8 1827	4·0 1796
B	4·0 1841	7·7 1845	13·1 1845 1890	23·0 1847	28·1 1877	35·6 1869	38·7 1863	38·1 1864	30·6 1885	24·7 1890	18·3 1890	8·0 1860
C	6·7 1867	7·3 1895	15·6 1890	24·5 1859	28·4 1892	35·6 1869	40·3 1863	38·2 1864	33·0 1872	23·8 1890	20·1 1858	6·7 1860

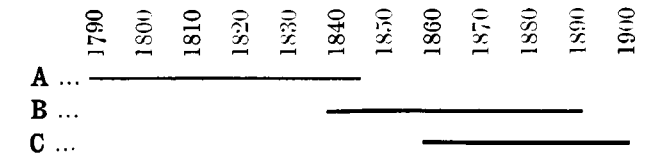
A. Royal Society, Somerset House, 1794–1843, by J. Glaisher, F.R.S., *Phil. Trans.*, 1850.

B. Royal Observatory, Greenwich, 1841–90, *Reduction of Greenwich Meteor. Obs.*, Part III.

C. Camden Square, 1858–97 abstracts in *Met. Mag.*, XXXIII.

The foregoing is probably sufficiently clear to need no explanation, but we will add a few words of comment by way of conclusion.

It will be noticed that the three records combined cover more than a century—roughly as is indicated by these lines :—



Except during January, the maxima given by series **A** are in every month lower than those for **B** or **C**; and, except in December, the minima are always higher—that is to say, the range of temperature shown by the **A** record is considerably less than at **B** and **C**. This might be due to an increase in the variability of climate, but it is probably really due to one or more of the following causes :—(1) The thermometers at **A** were suspended outside a window on the N. front, and on the first floor, of Somerset House, a cool position during the hot part of the day ; (2) The position in the very centre of London would be much warmer at night than in the open country; (3) From 1794 to 1841 the patterns of registering thermometers were inferior to those now in use.

We therefore think that the difference is not due to any real change in climate, but to difference in mode of observation.

The extremes for **B** and **C** agree very closely, but **B** (Greenwich) is hotter on very hot summer days. Whether this is real or due to the limited space hitherto allowed for meteorological purposes will, we believe, soon be shown by the records from the new station in Greenwich Park.

In any future table, carried down to date, the max. values for February will have to be for Greenwich **B 63°·9** in 1899 instead of **62°·3** in 1846, and for Camden Square **C 64°·8** in 1899 instead of **62°·5** in 1868.

FLOODS IN JANUARY, 1899.

WE take it as a compliment that directly a word is wrong in these pages somebody writes to point it out. On page 5 of the last number, in the second line of the second paragraph, we stated, on the authority of several newspapers, that "A few houses were invaded at ETON, WINDSOR and EGHAM, and boats, &c." We are informed that *no* house in ETON or WINDSOR was flooded. Accepting this correction, it seems to us to strengthen the arguments at the beginning and end of the sentence. We understand that the level was 2 ft. 5 in. below that reached in 1897.

We shall be glad to be favoured with any details of damage by these floods, and photographs showing their extent.

ROYAL METEOROLOGICAL SOCIETY.

THE monthly meeting of this Society was held on Wednesday evening, February 15th, at the Institution of Civil Engineers, Mr. F. C. Bayard, LL.M., President, in the chair.

PHENOLOGICAL REPORT.

Mr. E. Mawley read his annual report on the Phenological Observations, and stated that the weather of 1898, taken as a whole, had been throughout the British Isles very warm and dry. Wild plants blossomed much in advance of their average dates until about the end of March, but after that time, until the close of the flowering season, they were mostly late in coming into bloom. Favoured by the rains in May, the crop of hay was everywhere a remarkably heavy one, but the long drought which followed dried up the pastures and caused a scanty yield of roots. The dry season suited the cereals admirably, and especially the wheat, of which there was a very abundant crop. The yield of barley was nearly as exceptional, while that of oats, except in the north-east of England, and in Scotland, was also unusually good. There was a splendid crop of potatoes in Ireland and in parts of Scotland, but elsewhere the yield was moderate. Apples, pears and plums flowered abundantly, but adverse weather conditions, and the dry sub-soil in the spring, caused an irregular "set" of fruit; so that in all parts of the Kingdom these crops were, as a rule, below average. On the other hand there were good crops of all the smaller fruits.

CIRCULATION OF THE ATMOSPHERE.

A paper by Prof. W. M. Davis, of Harvard University, U.S.A., on "The Circulation of the Atmosphere," was read by the Secretary. The author said that the circulation of the atmosphere is ordinarily inadequately treated, inasmuch as the serious student seldom gains from the text-books in current use a comprehensive view of this great problem. After giving a brief historical development of the subject, the author went more particularly into the question of the outflowing polar winds, especially in the Antarctic regions. He called attention to the remarks made by Dr. Buchan, at the conference on the "Scientific Advantages of an Antarctic Expedition," held at the Royal Society last year, and maintained that Prof. W. Ferrel's views on the circulation of the atmosphere, as far as they touch Antarctic winds and pressure, had been misunderstood. Prof. Davis said that the convectional circulation of the atmosphere, as ordinarily stated was seriously incompetent, for the most striking features in the distribution of atmospheric pressure are not accounted for by it. As long as the effect of the winds in modifying the distribution of pressure is left out of consideration, no broad understanding of atmospheric processes can be reached.

ON A RECENT RECURRENCE IN WEATHER.

To the Editor of the Meteorological Magazine.

SIR,—One often finds weather curiously repeated—a recurrence of the same kind of weather, time after time, at about the same intervals, for a limited period. It is well, I think, to note such recurrence, if at all frequent or persistent. It sometimes throws light on the way in which certain popular beliefs about weather may have arisen. Sometimes it may afford a presumption as to coming weather. As to causation, this may be quite obscure; but the meteorologist does well to remember the possibility of some influence, (terrestrial or cosmic) on weather, being at one time apparent, at another masked by some other influence.

The following facts and figures relate to the last eight months (July, 1898, to February, 1899). Consider each week, or group of seven days, having a day of new moon central, and the same for full moon; tabulate for each of these days the plus or minus value of mean temperature (from the Greenwich tables); next add the values for each seven-day group, and take the averages. Also note the numbers of plus and minus values in each group. Thus we have these tables:—

NEW MOON. Days.	Sum of differences from aver.	Average difference.	+ cases.	− cases.
	°	°		
1. July 18	+ 8·5	+ 1·2	4	3
2. Aug. 17	+54·2	+ 7·7	7	—
3. Sep. 16	+49·4	+ 7·1	6	1
4. Oct. 15	+ 8·7	+ 1·2	4	3
5. Nov. 14	+43·9	+ 6·3	7	—
6. Dec. 13	+55·4	+ 7·9	7	—
7. Jan. 11	+49·2	+ 7·0	7	—
8. Feb. 10	+83·1	+11·9	7	—
	Sums.....	+50·3	49	7
FULL MOON. Days.	Average	+ 6·3		
1. July 3	— 5·1	— 0·7	3	4
2. Aug. 2	+ 2·7	+ 0·4	4	3
3. ,, 31	+ 7·9	+ 1·1	3	4
4. Sep. 29	—12·3	— 1·8	—	7
5. Oct. 29	+41·4	+ 5·9	6	1
6. Nov. 28	+ 4·2	+ 0·6	3	4
7. Dec. 27	+33·4	+ 4·8	5	2
8. Jan. 26	—15·3	— 2·2	1	6
9. Feb. 25	—21·5	— 3·1	2	5
	Sums	+ 5·0	27	36
	Average	+ 0·6		

The greater warmth generally in weeks about new moon is thus apparent. Excepting Nos. 5 and 7 in the full moon table, all the

values of the latter in the "average difference" column are *under* the lowest value in the other table.

I give these facts as I find them, and do not affirm lunar influence in the case, especially as the data for some time previous to July do not apparently yield a like result. Still, the facts seem worth consideration by those who think the idea of the moon having anything to do with our weather is quite exploded.

It remains to be seen how much further the correspondence in question will be traceable.—Yours faithfully,

ALEX. B. MACDOWALL.

[Has the author been reading Webster's *Recurring Atmospheric Periods*, 1857? if not, it is curious that he should use the word so often.—ED.]

WILL-WI'-THE-WISP.*

THE phenomenon known as "will-o'-the-wisp" appears so rarely that its existence has been doubted by some scientists. It is observed most frequently in graveyards and in muddy channels. In graveyards, where the gas escapes from the soil, without traversing a layer of water, the will-o'-the-wisp takes the form of a long flame; in the water the gas escapes in bubbles that take fire on reaching the air, producing, when the air is calm, white wreaths of phosphoric anhydride. These phenomena can be reproduced artificially with all their characteristics by burying in moist soil, or by throwing into the water, some calcium phosphide, a substance prepared by causing phosphorus vapour to pass over red-hot lime. Under the action of the water, the phosphide gives off the gases hydrogen and hydrogen phosphide, which inflame spontaneously on coming into contact with the oxygen of the air. The white rings are due to the combustion of the phosphorus, which gives rise to phosphoric anhydride, a white powder that takes the form of wreaths. The formation of wreaths is due solely to the issue of smoke through the circular opening made by the bubble in issuing from the water. All smoke while escaping suddenly through a circular hole forms similar wreaths.

I had occasion, during the months of August and September last, to observe some very numerous and intense will-o'-the-wisps in the port of Croisic (Loire-Inférieure). During several evenings, especially about the middle of August, the production of will-o'-the-wisps became so abundant and manifested itself with so much energy that the phenomen was noticed by all the bathers and sailors on the quays. The sailors were particularly astonished, for these will-o'-the-wisps were entirely new to them. The captain of the port of Croisic, although he had lived many years in the place, said that this was the first time in his life that he had ever seen these singular lights. It is unnecessary to add that both bathers and sailors gave the most fantastic explanations of the phenomenon. I owe it to the truth to confess that at first I

* For personal testimony as to this phenomenon see also *Met. Mag.*, Vol. XV. (1880), p. 156.

thought it was the trick of some chemist, who was amusing himself by throwing into the sea sticks of calcium phosphide; but this hypothesis was not admissible. The bubbles were so large that to produce them there would have been required sticks of huge dimensions, not found in commerce. Besides, the will-o'-the-wisps reappeared every evening and over a considerable extent of water, so that it would have been necessary to undergo a large expense, quite disproportionate to a simple practical joke. I never saw anyone throw the smallest object into the sea. Finally, all my doubts were removed by the fact that the bubbles of gas, which were very large in August, during the season of thunderstorms, became smaller and smaller during September as the temperature fell. Towards September 20, when the phenomenon ceased, only very small bubbles appeared, though perhaps they were more numerous and scattered over a very great surface. It was then necessary to conclude that the productive cause of the phosphuretted hydrogen underwent variations corresponding to the changes of temperature and electric state of the atmosphere. Just as certain ferments decompose mineral and organic bodies rich in sulphur and produce sulphuretted hydrogen, so there must exist in the waters of the port of Croisic ferments hitherto unknown, capable of decomposing phosphates and organic substances rich in phosphorus, setting free phosphuretted hydrogen. Now we know how atmospheric conditions act on ferments. On certain days, especially during thunderstorms, milk sours with prodigious rapidity, and meat also spoils in a few hours.

I will close by giving some details regarding the production of the will-o'-the-wisps. These were very large and reproduced on a large scale the well-known experiment of bubbles of phosphuretted hydrogen obtained by the action of water on calcium phosphide. I observed plainly the formation of the white fumes of phosphoric anhydride, and the characteristic odour of garlic. Wreaths were not produced, because of the constant agitation of the air. The bubbles occurred principally in the two basins that adjoin the fish market, whence the refuse is often cast into the water, especially the heads of sardines. They rose somewhat in all parts of these basins, but especially in certain localities where the tide would heap up the refuse. This part of the port of Croisic is very clean, and contains no mud. The bubbles sometimes reached an enormous size. I saw flashes so bright that the whole port was illuminated as if by lightning. I noticed sometimes, but quite rarely, regular series of bubbles in a straight line, as if the substance from which the bubbles were escaping were carried along by the current. Some persons, I should say, believed that the bubbles were due to the putrefaction of large jellyfish, then quite abundant. The production of the will-'o-the-wisps was coincident generally with the phosphorescence of the sea, another phenomenon quite distinct from it, and having quite another origin. I have, nevertheless, about the middle of September, seen will-o'-the-wisps when the sea presented no trace of phosphorescence.—Dr. M. A. Blunard, in *La Nature*.

REVIEWS.

Regen-karte der Provinz Schlesien mit erläuterndem text und tabellen in amtlichem auftrage bearbeitet von Prof. Dr. HELLMANN, Dietrich Reimer, Berlin 1899. Roy. 8vo, 24 pp., one coloured map.

IN the summer of 1887 the Roy. Meteor. Institute of Silesia distributed about 200 new rain gauges to various persons in that province. The present pamphlet deals almost exclusively with the results of these and other gauges during the decade 1888-97.

Silesia has a length N.W.—S.E. of about 200 miles and an average breadth of 80 miles, therefore its area is roughly 16,000 square miles, or about a seventh of that of the British Isles. Dr. Hellmann gives results for 294 stations which would, on the average, give about one station to each 50 square miles, but he does not give a map showing their positions, and it is, therefore, not easy for a foreigner to ascertain whether they are equably distributed. We agree with the author as to the desirability of placing only a few names on the map, but 300 small black dots would give valuable information and obscure nothing. We should have preferred to find the true mean printed over the site of each station, as in the map between pp. 22–23 of *Brit. Rain.*, 1897; or alternatively the coloured map (which is excellent) might be left as it is, each station in the table might have a consecutive number, and an outline map might be printed (uncoloured) from the same stone, and small rings containing the number might be placed over the site of each station.

We are quite ready to accept Dr. Hellmann's curves, but think that it is always well to produce the facts on which they are based.

The head line of the table on pp. 12–13 misled us, and may possibly mislead others. It is true that in the text it is stated "for Görlitz there is a continuous record for 50 years and that for some of the other stations the 50-year mean can be obtained by computation"; but still it seems to us rather misleading to head the column "50 years' mean" and in no way to indicate which are "observed" values and which "computed" ones, or on how many years the latter are based—the addition of three columns "Period observed," "Number of Years," "Mean observed," would have enabled one to realize the precise value to be attached to the subsequent columns. Apparently part of this information is given in Table II., but if so there is a good deal of "computing," for only one record is complete for the 50 years, one for 47, one for 40, two are for between 30 and 40, and all the others for 28 or less.

We have mentioned, as is our duty, points which seem to us weak, but wish as a whole to write of the pamphlet with warm approval; we do not remember one of equal size which gives so much all round information on the various details of rainfall. Mean annual fall (22 inches on the plains, 45 on the mountains) and the probable limits of its fluctuation, percentage falling in each month

(chiefly in summer—slight in winter, even on the mountains), greatest falls in individual months; also in days, hours, and even shorter periods—these are among the data given in this, which in many respects may be regarded as a pattern. Would that it were generally imitated.

Annuario storico meteorologico Italiano redatto dal P. GIUSEPPE BOFFITO Ba dell'Osservatorio di Moncalieri. Volume I. 1898. Torino, 1899. Post 8vo, 152 pages.

WE are glad to be able to offer a warm welcome to this annual. It is very good as far as it goes, and the Editor invites authors to send him copies of their works so that he may make it better. But we see no chance of it being ever possible to give in one small annual volume an abstract of *all* the works upon Meteorology published in the previous year—which is what Padre Boffito is attempting.

This little volume is divided into two parts. Part I. is entitled "Articles and Memoirs," and contains five:—(1) On the origin of the Magnetic Compass, and on some of its principal modifications; (2) On Sunspots and Terrestrial Magnetism; (3) Doni, a precursor of Galileo; (4) On an explanation of the star of the Magi, falsely attributed to Kepler; (5) On the Meteorology of Cecco [? 1260–1327 A.D.] as indicated by his *Acerba*.

Part II. is entitled "Bibliography," and is divided into two portions—Italian (notices of 135 works and occupying 64 pages) and Foreign (noticing 80 works and occupying 23 pages).

The articles in Part I. prove that in tracing the early history of Meteorology we may expect very valuable aid from Padre Boffito and the writers who are assisting him.

Part II. is, as we have already said, excellent as far as it goes; but evidence of the impossibility of this becoming more than a *contribution towards* a bibliography is afforded by the numbers quoted for Italy, and for the rest of the world. Italy has nearly twice the space, and nearly three times as many separate notices as all the rest of the world. If all the meteorological publications are to be noticed as fully as the Italian ones, instead of 23 pages, several hundred would be required. What is done is well done; but it serves chiefly to show how much more has to be accomplished.

Cloud Observations in Victoria, by P. BARACCHI, F.R.A.S., Government Astronomer, Melbourne. [Excerpt Report Australasian Assoc. for the Advance. of Science, 1898.] 8vo, 7 pages, 4 plates.

THE second report upon cloud work to reach us is this, which is merely a preliminary one, but interesting first, because it comes from nearly our antipodes and shows how widespread have been the efforts to carry out the proposals of the International Met. Com.,

and secondly, because the plates make it easy to follow the somewhat original methods employed at Melbourne.

In a few lines we can state only the general features of the method adopted. Two cameras were used—one at the Melbourne Observatory, the other at 6,820 ft. nearly due N. (N. 3° 38′ 51″ W.), on the roof of Parliament House. The cameras were extremely massive, made of heavy cast iron, built on stone columns, with the lens facing the zenith, and rigorously tested for precision in that respect. The dark slide was fitted in a massive brass frame running on a V-shaped groove, so that absolute identity of position for each plate was ensured.

When the 20,000 observations are all discussed, we expect to find that results of great excellence have been attained.

Annales de l'Observatoire Météorologique . . . . du Mont Blanc, par J. VALLOT. Tome III. 4to. Steinheil, Paris, 1898. xiv.-217 pages, map, and numerous illustrations.

AS regards contents, printing and illustrations, it is always a pleasure to read these sumptuous volumes, which embody the results of a devotion to science by the Vallot family which we are glad to see has been recognised by the French Government, who have given to M. J. Vallot the Cross of *Chevalier de la Légion d'honneur*; to his talented wife the decoration of *Officier d'Académie*, and to his brother, M. H. Vallot, that of *Officier de l'Instruction publique*. Rarely do three members of a family receive such recognition, but equally rare is it for a family to devote so much money and so much time to the prosecution of scientific work.

In noticing Tomes I. and II. we expressed our admiration of M. Vallot's vast and heroic undertaking; we need, therefore, merely refer to those reviews (Vol. XXX., p. 9, and XXXII., p. 42).

The contents of Vol. III. are—(1) Hourly temperatures at Chamonix 1,086 m. (3,563 ft.), Grands Mulets, 3,021 m. (9,911 ft.), and Bosses, 4,359 m. (14,301 ft.), with some very sensible remarks upon thermometer exposure for lofty stations; (2) Barometric means for the same stations; (3) Barometric diurnal range at the three stations; the disappearance at the high stations of the usual double maximum and minimum is very well illustrated by a series of diagrams; (4) Great barometric changes, *e.g.*, the effect at different altitudes due to the passage of cyclones. M. Vallot does not seem well satisfied with this part of the work, and we are inclined to take the same view. We should have tried the effect of representing the pressure at Chamonix by a straight line, and laying off the differences between it and the upper stations hour by hour. Perhaps M. Vallot did that, and did not find it a success.

The next section is very important, but too long for us to epitomize. It describes, and gives the results of, experiments in Chemical

Actinometry carried out synchronously at two stations by M. and by Madame Vallot respectively. It is an excellent piece of work, extremely suggestive and well thought out.

The two following sections report the progress of M. H. Vallot's trigonometrical survey of the Mont Blanc district, in preparation for his entirely new map on the scale of 3 inches to the mile. Subsequent ones deal with the state of the tunnel near the summit, of the temperature in it, and the density of the ice; another, illustrated by a dozen photo-blocks, deals with the erosion due to glacier action—but we must stop.

All who are fortunate enough to obtain a copy will join us in applying to it the one word—"charming."

Climate of Cuba, also a note on the weather of Manila, by W. F. R. PHILLIPS. Prepared under the direction of the Chief of the Weather Bureau. Washington, 1898. 23 pp., 8vo.

OUR American friends have lost no time in collecting and tabulating all the meteorological data that they could find in the splendid library of the Weather Bureau, respecting Cuba, and the outcome is a satisfactory little paper.

We greatly regret that one result of the recent struggle was the death of our valued correspondent, Mr. F. W. Ramsden, H.B.M. Consul at Santiago, who could have rendered great assistance in the preparation of this paper.

Dr. Phillips has, we think, done his work well, and we agree with him that for low lying places like Habana, 77° may very well be accepted as the mean annual temperature; Dove gave 77°·2 more than half a century since. Monthly mean temperature is rarely below 70° or above 84°; absolute max. reaches 80° in every month of the year and 95° every year; but happily there are usually low minima in winter, 55° to 50°, and once to 49°·6.

As regards total annual rainfall, Dr. Phillips gives 52 inches for Habana, but his other records are in no case for more than one year, and therefore tell us very little. November to April are the drier months, June to October wet, with rain on nearly half of the days.

Manila is hotter, its mean temperature is given as 80°, the max. goes to 100°, and the absolute min. is 60°. There is a mistake on page 22, where it says "The lowest reading recorded is 74°, and was observed in January." 74° was the *mean temperature* of the coldest month January, but both in January and in December temperatures of 60° have been recorded.

As regards both Cuba and Manila one of the first things for the U.S. authorities to do, is to start Sanatoria at high altitudes.

RESULTS OF METEOROLOGICAL OBSERVATIONS AT CAMDEN SQUARE FOR 40 YEARS, 1858–97.

FEBRUARY.

YEAR.	RAINFALL.				TEMPERATURE.										CLOUD.
	Total.		Max. Fall.	Falls of 1 in. or +	Dry Mean, 9a.&9p.	Wet Mean, 9a.&9p.	Shade Max		Shade Min		Sun Max. Black.		Grass Min.		
	Depth	Days					Abs.	Aver	Abs.	Aver	Abs.	Aver	Abs.	Aver	Aver
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	in.		in.		°	°	°	°	°	°	°	°	°	°	0-10
1858..	1·80	5	·60	0	34·7	33·7	52·1	41·3	24·4	30·2	..	..	..	..	5·2
1859..	1·23	15	·22	0	42·5	40·3	57·9	49·3	28·7	35·6	..	..	..	..	5·8
1860..	1·25	15	·41	0	35·4	33·6	52·4	41·2	23·2	30·3	..	..	21·4	29·4	5·3
1861..	1·93	12	·56	0	41·6	40·0	54·7	47·6	23·2	36·8	..	..	18·8	33·1	6·8
1862..	·31	5	·10	0	41·1	39·7	56·1	45·7	23·2	36·9	..	..	17·6	33·4	7·4
1863..	·67	8	·20	0	41·2	39·7	53·6	48·0	24·5	36·0	..	..	17·8	32·2	6·4
1864..	·85	11	·29	0	35·9	34·9	54·4	42·0	18·9	31·4	..	..	12·6	28·6	6·9
1865..	2·01	20	·42	0	37·0	35·8	52·8	41·7	15·4	32·3	..	..	10·8	28·8	7·3
1866..	3·72	18	·49	0	40·5	38·8	55·8	47·2	25·2	36·1	..	..	18·1	30·2	5·5
1867..	1·44	11	·36	0	45·2	43·8	56·2	50·4	30·0	40·2	..	..	26·5	37·4	7·5
1868..	1·21	10	·50	0	43·3	41·1	62·5	50·1	26·6	38·3	..	..	23·0	34·8	6·3
1869..	2·48	17	·52	0	45·6	43·7	60·8	51·7	31·3	40·6	..	..	27·4	38·3	6·9
1870..	1·21	14	·35	0	36·6	35·4	54·9	41·8	20·1	32·4	87·1	63·3	17·2	29·7	7·2
1871..	1·27	14	·31	0	42·5	41·1	56·2	48·1	25·8	37·5	102·4	69·4	25·7	35·2	7·6
1872..	·96	15	·19	0	44·5	43·0	57·0	51·1	31·4	39·3	94·1	72·2	26·6	35·3	6·5
1873..	1·96	13	·61	0	34·7	33·2	50·1	39·5	25·8	31·3	88·3	55·1	24·1	30·1	8·9
1874..	·91	16	·58	0	38·7	37·7	54·5	44·8	22·4	33·3	89·8	60·9	19·5	31·1	6·5
1875..	1·06	16	·36	0	35·3	34·5	51·2	40·8	25·1	31·0	90·2	58·8	23·4	29·6	7·4
1876..	1·97	18	·36	0	41·2	39·7	58·6	46·7	23·0	36·6	99·0	69·0	21·0	33·9	7·0
1877..	1·78	17	·34	0	43·2	41·6	58·5	49·4	25·3	38·6	92·0	74·1	22·7	36·1	6·4
1878..	1·49	11	·41	0	42·3	41·0	59·7	47·7	25·7	37·7	98·2	64·2	23·8	34·1	8·0
1879..	3·77	24	·76	0	38·2	37·1	53·8	43·0	25·2	34·4	73·8	56·1	24·9	32·6	8·3
1880..	2·33	19	·43	0	41·2	40·3	53·7	47·8	27·0	35·9	93·5	68·4	22·3	31·8	7·1
1881..	3·09	16	·76	0	37·7	36·6	52·7	42·8	26·7	33·9	90·2	58·9	23·3	31·8	8·1
1882..	1·30	8	·38	0	41·7	40·3	56·2	48·2	24·6	36·3	95·4	64·8	19·4	33·0	7·6
1883..	3·62	14	·60	0	42·3	40·8	57·3	49·0	29·3	36·5	100·8	68·1	24·4	33·2	6·2
1884..	1·40	14	·30	0	41·7	39·9	56·3	48·2	28·2	37·2	81·7	64·4	25·0	33·6	6·7
1885..	2·86	18	·75	0	43·5	41·9	57·8	49·9	27·6	38·7	79·2	62·1	20·8	33·5	6·5
1886..	·63	8	·30	0	33·4	32·4	47·7	38·4	19·4	29·5	82·6	51·9	14·7	25·6	7·2
1887..	·48	5	·12	0	38·0	36·5	54·1	45·2	22·6	33·1	97·8	62·8	16·6	29·0	5·9
1888..	·78	14	·31	0	35·1	33·7	52·0	40·1	19·1	31·4	76·7	59·3	16·1	28·2	7·9
1889..	2·28	18	·63	0	36·5	35·1	58·1	43·3	20·4	31·7	86·3	65·3	13·5	28·1	6·8
1890..	1·05	9	·66	0	36·5	35·4	49·3	43·4	27·1	33·2	83·4	62·9	21·8	29·2	6·5
1891..	·01	1	·01	0	37·5	36·4	61·2	46·0	24·2	32·5	83·8	61·6	19·7	28·6	5·9
1892..	1·62	17	·43	0	38·4	37·1	53·0	44·7	17·5	33·9	86·1	62·3	12·2	30·4	6·9
1893..	2·87	22	·44	0	40·8	39·4	57·0	47·1	25·1	35·9	86·8	63·4	20·1	32·2	6·7
1894..	1·74	16	·41	0	41·3	39·4	56·4	47·8	23·3	35·5	91·1	67·0	18·0	31·1	5·7
1895..	·12	4	·06	0	28·8	27·8	46·2	36·1	7·3	22·5	80·8	58·2	5·0	19·0	5·8
1896..	·30	8	·08	0	39·6	38·2	56·4	46·2	23·2	34·7	86·9	63·4	19·8	30·9	6·9
1897..	2·75	14	·59	0	43·0	41·4	58·0	48·4	27·9	39·0	93·3	60·9	22·6	34·5	8·1
Mean ...	1·61	13	·40	0	39·5	38·0	55·2	45·5	24·1	34·7	89·0	63·2	20·0	31·5	6·8
Extremes	3·77	24	·76	0	45·6	43·8	62·5	51·7	31·4	40·6	102·4	74·1	27·4	38·3	8·9
	·01	1	·01	0	28·8	27·8	46·2	36·1	7·3	22·5	73·8	51·9	5·0	19·0	5·2

CLIMATOLOGICAL TABLE FOR THE BRITISH EMPIRE, SEPTEMBER, 1898.

STATIONS. (*Those in italics are South of the Equator.*)	Absolute.				Average.				Absolute.		Total Rain.		Aver.
	Maximum.		Minimum.										
	Temp.	Date.	Temp.	Date.	Max.	Min.	Dew Point.	Humidity.	Max. in Sun.	Min. on Grass.	Depth.	Days.	Cloud.
	°		°		°	°	°	0-100	°	°	inches		
England, London	91·2	8	36·8	29	74·2	51·6	51·4	70	125·7	32·4	·33	4	4·0
Malta	86·3	9	65·1	30	81·9	68·9	65·1	77	147·8	61·5	2·50	9	2·1
Cape of Good Hope	79·9	25	41·0	14	64·9	49·0	49·6	82	...	...	3·16	13	5·2
Mauritius	78·4	14	58·3	28	75·9	63·8	60·6	76	129·6	49·9	1·34	10	5·6
Calcutta	90·9	30	75·5	20	87·3	77·8	76·5	84	157·0	75·5	8·00	11	8·2
Bombay	87·4	27	73·9	12	84·5	76·6	75·6	85	140·3	72·0	19·94	21	7·3
Ceylon, Colombo	38·7	15	73·8	29	86·4	76·6	73·7	82	152·0	72·0	6·90	23	5·7
Melbourne	72·8	25	40·0	10	62·5	47·5	43·9	71	129·0	36·2	2·90	13	6·1
Adelaide	80·6	25	39·3	28	67·8	48·2	46·6	63	144·9	34·4	·72	14	4·4
Sydney	...	...	...	...	...	...	...	..	..	...	...	...	...
Wellington	65·0	28	37·0	2	58·2	45·1	40·9	67	92·0	29·6	3·03	10	4·2
Auckland	65·0	24	45·0	17	60·2	48·5	45·5	71	124·0	42·0	2·25	22	4·9
Jamaica, Kingston	92·3	30	70·8	9	87·9	72·7	71·3	77	...	...	2·95	12	...
Trinidad	91·0	14	68·0	30	87·7	70·3	72·7	86	167·0	63·0	7·13	15	...
Grenada	88·2	27	71·2	21	83·2	74·3	73·0	81	154·0	...	12·02	18	2·8
Toronto	97·1	2	38·3	11	73·9	54·6	56·0	77	115·0	35·2	2·79	9	4·3
New Brunswick, Fredericton	81·7	5	26·0	25	66·5	45·2	46·5	67	...	...	1·53	9	4·9
Manitoba, Winnipeg	79·8	27	31·8	9	67·3	43·9	...	...	...	...	2·50	11	5·5
British Columbia, Esquimalt	85·0	6	37·3	30	67·0	47·9	..	...	...	...	1·79	9	5·2

REMARKS.

MALTA.—Adopted mean temp. 73°·7, or 1°·4 below average. Mean hourly velocity of wind 6·0 miles, or 1·9 below average. Mean temp. of sea 78°·2. TSS on 5 days. L on 10 days. J. F. DOBSON.

Mauritius.—Mean temp. of air 0°·6 below, of dew point 0°·7 above, and rainfall ·09 in. below, the average. Mean hourly velocity of wind 10·8 miles, or 1·2 below average; extremes, 29·2 on 18th and 2·6 on 24th; prevailing direction E.S.E. T. F. CLAXTON.

CEYLON, COLOMBO.—Mean temp. of air 80°·6, or 0°·1 below, of dew point 0°·5 above, and rainfall 1·83 in. above, the average. Mean hourly velocity of wind 8·7 miles; prevailing direction W. and S.W. TS on 4th. H. O. BARNARD.

Adelaide.—Weather generally very dry. Rain everywhere below average. Mean temp. 0°·9 above, and rainfall 1·03 in. below, the average for 41 years. C. TODD, F.R.S.

Sydney.—In the August table the dew point should have been 46°·2 and the grass min. 32°·8.

Wellington.—Generally fine up to the 13th; heavy R on 14th and showery to the 20th; the latter part of the month finer. Prevailing winds N.W.; frequently strong. L on 14th. Earthquake on 16th. Mean temp. 0°·7 above, and rainfall 1·23 in. below, the average. R. B. GORE.

Auckland.—No storms or heavy falls of rain during the month, the rainfall being less by an inch than the average of 31 years. Mean temp. close to the average. T. F. CHEESEMAN.

TRINIDAD.—Rainfall ·57 in. above the average of 30 years. J. H. HART.

SUPPLEMENTARY TABLE OF RAINFALL, FEBRUARY, 1899.

[For the Counties, Latitudes, and Longitudes of most of these Stations, see *Met. Mag.*, Vol. XIV., pp. 10 & 11.]

Div.	STATION.	Total Rain.	Div.	STATION.	Total Rain.
		in.			in.
I.	Uxbridge, Harefield Pk..	2·14	XI.	Builth, Abergwesyn Vic.	8·73
II.	Dorking, Abinger Hall .	3·19	,,	Rhayader, Nantgwillt ...	8·61
,,	Birchington, Thor	1·88	,,	Lake Vyrnwy	3·86
,,	Hailsham	3·25	,,	Corwen, Rhug	2·86
,,	Ryde, Thornbrough	2·81	,,	Criccieth, Talarvor	2·52
,,	Emsworth, Redlands ...	2·93	,,	I. of Man, Douglas	2·89
,,	Alton, Ashdell	3·68	XII.	Stoneykirk, Ardwell Ho.	2·31
III.	Oxford, Magdalen Col..	1·82	,,	New Galloway, Glenlee	3·85
,,	Banbury, Bloxham	3·23	,,	Monaive, Maxwelton Ho.	3·65
,,	Northampton, Sedgebrook	2·27	,,	Lilliesleaf, Riddell	2·05
,,	Stamford, Duddington..	1·63	XIII.	N. Esk Res. [Penicuick]	2·25
,,	Alconbury	·95	XIV.	Glasgow, Queen's Park..	1·84
,,	Wisbech, Bank House...	1·12	XV.	Inverary, Newtown	4·40
IV.	Southend	1·93	,,	Ballachulish, Ardsheal...	5·85
,,	Harlow, Sheering..... ...	2·61	,,	Islay, Gruinart School...	1·82
,,	Colchester, Lexden	1·31	XVI.	Dollar.....	2·43
,,	Rendlesham Hall	1·38	,,	Balquhidder, Stronvar...	6·83
,,	Scole Rectory	1·07	,,	Coupar Angus Station...	2·89
,,	Swaffham	·98	,,	Dalnaspidal H.R.S.....	...
V.	Salisbury, Alderbury ...	3·39	XVII.	Keith H.R.S.....	1·10
,,	Bishop's Cannings	3·06	,,	Forres H.R.S.	1·28
,,	Blandford, Whatcombe .	3·86	XVIII.	Fearn, Lower Pitkerrie..	1·32
,,	Ashburton, Holne Vic...	5·14	,,	S. Uist, Askernish	2·80
,,	Okehampton, Oaklands.	...	,,	Invergarry.....	1·66
,,	Hartland Abbey	3·15	,,	Aviemore H.R.S.	...
,,	Lynton, Glenthorne ...	5·18	,,	Loch Ness, Drumnadrochit	2·03
,,	Probus, Lamellyn	5·70	XIX.	Invershin	1·22
,,	Wellington, The Avenue	4·08	,,	Durness	2·06
,,	North Cadbury Rectory	3·14	,,	Watten H.R.S.....	1·03
VI.	Clifton, Pembroke Road	3·91	XX.	Dunmanway, Coolkelure	8·12
,,	Ross, The Graig	2·77	,,	Cork, Wellesley Terrace	4·36
,,	Wem, Clive Vicarage ...	1·52	,,	Killarney, Woodlawn ..	8·24
,,	Wolverhampton, Tettenhall	2·51	,,	Caher, Duneske	3·23
,,	Cheadle, The Heath Ho.	2·33	,,	Ballingarry, Hazelfort...	2·34
,,	Coventry, Priory Row ..	2·86	,,	Limerick, Kilcornan ...	2·91
VII.	Grantham, Stainby	1·50	,,	Miltown Malbay	3·03
,,	Horncastle, Bucknall ...	...	,,	Gorey, Courtown House	3·67
,,	Worksop, Hodsck Priory	1·47	XXI.	Moynalty, Westland ...	2·84
VIII.	Neston, Hinderton	1·21	,,	Athlone, Twyford	2·78
,,	Southport, Hesketh Park	1·55	,,	Mullingar, Belvedere ...	2·60
,,	Chatburn, Middlewood.	1·89	,,	Woodlawn	3·00
,,	Duddon Val., Seathwaite Vic.	5·77	XXII.	Crossmolina, Enniscoe ..	5·26
IX.	Melmerby, Baldersby ...	1·56	,,	Collooney, Markree Obs.	3·33
,,	Scarborough, Observat'y	...	,,	Ballinamore, Lawderdale	3·05
,,	Middleton, Mickleton ...	2·13	,,	Warrenpoint.....	4·14
X.	Haltwhistle, Unthank...	1·97	XXIII.	Seaforde.....	3·70
,,	Bamburgh	1·34	,,	Belfast, Springfield	3·04
,,	Keswick, The Bank	4·98	,,	Bushmills, Dundarave..	1·75
XI.	Llanfrechfa Grange	3·94	,,	Stewartstown	3·08
,,	Llandovery	4·36	,,	Killybegs	2·64
,,	Castle Malgwyn	5·10	,,	Horn Head	2·67
,,	Brecknock, The Barracks	6·19	,,		

FEBRUARY, 1899.

Div.		STATIONS. [The Roman numerals denote the division of the Annual Tables to which each station belongs.]	RAINFALL. Total Fall.	Difference from average 1880-9.	Greatest Fall in 24 hours Dpth	Greatest Fall in 24 hours Date	Days on which 01 or more fell.	TEMPERATURE. Max. Deg.	Max. Date	Min. Deg.	Min. Date.	No. of Nights below 32°. In shade.	No. of Nights below 32°. On grass.
			inches.	inches.	in.								
I.	ENGLAND.	London (Camden Square) ...	2·00	+ ·12	·38	4	11	64·8	10	24·9	27	10	16
II.		Tenterden ...	2·51	+ ·39	·66	8	15	60·0	10	21·5	28	11	16
,,		Hartley Wintney ...	2·65	...	·55	6	12	62·0	10	21·0	26	11	15
III.		Hitchin ...	1·53	— ·22	·30	15	11	63·0	10	21·0	25	14	...
,,		Winslow (Addington) ...	2·04	— ·12	·40	6	11	61·0	10	20·0	27*c*	12	17
IV.		Bury St. Edmunds (Westley)	1·11	— ·45	·34	15	12	61·0	10	24·0	4	...	...
,,		Norwich (Brundall) ...	1·27	...	·33	15	16	63·6	10	23·8	28	10	19
V.		Winterbourne Steepleton ...	4·34	...	·88	12	12	55·9	17	21·8	28	10	16
,,		Torquay (Cary Green)	5·77	...	1·22	5	14	59·4	9	28·2	3	3	7
,,		Polapit Tamar [Launceston]..	3·60	+ ·33	·55	13	12	59·4	9	19·6	3	10	10
VI.		Stroud (Upfield) ...	3·18	+ ·62	·78	15	14	57·0	9, 10	25·0	3, 27	10	...
,,		ChurchStretton(Woolstaston)	3·54	+ 1·09	·71	13	14	55·5	10	23·5	26	13	17
,,		Worcester (Diglis Lock) ...	2·53	+ ·56	·50	6	12	...	..	...	...	...	...
VII.		Boston ...	·92	— ·76	·22	15	12	62·0	10	24·0	28	12	...
,,		Hesley Hall [Tickhill]...	1·49	— ·01	·31	15	9	59·0	10	21·0	22	15	...
,,		Breadsall Priory ...	1·46	...	·31	6	13	58·0	28	20·0	4	13	22
VIII.		Manchester(PlymouthGrove)	...	...	...	...	...	...	...	...	...	...	...
IX.		Wetherby (Ribston Hall) ..	1·33	— ·25	·35	9	9	...	...	...	...	...	...
,,		Skipton (Arncliffe) ...	4·53	— ·16	1·16	9	14	...	...	...	...	...	...
,,		Hull (Pearson Park).	1·00	— ·80	·18	7, 15	9	61·0	10	24·0	4, 24	13	15
X.		Newcastle (Town Moor) ...	·89	— ·51	·22	1	11	...	...	...	...	...	...
,,		Borrowdale (Seathwaite)...	9·07	— 2·57	2·22	13	13	...	...	...	...	...	...
XI.	WALES.	Cardiff (Ely)...	3·99	+ ·80	·76	4	14	...	...	...	...	...	...
,,		Haverfordwest ...	5·18	+ 1·06	·88	20	13	54·7	9	23·4	3	7	14
,,		Aberystwith (Gogerddan) ...	2·08	— 1·18	·46	7	11	55·0	11*a*	...	...	...	...
,,		Llandudno...	2·35	+ ·43	·44	11	15	65·0	10	27·0	4	5	...
XII.	SCOTLAND.	Cargen [Dumfries]	4·36	+ ·71	·74	8	11	52·0	22*b*	19·0	4	15	...
XIII.		Edinburgh (Blacket Place)...	1·45	...	·31	17	11	53·9	17	22·1	27	11	18
XIV.		Colmonell	2·97	...	·62	8	14	53·0	10	19·0	2	...	...
XV.		Tighnabruaich ...	3·19	...	·57	8, 10	11	47·0	28	26·0	3	11	...
,,		Mull (Quinish)...	4·19	— 1·28	·84	9	14	...	...	...	...	...	...
XVI.		Loch Leven Sluices ...	2·80	+ ·05	·60	11	10	...	...	...	...	...	..
,,		Dundee (Eastern Necropolis)	2·30	+ ·20	·50	8	13	51·7	11	23·3	4	15	...
XVII.		Braemar	1·96	— 1·40	·45	10	13	52·8	27	11·0	5	18	25
,,		Aberdeen (Cranford)	2·56	...	·51	9	17	53·0	12*c*	...	...	...	...
,,		Cawdor (Budgate) ...	1·46	— ·77	·45	17	9	...	...	...	...	...	...
XVIII.		Strathconan [Beauly] ...	2·11	— 2·60	·50	11	7	...	...	...	...	...	...
,,		Glencarron Lodge...	3·54	...	·61	14	15	51·6	24	24·0	2	15	...
XIX.		Dunrobin ...	1·55	— ·54	·41	17	10	51·2	12	28·0	20	8	...
,,		S. Ronaldshay (Roeberry) ...	1·51	— 1·13	·37	13	17	49·0	28	27·0	4, 5	5	...
XX.	IRELAND.	Darrynane Abbey...	5·69	...	·80	16	18	...	...	...	...	...	...
,,		Waterford (Brook Lodge) ...	4·53	+ ·45	·64	20	16	54·0	10	28·0	3	7	...
,,		Broadford (Hurdlestown) ...	2·50	...	·38	12	16	...	...	...	...	...	...
XXI.		Carlow (Browne's Hill) ...	2·43	— ·65	·34	11	15	...	...	...	...	...	...
,,		Dublin (FitzWilliam Square)	2·17	— ·18	·49	20	15	56·0	9	29·0	27	4	14
XXII.		Ballinasloe	3·29	+ ·51	·54	11	17	52·0	28	25·0	3	9	...
,,		Clifden (Kylemore)	6·30	...	1·06	16	14	...	...	...	...	...	...
XXIII		Waringstown ...	3·00	+ ·55	·48	17	18	56·0	12	22·0	2	14	15
,,		Londonderry (Creggan Res.).	1·92	— 1·11	·42	9	17	...	...	...	...	...	...
,,		Omagh (Edenfel) ...	3·19	+ ·50	·55	9	15	51·0	...	25·0	...	9	13

+ Shows that the fall was above the average ; — that it was below it.

a—and 14, 24. *b*—and 23. *c*—and 28.

METEOROLOGICAL NOTES ON FEBRUARY, 1899.

ABBREVIATIONS.—Bar. for Barometer; Ther. for Thermometer; Max. for Maximum; Min. for Minimum; T for Thunder; L for Lightning; TS for Thunderstorm: R for Rain; H for Hail; S for Snow.

ENGLAND.

TENTERDEN.—The first few days were cold, followed by 2·48 in. of R in the wet period, 4th to 15th, during which the springs rose at last and ponds filled up. Very warm from 8th to 14th and much wind, especially on 11th and 12th from S.W. The nights were very cold in the latter half of the month, and the wind generally E. Duration of sunshine 115 hours, of which 70 were in the last 8 days. Min. temp. in shade on 28th the lowest for four years. Thick rime on trees on 28th.

HARTLEY WINTNEY.—A Janus-like month—one face wet, the other dry. The rain which fell from the 4th to 15th was the greatest recorded here in any corresponding period. Gales of wind from S.W. and W. from 8th to 13th. From 16th to the end of the month, dry, calm and cloudless days, and sharp frosts from 22nd to 28th. Fogs on 5th, 19th, 20th, 26th and 27th. Ozone on 10 days. L on 11th, 12th and 13th. Lunar halo on 23rd. Brimstone butterfly on the wing on 16th.

ADDINGTON.—Between the 4th and 15th there was much rain and frequent high wind, then dry weather until the end. Very sharp frost on the 4th, and again on 26th, 27th and 28th. T to N. on 7th. The last six days very clear, with bright sunshine. S on 4th, 5th and 6th. Fog on 15th, 18th, 19th, 25th and 28th.

BURY ST. EDMUNDS, WESTLEY.—Dull to the 15th, then very fine. Very cold mornings from 22nd to end of the month, with much sunshine. Distant T on 7th. Fog on 23rd.

NORWICH, BRUNDALL.—S on 2nd, 3rd, 6th, and covering the ground on 4th. Fog on 4th, 17th and 18th. L in evening on 7th. Gales from S. on 8th, S.W. on 11th and 12th. The 10th was the warmest day ever registered so early in the year, but on February 28th, 1891, 64°·0 was recorded.

WINTERBOURNE STEEPLETON.—After a short spell of dry weather, heavy R fell between the 4th and 15th, filling up the springs to the full. The Winterbourne stream is running strongly, and a well by the side of the road about 1½ miles lower down is (March 3rd) still running over. The first five nights were cold, and again from the 21st we had continuous frosts on grass, and also in shade, except on the 24th, when 33° was registered. Mean temp. 41°·7. S on 4th. T on 7th and 13th. L on 12th and 13th. Fog on 17th and 18th.

TORQUAY, CARY GREEN.—R 3·24 in. above the average. Mean temp. 45°·6, or 2°·3 above the average. Duration of sunshine 94 hours, being 15 hours 35 minutes above the average; 8 sunless days.

POLAPIT TAMAR [LAUNCESTON].—The first half of the month was particularly stormy and wet, with high temp.; the latter half quite the reverse. Gales from S. on 8th and 9th, and S.S.W. on 13th. L on 8th. L and H on 13th.

STROUD, UPFIELD.—S on 4th. T and L on 7th, 8th and 13th. S.W. gales on 9th and 13th.

WOOLSTASTON.—The early part of the month was wet, cold and stormy, S falling lightly on 4 days. The last week was again very cold, but dry. Mean temp. 39°·6. Vivid L, with T and H, on the 8th.

BOSTON.—Rainfall again deficient, and the water in the river has not risen this winter to half the height that it usually does after heavy rains. TSS on 7th and 13th. The max. temp. (62°·0 on 10th) is the highest on record for this month.

HESLEY HALL [TICKHILL].—Heavy TS 10 to 10.30 p.m. on 8th.

BREADSALL PRIORY.—Mild and wet during the earlier part of the month, followed by fine weather with cold nights and warm days.

SEATHWAITE.—S 4½ inches deep at 9 a.m. on 6th.

WALES.

HAVERFORDWEST.—The cold weather of January continued till the 4th, followed by stormy, wet, and very disturbed weather, especially from the 6th to the 13th, and the high tide with the excessive R at the period of new moon occasioned inundations not exceeded during 30 years. At 3 p.m. on the 13th a sharp but short TS occurred, the L being very vivid, and the T following quickly. After the 20th a complete change took place, the wind blew from the E., and very sharp frost with clear sky prevailed.

GOGERDDAN.—The last ten days were very bright, with sharp frosts at night.

SCOTLAND.

CARGEN [DUMFRIES].—Normal conditions on the whole characterized the month, the mean of the readings of the bar. and ther., and the records of rainfall and sunshine closely approximating to the average of 40 years. From the 1st to 7th inclusive a mean temp. of 32°·9 was registered, the min. being below freezing-point each day; higher mean temp. then occurred until the 22nd, when frost was again recorded, continuing during the last seven nights. Upwards of 4 inches of R fell in the nine days, 6th to 14th; but on 19th fine bright weather set in, continuing until the end of the month. Three inches of S fell on 6th. A severe TS occurred on 7th. E. winds prevailed on 20 days.

EDINBURGH, BLACKET PLACE.—Mean temp. 1°·2 above average; pressure and bright sunshine normal; rain slightly below the average. S from 2 to 3 p.m. on 5th and early on 7th. Solar halo on 9th. Aurora on 12th. Lunar halo on 23rd. Dense mist all day with silver thaw at night on 26th.

COLMONELL.—R ·75 in. below, and mean temp. 2°·2 above, the average of 22 years. S on 5th, 1½ inches deep. Gale on 17th.

TIGHNABRUAICH.—In every respect a normal month. S on 6th.

ABERDEEN, CRANFORD.—The month was cold and wet, with sharp frost and very little S. Wind for the most part S.W. and W. Very little sunshine.

S. RONALDSHAY, ROEBERRY.—A very fair month upon the whole. Mean temp. 38°·7, or 0°·2 above the average.

IRELAND.

DARRYNANE ABBEY.—The first fortnight was very mild and wet, with unusually high tides from 10th to 14th. The last few days were very fine.

WATERFORD, BROOK LODGE.—Remarkably high tides on 12th. H showers on 13th. Fog on 17th, 18th and 19th. E. winds from 20th to 26th.

BROADFORD, HURDLESTOWN.—Rainfall ·72 in. above, and number of rainy days one below, the average for 14 years. A favourable month on the whole. S.E. gale on 5th and 6th. Distant T on 7th.

DUBLIN, FITZWILLIAM SQUARE.—Stormy and wet during the first half of the month; the weather then became fine, dry and seasonable, with a remarkably large diurnal range of temp. Mean temp. 44°·0 or 1°·2 above the average. Fog on 7 days; high winds on 12 days, reaching the force of a gale on 6th, 9th, 10th, 13th and 14th. Lunar halos on 4th and 6th. S or sleet and hail fell on the 2nd; L was seen on the 8th and 9th.

OMAGH, EDENFEL.—For the first fortnight the weather was very wet and unsettled, the third week somewhat less so; but from the 21st to the end there followed a very fine dry period, with but little frost—highly favourable for all agricultural operations.