

# SYMONS'S

## MONTHLY

# METEOROLOGICAL MAGAZINE.

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CCCII.]

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FEBRUARY, 1891.

THE rainfall of February was so abnormally small that the usual tables give quite inadequate details; we have therefore prepared a map showing the distribution over the British Isles, and devote almost the whole of the present number to its description and to notes with which we have been favoured by our correspondents.

The map is self-explanatory, but a few words may be devoted to its chief features. Over practically the whole of England and Wales the total rainfall of the month was less than half an inch, the only exceptions being on the mountains of Wales and in the Lake District, where such a small fall is probably physically impossible. The whole of the country, east of a line drawn from Sunderland to Plymouth, with three unimportant exceptions, had less than one-tenth of an inch of rain, snow, hail, dew, fog, and mist; while no fewer than 35 stations report absolutely no measurable quantity. The exceptions referred to are a small area round Hull; a somewhat irregularly-shaped district, including Boston, Derby, Birmingham, Warwick, Rugby, and Oakham; and a tongue-shaped tract of land stretching from the Isle of Wight to Basingstoke. From these districts the amounts reported generally reach or slightly exceed a tenth of an inch, and from two stations exceed  $\cdot 25$  in.

In Ireland, also, the month was phenomenally dry, the fall over the country generally averaging about  $\cdot 25$  in.; but in the S.W. and in the counties of Donegal and Fermanagh, and parts of Tyrone and Leitrim exceeding  $\cdot 50$  in.

Over Scotland the fall was more irregular, and over the N.W. half of the country was not greatly deficient. In the E. the falls roughly average  $\cdot 25$  in., and in the S.W.  $\cdot 50$  in.

Effective comparison of the fall over the country generally, with that of other exceptionally dry months, cannot be carried further back than the commencement of the Rainfall organisation in 1860,

but in the 31 years that have since elapsed, no parallel can be found. The nearest approach is September, 1865, which was a remarkably dry month ; in most parts of England and Wales, unprecedentedly so.

*Number of Stations having small falls in September, 1865 :—*

Div.	County.	Below ·10 in.	No Rain.	Div.	County.	Below ·10 in.	No Rain.
II.	Hampshire .....	3	1	V.	Devon .....	25	15
„	Kent .....	8	2	„	Cornwall .....	4	0
„	Sussex .....	14	3	„	Somerset .....	14	7
III.	Herts .....	1	0	VI.	Gloucester .....	11	2
„	Northampton ...	2	2	„	Hereford .....	7	1
IV.	Essex .....	3	0	„	Stafford .....	1	0
„	Suffolk .....	8	2	„	Worcester .....	1	0
„	Norfolk .....	10	6	XI.	Monmouth .....	2	1
V.	Wilts .....	5	2	„	Denbigh .....	2	1
„	Dorset .....	8	3				

From this table, based on about 770 stations, we find that at 129, or 17 per cent., the fall was less than ·10 in., and that at 48, or 6 per cent. (of which 15 were in Devonshire), no rain at all fell.

The results for the month under discussion set out similarly are

*Number of Stations having small falls in February, 1891 :—*

Div.	County.	Below ·10 in.	No Rain.	Div.	County.	Below ·10 in.	No Rain.
I.	Middlesex .....	6	3	V.	Somerset .....	4	—
II.	Surrey .....	8	2	VI.	Gloucester .....	12	3
„	Kent .....	9	2	„	Hereford .....	2	—
„	Sussex .....	5	2	„	Shropshire .....	1	—
„	Hants .....	5	1	„	Staffordshire ...	1	—
III.	Herts .....	25	5	„	Worcester .....	5	—
„	Bucks .....	1	1	VII.	Leicester .....	1	—
„	Oxford .....	3	2	„	Rutland .....	2	—
„	Northampton ...	2	—	„	Lincoln .....	1	—
„	Hunts .....	1	1	„	Nottingham .....	2	—
„	Bedford .....	4	3	„	Derby .....	1	—
„	Cambridge .....	2	—	VIII.	Lancashire .....	1	—
IV.	Essex .....	6	1	IX.	Yorkshire .....	10	4
„	Suffolk .....	4	1	X.	Durham .....	2	—
„	Norfolk .....	6	—	„	Northumberland	3	—
V.	Wilts .....	5	1	XI.	Monmouth .....	3	—
„	Dorset .....	3	1	„	Glamorgan .....	1	—
„	Devon .....	16	—	„	Merioneth .....	1	1
„	Cornwall ..	3	—	„	Carnarvon .....	1	—

This table being based on the returns from only 220 stations, they are comparable only by means of percentages, the total returns of less than ·10 in. are 168, or 76 per cent., and of ·00 in. 35, or 16 per

cent., this latter percentage being almost equal to that of the returns under  $\cdot 10$  in. in September, 1865, viz. : 17 per cent.

The only other means of comparison is to select old-established stations, and to see what months in their records show a similar or greater deficiency of rain. For such a purpose one naturally turns first to the National Observatory, but only to meet with disappointment, for the Greenwich records are reliable for only 50 years, while the duration of those for Paris is nearer 200 years. However, we find the following months with less than  $\cdot 25$  in. :—

1852, March,  $\cdot 17$  in.  
1855, April,  $\cdot 09$  in.  
1857, Feb.,  $\cdot 20$  in.  
1865, Sept.,  $\cdot 16$  in.

If we take the earlier years, from 1815-40, we have in addition—1817, April,  $\cdot 10$  in. ; 1818, Aug.,  $\cdot 10$  in. ; 1821, Feb.,  $\cdot 04$  in. ; 1825, July,  $\cdot 10$  in. ; 1829, Dec.,  $\cdot 10$  in. ; 1833, May,  $\cdot 20$  in. ; 1840, April,  $\cdot 11$  in. ; but these figures are their own condemnation, for their very frequency is sufficient proof of their inaccuracy. The following table gives for a few long records the driest February and the driest month prior to 1891, with the duration of the record :—

Station.	Duration of record in years.	Driest February.		Driest Month.		February 1891. in.
		Amount. in.	Year.	Amount. in.	Date.	
Camden Square .....	33	$\cdot 31$	1862	$\cdot 26$	May, 1880	$\cdot 01$
Strathfield Turgiss .....	29	$\cdot 60$	1886	$\cdot 22$	July, 1885	$\cdot 11$
Hitchin .....	41	$\cdot 11$	1857	$\cdot 10$	July, 1885	$\cdot 01$
Bury St. Edmunds, Westley	34	$\cdot 15$	1857	$\cdot 11$	Sept., 1865	$\cdot 06$
Barnstaple.....	34	$\cdot 59$	1887	$\cdot 26$	Sept., 1865	$\cdot 03$
Tenbury, Orleton ....	60	$\cdot 44$	1887	$\cdot 11$	Sept., 1865	$\cdot 07$
Arnccliffe .....	37	$\cdot 37$	1858	$\cdot 00$	May, 1853	$\cdot 81$
Haverfordwest .....	42	$\cdot 85$	1888	$\cdot 30$	April, 1854	$\cdot 17$
Llandudno .....	32	$\cdot 44$	1888	$\cdot 13$	Sept., 1865	$\cdot 16$
Cargen .....	31	$\cdot 73$	1888	$\cdot 10$	April, 1873	$\cdot 28$
Cork, Blackrock .....	31	$\cdot 27$	1888	$\cdot 20$	May, 1876	...
Lurgan, Waringstown .....	29	$\cdot 49$	1888	$\cdot 37$	June, 1889	$\cdot 36$

These figures again, though representing the observations of a long series of years, show no indication of any month at all comparable with February, 1891.

### OBSERVERS' NOTES.

WEST KENSINGTON, EDITH ROAD.—The rainfall for February is  $\cdot 01$  in., which fell on the 6th. I remember well that I felt very doubtful whether to enter that or not—it was certainly not a full hundredth. A rainless month has not occurred in London since July, 1800 ! so we may congratulate ourselves on having seen what hardly anyone living has seen before.—*G. von U. Searle.*

STROUD GREEN, MOUNT VIEW ROAD.—I have recorded no rain here during the entire month of February. The last rain fell on

January 31st. Moisture from the fogs was noted on 5 days, giving a total of  $\cdot 035$  in.—*Geo. T. Gwilliam.*

FINCHLEY, ETCHINGHAM PARK.—Enclosed are the returns, not of rainfall, but of drought, at this place and at Muswell Hill. What's to be done in these very extraordinary circumstances? Do you expect each of your observers who sends in a blank record to send you a pair of white kid gloves, the same as when a judge has no cases to try at an assize on the criminal side? Seriously, though, it must be bad for the country. Is it not curious that we should have had five dry Februaries in the last six years? This seems to me very much against taking so short a period as ten years as a basis of comparison.—*J. W. Scott.*

CRANLEIGH, HALL PLACE.—Literally, we had not a drop of rain throughout the whole month of February, a circumstance, I should think, quite unprecedented.—*E. S. Rowcliffe.*

SUTTON.—The only fall last month was on the 6th,  $\cdot 01$  in.; the last day I found  $\cdot 04$  in. accumulated condensation.—*William Goode.*

TENTERDEN.—Old gauge,  $\cdot 10$  in.; dew on 1st, 24th, and 25th; fog on 7th, 18th, 20th, 21st, and 23rd, also on 6th, when I have  $\cdot 02$  in. recorded, partly rain, and the only day with any. At Folkestone the total was  $\cdot 09$  in.; and  $\cdot 02$  in. rain on 14th. September, 1865, with  $\cdot 06$ , is my only less month. Perhaps I was not careful as to dew then. My Snowden gauge gives only  $\cdot 06$  in. on 6th, 7th, 20th, 21st, 23rd, and 24th.—*J. Ellis Mace.*

CRANBROOK, SWATTENDEN.—We had no rain in the month of February this year, excepting  $\cdot 02$  in. on the 6th.—*E. Appach.*

BECKENHAM.—Total rainfall, February 2nd,  $\cdot 005$  in.; 6th,  $\cdot 007$ ; 18th,  $\cdot 003$ ; total,  $\cdot 015$  in.—*Percy Bicknell.*

BECKENHAM, FOXGROVE ROAD.—An absolutely rainless February. The lowest records I have for that month since 1876 are  $\cdot 56$  in. in 1886 and  $\cdot 57$  in. in 1887.—*C. S. Pringle.*

WORTHING, HEENE.—The total rainfall for February here was  $\cdot 09$  in. on 6 days; and of this,  $\cdot 05$  in. on 4 days was due to the deposit of fog and hoar frost. The monthly gauge recorded the same amount, a somewhat remarkable fact for so dry a time. I have records since 1852, and no such dry February has ever been registered. I append a table of very dry months since 1852:—

1854.	$\cdot 10$ in.	during 5 days	in March.
1855.	$\cdot 10$ in.	2	April.
1865.	$\cdot 10$ in.	2	September.
1869.	$\cdot 18$ in.	4	July.

*Wm. J. Harris.*

CROWBOROUGH OBSERVATORY.—We have had an absolutely rainless month of February. The phenomenon of a rainless

calendar month has not occurred in Sussex since July, 1842, when there was no rain from June 30th to August 11th.—*C. L. Prince.*

SHANKLIN, BONDI.—I have not measured a drop of rain for the whole month of February.—*Alfred Parbury.*

HORNDEN, ST. CATHERINE'S.—Our rainfall here last month was .25 in.—*Mary C. Barnes.*

PETERSFIELD, COMPTON.—The rainfall of February is a curiosity, .09 in. on 5 days.—*H. M. Langdale.*

ST. ALBAN'S, THE GRANGE.—Rainfall in February :—

6th	...	...	...	.02 in.
21st	}	condensed fog	{	.01 in.
22nd				.01 in.
24th				.01 in.
				<hr/> .05 in.

Smallest falls on record at Herts stations in February :—Odsey Grange, .23 in. ; Throcking, .24 in. ; Much Hadham, .26 in. ; all in 1886. Smallest in any month : April, 1870, Cassiobury, .08 in. ; July, 1884, Hitchin, .10 in. ; Feb. 1857, Hitchin, .11 in.—*John Hopkinson.*

ST. ALBANS, TORRINGTON HOUSE.—My rainfall return for February, taken on March 1st at 9 a.m. was precisely 0.035 in. in both jar and can gauges.—*Eleanor A. Ormerod.*

HITCHIN, THE FIRS.—On the 1st of February, just after 9 a.m., enough "rain" fell to make .01 in. and so spoil my *carte blanche*. My friend, Mr. Lindsell, 400 yards north of me, who is a most accurate observer and has the best instruments, has scored *carte blanche* twice in 40 years. This month's max. temp. is unprecedented, 62°. Sulphur butterflies have swarmed during the last fortnight, and on the 16th a queen wasp was killed. Altogether, everything is out of gear, and we have had 21° at sunrise and over 50° at 1 or 2 o'clock.—*W. Lucas.*

ADDINGTON.—The long tract of dry weather we have had in this district is now fairly at an end. From the 31st of January until the 6th of March I had nothing to measure, but yesterday morning (7th) I had .01 in. and this morning 0.34 in. 33 consecutive days without rain I imagine to be a rare occurrence in this country.—*John Mathison.*

KIMBOLTON, COVINGTON RECTORY.—It seems remarkable that the rainfall has been so tiny in almost every part of England. Here on the night of Jan. 31st it began to rain at 9 p.m. ; how long it continued I cannot say, but at 3 a.m. it rained and hailed tremendously and kept me awake for an hour. On measuring the rainfall on February 1st, I found half-an-inch, of which a good deal fell on Feb. 1st. This I emptied. On measuring again, March 1st, I found .30 in.—*Geo. F. Watson.*

ASPLEY GUISE.—I have not in February had any rain at all. There was some rain in the gauge on the morning of the 1st, which is, according to rule, reckoned to the 31st January, and unless this fell on this side midnight there has been absolutely no rain during the whole of the month.

This appears, from my record, extending from the beginning of 1856 to the present time, with the exception of the years 1866–67, to be quite unprecedented at this place.

My average for the month, according to the same record, is 1·50 in., and I have in my own 20 years (1871 to 1890 inclusive) had as little as ·40 in. in 1886 and as much as 3·54 in. in 1879.

Has anybody else noticed an extraordinary dryness of air in the last two days of the month? I was greatly surprised, on casually looking at the thermometers on the 27th, at 2.20 p.m., to find the dry bulb at 64° and the wet at 49°·5. It took two or three lookings to persuade me that I had not made a mistake. Glaisher's tables give for these temperatures a relative humidity of 37. What the drying power of such air may be I leave to more learned ones to determine.—*Edward E. Dymond.*

BEDFORD.—The entire absence of rain is notable here. At the Cardington Observatory, Miss McLaren had none; Mr. Godfrey, St. Peter's, had ·02 in., ascribed to dew and hoar frost. None has fallen in my gauge for 34 days, but for three or four days rain has seemed impending. The smallest rainfall previously at Cardington was in May, 1848, when only ·03 in. was measured.—*David Robie.*

SOUTHEND.—Last month I registered the extraordinarily small quantity of ·02 in. of rain, the lowest on my record, which dates back to 1875.—*C. J. Holthouse.*

DEDHAM, THE ROOKERY.—A month without a drop of rain is beyond my former experience, such has been this month of February. The moisture, ·09 in., registered on 9 days, being the result of the dense fogs so generally experienced.—*W. H. Penrose.*

IPSWICH, CLARE LODGE.—We had rain here on only one day in February, viz., on the 6th, measuring ·02 in. On the morning of March 2nd there was a slight fall of rain, which I estimate at not more than ·01 in., but the water in the gauge measured ·05 in. Of this, ·04 in. at least must have been fog condensation accumulated since the 6th February. It is very unusual to have fogs here such as those of last month, so that it never occurred to me to examine the gauge in the intervals of rain falling.—*E. R. Turner.*

GREAT YARMOUTH.—The rainfall for February, ·14 in. on 8 days, is the smallest monthly amount I have recorded.—*W. C. Steward.*

BRADFORD-ON-AVON.—Only ·01 in. of rain fell during February. It fell on the 3rd.—*E. M. Spencer.*

MARLBOROUGH, MILDENHALL RECTORY.—The driest month on

record. No rain. Only .04 in. in gauge, from the accumulation of melted hoar frost.—*C. Soames.*

WIMBORNE, CHALBURY RECTORY.—We have not had a drop of rain or snow here since January 31st, and at this height we had hardly any fog.—*G. H. Billington.*

STURMINSTER NEWTON.—On February 7th there was a slight fall of rain in the morning, which turned to damp fog; .02 in. was registered, which is the total for the month.—*Arthur R. Hallett.*

DEVONPORT WATER WORKS.—The rainfall for February having been so exceptional, I send the result of the month's gaugings at my three gauges:—(1). Rowden's Reservoir, Devonport: Total fall for month, .02 in.; number of wet days, 2. (2). Lowery, Walkhampton: Total fall for month, .09 in.; number of wet days, 1. (3). Cowsic Valley, Princetown: Total fall for month, .70 in.; gauge taken weekly.—*H. Francis.*

WIDDECOMBE VICARAGE.—February a remarkable month. No rain since the 1st (.14 in.); very little wind; great stillness; frequent fogs, but (for the Moor) an extraordinary amount of sunshine. I do not remember a February at all like it.—*J. Williams.*

HONITON, IVEDON.—During February I recorded only .01 in. of rain, viz., on 11th. The weather throughout was very like California coast winter climate—frosts, sometimes sharp, at night, and bright, warm days—all the frost disappearing by 11 o'clock. There were 20 days of bright sunshine, with scarcely any wind; that generally E. to S.E.—*G. E. Stanley.*

LOSTWITHIEL, LANWITHAN.—Seeing in your letter in the *Times* on "The Dry February" no return from Cornwall, I am sending you mine (.14 in.), which I understand is more than some others. In June, 1887, we had only .09 in.—*Mabel Foster.*

BRISTOL, OVER COURT.—Both my gauges, the one in the park, and the one in the garden, registered .01 in. only during February. This was registered on the morning of the 2nd, and was, I think, due to condensed fog or dew.—*R. C. Cann Lippincott.*

COLEFORD, STAUNTON RECTORY.—Rain fell on two days only in February, viz., as taken at 9 a.m. on the 4th, .01 in.; on the 8th, .03 in. So total rainfall in month was .04 in.—*C. J. Jones.*

CHELTENHAM, HEATH LODGE.—In February we had literally no rain. One day there was a slight snowstorm, which yielded .02 in., and fog on three days yielded .01 in., making a total of .05 in. I have measured the rain for 40 years, and do not remember so small a quantity in any month.—*W. A. Smelt.*

DILWYN.—Rainfall for February taken here: 8th, .02 in.; 28th .01 in.; total, .03 in.—*T. Lambert Hall.*

CHEADLE, TEAN VICARAGE.—Total rainfall in February .12 in., of which .02 in. was deposited in the form of dew or fog. Maximum

shade temperature on 28th,  $61^{\circ}$ ; the highest max. in previous 16 Februaries,  $58^{\circ}$ .—*G. T. Ryves.*

LEICESTER, ROTHERBY HALL.—I commenced a record of rainfall in January, 1869, and only once since then, viz.,  $\cdot 06$  in. July, 1885, has the rainfall been as small as in February last; my record is  $\cdot 12$  in. on 6 days, but on 3 the water was more the accumulation from fog than absolute rain. On 21 days the temp. fell below freezing point, and we had much fog and very little sunshine until the 23rd; from then to the end of the month the middays were warm.—*Joseph Hames.*

STAMFORD, TOLETHORPE HALL.—Rain on 1st,  $\cdot 01$  in.; 8th,  $\cdot 04$  in.; total,  $\cdot 05$  in. I think this is quite unprecedented.—*C. O. Eaton.*

DERBY, HAZELWOOD.—In February, with my 5 in. gauge, I measured on the morning of the 9th,  $\cdot 11$  in.; 10th,  $\cdot 01$  in.; 14th,  $\cdot 01$  in.; 21st,  $\cdot 01$  in.; on 1st March,  $\cdot 01$  in.; total,  $\cdot 15$  in. My 8 in. gauge, which I examined on the 1st March, gave  $\cdot 15$  in. I hear from Mr. John Hunter, of Belper, that his gauge gave  $\cdot 14$  in. The only rain that fell was that mentioned on the 9th; the other quantities were, on 3 days, certainly fog or dew, though that measured on the 1st March I am not quite sure about.—*C. H. Burbidge Hambly.*

LIVERPOOL, HOPE STREET.—February rainfall,  $\cdot 11$  in. on 7 days.—*G. Jevons.*

CLITHEROE, DOWNHAM HALL.—Rainfall here in February,  $\cdot 55$  in., last year it was  $\cdot 65$  in. These are the driest Februaries I have recorded since I commenced observing in 1855.—*R. Assheton.*

YORK, BOOTHAM.—February, 1891, was rainless, so far as the rain gauge was concerned. A few drops, but very few, fell on the 11th, and at 6 p.m. on the 28th just a few spots on the pavement. About 3 a.m. on March 1st rather more fell, but the pavement, according to a policeman's report, was still dry at 6 a.m. The mean February rainfall for 50 years is 1.52 inches.—*J. E. Clark.*

HULL, MIDDLETON RECTORY.—The February rainfall has been abnormal, no doubt, all over the kingdom. My register is—Feb. 3rd,  $\cdot 02$  in.; Feb. 28th,  $\cdot 04$  in. But although there has been no rain on the other days, the thick fogs and hoar frosts have deposited moisture, I cannot say how much on each day. But on Feb. 21st there was  $\cdot 02$  in. in the gauge and on Feb. 28th,  $\cdot 02$  in.—*H. D. Blunckard.*

SUNDERLAND, WEST HENDON HOUSE.—The rainfall in February was  $\cdot 04$  in., part of which may have been condensed fog. The driest month I have recorded previously in my 31 years' observation was June, 1889, when the fall was  $\cdot 24$  in. There was no rain from the end of February until March 6th, on which date there was  $\cdot 03$  in. The total fall from January 21st till March 6th inclusive was  $\cdot 21$  in. We have now, however, had a sudden change, as it commenced to snow on the evening of the 7th, and by 8 a.m. on the 8th the snow was  $14\frac{1}{2}$  inches deep. This is the deepest fall I have ever known in



one day, though not the heaviest, as the snow was very light, being equal to about 0·94 in. of water up to 8 a.m. On the 8th it snowed nearly all day, with I am told a little rain, but the depth of snow diminished. In the 24 hours ending 8 p.m. on the 8th, the total fall would be about 1·43 in. of water, and in the 26 hours up to 10 p.m., when it practically ceased, 1·47 in., which is more than the total fall of the previous 71 days. The amount of melted snow in the 24 hours has been exceeded once before in my experience—viz., Nov. 12th, 1878, when the fall (which was 10½ inches) gave 1·63 in. of water.—*T. W. Backhouse.*

CORBRIDGE, BINGFIELD.—The rainfall at this place for February was only ·07 in.—*John Coppin.*

SWANSEA.—The rain here for February measured only ·14 in., which, I think, is the lowest on record.—*T. Travers Wood.*

LLANFAIRFECHAN.—Rainfall of February, ·09 in. : ·03 in. on the 3rd, ·03 in. on the 5th, ·01 in. on the 6th, and ·02 in. on the 13th. I have no previous record of so small a fall in any month, in any year.—*Richard Luck.*

### ROYAL METEOROLOGICAL SOCIETY.

THE usual monthly meeting of this Society was held on February the 18th, at the Institution of Civil Engineers, 25, Great George Street, Westminster, Dr. C. T. Williams, M.A., Vice-President, in the chair. Mr. C. L. Brook, Mr. C. E. De Rance, F.G.S., Assoc.Inst.C.E., Mr. J. Eden, Assoc.M.Inst.C.E., Mr. J. C. Mundell, and Mr. J. Sidebottom, J.P., were elected Fellows of the Society.

The following papers were read :—

1. "The Great Frost of 1890-91;" by Mr. C. Harding, F.R.Met.Soc. This paper dealt with the period from November 25th to January 22nd, and it was shown that over nearly the whole of the south-east of England the mean temperature for those fifty-nine days was more than 2° below the freezing point, whilst at sea-side stations on the coast of Kent, Sussex, and Hampshire, the mean was only 32°. In the extreme north of Scotland, as well as in the west of Ireland, the mean was 10° warmer than in the south-east of England. In the Southern Midlands, and in parts of the south of England, the mean temperature for the fifty-nine days was more than 10° below the average, but in the north of England the deficiency did not amount to 5°, and in the extreme north of Scotland it was less than 1°. The lowest authentic reading in the Stevenson screen was 0°·6 at Stokesay in Shropshire, but almost equally low temperatures occurred at other periods of the frost. At many places in the south and south-west of England, as well as in parts of Scotland and Ireland, the greatest cold throughout the period occurred at the end of November, and at Waddon, in Surrey, the thermometer in the screen fell to 1°, a reading quite unprecedented at the close of the

autumn. At Addington Hills, near Croydon, the shade thermometer was below the freezing point on 58 out of the 59 nights, and at Cambridge and Reading on 57 out of the 59. At Biarritz frost occurred on thirty-one nights; in the Shetlands on nine and at Rome on six nights. Although at many places in England the frost was continuous night and day for twenty-five days, at coast stations in the north of Scotland it in no case lasted throughout the twenty-four hours. On the coast of Sussex the temperature of the sea was about  $14^{\circ}$  warmer than the air throughout December, but on the Yorkshire coast it was only  $6^{\circ}$  warmer, and in the Shetlands and on parts of the Irish coast it was only  $3^{\circ}$  warmer. The Thames water off Deptford, at 2 feet below the surface, was continuously below  $34^{\circ}$  from December 23rd to January 23rd, a period of thirty-two days, whilst the river was blocked with ice during the greater part of this time. In Regent's Park, where skating continued uninterruptedly for forty-three days, the ice attained the thickness of over 9 inches. The frost did not penetrate to the depth of 2 feet below the surface of the ground in any part of England; but in many places, especially in the south and east, the ground was frozen for several days at the depth of 1 foot, and at 6 inches it was frozen for more than a month. In the neighbourhood of London the cold was more prolonged than in any previous frost during the last 100 years, the next longest period being fifty-two days in the winter of 1794-5, whilst in 1838 frost lasted for fifty days, and in 1788-9 for forty-nine days.

2. "The Problem of Probable Error as applied to Meteorology;" by Mr. T. W. Backhouse.

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#### MERLE'S MS. OBSERVATIONS, A.D. 1337-1344.

WE are glad to say that through the help of our old correspondent Colonel Ward, this MS. has not only been found, but is already in process of being photographed, and has been deciphered and translated. This rapid action could not, however, have been secured without that which we desire at once to recognize, namely, the ready help of the authorities of Bodley's Library and of the University Press.

Colonel Ward has very kindly promised to guarantee us against pecuniary loss in the matter, but we shall not be surprised if the reproduction is effected without calling upon him at all.

There are ten sheets of vellum in the MS., and each of these will be photographed and reproduced as a collotype. There is the deciphering and translation to be paid for. There will be the printing of the translation, and of a title-page and (if materials can be found) an introductory note as to Merle and his MS., and the whole must be bound. The photographs will be large ones, 12 inches by 10 inches, and therefore the binding will be expensive. There will

also be the cost of distribution. Copies will be sent gratis to some of the principal meteorological establishments in the world, and to a few of the larger libraries, and the remainder will be appropriated to those who first apply for them and remit with their application the sum of half-a-guinea.

We have not seen the MS., and consequently offer no guarantee as to its quality ; but it is more than five hundred years old, and is, we believe, far and away the oldest daily meteorological record in existence. Thanks to the excellent arrangements and very reasonable charges adopted at the Bodleian, we think that this can be reproduced at the low price we have above named, and we shall be surprised if many of our readers are not prepared to pay that sum for the curiosity.

We intend to reserve 10 copies for Colonial and Foreign correspondents (who will not be able to apply in time), but, with that exception, shall prepare only the gratuitous copies above mentioned, and those for which payment is made. Therefore no copies will be available for subsequent sale at any price whatever.

All applications to be made to G. J. Symons, 62, Camden Square, N.W.

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#### BRIGHT METEOR DECEMBER 14TH, 1890.

*To the Editor of the Meteorological Magazine.*

SIR,—I believe that this meteor, referred to in the February number, was seen here. On the following morning the gardener reported having seen distant sheet lightning at 9.45 the previous evening. I accordingly filled up a thunderstorm form and posted it to the Royal Meteorological Society. A few days after I saw a report of the meteor in *Nature*, and, as the time corresponded precisely, I questioned him more carefully, when he told me that it was bright starlight at the time ; he was out of doors, and suddenly noticed the sky lit up brightly, apparently to the southward ; it seemed to flash up two or three times at intervals of a few seconds ; the first impression it gave him was that it was a brilliant aurora. This is a long way from the other localities where the meteor was seen, but the time corresponds so closely that it seems probable that it was the same phenomenon.—Yours truly,

HENRY MELLISH.

*Hodsock Priory, Worksop, 23rd February, 1891.*

## CLIMATOLOGICAL TABLE FOR THE BRITISH EMPIRE, AUGUST, 1890.

STATIONS.  (Those in italics are South of the Equator.)	Absolute.				Average.				Absolute.		Total Rain.		Aver.
	Maximum.		Minimum.		Max.	Min.	Dew Point.	Humidity.	Max. in Sun.	Min. on Grass.	Depth.	Days.	
	Temp.	Date.	Temp.	Date.									
England, London .....	79·7	5	40·4	31	69·9	52·5	52·2	78	124·6	38·4	1·55	13	5·9
Malta.....	97·5	25	64·8	29	89·1	70·5	69·0	69	149·4	59·0	·00	0	0·0
Cape of Good Hope ...	65·8	21	38·3	13	60·2	46·4	...	...	...	...	3·64	...	5·9
Mauritius.....	74·4	14a	56·2	30	73·0	62·5	58·9	76	128·2	49·0	2·22	22	5·6
Calcutta.....	89·8	4, 18	74·6	22	86·9	77·0	78·1	87	155·7	73·8	9·04	23	7·4
Bombay.....	84·9	25	74·0	2, 18	83·2	75·4	73·9	84	137·6	68·9	10·61	29	8·9
Ceylon, Colombo .....	86·7	25	74·6	11	84·8	77·0	70·2	75	147·0	70·0	·73	14	6·5
Melbourne.....	65·7	28	33·6	5	57·9	43·1	42·3	74	118·0	27·5	1·47	17	7·0
Adelaide .....	70·2	22	36·0	10	59·7	45·9	44·0	72	138·3	28·8	3·73	20	6·1
Wellington .....	63·3	12	32·0	15	57·1	42·1	40·7	73	115·0	27·0	4·16	13	3·8
Auckland .....	64·0	20	40·0	15	59·3	47·1	45·4	75	119·0	29·0	4·44	18	6·0
Jamaica, Kingston.....	92·3	15	69·3	4	89·1	72·6	70·0	70	...	...	5·23	...	...
Trinidad .....	90·5	1	60·0	26	86·3	68·9	72·3	82	155·0	60·0	11·65	22	...
Toronto .....	89·4	3	46·0	23	73·1	56·9	56·7	75	...	39·0	3·03	13	4·8
New Brunswick, Fredericton .....	88·2	4	43·0	19	73·3	54·5	57·0	74	...	...	5·88	15	6·1
Manitoba, Winnipeg ...	87·8	1	33·0	22	68·4	43·8	52·7	78	...	...	3·08	18	4·6
British Columbia, Victoria.....	...	...	...	...	...	...	...	...	...	...	...	...	...

a And 15, 27.

## REMARKS.

MALTA.—Mean temp. 78°·9; mean hourly velocity of wind, 6·1 miles; sea temp. rose from 78°·5 to 82°·6; L seen on 22nd and 31st.

J. SCOLES.

Mauritius.—Mean temp of air, 1°·6 below, dew point 0°·2 below, and R ·14 in. above their respective averages; mean hourly velocity of wind, 11·4 miles, or 1·0 below average; extremes 30·1 on 12th and 1·8 on 28th; prevailing direction, S.E. by E.

C. MELDRUM, F.R.S.

Melbourne.—Mean temp. of air and mean humidity same as the average. Dew point 0°·2 and cloud 0·9 above the average. R ·37 in. below average. Prevailing winds N. and N.E., strong on 12 days; frosts on 4 days; fogs on 2 days; heavy dew on 5 days; hail on 17th; T and L on 29th.

R. L. J. ELLERY, F.R.S.

Adelaide.—A cold, wet month; mean temp. 1°·2 below average; R 1·40 in. in excess.

C. TODD, F.R.S.

Wellington.—The first two days fine, then showery until the 7th; from 7th to 17th fine, afternoon of 17th, and 18th showery, then generally fine until the 27th, when it rained, and continued showery almost to the end. Prevailing N.W. wind, strong on 7 days; hail on 5th and 6th; fog on 10th; 2·35 in. of R on 3rd. Mean temp. 1°·6 above the average; R 1·05 in. below average.

R. B. GORE.

Auckland.—A warm, moist month, with an unusual predominance of N.E. and E. winds. Mean temp. and pressure considerably above the average; R slightly in excess.

T. F. CHEESEMAN.

SUPPLEMENTARY TABLE OF RAINFALL,  
 FEBRUARY, 1891.

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

D v	STATION.	Total Rain.	Div.	STATION.	Total Rain.
		in			in.
II.	Dorking, Abinger Hall.	·04	XI.	Builth, Llanwrtyd Wells	1·45
"	Margate, Birchington...	·10	"	Rhayader, Nantgwillt..	·24
"	Brighton, Prestonville Rd	·01	"	Corwen, Rhug .....	·00
"	Hailsham .....	·05	"	Carnarvon, Cocksidia ...	·32
"	Ryde, Thornbrough .....	·15	"	I. of Man, Douglas .....	·24
"	Alton, Ashdell .....	·11	XII.	Stoneykirk, Ardwell Ho.	·44
III.	Oxford, Magdalen Col...	·00	"	New Galloway, Glenlee	·78
"	Banbury, Bloxham .....	·04	"	Melrose, Abbey Gate...	·13
"	Northampton .....	·03	XIII.	N. Esk Res. [Penicuik]	1·25
"	Cambridge, Fulbourne..	·06	XIV.	Ballantrae, Glendrisaig	·38
"	Wisbech, Bank House..	·05	"	Glasgow, Queen's Park..	·54
IV.	Southend .....	·07	XV.	Islay, Gruinart School..	·86
"	Harlow, Sheering ...	·01	XVI.	Dollar .....	·70
"	Rendlesham Hall .....	·21	"	Balquhiddier, Stronvar..	2·01
"	Diss .....	·07	"	Coupar Angus Station..	·15
"	Swaffham .....	·03	"	Dunkeld, Inver Braan..	·32
V.	Salisbury, Alderbury ...	·01	"	Dalnaspidal H.R.S. ...	1·79
"	Warminster .....	·01	XVII.	Keith H.R.S. ....	1·19
"	Bishop's Cannings .....	·00	"	Forres H.R.S. ....	1·41
"	Ashburton, Holne Vic....	·07	XVIII.	Fearn, Lower Pitkerrie.	2·33
"	Okehampton, Oaklands.	·09	"	Loch Shiel, Glenaladale	8·73
"	Lynmouth, Glenthorne.	·01	"	N. Uist, Loch Maddy ...	3·66
"	Probus, Lamellyn .....	·17	"	Invergarry .....	5·58
"	Launceston, S. Petherwin	...	"	Aviemore H.R.S. ....	1·05
"	Wincanton, Stowell Rec.	·05	"	Loch Ness, Drumnadrochit	1·80
"	Wells, Westbury .....	·01	XIX.	Lairg H.R.S. ....	...
VI.	Bristol, Clifton .....	·00	"	Scourie .....	3·51
"	Ross, the Graig .....	·01	"	Watten H.R.S. ....	1·81
"	Wem, Clive Vicarage ...	·15	XX.	Dunmanway, Coolkelure	·80
"	Cheadle, The Heath Ho.	·06	"	Fermoy, Gas Works ...	·61
"	Worcester, Diglis Lock	·09	"	Darrynane Abbey .....	·94
"	Coventry, Coundon .....	·19	"	Tipperary, Henry Street	·30
VII.	Ketton Hall [Stamford]	·09	"	Limerick, Kilcornan ...	·18
"	Grantham, Stainby .....	·16	"	Ennis .....	·19
"	Horncastle, Bucknall ...	·06	"	Miltown Malbay .....	·53
"	Worksop, Hodsock Priory	·08	XXI.	Gorey, Courtown House	·24
VIII.	Neston, Hinderton .....	·17	"	Mullingar, Belvedere...	·29
"	Knutsford, Heathside ...	·24	"	Athlone, Twyford .....	·25
"	Lancaster, Southfield ...	...	"	Longford, Currygrane...	·22
"	Broughton-in-Furness ..	·82	XXII.	Galway, Queen's Coll...	·32
IX.	Ripon, Mickley .....	·03	"	Crossmolina, Enniscoe..	·25
"	Scarborough, West Bank	·06	"	Collooney, Markree Obs.	·27
"	East Layton [Darlington]	·00	"	Ballinamore, Lawderdale	·54
"	Middleton, Mickleton ..	·22	"	Lough Sheelin, Arley ..	·26
X.	Haltwhistle, Unthank..	·22	XXIII.	Warrenpoint .....	·11
"	Bamburgh .....	·12	"	Seaforde .....	·29
"	Shap, Copy Hill .....	·15	"	Belfast, New Barnsley..	·17
XI.	Llanfrehfa Grange .....	·00	"	Bushmills, Dundarave...	·29
"	Llandovery .....	·30	"	Stewartstown .....	·42
"	Castle Malgwyn .....	·74	"	Buncrana .....	·31

## FEBRUARY, 1891.

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.	Difference from average 1880-9.	Greatest Fall in 24 hours		In shade.	Max.		Min.		On grass			
				Dpth	Date		Deg.		Date	Deg.		Date		
inches.	inches.	in.												
I.	London (Camden Square) ...	·01	— 1·87	·01	7	1	61·2	28	24·2	23	14	22		
II.	Maidstone (Hunton Court)...	·00	— 1·80	·00	...	0	...	...	...	...	...	...		
III.	Strathfield Turgiss .....	·11	— 1·89	·05	28	4	64·0	28	23·3	27	19	23		
III.	Hitchin .....	·01	— 1·74	·01	1	1	62·0	27	21·0	23	16	...		
IV.	Winslow (Addington) .....	·00	— 2·16	·00	...	0	66·0	27	19·0	25	19	23		
IV.	Bury St. Edmunds (Westley) ...	·06	— 1·50	...	...	...	55·0	28	17·0	23	...	...		
V.	Norwich (Cossey) .....	·03	— 1·56	·03	14	1	...	...	...	...	...	...		
V.	Weymouth (Langton Herring) ...	·03	— 2·57	...	...	...	53·0	27	28·0	10	11	...		
"	Barnstaple .....	·03	— 3·04	·03	21	1	67·5	23	27·0	10	...	...		
"	Bodmin (Fore Street) .....	·21	— 4·78	·16	11	5	...	...	...	...	...	...		
VI.	Stroud (Upfield) .....	·00	— 2·56	·00	...	0	58·0	28	28·0	17 <sup>f</sup>	18	...		
"	Church Stretton (Woolstaston) ...	·06	— 2·39	·03	4	3	60·0	28	22·5	20	...	21		
"	Tenbury (Orleton) .....	·07	— 2·41	·02	8, 20	6	63·5	28	20·2	26	16	21		
VII.	Leicester (Barkby) .....	·13	— 1·68	·12	8	2	60·0	28	17·0	23	21	26		
"	Boston .....	·77	— .91	·70	1	3	65·0	28	22·0	23	15	...		
"	Hesley Hall [Tickhill] .....	·02	— 1·48	·01	8, 27	2	63·0	28	22·0	26	16	...		
VIII.	Manchester (Plymouth Grove) ...	·27	— 1·78	·17	3	6	58·0	28	27·0	18 <sup>g</sup>	13	21		
IX.	Wetherby (Ribston Hall) ...	·00	— 1·58	·00	...	0	...	...	...	...	...	...		
"	Skipton (Arncliffe) .....	·81	— 3·88	·26	4	8	...	...	...	...	...	...		
"	Hull (Pearson Park) .....	·17	— 1·63	·12	28	4	...	...	...	...	...	...		
X.	Newcastle (Town Moor) .....	·10	— 1·30	·04	4, 12	3	...	...	...	...	...	...		
XI.	Borrowdale (Seathwaite) .....	2·60	— 10·04	1·06	2	10	...	...	...	...	...	...		
XI.	Cardiff (Ely) .....	·05	— 3·14	·03	2	2	...	...	...	...	...	...		
"	Haverfordwest .....	·17	— 3·95	·05	2	8	51·0	21	24·9	17	12	21		
"	Carno (Tybrith) .....	·11	— 3·85	·05	28	3	48·0	24 <sup>c</sup>	17·0	25	23	...		
"	Llandudno .....	·16	— 1·76	·10	3	3	67·0	22	31·8	21	1	...		
XII.	Cargen [Dumfries] .....	·28	— 3·37	·08	2, 3i	5	58·4	23	23·0	9	14	...		
XIV.	Jedburgh (Sunnyside) .....	·09	— 1·42	·06	21	2	61·0	23	22·0	9	15	...		
XV.	Old Cumnock .....	·47	— 3·03	·16	28	8	58·0	22	23·0	8	16	...		
XV.	Lochgilphhead (Kilmory) .....	1·43	— 3·76	·36	28	11	...	...	27·0	11 <sup>h</sup>	9	...		
"	Oban (Craigvarren) .....	3·80	...	1·03	2	15	58·0	24	33·2	27	0	...		
"	Mull (Quinish) .....	2·38	— 3·09	·52	28	14	...	...	...	...	...	...		
XVI.	Loch Leven Sluices .....	·70	— 2·65	·20	3a	4	...	...	...	...	...	...		
XVII.	Dundee (Eastern Necropolis) ...	·15	— 1·95	·05	3b	3	55·7	24	27·8	27	12	...		
XVII.	Braemar .....	·23	— 3·13	·08	12	6	61·0	24	19·3	27	12	24		
XVIII.	Aberdeen (Cranford) .....	·27	...	·10	11	6	56·0	15 <sup>d</sup>	26·0	26	11	...		
XVIII.	Strome Ferry .....	3·54	— 2·19	1·27	2	15	...	...	...	...	...	...		
"	Inverness (Culloden) .....	1·31	— .53	...	...	...	61·0	24	27·0	21	4	17		
XIX.	Dunrobin .....	2·88	+ .79	1·16	2	7	56·0	15	27·0	13	5	...		
"	S. Ronaldsay (Roeberry) .....	2·09	+ .55	.74	11	12	52·0	19 <sup>e</sup>	29·0	12	3	...		
XX.	Dromore Castle .....	·90	— 4·75	.25	1	5	60·0	24	31·0	3	...	...		
"	Waterford (Brook Lodge) ...	·33	— 3·75	·19	21	6	55·0	24	27·0	5	7	...		
"	O'Briensbridge (Ross) .....	·40	...	·12	7	8	52·0	4	31·0	5, 20	4	...		
XXI.	Carlow (Browne's Hill) .....	·28	— 2·80	·06	21	9	...	...	...	...	...	...		
XXII.	Dublin (Fitz William Square) ...	·04	— 2·31	·02	13	2	61·9	23	30·1	9	2	17		
XXII.	Ballinasloe .....	·24	— 2·54	·02	21	11	54·0	24	22·0	9	13	...		
XXII.	Clifden (Kylemore) .....	1·12	...	·28	28	10	...	...	...	...	...	...		
XXIII.	Waringstown .....	·36	— 2·09	·09	21	10	62·0	24	21·0	9	14	18		
"	Londonderry (Creggan Res.) ..	·25	— 2·78	·06	7	11	...	...	...	...	...	...		
"	Omagh (Edenfel) .....	·68	— 2·01	·19	11	10	56·0	24	24·0	8	9	13		

*a* And 4, 12. *b* And 11, 28. *c* And 28. *d* And 16, 24, 28. *e* And 25. *f* And 18.

*g* And 16.

*h* And 26.

*i* And 28.

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

# METEOROLOGICAL NOTES ON FEBRUARY, 1891.

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.

HUNTON COURT.—Not any R during the month.

STRATHFIELD TURGISS.—Chiefly remarkable for the very small amount of R and for the dense and continuous fogs. These fogs were peculiar in their character, some neighbouring places on a higher altitude entirely escaping them. The bar. was very high and there was little or no wind. Honey bee seen on 15th; snowdrops in flower (wild) on 21st.

ADDINGTON.—Fogs frequent and often dense. From the 16th to the end frost every night, very sharp at times. In two respects this month stands quite alone as far as my observations go. It is the only month in which we have not had a single drop of R, and it had the highest shade temperature for the month of February—namely, 66° on the 27th and 64° on the 28th. During 21 years of regular observation at this station, 60° is the highest previously noted, and that only once, on the 17th of February, 1878.

BURY ST. EDMUNDS, WESTLEY.—The month was without any R, but .06 in. was measured, which was produced by mist. I have kept the rain gauge since 1857, and this is the only month without any R. For some days in the middle of the month we had misty mornings with sunny afternoons. Bar. high, with very little variation.

LANGTON HERRING.—With the exception of a slight shower (less than .01 in.) on the morning of the 14th, no R fell here throughout the month; the dew gauged was .03 in. In 15 years the monthly falls below .25 in. have been—May, 1876, .18 in.; Nov., 1879, .08 in.; Feb., 1891, .03 in. On four or five days there were fogs and mist, but with these exceptions it was a remarkably fine month. From the 2nd to 25th the bar. was uniformly very high, and the mean .15 in. higher than the next highest in the last 10 years, Jan. 1882. Mean temp. at 9 a.m. 2° below, mean min. 2° below, but mean max. very slightly above the average.

BODMIN, FORE STREET.—A remarkably dry month; many frosty nights and splendid sunshine by day; some days very warm, quite like June, especially the 26th and 27th. The driest February on record, and the least R in any month except .10 in. on 4 days in June, 1887. Thick mist on the 2nd, 3rd, 4th, and 7th, and on 11th showers in the night, the only R during the month.

STROUD, UPFIELD.—A most beautiful, fine, dry February. Bright sunshine with slight frosts at night and no wind. No rain.

WOOLSTASTON.—An exceptionally dry month, slight showers falling on three days only, in the early part of the month. Sharp frosts on the grass on most nights and much fog on the lower grounds. Mean temp. 41°.5.

ORLETON.—The driest month recorded in 60 years, the total fall being only 0.07 in., of which more than one-third was fog. The max. temp. on the 28th, 63°.5, was the highest for 35 years in February. The mean temp. for the first 14 days was above the average, but although the days in the latter half of the month were warm, there were severe night frosts, so that the mean for the month was nearly 4° below the average.

LEICESTER, BARKBY.—A month remarkable for the following facts:—Very dry; barometer very high; frosts and fogs almost every night and morning, till nearly noon; the rest of each day being very fine. Mean max. 47°.2; mean min. 28°.4.

BOSTON.—A month of high barometer, small rainfall, calm air, and dense fogs, with occasional bursts of sunshine. Temperature below the average.

HESLEY HALL [TICKHILL].—A month remarkable for the entire absence of R, very heavy fogs, and hoar frost; the last fortnight foggy entirely, except two or three hours in the afternoons.

MANCHESTER, PLYMOUTH GROVE.—The smallest R in February for 25 years. Dense fogs on 16th, 18th, 19th, 20th, and 24th. Mean temp.  $40^{\circ}8$ .

WETHERBY, RIBSTON HALL.—No R since January 25th. I have recorded the rain for nearly 20 years, but never had a clear monthly sheet before this.

HULL, PEARSON PARK.—The weather during the month has been remarkably dry and calm with a small amount of cloud, but frosty and very foggy from the 16th to the end of the month.

NEWCASTLE, TOWN MOOR.—The R for the month is the lowest ever registered at this station; the record beginning in 1868.

#### WALES.

CARDIFF, ELY.—Brilliantly fine; sunshine nearly all the month, with cold nights and white frost in the early mornings.

HAVERFORDWEST.—Fine, but cold, bright weather characterised this month. The R was the least recorded in any month during the last 42 years, except the month of May, 1859, when none fell. The barometer was very high during the whole month, the highest reached was  $30\cdot750$  ins. on the 22nd (corrected). On some nights the frost was sharp, the lowest grass temperature being  $21^{\circ}3$  on the 18th. A fine time for ploughing and dressing the arable lands.

#### SCOTLAND.

CARGEN.—The most notable features of the month were the unusually high bar. and the very slight R. The mean of the bar. (corrected) was  $30\cdot413$  in. The only other occasions when the pressure came near this were November, 1867,  $30\cdot189$  in.; November, 1879,  $30\cdot181$  in.; February, 1890,  $30\cdot186$  in. The R was the lowest recorded in any month, except April, 1873, when only  $\cdot10$  in. fell. In only five months during the last 31 years has the R been below  $\cdot50$  in. Fog prevailed to a considerable extent. The wind on 22 days was very light, not reaching force 1. Very sudden changes of the temp. occurred on several days, the range on 20th being  $30^{\circ}2$ , and on 26th  $28^{\circ}4$ . Mean temp. for the month,  $39^{\circ}4$ .

OBAN.—The month as a whole was very fair and warm, during the latter half unprecedentedly so, almost reaching summer heat and causing everything to bud, and blossoms even were frequent. The R, however, considerably exceeded that of 1890, and the temp. was higher.

ABERDEEN, CRANFORD.—An exceptionally fine month.

INVERNESS, CULLODEN.—A fine month in every way, and out-door work well forward. Little R, no snow, no fog.

DUNROBIN.—Very fine and mild.

S. RONALDSAY, ROEBERRY.—With the exception of a few days in the middle of the month, it was the finest February for many years. Wind light and generally from S. to S.W. Snow storm on 11th and 12th.

#### IRELAND.

DROMORE.—A very fine month. Vegetation setting in from the middle of the month and towards the end exceptionally forward.

WATERFORD, BROOK LODGE.—The driest February for over 32 years. Fog on several mornings. Mean temp.  $43^{\circ}9$

O'BRIENSBRIDGE, ROSS.—Without exception the finest February on record in this country, only four nights of frost, and those slight.

DUBLIN.—February, 1891, proved a record month for drought, mildness, calm, and foginess combined. Mean Temp.  $44^{\circ}7$ , being  $1^{\circ}9$  above the average. Mean Bar.  $30\cdot398$  in. or  $\cdot543$  in. above the average. The R for the month is probably unparalleled, the nearest approach to this drought was Sept. 1865, when  $\cdot056$  in. was measured on three days. There was no S, Sleet, or H. Fogs on 16 days. High wind on 8 days, reaching the force of a gale on 11th. The temp. exceeded  $50^{\circ}$  in the screen on 14 days and fell below  $32^{\circ}$  in screen on 2 days.

BALLINASLOE.—Very fine, with the smallest R during any month of the last 18 years, the nearest approach to it being  $\cdot42$  in. in June, 1887.

EDENFEL.—A month of phenomenal fairness, calm, fine, and frequently bright. What little R there was fell chiefly at night, and to the ordinary observer did not disturb the even tenor of its way.