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WINTER MINIMA ON BRITISH MOUNTAIN TOPS.*

ON May 13th, 1867, the late Mr. H. B. Biden placed a minimum thermometer at the altitude of 3,262 ft. on Y Glyder fach, a rough, stone-covered summit, about 4 miles E.N.E. of Snowdon. It was placed amid a chaos of large angular stones, beneath a protecting slab of feldspar porphyry, duly set, and left to its fate. For nearly 20 years Mr. Biden climbed up each spring, read and recorded the minimum of the previous winter, and reset the instrument. The site was too rough to tempt the ordinary tourist, but at last the repeated visits of nail-clad boots left a track of scratches, and finally, in 1895, some silly tourist found the thermometer and spoiled the record for 1894-95. Since then another spot has been selected, and there are now two thermometers on that lone top, where we hope that no unauthorized person will ever find them.

After Mr. Biden became unable to climb, and since his death, we believe that all the work has been done by Mr. Piffe Brown, of Gloucester, who read a short paper upon the subject a few years since.—(*Q. Jour. R. Met. Soc.*, xix. (1893), p. 149.)

He has recast the story, added comparative records, and completed the tables down to date in the article mentioned below, and (owing to its unique character) we think that the principal table should be quoted for general information—we have added the last two columns and a line of averages.

* W. Piffe Brown "On the Glyder thermometers and winter temperature on mountain summits" in *The Climbers' Club Journal*, February, 1899.

Winter Minima.

WALES.				SCOTLAND.		
Year.	Glyder fach, 3,262 ft.	Church- stoke, 540 ft.	Llandudno 90 ft.	Ben Nevis, 4,407 ft.	Fort William, 35 ft.	Difference
1867-68	14°5	°	°	°	°	°
1868-69 .....	...	...	...	...	...	...
1869-70 }	14°0	...	...	...	...	...
1870-71 } .....	...	...	...	...	...	...
1871-72	14°0	...	...	...	...	...
1872-73	13°0	...	...	...	...	...
1873-74	14°0	...	...	...	...	...
1874-75	18°0	...	...	...	...	...
1875-76	15°0	15°7	22°9	...	...	...
1876-77	26°0	22°8	26°3	...	...	...
1877-78	17°0	23°5	28°0	...	...	...
1878-79	22°0	12°2	19°1	...	...	...
1879-80	15°5	13°2	23°0	...	...	...
1880-81	12°0	—1°0	14°5	...	...	...
1881-82	21°5	22°1	30°2	...	...	...
1882-83	16°0	10°7	25°5	...	...	...
1883-84	20°0	20°3	30°0	9°9 Feb., 1884	...	...
1884-85	26°0	21°8	27°0	11°1 Feb., 1885	18°9	7°8
1885-86	17°5	13°2	22°5	8°4 Dec., 1885	17°0	8°6
1886-87	18°0	14°7	24°5	8°4 Dec., 1886	14°0	5°6
1887-88	15°7	17°6	25°7	7°2 Mar., 1888	21°2	14°0
1888-89	15°0	14°4	25°5	6°4 Feb., 1889	15°7	9°3
1889-90	15°0	16°5	25°4	10°1 Mar., 1890	21°2	11°1
1890-91	11°0	9°2	20°0	5°6 Mar., 1891	17°2	11°6
1891-92	9°0	8°9	22°6	3°5 Mar., 1892	11°8	8°3
1892-93	10°0	11°2	25°0	6°4 Jan., 1893	13°9	7°5
1893-94	8°0	10°0	15°0	0°7 Jan., 1894	13°9	13°2
1894-95	No record	—5°0	17°5	1°8 Feb., 1895	8°9	7°1
1895-96	17°0	19°0	26°8	14°2 Jan., 1896	24°9	10°7
1896-97	15°0	19°0	26°0	4°0 Jan., 1897	...	...
1897-98	19°0	22°2	28°0	9°6 Feb., 1898	...	...
Averages—						
1867-98	16°0	...	...	...	...	...
1875-98	16°4	14°4	23°9	...	...	...
1883-98	15°4	14°2	24°1	7°1	...	...
1884-96(—94·5)	14°7	14°2	23°6	7°5	17°3	9°8

Mr. Piffe Brown was evidently surprised to find that the minima were not lower, and suggests that occasionally it may be due to an accumulation of snow covering the rocks and the thermometer, and so keeping it warm; but he points out, quite rightly, that it is improbable that there is *always* snow there at times of severe cold, and that if the high average is due to snow, the differences between the high and the low level minima ought to be very irregular, which, during the last 24 years, they are not.

There are, however, other points to mention. Mr. Brown has wisely brought into the table the only other record kept synchronously at an equal or greater height in the British Isles—Ben Nevis, at 4,407 ft. But with Ben Nevis it is necessary to compare some low level station in its immediate vicinity, and we have tabulated the figures for Fort William, corresponding with the dates of the summit minima. Here, on the 12-year mean, we get an average *decrease* for elevation of $9^{\circ}3$.

There were, in 1866, thermometers at the hut on Snowdon, but they were of poor quality, and we never saw the records of their indications.

The only other high-level readings in the British Isles which we remember, were those made by Dr. J. F. Miller, F.R.S., on Sca Fell Pike, respecting which we reprint his account from the *Phil. Trans.* for 1849 and subsequent years.

“*Temperature on Sca Fell.*—Last summer I stationed a pair of Rutherford's self-registering thermometers (previously compared with a standard) on the top of Sca Fell Pike; they are suspended in a deal box, having the sides and base riddled with small circular holes, so that the instruments are freely exposed to the air, and at the same time thoroughly protected from the effects of terrestrial radiation. On the summit of the Pike is a cairn, or large pile of stones, about 8 ft. in height, having a stout pole in the centre, which projects about 2 ft. above the top of the pile. To this pole the box containing the thermometers is firmly fixed.

“From the maximum thermometer I have never been able to obtain any correct readings, as, from some cause, the steel needle is always found at the extreme end of the stem, furthest from the bulb. I cannot account for this, unless, indeed, the fine steel needle is affected by electrical currents at such an extreme height in the clouds. The readings of the maximum thermometer would, however, have probably been of little value, as it would be almost impossible to protect it from the effect of solar radiation.

“The following are the readings of the minimum thermometer for each month from July to the end of the year 1848 :—

“July, 22° ; August, 24° ; September, 18° ; October, -6° ; November, -6° ; December, -9° , or 41° below the freezing point of water.*

“The lowest extreme in these months, in the Vale of Borrowdale, at 4 ft. above the ground was as under :—

“July, 45° ; August, $41^{\circ}5$; September, $38^{\circ}5$; October, $29^{\circ}5$; November, 24° ; December, 26° .”

In his report for 1849, Dr. Miller said :—

“I regret that my endeavours to obtain the monthly extremes of temperature on the summit of Sca Fell Pike have hitherto failed.

* On the 29th and 31st of January, 1849, the box containing the thermometers was so thickly encased in ice that it could not be opened. The minimum temperature for the month was read off on the 12th of February, being no less than 34° below the zero point of Fahrenheit's scale. This unheard of extreme of cold undoubtedly occurred on the night between the 2nd and 3rd of January, when a naked thermometer on grass, at Whitehaven, fell to $+4^{\circ}$, and one on raw wool to $-2^{\circ}8$. J. F. M.

"The indications for 1849 are apparently so erroneous, that I cannot place any dependence upon them. The instruments are slightly inclined in the box, which is riddled with small circular holes, and it is supposed that strong currents of air passing through them have shaken the thermometers, and caused the indices to descend in the tubes. The instruments are now fastened in the case, and I hope to secure correct readings during the current year."

Finally, in the report for 1850, we have the following statement, with no indication of doubt as to the accuracy of the record:—

"The records of the self-registering minimum thermometer on Sca Fell, in 1850, are as under:—

"January and February, 31° below zero; March, 10° below zero; April, 10° below zero; May, 14°; June, 22°; July, observation lost; August, 9°; September, 7°; October, 7°; November and December, 15° below zero.

"In the valley, the minima at 4 ft. from the ground were: in January, 19°; February, 29°; March, 21°; April, 32°; May, 30°; June, 42°; July, 43°; August, 39°·5; September, 39°; October, 27°; November, 20°·5; and December, 22°.

"I have recently planted a minimum thermometer on the Gabel, and also one near Sprinkling Tarn, at the respective heights above the sea of 2,928 and 1,900 ft., and hope, in future, to obtain regular monthly readings at all the three stations."

We have copied these wonderful temperatures verbatim, instead of putting them in their proper form of "—31°," &c., because Dr. Miller, having used the words "below zero," seems to have desired to exclude all doubt as to the fact.

We do not think that it would be easy to produce evidence more contradictory than that from Glyder fach and from Sca Fell, or a clearer proof of the difficulty of the investigation, and of the desirability of renewed efforts to ascertain the facts.

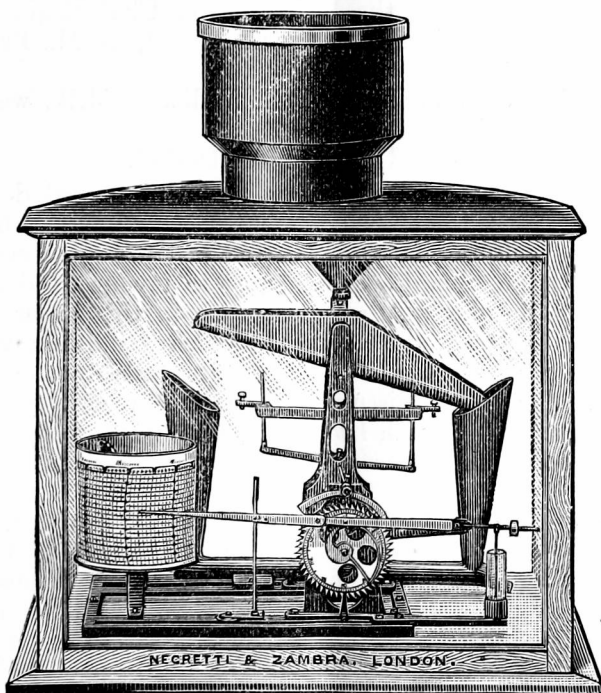
NEGRETTI AND ZAMBRA'S SELF-RECORDING RAIN GAUGE.

It is long since we have seen so simple and yet so efficient an instrument as this.

As a standard for determining the total fall of rain no one detests Crosley's and all mechanical gauges more heartily than we do. We saw with regret that a modified Crosley, with a pretty face, had been brought out. We were sure that it would fail, and have already heard of its having done so. How is it then that holding these views we can approve of this, which is also a modified Crosley?—(1) Because in this pattern every part is visible and easily accessible; (2) Because the two chief faults of a Crosley as a standard instrument, even when in good order, are unimportant in a recording one—viz., (a) the loss by evaporation from the bucket of (on the average) half of once its capacity, *i.e.*, with the gauge before us, of '005 in.; (b) the loss during a torrential rain of what falls during the tip.

We have always held that the very best recorder should have an ordinary gauge by its side. We trust the recorders for the distribution of the fall in time and amount; but we take the real total from an ordinary gauge.

Now a brief description of the new pattern. The rain collected by the receiver passes down and falls into the upper half of the vibrating bucket (designed by Sir Christopher Wren). When $\cdot 01$ in. has fallen, the weight of the water tips the bucket over, and sends the water down one of the ear-trumpet-like shoots. In tipping it falls on and drives down the vertical rod, which, being rigidly connected with the escapement, it advances the wheel one tooth. Attached to the wheel is a helix, on which rests the lever carrying the pen, and thus each $\cdot 01$ in. raises the pen slightly $0\cdot 028$ in. As the clock (the useful invention of MM. Richard) is turning the paper about $\cdot 001$ in. per minute, a very clear curve is produced.



The proportions which we have just quoted, *i.e.*, 1 in. of rain represented by 2·8 ins. of paper, and 24 hours represented by 1·6 ins. of paper, are those adopted in the instrument which Messrs. Negretti sent to us for trial. It is obvious that by varying the size of the buckets and of the funnel and the length of the lever, any scale desired can be obtained. No recorder is known to us which will give minute details of thunderstorm rain, such as would stand high in the list of Heavy Rains in Short Periods in *British Rainfall*. Take, for instance, the first case in *British Rainfall*, 1897, *viz.*, $\cdot 19$ in. in 3 minutes, *i.e.*,

·01 in. in 10 seconds. There are 86,400 seconds in a day; how many yards of paper would be accumulated daily and yearly if the gauge were required to show every hundredth in the rare case of such a fall as that? It could be done, but no one would like the trouble or the cost of doing it. The scale adopted by Messrs. Negretti & Zambra seems to us a reasonable one; in all ordinary cases, every hundredth of an inch can be read off, and unless the fall exceeds two inches an hour we do not think that there will be the least difficulty in reading off the details.

We hope to place one at Seathwaite, which fact will probably be the best indication of our opinion as to its suitability.

ROYAL METEOROLOGICAL SOCIETY.

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

Messrs. T. W. Rundell and J. R. Williams, M.B., were elected Fellows.

THE DROUGHT OF 1897-8.

Mr. F. J. Brodie read a paper on "The prolonged deficiency of Rain in 1897 and 1898." For several years past there has existed over England, and especially over the central and south-eastern parts of the country, a remarkable tendency in favour of dry weather. Consequently the dry weather dealt with in this paper came at a very inopportune time, and its effects, which would in any case have been sufficiently evident, were greatly aggravated by the antecedent conditions. Mr Brodie discussed the rainfall records at 80 stations distributed over the British Isles for the 18 months, April, 1897, to September, 1898; these were divided into three periods of six months each.

During the period April to September, 1897, the rainfall was in excess of the average over practically the whole of Ireland, the greater part of Scotland, and the north-west and south-west of England and Wales, while in the north of Scotland, and the central and the whole of the eastern part of England, there was a deficiency, in some parts amounting to between 60 and 70 per cent.

During the period October, 1897, to March, 1898, with the exception of the north-west of Scotland and of England, the rainfall was below the average all over the British Isles, the deficiency over the midland and south-eastern parts of England being from 50 to 60 per cent.

During the period April to September, 1898, two of the six months were exceedingly dry, and in the southern parts of England at least two others had a deficiency of rainfall.

Taking the 18 months, the rainfall over the eastern, midland and southern counties was deficient by about 20 per cent. and in the

south-eastern counties more than 40 per cent., the greatest deficiency being 49 per cent. in London. From an examination of the Greenwich rainfall records since 1841, it appears evident that for length and severity combined, the recent spell of dry weather was the most remarkable experienced there during that period.

A paper on the "Climate of Jersey," by the Rev. H. W. Yorke, M.A., was read by the Secretary. The situation and geological formation of the island, together with the action of the tides, have a great local effect on the general character of the weather. The climate as a whole is bright, genial and sunny.

DR. HELLMANN'S RAINFALL MAP OF SILESIA.

To the Editor of the Meteorological Magazine.

SIR,—I cannot agree with the principles about the construction of maps of rainfall laid down in your review of my *Regenkarte der Provinz Schlesien* (p. 23 of last number).

I am of the opinion that such a map, and indeed all physical maps, should be as clear and as expressive as possible. The topographical details of this class of maps will, therefore, entirely depend upon their scale and special scope.

You suggest the indication of the positions of the 300 stations by small black dots. This could have been done in my map, the scale of which is 1:1250000, for all the stations in the plain—not without obscuring the map, as you suppose—but it would be quite impossible in the mountainous districts, *i.e.*, just in that part where the deepest shades of colour are to be found. In the Giant Mountains there are about 35 stations. If you would put these dot by dot, that part of the map would become one large dark spot and quite illegible.

Your reference to the map of rainfall in the Lake District (*British Rainfall*, 1897,) seems to me not strictly parallel, it being a special map of large scale which contains only isohyets but not shades of colour.

What you desire, the position of all stations and the true mean printed over the site of each station, you can find in a map of rainfall of Silesia, based on observations of five years, and published by Professor Partsch in 1895, the scale of which is larger (1:1000000) than that of mine. Please compare the two maps. I am sure that you will not hesitate a moment in deciding which is clearer and more expressive.

Your second suggestion—*viz.*, to print an outline map in which the position of each station is marked with a number corresponding to the printed table—seems to me much more acceptable. I did not do so because I desired to keep down the cost of the map. In publishing the pamphlet—similar ones for the other Prussian provinces are in preparation—it was my aim to offer to the public interested in rainfall work, especially to the farmer and to the engineer, reliable information, in text and in map, of the various

details of the rainfall of his province at a reasonable price. And I hope that I have not failed in this respect; for a pamphlet, royal 8vo, 24 pp., and a coloured map, at the price of *one mark*, is, I think, all that could be desired.

If anyone doubts the exactness of the curves on the map, he has the data wherewith to test them; for the letterpress contains all facts on which they are based, and a large atlas or a special map of Silesia affords the position of the stations.

Lastly, I beg to correct a misunderstanding in the review. Not the "Royal Meteorological Institute of Silesia" has distributed rain gauges to various persons in that province, but the Royal Meteorological Institute of Prussia has done that in Silesia (as well as in the other provinces).—Yours faithfully,

G. HELLMANN.

Reference to our Review will show how favourably we spoke of Dr. Hellmann's work; but as regards the points raised by his letter, we see no reason to alter a word which we wrote, except in as far as additional information is afforded by Dr. Hellmann himself.

In the third paragraph, Dr. Hellmann objects to our suggestion of marking the stations by black dots. A dot 1 mm. square would be amply large. The map occupies nearly 60,000 sq. mm., but as the country is irregular in shape, and there is much margin, we may say that the real area is 30,000 sq. mm.; and as there are 300 stations, evidently if the stations were equably distributed, each mm. dot would have 99 clear mm. around it. But it now appears that the stations are not at all equably distributed, which is just the fact which we wanted to elicit, and we admit that 35 black spots could not be shown on the dark shaded area. We doubt whether they could be shown individually unless the map were on a larger scale.

We have not seen Prof. Partsch's map, but as to Dr. Hellmann's, we wrote: "the coloured map (which is excellent)" . . . What more could we have said?

On the pamphlet which we reviewed there is no reference to price. We thought that it was an official publication, and then, in most countries, the cost does not matter. It is certainly a wonderful shilling's worth. They will have to sell a large edition to pay even the cost of paper and printing.

We did not in the least doubt the accuracy of the curves, but we thought, and think, that some map indicative of the geographical distribution of the stations would add to the value of the paper.

We fully admit the error mentioned in the last paragraph of Dr. Hellmann's interesting letter, but in palliation we reprint the two lines which led to the mistake:—"Im laufe des Sommers 1887 wurde vom Königlichen Meteorologischen Institut in der Provinz Schlesien, &c.'" The sentence runs on for five lines, and of course we ought not to have made the mistake, but the word "Preussischen" is omitted—taken for granted, and the absence of a comma after the word "Institut," caused our fall.—ED.

THE POST OFFICE IN 1876 AND IN 1898.

To the Editor of "The Times."

SIR,—When the chiefs of a Government department reverse the decisions of their predecessors in office, and inflict fines upon the public for persisting in the course approved by their predecessors, and when, moreover, on their attention being called to it they refuse either apology or redress, there are three courses open to the aggrieved party. (1) He can put up with it; (2) he can bring an action, but even if he wins he will probably be out of pocket; (3) he can try to enlist the attention of the Press, the public, and Parliament.

I hope that, not for my sake but for the public benefit, as you will see later on, you will allow me to state my case.

About thirty years ago I prepared, for the use of rainfall observers, the form* respecting which the present Post Office officials have reversed the decision of their predecessors, and of which I enclose one taxed as being "of the nature of a letter."

Neither I nor any of my correspondents had the slightest doubt that such a document was entitled to go at the halfpenny rate. Tens of thousands of them did so go, and eventually the question was proved, for in 1876 several of them were taxed. I wrote to the Post Office, they apologized, said that it had been done in error, and should not occur again.

Subsequently, occasionally, if one was taxed I sent it to the Secretary, the taxation was cancelled, the penny was refunded, and I had to sign a receipt for the amount. Doubtless the Post Office hold these receipts, as I hold specimens of the forms with the taxation cancelled by their own officials.

Last autumn, however, when Parliament was not sitting, and most persons were out of town, the Office suddenly changed its mind and has been taxing me 10s. or 15s. a month ever since.

I thought that it was better not to take any action until the principal officers were in town, and then I sent in a memorandum with the necessary documentary evidence as to the change of front.

The result was that the present officials ignored the action of their predecessors, refused any apology or redress, and are so energetic in having all documents coming to me examined and taxed that they recently taxed one bearing the full letter postage. I am keeping it with other postal curios.

The London officials have not yet converted the chiefs of the colonial post offices, and so we have now the further amusing complication that returns coming to me from the colonies and passed by the colonial offices as sufficiently paid are being taxed 3d. each by the London authorities. Whether they send the 3d. to the colony concerned I do not know, but, from my personal knowledge of one of the colonial Postmasters-General, I think that St. Martin's-le-Grand will regret interfering with colonial rights.

* The monthly rainfall forms on which returns are received for the tables in his Magazine.

Of course, I am aware that if I chose to have the information sent to me on a card, instead of on a sheet of paper, the officials would be quite happy ; but I do not see why what was right in 1876 was wrong in 1898.

I said that my object in writing is not merely personal, and I wish in conclusion to enquire whether the halfpenny rate is not capable of reduction to common sense.

At present a tradesman sends me an invoice with description and price of goods ; that is not "of the nature of a letter." A scientific friend sends me a string of figures without a word of explanation ; that is "of the nature of a letter."

What is the money value of the time spent by officials in opening and investigating documents coming to me I do not know, but I cannot see why all this inquisitorial business should not be abolished by the adoption of a common-sense rule which does not pretend to discriminate between commercial and scientific figures, and which is in accordance with what was until lately the practice of the Post Office.

I am, Sir, your obedient servant,

G. J. SYMONS, F.R.S.

62, Camden Square, N.W., March 24th.

[We should not have thought of reprinting the above letter in these pages had it concerned ourselves alone. If no member of either House of Parliament takes the matter up, and if the Post Office is allowed at its own sweet will to declare the same practice at one time correct and at another time incorrect, the responsibility rests not with us but with our rulers. We can either pay the fines or change our forms ; but if such practices are to be condoned, a new work is wanted with the late Albany de Fonblanque's title lengthened, "How we are governed [in 1899]." Even that, however, would not justify our devoting space to the subject ; but if our correspondents are to be so severely dealt with, it is well that they should know it.—ED.]

REMARKS (*continued from p. 43*).

Adelaide.—Mean temp. $1^{\circ}7$ above, and rainfall $\cdot 13$ in. above, the average for 41 years.

C. TODD, F.R.S.

Sydney.—Temp. $2^{\circ}3$ above, humidity $1^{\circ}9$ below, and rainfall $\cdot 36$ in. above, the average.

H. C. RUSSELL, F.R.S.

Wellington.—The early part generally stormy from N.W., with light rain at intervals ; fine in the middle ; showery with stormy N.W. wind towards the end. L and T on 4th. Snow on hills on 5th. Rainfall $\cdot 52$ in. below average.

R. B. GORE.

Auckland.—Stormy and showery, with prevalence of S.W. winds, and occasional T. Rainfall $1\cdot 25$ in. above, and mean temp. nearly 1° below, the average for 30 years.

T. F. CHEESEMAN.

TRINIDAD.—Rainfall $1\cdot 86$ in. below the average for 30 years. J. H. HART.

CLIMATOLOGICAL TABLE FOR THE BRITISH EMPIRE, OCTOBER, 1898.

STATIONS. <i>(Those in italics are South of the Equator.)</i>	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.									
England, London	71·1	3	40·2	2	60·6	49·0	49·8	86	106·1	33·6	2·96	13	7·0
Malta.....	84·9	17	55·9	21	76·3	65·4	62·2	75	143·6	55·0	7·78	8	2·7
<i>Cape of Good Hope ...</i>	79·4	15	44·7	28	67·5	52·2	51·0	76	...	...	2·51	10	2·5
<i>Mauritius.....</i>	81·0	18a	60·0	11	78·7	65·5	61·6	73	134·3	52·6	·53	8	5·0
Calcutta.....	91·2	3	63·1	29	85·6	72·7	71·4	77	155·7	55·0	6·43	6	4·3
Bombay.....	94·2	23	76·0	2	90·1	78·2	75·3	75	137·3	66·9	·48	5	2·0
Ceylon, Colombo	90·0	21	72·0	31	86·2	75·0	72·5	83	152·0	71·5	20·60	25	6·9
<i>Melbourne.....</i>	89·0	26	38·2	5	70·5	49·8	44·5	61	143·1	27·9	1·21	11	5·4
<i>Adelaide</i>	90·7	16	41·8	28	75·9	51·5	45·8	54	152·0	33·2	1·91	10	4·3
<i>Sydney</i>	99·7	19	48·9	2	74·4	57·1	53·7	66	147·1	38·3	3·19	13	3·6
<i>Wellington</i>	75·0	26	37·0	6	60·8	47·7	44·1	69	130·0	25·0	2·85	12	4·1
<i>Auckland</i>	65·0	29	47·5	2, 6	61·2	51·2	47·9	73	130·0	43·0	4·68	19	6·4
Jamaica, Kingston.....	92·1	4	69·7	11	86·4	73·0	71·6	79	...	...	9·77	17	...
Trinidad	92·0	18	68·0	26	87·9	68·0	71·4	80	167·0	68·0	6·15	20	...
Grenada.....	86·0	2	71·4	26	83·9	75·2	72·0	77	154·0	...	7·74	24	3·0
Toronto	82·0	3	26·6	28	58·5	43·4	46·5	82	98·8	22·0	5·77	16	6·5
New Brunswick, Fredericton	80·9	4	21·4	19	56·2	37·7	36·5	67	...	...	7·25	13	5·6
Manitoba, Winnipeg	65·8	2	19·0	30	45·0	30·5	...	...	...	...	5·67	16	7·3
British Columbia, Esquimalt	61·1	7	36·0	15	55·8	43·6	..	...	...	...	3·14	12	6·9

a—and 24.

REMARKS.

MALTA.—Adopted mean temp. 69°·6, or 0°·3 above average. Mean hourly velocity of wind 9·2 miles, or 0·2 above average. Mean temp. of sea 75°·3. L on 6 days. At 2 p.m. on 19th a cyclonic TS precipitated hailstones the size of hens' eggs, many measured 2½ inches in longest diameter. In other parts of the island they crashed through wooden venetians, and pierced corrugated iron roofing. A friend assures me that one mass of ice which fell, an agglomeration of walnut sized masses, congealed together, weighed just over two pounds. Nearly 300 panes of glass were destroyed in this College, and it is estimated that over 1,000,000 panes were destroyed in Valletta and suburbs. The storm centre passed over from N.W. to S.E., the wind gusts being of hurricane force, throwing down walls and uprooting trees. Most of the war ships in harbour were completely stripped of their awnings. A massive stone wall, flanking the botanical gardens at Floriano, was thrown down, for a length of 300 feet. J. F. DOBSON.

Mauritius.—Mean temp. of air 0°·3, of dew point 0°·2, and rainfall 1·04 in., below their respective averages. Mean hourly velocity of wind 10·3 miles, or 0·8 below average; extremes, 24·9 on 2nd and 0·0 on 8th, 23rd, and 24th; prevailing direction S.E. by E. to E. by N. The rainfall is the least on record in 24 years, excepting 1878, when 46 in. fell on 3 days. T. F. CLAXTON.

CEYLON, COLOMBO.—Mean temp. of air 0°·1 below, of dew point 0°·4 above, and rainfall 6·24 in. above, the average. Mean hourly velocity of wind 7·5 miles; prevailing direction S.W. and W. L on 7 days. H. O. BARNARD.

(Continued on p. 42.)

RESULTS OF METEOROLOGICAL OBSERVATIONS

AT

CAMDEN SQUARE FOR 40 YEARS, 1858-97.

MARCH.

YEAR.	RAINFALL.				TEMPERATURE.										CLOUD.
	Total.		Max. Fall.	Falls of 1 in. or +	Dry Mean, 9a.&9p.	Wet Mean, 9a.&9p.	ShadeMax		Shade Min		Sun Max. Black.		Grass Min.		
	Depth	Days					Abs.	Aver	Abs.	Aver	Abs.	Aver	Abs.	Aver	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14		15
	in.		in.												0-10
1858..	.69	5	.37	0	42.0	39.3	70.1	51.1	24.5	35.0	..	..	..	..	3.8
1859..	1.33	12	.40	0	45.9	43.3	62.6	53.5	27.8	39.9	..	..	..	..	6.4
1860..	1.87	17	.24	0	40.9	38.7	57.8	48.3	25.8	35.4	..	..	23.8	33.2	6.1
1861..	2.43	17	.39	0	43.7	41.1	62.7	52.7	27.8	36.9	..	..	19.9	32.8	5.4
1862..	3.69	20	.86	0	43.5	42.2	62.5	50.0	21.3	37.9	..	..	16.6	35.4	8.1
1863..	.85	9	.22	0	43.4	41.1	65.0	53.5	26.9	35.9	..	..	20.7	30.3	4.8
1864..	2.62	15	.53	0	41.0	39.2	60.5	50.3	26.4	34.6	..	..	19.4	31.8	6.6
1865..	1.12	15	.24	0	36.5	34.8	57.8	45.0	23.2	31.7	..	..	19.2	28.0	6.4
1866..	1.69	17	.40	0	40.8	38.7	65.2	48.9	22.5	35.1	..	..	14.2	29.5	5.9
1867..	2.48	21	.48	0	38.1	36.5	57.1	45.2	25.0	33.2	..	..	22.1	31.0	7.5
1868..	1.28	16	.44	0	44.7	42.2	60.5	53.0	29.2	37.4	..	..	24.4	33.9	6.0
1869..	1.97	16	.55	0	38.1	36.2	54.0	45.5	26.8	32.2	..	..	23.4	30.0	7.2
1870..	2.31	13	.95	0	40.0	37.8	60.5	48.3	23.8	35.5	101.5	80.0	20.8	32.3	7.4
1871..	1.19	12	.37	0	44.6	42.4	68.7	54.7	29.0	37.3	110.0	82.7	26.3	34.2	5.5
1872..	2.66	17	.69	0	44.8	42.8	61.1	53.5	26.1	37.9	101.2	84.1	23.1	34.6	6.1
1873..	1.46	17	.24	0	41.7	40.2	63.7	51.2	29.2	35.6	102.9	79.6	26.8	33.4	6.0
1874..	.39	12	.08	0	43.7	41.7	65.4	53.3	21.9	36.9	109.7	83.8	20.1	34.9	6.6
1875..	.69	11	.28	0	40.8	38.5	59.5	48.3	27.1	35.3	106.2	75.4	25.4	33.3	7.2
1876..	2.96	22	.74	0	41.2	39.1	63.3	48.9	26.4	35.2	104.2	84.0	19.2	31.2	5.4
1877..	2.38	20	.34	0	40.6	38.9	59.4	48.6	23.5	34.9	103.1	81.6	23.0	32.4	7.0
1878..	1.12	10	.50	0	42.1	39.2	58.0	51.0	26.4	36.3	99.2	86.2	19.3	31.8	6.6
1879..	.91	14	.14	0	40.5	38.8	63.1	49.4	29.2	34.8	107.1	78.7	27.4	32.4	6.1
1880..	.79	5	.31	0	43.4	41.3	62.6	54.4	28.7	37.0	111.2	91.3	22.7	32.3	6.0
1881..	2.30	11	.59	0	42.1	39.8	60.3	51.1	23.7	36.1	112.6	87.8	20.8	32.4	6.2
1882..	1.35	11	.67	0	45.0	42.9	63.9	55.5	28.5	38.1	128.7	91.4	25.2	34.0	5.1
1883..	.86	11	.29	0	35.9	34.1	57.0	44.9	22.4	30.4	101.4	81.0	19.3	27.8	5.4
1884..	1.41	7	.56	0	43.8	41.3	68.0	52.7	27.5	37.5	99.8	79.7	23.2	34.1	5.8
1885..	1.65	7	.74	0	39.7	37.1	62.6	49.4	26.5	33.0	105.9	78.7	21.5	28.0	5.4
1886..	1.38	14	.38	0	39.3	37.6	62.2	46.8	22.1	34.1	103.3	72.2	17.3	30.0	6.5
1887..	1.65	12	.37	0	37.4	35.8	57.5	45.8	22.4	32.2	100.4	74.4	17.4	28.4	6.1
1888..	3.34	20	.39	0	38.0	36.4	55.4	45.0	24.7	33.7	92.8	70.6	17.7	29.7	8.2
1889..	1.36	13	.37	0	40.5	38.1	59.6	48.2	19.2	33.8	98.8	77.6	16.4	29.5	7.0
1890..	1.76	14	.48	0	43.2	41.0	66.2	51.1	15.6	36.5	103.7	81.7	12.8	31.6	6.6
1891..	2.01	15	.55	0	40.1	37.7	57.7	47.8	23.7	34.6	101.1	79.4	18.0	30.0	6.4
1892..	1.04	9	.20	0	36.9	34.9	59.8	44.9	22.3	31.0	96.7	75.3	20.3	28.1	5.6
1893..	.32	6	.13	0	44.6	41.6	67.6	56.6	25.9	36.3	103.4	86.9	19.9	30.3	3.1
1894..	1.18	9	.40	0	43.3	40.9	65.8	54.2	28.6	36.0	108.8	88.0	22.1	29.5	4.4
1895..	1.42	14	.38	0	41.7	39.7	63.7	51.0	23.7	35.6	102.6	81.8	22.4	32.2	6.5
1896..	3.20	25	.53	0	45.7	43.4	65.2	53.3	29.4	39.9	103.2	80.5	24.9	34.4	6.9
1897..	3.42	17	.49	0	44.4	41.8	61.7	52.3	26.8	39.2	101.9	82.9	20.5	32.8	6.2
Mean ...	1.71	14	.43	0	41.6	39.5	61.9	50.2	25.3	35.5	104.3	81.3	21.0	31.6	6.1
Ex- {	3.69	25	.95	0	45.9	43.4	70.1	56.6	29.4	39.9	128.7	91.4	27.4	35.4	8.2
tremes }	.32	5	.08	0	35.9	34.1	54.0	44.9	15.6	30.4	92.8	70.6	12.8	27.8	3.1

SUPPLEMENTARY TABLE OF RAINFALL,
 MARCH, 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..	·38	XI.	Builth, Abergwesyn Vic.	3·27
II.	Dorking, Abinger Hall ..	·67	„	Rhayader, Nantgwillt ...	2·70
„	Birchington, Thor	·88	„	Lake Vyrnwy	2·97
„	Hailsham	·95	„	Corwen, Rhug	2·03
„	Ryde, Thornbrough	·85	„	Criccieth, Talarvor	2·04
„	Emsworth, Redlands ...	·65	„	I. of Man, Douglas	2·31
„	Alton, Ashdell	1·11	XII.	Stoneykirk, Ardwell Ho.	2·04
III.	Oxford, Magdalen Col..	·25	„	New Galloway, Glenlee	5·25
„	Banbury, Bloxham	·55	„	Moniaive, Maxwellton Ho.	5·47
„	Northampton, Sedgebrook	1·26	„	Lilliesleaf, Riddell	2·92
„	Stamford, Duddington..	·75	XIII.	N. Esk Res. [Penicuik]	3·25
„	Alconbury	·54	XIV.	Glasgow, Queen's Park..	3·18
„	Wisbech, Bank House...	·66	XV.	Inverary, Newtown	6·19
IV.	Southend	·78	„	Ballachulish, Ardsheal...	7·68
„	Harlow, Sheering.....	·60	„	Islay, Gruinart School ...	2·60
„	Colchester, Lexden	·86	XVI.	Dollar.....	3·46
„	Rendlesham Hall	1·23	„	Balquhider, Stronvar...	7·06
„	Scole Rectory	1·16	„	Coupar Angus Station...	1·85
„	Swaffham	1·16	„	Dalnaspidal H. R. S. ....	...
V.	Salisbury, Alderbury ...	·85	XVII.	Keith H. R. S.	2·23
„	Bishop's Cannings	·46	„	Forres H. R. S. ...	2·58
„	Blandford, Whatcombe ..	·82	XVIII.	Fearn, Lower Pitkerrie..	2·46
„	Ashburton, Holne Vic...	1·45	„	S. Uist, Askernish	3·47
„	Okehampton, Oaklands.	1·41	„	Invergarry	4·82
„	Hartland Abbey	·92	„	Aviemore H. R. S. ....	...
„	Lynton, Glenthorne	2·20	„	Loch Ness, Drumnadrochit	2·63
„	Probus, Lamellyn	1·37	XIX.	Invershin	2·64
„	Wellington, The Avenue	1·05	„	Durness	6·46
„	North Cadbury Rectory	·38	„	Watten H. R. S.	1·66
VI.	Clifton, Pembroke Road	1·17	XX.	Dunmanway, Coolkelure	4·12
„	Ross, The Graig	·63	„	Cork, Wellesley Terrace	1·38
„	Wem, Clive Vicarage ...	1·13	„	Killarney, Woodlawn ..	4·69
„	Wolverhampton, Tettenhall	·97	„	Caher, Duneske	·93
„	Cheadle, The Heath Ho.	1·76	„	Ballingarry, Hazelfort...	1·08
„	Coventry, Priory Row ..	1·40	„	Limerick, Kilcornan ...	...
VII.	Grantham, Stainby	·73	„	Miltown Malbay	2·06
„	Horncastle, Bucknall ...	...	„	Gorey, Courtown House	·89
„	Worksop, Hodsck Priory	·83	XXI.	Moynalty, Westland ...	1·46
VIII.	Neston, Hinderton	·96	„	Athlone, Twyford	1·63
„	Southport, Hesketh Park	1·28	„	Mullingar, Belvedere ...	1·57
„	Chatburn, Middlewood.	2·93	„	Woodlawn	1·95
„	Duddon Val., Seathwaite Vic.	6·63	XXII.	Crossmolina, Enniscoe ..	4·12
IX.	Melmerby, Baldersby ...	1·24	„	Collooney, Markree Obs.	2·35
„	Scarborough, Observat'y	2·05	„	Ballinamore, Lawderdale	...
„	Middleton, Mickleton ...	1·42	„	Warrenpoint.....	1·61
X.	Haltwhistle, Unthank...	2·18	XXIII.	Seaforde.....	1·53
„	Bamburgh	1·83	„	Belfast, Springfield	2·15
„	Keswick, The Bank	3·55	„	Bushmills, Dundarave..	2·25
XI.	Llanfrechfa Grange	1·82	„	Stewartstown	2·49
„	Llandovery	2·15	„	Killybegs	5·35
„	Castle Malgwyn	2·72	„	Horn Head	2·96
„	Brecknock, The Barracks	1·35	„		

MARCH, 1899.

Div.	STATIONS. [The Roman numerals denote the division of the Annual Tables to which each station belongs.]	RAINFALL.						Days on which ·01 or more fell.	TEMPERATURE.				No. of Nights below 32°.	
		Total Fall.	Differ- ence from average 1880-9.	Greatest Fall in 24 hours		Deg.	Date		Deg.	Date				
				Inches.	Inches.						In.	Dpth.	Date	
I.	London (Camden Square) ...	·50	— 1·11	·19	25	8	61·1	29	19·9	21	18	22		
II.	Tenterden	·82	— ·97	·36	25	8	59·5	14	21·0	21	17	22		
III.	Hartley Wintney	·76	— ...	·22	25	7	60·0	30	15·0	22	19	25		
IV.	Hitchin	·68	— ·66	·24	25	8	60·0	29	18·0	20	21	...		
V.	Winslow (Addington)	·70	— 1·02	·19	8	9	62·0	29	14·0	22	20	22		
VI.	Bury St. Edmunds (Westley) ..	1·23	— ·32	·40	25	10	58·0	29	15·0	22	...	...
VII.	Norwich (Brundall)	1·99	— ...	·73	19	17	62·2	11	14·0	21	16	25		
VIII.	Winterbourne Steepleton ...	·73	— ...	·27	8	12	60·2	15	16·5	23	16	25		
IX.	Torquay (Cary Green)	·76	— ...	·37	8	5	60·4	29	26·2	22	9	17		
X.	Polapit Tamar [Launceston]..	1·51	— 1·02	·56	8	12	65·5	15	11·5	22	...	19		
XI.	Stroud (Upfield)	·89	— 1·30	·50	8	8	60·0	13a	21·0	21	15	...		
XII.	Churchstretton (Woolstaston)	1·38	— ·75	·53	25	11	62·5	16	21·0	23	11	21		
XIII.	Worcester (Diglis Lock)	·47	— 1·31	·16	19	7	...	...	...	...	...	...
XIV.	Boston	·73	— ·81	·25	30	9	62·0	11	20·0	21	15	...		
XV.	Hesley Hall [Tickhill]	·91	— ·99	·34	30	12	61·0	13	20·0	21f	16	...		
XVI.	Breadsall Priory	1·33	— ...	·40	25	14	60·0	14	18·0	21	15	26		
XVII.	Manchester (Plymouth Grove)	...	— ...	...	...	...	...	...	...	...	...	...
XVIII.	Wetherby (Ribston Hall) ..	1·10	— ·96	·48	30	9	...	...	...	...	...	...
XIX.	Skipton (Arncliffe)	3·49	— 1·61	·93	25	15	...	...	...	...	...	...
XX.	Hull (Pearson Park)	1·40	— ·65	·29	20	14	60·0	11b	19·0	21	14	21		
XXI.	Newcastle (Town Moor)	1·35	— 1·28	·31	23	13	...	...	...	...	...	...
XXII.	Borrowdale (Seathwaite)	9·38	— 1·12	2·91	25	17	...	...	...	...	...	...
XXIII.	Cardiff (Ely)	1·67	— 1·21	·97	25	11	...	...	...	...	...	...
XXIV.	Haverfordwest	2·38	— ·86	·96	25	13	62·8	15	22·1	24	12	21		
XXV.	Aberystwith (Gogerddan) ...	1·67	— 1·31	·84	25	10	62·0	15c	...	...	...	...
XXVI.	Llandudno	1·18	— ·90	·35	25	11	61·0	16d	26·0	24	6	...		
XXVII.	Cargen [Dumfries]	4·84	+ 1·54	1·46	28	10	60·0	17	18·0	24	12	...		
XXVIII.	Edinburgh (Blacket Place)...	2·13	— ...	·58	25	12	62·9	17	23·5	24	8	14		
XXIX.	Colmoneh	2·91	— ...	·51	28	16	66·0	17	19·0	23	...	...
XXX.	Tighnabruaich	4·81	— ...	·95	25	17	52·0	14e	23·0	21	10	...		
XXXI.	Mull (Quinish)	5·55	+ 1·71	·92	28	21	...	...	...	...	...	...
XXXII.	Loch Leven Sluices	3·30	+ ·33	1·10	29	...	...	...	...	...	...	...
XXXIII.	Dundee (Eastern Necropolis)	1·65	— ·75	·40	25	17	62·3	17	20·9	24	11	...		
XXXIV.	Braemar	2·46	— ·18	·30	28	23	63·0	16	3·0	24	16	25		
XXXV.	Aberdeen (Cranford)	3·02	— ...	·65	20	22	60·0	14	14·0	23	16	...		
XXXVI.	Cawdor (Budgate)	2·56	+ ·52	1·06	29	16	...	...	...	...	...	...
XXXVII.	Strathconan [Beaully]	2·87	— 1·45	·56	7	10	...	...	...	...	...	...
XXXVIII.	Glencarron Lodge	9·26	— ...	1·30	31	25	57·0	16	17·0	23	11	...		
XXXIX.	Dunrobin	2·91	+ ·66	·46	28	21	57·0	14	22·0	24	17	...		
XL.	S. Ronaldshay (Roeberry) ...	2·54	— ·00	·56	31	26	52·0	16	23·0	21	14	...		
XLI.	Darrynane Abbey	2·11	— ...	·65	8	18	...	...	...	...	...	...
XLII.	Waterford (Brook Lodge) ...	1·62	— 1·28	·43	28	10	64·0	31	22·0	24	9	...		
XLIII.	Broadford (Hurdlestown) ...	1·24	— ...	·38	8	16	...	...	...	...	...	...
XLIV.	Carlow (Browne's Hill)	1·21	— 1·16	·41	28	10	...	...	...	...	...	...
XLV.	Dublin (Fitz William Square)	·91	— 1·10	·29	25	12	59·9	31	26·6	22	5	13		
XLVI.	Ballinasloe	1·94	— ·69	·47	25	17	60·0	16d	26·0	23	7	...		
XLVII.	Clifden (Kylemore)	5·02	— ...	1·22	24	17	...	...	...	...	...	...
XLVIII.	Waringstown	1·71	— ·64	·52	25	9	68·0	18	20·0	23g	12	17		
XLIX.	Londonderry (Creggan Res.)..	2·50	— ·23	·46	25	20	...	...	...	...	...	...
L.	Omagh (Edenfel)	2·35	— ·16	·80	25	16	64·0	16	22·0	22	11	14		

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

a—and 29, 30. b—and 12. c—and 16. d—and 17. e—and 29. f—and 22. g—and 24.

METEOROLOGICAL NOTES ON MARCH, 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 dry March since 1893, and the coldest weather since February, 1895. Sunny days and cold nights continued half through the month, with very little wind. From 19th to 25th a very cold spell occurred; calceolarias were killed, and apparently bamboo which had stood three winters. Average max. temp. $49^{\circ}\cdot8$, average min. in shade $32^{\circ}\cdot3$, and on grass $27^{\circ}\cdot4$. Duration of sunshine 185 hours, 30 mins. Grass min. $15^{\circ}\cdot0$ on 25th. T on 4th. S on 20th, 21st and 24th.

HARTLEY WINTNEY.—A bitterly cold and dry month. The driest March since 1893. There were only 6 mornings without frost, which in the third week was exceedingly severe, with ice in shade all day long. The temp. on grass fell to 8° on 22nd, destroying all peach, apricot and nectarine bloom. Slight S on 20th and 22nd. Fogs from 11th to 19th. The last week milder, with light S.W. breezes. Ozone on 12 days.

WINSLOW, ADDINGTON.—A dry month with much frost, which was very severe between 19th and 26th, damaging fruit blossom even when protection was given. There was high day temp. from 11th to 16th, which made things more susceptible to the cold which followed. Twice only in 29 years has there been less R in March; viz: $\cdot55$ in. in 1892, and $\cdot14$ in. in 1893. Fog on 11th, 13th, 14th, 16th and 17th.

BURY ST. EDMUNDS, WESTLEY.—Dry and cold. Several misty mornings. Min. temp. on grass 13° on 22nd. S on 20th, 21st and 22nd.

NORWICH, BRUNDALL.—Dry and mild to the 17th, followed by an exceedingly cold week from 18th to 25th, with S daily; that on 19th yielding $\cdot73$ ins., and being 8 inches deep on the level. Milder from 25th to the close. At Norwich on 20th at 1.2 p.m. a sharp flash of L, and long rolling peal of T occurred during a storm of S and H. The min. temp. on grass fell to $9^{\circ}\cdot4$ on 21st. S on 7 days. H on 9th and 18th.

WINTERBOURNE STEEPLETON.—A very dry month, and until the last week the temp. was very low. In the three months of 1899 the mean temp. has retrograded, that for January being $42^{\circ}\cdot0$, February $41^{\circ}\cdot7$, and March $40^{\circ}\cdot7$. The week ending March 25th was much the coldest this year, the mean being $31^{\circ}\cdot7$. H on 8th. S on 21st and 23rd.

TORQUAY, CARY GREEN.—R $1\cdot79$ in. below the average. Mean temp. $44^{\circ}\cdot3$, or $0^{\circ}\cdot3$ above the average. Duration of sunshine 192 hrs. 5 mins., being 48 hrs. 55 mins. above the average.

POLAPIT TAMAR [LAUNCESTON].—The wind in the earlier part of the month kept in the N. or E., and it was fine up to the 8th, with more or less fog in the mornings. S and H fell on 8th, followed by generally fine weather till 21st, when it became wintry, and the 22nd was the coldest morning of the year, the temp. on grass falling to 10° . The latter part of the month was dull, damp and warm. Fog on seven days. S on 20th, 22nd and 23rd.

WOOLSTASTON.—A very cold month, with constant frosts till the last week, when it became genial and spring-like. S fell lightly on 4th, 21st and 22nd. Violent storms of H on 9th. Mean temp. $42^{\circ}\cdot2$.

BREADSALL PRIORY.—Very cold and dry generally. S on 19th, 20th and 21st. Fog on 15th and 16th.

WALES.

HAVERFORDWEST.—The weather up to the 20th was fine and generally sunny, with keen frosts at night; unusual heat occurring on several days, notably the 15th. On the morning of 20th S began to fall, and the Precelly range was covered for 5 days; while on 21st the whole district was covered by from 3 to 4 inches of S. No such severe weather has occurred here since the great frost of February, 1895. Heavy R fell on 25th, and it continued rainy, stormy, and mild till the end.

GOGERDDAN.—Very changeable. From 5th to 17th it was unusually hot for March, while on 21st six inches of S fell after severe frost in the night.

SCOTLAND.

CARGEN [DUMFRIES].—The meteorological feature of the month was the remarkable variation of temp. After a period of unusual mildness (the mean temp. of the 8 days, 11th to 18th almost reaching 46°) the temp. suddenly fell and bitterly cold weather accompanied by sharp N.E. wind set in continuing till 25th, for which time the low mean of 32°·7 was recorded. Notwithstanding the coldness of these 7 days the mean for the month is nearly 1° above the average. The R is largely in excess of the average, but more than half the total fell on 25th and 28th. Prevailing winds N.E. S on 4th. Duration of sunshine 11 hours above the average. The frost and wet weather were unfavourable for sowing corn, and pastures made little growth.

EDINBURGH, BLACKET PLACE.—The mean temp. of the week ending 26th, was 32°·6 or 8°·6 below the average. The only colder week so far on in the season during the last 42 years, was that ending March 29th, 1879, with a mean temp. of 32°·0. Absolute drought from 9th to 23rd inclusive. Soft H on 19th and 22nd. Solar halo on 10th.

COLMONELL.—R 46 in. below, and mean temp. 2°·6 above, the average of 23 years. S on 19th, 21st and 24th.

TIGNABRUAICH.—More of a winter than a spring month. The ground cold and wet.

ABERDEEN, CRANFORD.—The first part of the month was fine and mild, but the weather changed on 17th, and on 18th there were strong winds from N.N.W. with S showers and between 20th and 21st a heavy fall of S.

S. RONALDSHAY, ROEBERRY.—A rough cold month. S from 18th to 27th inclusive. Mean temp. 38°·3 or 1°·1 below the average of 9 years. Mean max. 43°·3, mean min. 33°·2.

IRELAND.

BROADFORD, HURDLESTOWN.—A curious March. Some days were hot as any in July and others were very cold. Rainfall 89 in., and rainy days one, below the average of 14 years. H on 7th. S on 20th, 21st and 22nd.

DUBLIN, FITZWILLIAM SQUARE.—A dry and generally favourable month. From 12th to 19th conditions were anticyclonic and the diurnal range of temp. was large. Mean temp. 45°·1 or 2°·0 above the average. Fog on 4 days. High winds on 9 days, reaching the force of a gale on 28th and 29th. S or sleet on 5 days. Solar halos on 26th and 27th, and lunar halos on 19th and 24th.

OMAGH, EDENFEL.—Up to the 18th, with but little intermission, the weather was remarkably fine, the third week being especially brilliant, culminating on 16th in a max. temp. of 64°, the highest ever recorded so early in the season; but on 19th there followed the inevitable rebound to cold, harsh, unsettled and snowy days, and keen, frosty nights; the month terminating with heavy rains and close, humid atmosphere.