

# SYMONS'S

## MONTHLY

# METEOROLOGICAL MAGAZINE.

CCCXXI.]

AUGUST, 1893.

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### THE DROUGHT OF 1893.

ALTHOUGH, under the arbitrary definition necessarily adopted in *British Rainfall* and in this Magazine, the great drought terminated about the end of the third week in June, that month was decidedly dry, and it was necessary to wait for July, to see whether Nature's drought, unlimited by human definitions, had really come to an end.

The rainfall of July was only slightly below the average—except in Ireland—and we think that few would contend that the drought still continues, though no doubt certain stations recorded comparatively little rain, and the great deficiency of the earlier months is far from made up. The *effects* of the deficiency are too far-reaching for human skill to calculate their limit.

Last month we gave the daily fall at twelve widely distributed representative stations,\* and we now purpose dealing with only two points, which may be briefly described as the *mean* result and the *extreme* result.

We have put into tabular form the differences from the average of the rainfall at 43 out of the 50 stations, printed in our monthly tables of rainfall and temperature, for the months of March, April, May, June, and July, and give the average values first for each month separately, and then for the three months March to May, and for the four months March to June. The records are grouped into England and Wales (24 stations), Scotland (12 stations), and Ireland (7 stations):—

*Rainfall and departure from the average of the ten years, 1880–89.*

ENGLAND AND WALES. (Average of 24 Stations):—

	March.	April.	May.	June.	July.	3 months, July. March to May.	4 months, March to June.
	in.	in.	in.	in.	in.	in.	in.
Total rain .....	·88	·37	1·85	1·44	3·40	3·10	4·53
Deficiency from average .....	1·65	1·88	·54	·89	·13	4·07	4·96
Per cent. of average .....	35	16	77	62	96	43	48

\* Mr. C. L. Brook has pointed out that on p. 81 the duration of the drought at Reigate, Surrey, should be 98 days—from March 16th to June 21st.

*Rainfall and departure from the average of the ten years, 1880-89.—(con).*

SCOTLAND. (Average of 12 Stations):—

	March.	April.	May.	June.	July.	3 months, March to May.	4 months, March to June.
	in.	in.	in.	in.	in.	in.	in.
Total rain .....	1·88	1·40	1·99	1·91	3·50	5·27	7·18
Deficiency from average .....	1·13	·79	·41	·21	+·02	2·33	2·54
Per cent. of average .....	62	64	83	90	101	69	74

IRELAND. (Average of 7 Stations):—

Total rain .....	1·05	1·02	1·68	1·84	2·83	3·74	5·59
Deficiency from average.....	1·46	1·28	·69	·28	·69	3·43	3·70
Per cent. of average .....	42	44	71	87	80	52	60

It will be seen that, in the table, the first line for each country gives the average total rainfall for the stations in that country for each month and for the two groups of months. The second line gives the deficiency of that average fall, as compared with the average of the corresponding month, or group of months, for the ten years 1880-89. The third line is the value in the first line expressed as a percentage of the average of the ten years.

Assuming that the 24 stations fairly represent England and Wales, we find that in March the rainfall was only one-third of the average, in April one-sixth, in May three-quarters, and in June two thirds, while in July it reached nineteen-twentieths of the average. In the three months March to May considerably less, and in the four months slightly less, than half the average, fell. This, of course, is taking the country as a whole, at many individual stations the result would be much more striking—*e.g.*, at Bodmin in the three months, only one-fifth of the average fell, and in the four months, only one-quarter.

In Scotland as a whole the drought was not striking. In no month was the fall as little as half the average, while for the three months, and four months, the values very nearly reach three-quarters of the average. The July fall was slightly in excess.

Although the deficiency in Ireland considerably exceeded that in Scotland, the drought was—as would naturally be expected—of less intensity there than in England. The falls in March and April were less than half the average, and the three and four month groups give respectively, a little more than half, and less than two-thirds, of the average.

The oft-quoted definitions of drought practically preclude—we think rightly—the possibility of a drought being recorded at a wet station, but the figures previously quoted for Bodmin probably show a greater relative deficiency than occurred at many of the stations included in the following table, which is based on all the records which we have received, and we believe embraces all cases of 100 or more days with a total rainfall not exceeding ·01 in. per diem.

This table contains no fewer than 37 entries, is thoroughly self-explanatory, and requires little comment. It shows that the intensity of the drought was most prolonged in the south-east of England, the

STATION & COUNTY.	PARTIAL DROUGHTS.			
	Began.	Ended.	Lasted.	Amount.
<i>Surrey.</i>				in.
Coulsdon Grange .....	March 2	June 21	112	1.12
Leatherhead (Oxshott) .....	" 2	" 21	112	1.11
Addington (Hares Bank) .....	" 2	" 21	112	1.00
" (Park Farm) .....	" 3	" 21	111	1.11
" Hill .....	" 3	" 21	111	1.09
Wallington .....	" 2	" 21	112	1.08
Beddington (Riverside) .....	" 2	" 21	112	1.05
Croydon (Waddon House) .....	" 2	" 21	112	1.01
" (The Whitgift) .....	" 2	" 21	112	1.11
" (Brimstone Sew. Works) .....	" 1	" 21	113	1.12
" (Park Hill) .....	" 2	" 21	112	1.12
" (Addiscombe) .....	" 3	" 21	111	1.07
" (Duppas House) .....	" 4	" 21	110	1.04
Wimbledon Sewage Works .....	" 2	" 21	112	1.02
South Norwood (Selhurst Road) .....	Feb. 28	" 21	114	1.10
West Norwood (Thornlaw Road) .....	March 1	" 21	113	1.10
Wandsworth Com. (Patten Road) ..	" 2	" 21	112	1.01
Brixton (Acre Lane) .....	Feb. 28	" 21	114	1.09
<i>Kent.</i>				
Westerham (The Fishponds) .....	March 4	" 20	109	1.08
Keston (Bradfield) .....	" 2	" 22	113	1.13
" Tower .....	" 4	" 21	110	1.08
Hayes (Layham's Farm) .....	" 4	" 21	110	1.06
" Common (The Warren) .....	" 2	" 21	112	.95
Orpington (Kent Waterworks) .....	" 4	" 21	110	1.10
Bickley (Highfield) .....	" 2	" 21	112	.98
Bromley .....	" 2	" 21	112	1.08
Wilmington (Kent Waterworks) ..	" 1	" 25	117	1.16
Beckenham (Foxgrove) .....	Feb. 28	" 21	114	.99
Forest Hill (Dartmouth Road) .....	" 28	" 21	114	1.06
" " (The Nurseries) .....	" 28	" 21	114	.96
Eltham .....	" 28	" 21	114	.93
Greenwich (Royal Obs.)* .....	March 2	" 21	112	1.11
Deptford (Kent Waterworks) .....	Feb. 28	" 21	114	1.02
<i>Sussex.</i>				
Hailsham ..	March 1	" 22	114	1.11
<i>Bucks.</i>				
Slough (Langley) .....	" 1	" 23	115	1.11
<i>Essex.</i>				
Southend (Waterworks) .....	" 2	" 21	112	1.02
Bradwell-on-Sea (Down Hall) .....	" 2	" 18	109	1.04

stations being distributed over Surrey, Kent, Sussex, Hants, Bucks, and Essex. The records in Surrey and Kent are disproportionately augmented by the fact that in addition to the returns received direct from observers, we have used the very valuable tables of the Croydon Microscopical Club, so promptly issued by Mr. F. C. Bayard. The periods are in very close agreement throughout, running from the 1st or 2nd of March to June 21st.

\* This entry is from Mr. Bayard's tables, where the readings are printed to two places of decimals. The "Quarterly Return of the Registrar General" quotes .911 in. on 110 days, and "The Observatory" .967 in. on 109 days.

ARFORD HOUSE, HEADLEY, HANTS.—You may care to have the result of my observations here, as follows :—

1893.  
32 days absolute drought, ending April 17th.  
29 " " " " May 16th.  
20 " " " " June 23rd.  
72 " partial " with 20 in. of R, March 2nd—May 12th.

A. F. PARBURY.

LANGLEY, SLOUGH, BUCKS.—I send you account of rainfall measured during the drought. It is the driest period recorded here in the last 21 years ; the nearest approach being 72 in. of rain in 73 days, ending 15th August, 1887.

1893.	in.	1893.	in.
March .....	13	May .....	64
April .....	05	June (to 23rd) ..	29

Partial drought lasted 115 days with 11 in. of rain.

Absolute " " 29 "  
During 72 days ending May 14th, only 09 in. fell.

" 110 " " June 21st, " 81 in. "

R. H. MAJOR.

EASTON, STAMFORD.—Now we have been blessed with a little rain since July 1st, I send a statement of the rain here for the last eight months (from October, 1892, to June 30th, 1893), amounting in all to only 6·97 in., very little more than one-third of the year's average:—

1892.	November .....	in.	1893.	March .....	in.
"	December .....	91	"	April .....	33
1893.	January .....	1·21	"	May .....	70
"	February .....	1·84	"	June .....	84

Total 8 months = 6·97 in.

This, I should think, is about as small a quantity as in any part of England. During the first 11 days of this month we have had 99 in., and are now hoping the drought is at an end.

HENRY WATKINS.

BRADWELL-ON-SEA, SOUTHMINSTER, ESSEX.—The drought having now apparently broken up, I send you my register of rain since the end of February. Omitting March 1st, the rainfall here for 109 days was 1·04 in. on 13 days.

ROBERT PAGE.

## HEAVY RAINS FOLLOWING THE DROUGHT.

(In order of date.)

BIRMINGHAM.—A severe thunderstorm broke over our Belvide Reservoir, near Brewood, at 4.30 p.m., on the 14th June, and lasted till 6.30 p.m., during which time the rain gauge we have fixed there registered 2·38 in.

GEO. R. JEBB.

ROCKDALE, DUNGANNON, CO. TYRONE.—I have to tell you of an unprecedented fall of rain here yesterday. It began about 12.30 p.m. ; at 7 o'clock 3·33 in. was measured, and it was by no means raining all the time. I was from home about 20 miles away, where we had only a few slight showers. I could hardly believe my gardener when he

told me the quantity of rain he had measured, so I myself to-day measured the monthly gauge, which is 50 ft. lower than the daily, and always registers each month from 15 to 20 per cent. more than it. I give the rainfall of each up to this morning :—

Daily.		Monthly.
June 4th	..... 0·12 in.	
„ 5th	..... 0·14 „	
„ 6th	..... 0·11 „	
„ 22nd	..... 0·06 „	
„ 23rd	..... 0·01 „	
„ 24th	..... 0·03 „	
„ 26th	..... 0·46 „	
„ 27th	..... { 3·33 } 3·57	
	..... { 0·24 }	
	4·50 in.	5·05 in.

This shows for the monthly gauge an even greater quantity than my gardener measured. We have had to June 1st :—

	Daily.	Monthly.
January .....	2·85 in.	.. 3·24 in.
February .....	4·34 „	.. 5·10 „
March.....	1·39 „	... 1·72 „
April .....	1·34 „	... 1·62 „
May .....	1·11 „	... 1·37 „
	11·03 in.	13·05 in.

I may mention that since I began to keep the gauge on January 1st, 1875, the greatest falls in 24 hours have been 1·90 in. on 3rd March, 1876 ; 1·71 in. on 26th Sept., 1882 ; and 1·70 in. on 12th August, 1883. In 18½ years we have had one inch of rain in 24 hours only 19 times before yesterday. J. C. LOWRY.

TEAN VICARAGE, STOKE-ON-TRENT.—A TS this afternoon (July 3rd) has brought us 1·78 in. of rain. It is to be hoped we shall hear no more of the drought at any rate in this district.

Rainfall in May.....	2·50 in.
„ June .....	1·51 „
„ July 1—3 .....	1·88 „

5·89 in. G. T. RYVES.

HEATH HOUSE, CHEADLE, STAFFORDSHIRE.—On July 3rd, 1·97 in. of rain fell within an hour, 3.40 p.m. to 4.40 p.m. J. C. PHILIPS.

EDITH ROAD, W. KENSINGTON.—Last night (11th) 1·57 in. of rain fell—in a very short time, I fancy, but unluckily being night, I could not keep account. G. VON U. SEARLE.

CRANMER HALL, FAKENHAM, NORFOLK. — Rainfall here on July 11th, 4·48 in. A thunderstorm broke over this house about 2 p.m. on the 11th, and 2·40 in. fell in about 75 minutes. Further heavy rain fell during the evening and night, making the record fall for 24 hours. The total rainfall for the four months, March to June, was only 3·61 in. LAWRENCE J. JONES, Bart.

LITTLE SAXHAM RECTORY, BURY ST. EDMUNDS.—The storm we had last Wednesday week (July 12th) was most severe. We had

some rain about 11.15 p.m. on Tuesday (11th). About 1 a.m. on Wednesday we had a heavy shower with distant thunder and vivid flashes of lightning; about 7.30 a.m. it began to pour and continued some time; about 8.30 it left off for about 10 minutes, and then another shower fell; at 9 a.m. it held up for about 2 or 3 minutes, at which hour I registered the enormous amount of exactly 3 inches. I scarcely got into the house before the rain came down harder than ever, and continued till 10.45 a.m. As it was then only raining slightly, I went and took the amount, and found 2.05 in. extra had fallen since 9 a.m., thus making 5.05 in. in under 12 hours. It went on raining gently for a time, so that the whole rainfall was 2.10 in. from 9 a.m. Wednesday to 9 a.m. on Thursday. There seems to have been a waterspout over a field about half-a-mile distant; a portion of the field was completely washed away, the main gullies being over 4 ft. wide. At the bottom of the field for about 18 yards wide it looked exactly like a sea-shore. A platelayer on the line said he saw two clouds meet and then apparently double over. H. J. KILNER.

[The local character of these great rainfalls at Cranmer Hall on the 11th, and at Little Saxham Rectory on 11th and 12th, is shown by the following records from other stations in Suffolk and Norfolk:—

	July 11th.		July 12th.	
Bury St. Edmunds (Westley).....	1.40 in.	...	.40 in.	
Diss .....	.12 "	...	.35 "	
Harleston (Rushall Vicarage).....	.60 "	...	.63 "	
Wymondham .....	.12 "	...	.20 "	
Denver.....	1.18 "	...	.39 "	
Swaffham (London Street) ..	1.37 "	...	.47 "	
" .....	1.39 "	...	.48 "	
Costessey .....	.86 "	...	.47 "	Ed.]

TEAN VICARAGE, STOKE-ON-TRENT.—Rainfall of past 24 hours as measured at 9 a.m. to-day (July 12th), 1.31 in., making 3.54 in. since July 1st. Range of shaded thermometers in June rather remarkable: min., 36°; max. 88°·6—in Glaisher's stand. G. T. RYVES.

REDLANDS, EMSWORTH, HANTS.—During a thunderstorm to-day, (July 12th) from 2.30 p.m. to 2.55 p.m., in 25 minutes, .78 in. of R fell—direction, N.—N.E. F. JACOMB HOOD.

HORWOOD, BIDEFORD, N. DEVON.—The rainfall here on two days last week was so large that I think it will interest you. On the 11th it was 2.57 in., the largest amount I have registered in one day during the twenty years I have had a rain-gauge. Of this amount 2.42 in. fell between 1 p.m. and 6 p.m. On the 15th there fell 2.03 in., which fell during the night. There was very little thunder, and not any lightning. JOHN DENE.

WELLINGTON, SOMERSET.—An exceptionally heavy fall of rain occurred here last night (15th), amounting to 1.49 in.

F. J. BURNETT.

HALSE HOUSE, NEAR TAUNTON.—Another heavy fall of rain. On Friday last, July 21st, there fell an inch between 4 p.m. and 5.30, and came rushing down the five roads that meet below my

house faster than it could flow away. This is the fourth heavy fall this month. I have measured on the

12th.....	1.24 in.	20th.....	1.16 in.
16th....	1.45 in.	22nd .....	1.35 in.

The falls on 12th and 16th both occurred at night. In all during this month we have had 6.42 in., after a drought of four months.

R. C. A. PRIOR.

HEENE, WORTHING.—The falls of rain here during July have been both heavy and exceptional. The total fall was 5.01 in., being 3.18 in. above the average for 20 years, and I find it is the “wettest” July since the commencement of registration in 1852. On 15th–16th it commenced to rain about 6 a.m., and continued until 11.45 a.m., 1.13 in. falling in just over 2½ hours. On 26th, another sharp thunder shower occurred, 0.25 in. falling torrentially for 20 minutes.

WILLIAM J. HARRIS.

### DROUGHTS IN PAST YEARS.

*To the Editor of the Meteorological Magazine.*

SIR,—Annexed I hand particulars of a partial drought of 95 days which occurred at Beverly-road, Hull, in the winter of 1857–58, including an absolute drought of 15 days, December 24th to January 7th, inclusive.

1857.		1858.	
Nov.	Dec.	Jan.	Feb.
in.	in.	in.	in.
Rainfall... .15	.25	.29	.26
On 5 last days of Nov.	31 days.	31 days.	28 days.
		Days.	in.
November .....	5	.....	.15
December .....	31	.....	.25
January .....	31	.....	.29
February .....	28	.....	.26
Total.....	95		.95

In this winter occurred also an engineer's drought of 10 months, as shown in the following table:—

#### *Rainfall, Beverly Road, Hull.*

Year.	Month.	Fall.	Average of	
		in.	30 Years.	in.
1857..	September.....	2.01	2.63	— .62
„	October.....	.79	2.86	— 2.07
„	November.....	1.04	2.42	— 1.38
„	December.....	.25	2.50	— 2.25
1858	January.....	.29	1.84	— 1.55
„	February.....	.26	1.64	— 1.38
„	March.....	.95	1.85	— .90
„	April.....	.97	1.63	— .66
„	May.....	2.60	1.78	+ .82
„	June.....	.69	1.97	— 1.28
		9.85	21.12	— 11.27

The fall of the five months of October to February was only 2.63 in., or 23.4 per cent. of the average fall.—Yours sincerely,

HAROLD SMITH.

*Ingleside, Kenley, Surrey, May 4th, 1893.*

*To the Editor of the Meteorological Magazine.*

SIR,—It may perhaps interest your readers, as you have given an extract from the annals of 1615 of remarkable drought, if I give you another, extracted from the Annals of Waverley Abbey, Rolls Series, p. 351.

There had been drought in 1253, and great dearth in consequence in 1254. But in 1260 we read as follows:—

“The drought was so great and so persistent in the summer that barley and oats in many places failed to come up almost until the autumn. But then the rain becoming tolerably abundant, thus late the grain begun to spring and send forth spikes; but as the heat of the sun was naturally failing, when it was plain the crops could never ripen, to the great and inestimable loss of the owners they were mown and given to the animals for fodder.”

Your obedient Servant,

JOHN SLATTER.

*Whitchurch, Oxon, 20th July, 1893.*

## REVIEW.

*Katechismus der Meteorologie. Dritte Auflage, gänzlich umgearbeitet*  
von Prof. Dr. W. J. van BEBBER. J. J. Weber, Leipzig, 1893  
12mo., xii.—260 pages and 63 engravings.

THIS is a new edition of one of Weber's large series of illustrated catechisms—and a very good one. Prof. van Bebbber stands so high that there is little chance of any material error creeping in; the book is well arranged, well printed, and well illustrated; for though some of the engravings are hard, all unmistakably show that which they are intended to teach, and that is of much more importance than mere prettiness. We have noticed only two omissions, and of them, one—any reference to the formation of “anchor ice”—is quite reasonable in a very elementary work. The other omission is probably an oversight, viz.: “Sunshine recorders.” We are sorry to find Prof. van Bebbber representing the Piche evaporimeter; much respect as we have for M. Piche, we have none for the records of his instrument. Prof. Mascart seems to be the only leading meteorologist on the Continent who realizes the conditions necessary for obtaining trustworthy results as to evaporation. The French engineers in the early part of this century grasped the situation, a few Englishmen and Americans have followed, and Prof. Mascart is among the last recruits, but on the Continent generally, observers are still using tiny little vessels, such as were severely ridiculed by Mr. Isaac Fletcher a quarter of a century since.

However, we are not writing an article on evaporation, but the notice of the best elementary book upon meteorology which we have seen; one which has the rare merit of being written in so popular a manner, that everyone could follow it from the first word to the last.



# RAINFALL AT CHICHESTER.

ON p. 42 of the present volume, when reviewing Mr. Prince's book upon the Uckfield rainfall, we wrote :—

“The first record from Sussex known to us is that kept by Mr. Mossop, in West Street, Brighton, of which we have the monthly values for one year only, 1790.”

We can now go twenty years further back, as we have just purchased a thin 4to weather journal extending from October, 1769, to September, 1770, kept at Chichester ; it is evidently one of a series, but where the others are we know not.

There is no author's name, but he was evidently a medical man, and his father had been practising in Chichester from 1719. It is also evident that the author was in regular communication with Dr. George Buxton, who kept a meteorological register at Chelmsford.

The following is a fair specimen of the daily entries for Chichester :—

*June, 1770.*

Day. W. M.	Hour.	Barometer In. Dec.	Thermo- meter. Deg.	Hygrometer		Wind.		Atmosphere	Rain & Hail.
				Dry.	Moist.	Dir.	For.		
4 27	9 $\frac{3}{4}$ a.m.	29·1 $\frac{1}{4}$	63		43	S.W.	3	Alternate	Rain in ye night
	10 $\frac{3}{4}$ p.m.	29·0 $\frac{3}{8}$	61		39	p.m.	4	Cloudy	Rain p.m. =0·19 $\frac{1}{2}$

The author had no rain gauge until March, 1770 ; the totals are :—

1770.

March.	April.	May.	June.	July.	Aug.	Sept.
2·61 ...	2·55 ...	2·19 ...	3·80 ...	1·85 ...	1·52 ...	4·17

Possibly in the municipal archives, or in some of the Cathedral or Parish records, it may be practicable to find other writing by this medical man, and thus to ascertain his name, and possibly even to find what has become of the rest of the records.

## ERRATA IN “METEOROLOGICAL MAGAZINE,” 1892.

### REGULAR TABLES.

London (Camden Square).—Jan. Days of frost in shade should be 21, not 1.  
Torquay (Babbacombe).—Feb. Date of min. temp. should be 17th, not 18th.  
Aberdeen (Cranford).—February. Total rain ,, 2·01 in., ,, 1·92 in.

### SUPPLEMENTARY TABLES.

Llanfrechfa Grange.—September. Total rain should be 3·39 in., not 2·76 in.  
Scarborough (South Cliff).—Nov. Total rain ,, 1·67 in., ,, 1·62 in.

### CLIMATOLOGICAL TABLES.

Auckland.—September, 1891. Max. temp. should be 69°0.  
Bombay.—March, 1892. Amount of cloud ,, 0·7, not 7·0.

## UNUSUAL ICEBERGS.

For more than a year past mariners all the world over have displayed more than usual interest in the frequent reports relating to the abnormal quantities of ice which have been sighted in the southern oceans. Englishmen, with their vast shipping interests in every quarter of the globe, cannot afford to ignore the facts which are coming to hand almost daily about the surprising prevalence of icebergs, especially in the South Atlantic. Three years ago the neighbourhood of the Grand Banks of Newfoundland was studded with these dangers to navigation, the spring and summer of 1890 being considered amongst the most remarkable ice-seasons on record in the locality. Since the dissolution of the last of the bergs in the following autumn the North Atlantic has been singularly free from ice, only a few pieces having been seen this year. In southern regions it would almost seem as if some great convulsion—an earthquake, or an Antarctic Krakatoa eruption—had occurred under a range of Alpine ice-mountains, from which an incredible number of huge masses were detached and hurled into the sea, to be drifted by currents from the southern solitudes across the Antarctic Circle, and northwards into the direct tracks of vessels in the Atlantic, Indian and Pacific Oceans. A good number of bergs have been seen from ships bound to Australia, running down their easting in the usual latitude. In the South Pacific they have been still more numerous, and exceptionally far north, several being sighted a few hours' steaming time from Lyttelton, New Zealand, and some sailing ships making for Cape Horn being compelled to head northwards along the east coast of New Zealand to pass Chatham Island before setting the course to the eastward. Some idea of the extent of this obstruction may be formed from the fact that it necessitated a steam-ship losing two days in making a detour to regain its proper course. The Pacific and Indian Ocean ice, however, would appear to be relatively trifling in quantity when compared with what has been seen in the South Atlantic. A cold current is known to set from the Antarctic region in a north-easterly direction past Cape Horn towards the Falkland Islands, and on this stream hundreds, if not thousands of gigantic bergs have been floating leisurely into mid-ocean, many of them as far north as the thirty-seventh parallel of south latitude. Some have drifted eastward to about the meridian of fifteen degrees west, and it is likely, therefore, that ere long vessels outward bound to the East and to the Antipodes, round the Cape of Good Hope, will fall in with these dangers. Transatlantic navigators have often seen Greenland ice on the Newfoundland Banks a few miles in circumference, and from fifty to two hundred and fifty feet high, but the largest of these blocks dwarf into insignificance beside the monsters from the South Pole. Ships working up from the Horn have run into thick fog, and after a time, the fog dispersing, they discover themselves to be surrounded by innumerable icebergs, of every shape, size, and height. Two or three captains have reported, from the time occupied in sailing, that some of these bergs are at least fifty miles in length, those of ten miles and upwards being numerous. One ship sailing past a line of bergs found as she proceeded that the line was interminable, presently curving round like an immense horseshoe, no outlet being discovered until the other extremity of the bay was reached, some fifty miles distant from the opposite end. The fields of ice have been seen for a distance of four hundred miles. Bergs two hundred feet high are common, several have been reported as a thousand feet, and the summit of one

ice island is said to be one thousand five hundred feet above the water-line—that is, ten times the height of Queen Anne's Mansions, in Westminster. Fortunately, the casualties through collision with the bergs have been unexpectedly few. The *Templemore* ran against one and was abandoned by her crew, but she was still afloat a week later, when she was boarded by men from the *Selkirkshire*. The *Arthurstone*, now lying in the West India Docks shows severe damages to her bow, and some half-dozen other vessels have reported actual collision, but no very serious injuries. But there have been hairbreadth escapes, and captains at the docks relate most thrilling accounts of the dangers they have passed through—finding themselves hemmed in between mountains of ice with only a few feet clear on either side, huge masses of ice falling into the sea from great heights, and now and again a whole berg toppling over. As a sight, nothing can be grander or more tremendous than these majestic icebergs, but there is not a mariner who would knowingly steer toward an icefield of the description now drifting about the South Atlantic. The only way to avoid the danger is for homeward-bound vessels from the Pacific to steer well to the westward near the Falklands. Those who have acted on this advice have seen no trace of ice.—*Morning Post*.

[We reprint the above because we believe the extent and the size of the Southern icebergs to have been most unusual, and the general facts much as stated, but we feel sure that the *heights* have been very much exaggerated, an iceberg 1,500 ft. out of the water is a monster which would require very deep water to float in.—ED.]

## THE LEICESTERSHIRE EARTHQUAKE.

*To the Editor of the Meteorological Magazine.*

SIR,—Yesterday evening (August 4th) we had a shock of earthquake here. I was sitting quietly in my house reading, when I heard a rumbling noise, like thunder, at a *great* distance, and noticed the house shaking. This noise and shaking also lasted from five to seven seconds. Time, 6 h. 41 m. p.m. Barometer 29·67 in. Wind W.; sky almost clear in S., detached clouds in other parts. Many persons in this village felt the earth tremor, and Mr. Coventry's man heard the rumbling noise also, and went outdoors, thinking a carriage was approaching, but found none.

W. H. DIVERS.

*Ketton Hall Gardens, near Stamford, August 5th, 1893.*

[Letters in the local Press report the earthquake to have been felt also at—Fletton, near Peterborough, *Hunts*; Barnack and Walcot, near Stamford, *Northampton*; Uppingham (at 6.39 p.m.), West Deyne, North Luffenham, Edith Weston, and Oakham (about 6.45 p.m.), *Rutland*; Leicester, Charnwood Forest, Seagrave, near Loughborough (about 6.45 p.m.), and Hose, near Belvoir, *Leicester*; Colston Bassett, Cotgrave, Cropwell Bishop, and Shelford (about 6.45 p.m.), *Notts*. These places cover an area roughly 50 miles from N.W. to S.E., and 12 miles from N.E. to S.W.—ED.]

## CLIMATOLOGICAL TABLE FOR THE BRITISH EMPIRE, FEBRUARY, 1893.

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.	Cloud.
	Temp.	Date.	Temp.	Date.									
	°		°		°	°	°	0-100	°	°	inches		
England, London .....	57·0	19	25·1	6	47·1	35·9	37·6	87	86·8	20·1	2·87	22	6·7
Malta.....	68·9	25	41·7	6	61·2	49·1	46·5	81	122·1	36·3	1·77	7	4·1
<i>Cape of Good Hope</i> ...	...	...	...	...	...	...	...	...	...	...	...	...	...
<i>Mauritius</i> .....	85·3	18	69·0	7	83·8	72·4	69·4	78	137·8	63·9	2·42	18	5·4
Calcutta.....	80·7	17	46·9	2	74·2	56·8	57·1	76	139·0	37·7	4·30	7	3·9
Bombay.....	85·0	9	57·9	8	80·3	65·2	61·4	68	133·2	49·3	·14	2	0·6
Ceylon, Colombo ...	90·7	14	65·8	8	87·1	71·4	69·6	79	150·0	53·0	2·36	10	2·0
<i>Melbourne</i> .....	103·1	9	48·6	11	77·0	56·8	...	61	155·5	37·1	·25	3	3·8
<i>Adelaide</i> .....	108·0	2	51·6	16	87·1	60·4	49·6	43	161·8	41·3	·00	0	1·6
<i>Sydney</i> .....	84·2	14	56·3	22	75·4	64·5	61·8	77	153·0	47·2	3·18	19	5·8
<i>Wellington</i> .....	75·3	10	49·0	19	68·2	56·1	52·7	72	145·0	39·0	4·13	13	5·2
<i>Auckland</i> .....	81·0	10	53·0	4	73·8	61·0	61·5	81	142·0	49·0	7·06	14	6·0
Jamaica, Kingston.....	89·5	2	65·3	19	85·6	67·6	65·3	74	...	...	·88	6	5·5
Trinidad .....	88·0	18 <sup>a</sup>	63·0	1	86·1	67·1	67·6	75	138·0	59·0	1·5	10	...
Toronto .....	40·1	28	— 6·3	20	27·6	9·4	17·2	83	...	—11·0	3·62	23	7·0
New Brunswick, Fredericton .....	46·9	15	—20·5	6,9	24·0	1·5	7·3	76	...	...	3·80	12	4·0
Manitoba, Winnipeg ...	19·5	23	—48·0	1	3·6	—20·8	...	...	...	...	1·52	9	5·0
British Columbia, Esquimalt .....	49·0	21	5·5	2	39·1	29·5	33·0	91	...	...	6·57	22	8·0

<sup>a</sup> And 20th.

## REMARKS.

MALTA.—Mean temp. 54°·1; mean hourly velocity of wind 11·5 miles. Lightning on 4th and 23rd. J. SCOLES.

*Mauritius*.—Mean temp. of air 0°·7 below, mean dew point 0°·7 below, and rainfall 3·88 in. below, their respective averages. Mean hourly velocity of wind 8·6 miles, or 2·6 miles below average; extremes, 28·5 on 20th, and 1·6 on 26th and 27th; prevailing direction, E. to E.N.E. Lightning on 5 days; thunder on 8 days. A cyclone passed N. & N.W. of Mauritius from the 18th to the 21st, and did considerable damage at Tamatave on the 21st. C. MELDRUM, F.R.S.

CEYLON, COLOMBO.—Thunderstorms occurred on 7 days, and lightning alone was seen on the 28th. F. C. H. CLARKE, Lt.-Col. R.E.

*Melbourne*.—Hot wind on the 9th and 18th; thunder and lightning on the 2nd; smoke haze from Bush fires on the 10th, 11th, 12th, 26th, 27th and 28th; dust storm on 18th. R. L. J. ELLERY, F.R.S.

*Adelaide*.—Mean temp. 0°·1 above the average of 36 years. No B fell in Adelaide during the month, while the average of 36 years is ·65 in. C. TODD, F.R.S.

*Sydney*.—Mean temp. 0°·9 below, mean humidity 3 below, and rainfall 2·32 in. below their respective averages for 35 years. H. C. RUSSELL, F.R.S.

*Wellington*.—Fine, with occasional showers during the first half of the month, but strong N.W. wind from 10th to 20th; the latter part of the month showery, with fresh S. wind. Earthquakes on 10th, 12th and 18th. Mean temp. 0°·4 below, and rainfall ·59 in. above, the average. R. B. GORE.

*Auckland*.—A rainy and unsettled month; strong N.E. gale from the 7th to the 9th, and unusually violent N.E. gale on the 24th, doing much damage to shipping. Total rainfall more than twice the average. T. F. CHEESEMAN.

JAMAICA, KINGSTON.—Fair in the early part of the month, and fine afterwards. Mean hourly velocity of wind 4·5 miles. R. JOHNSTONE.

SUPPLEMENTARY TABLE OF RAINFALL,  
JULY, 1893.

[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.			
II.	Dorking, Abinger Hall.	2·64	XI.	Builth, Abergwessin Vic.	4·63
„	Birchington, Thor .....	2·73	„	Rhayader, Nantgwillt..	4·49
„	Brighton Prestonville Rd ..	...	„	Corwen, Rhug .....	2·99
„	Hailsham .....	3·75	„	Carnarvon, Cocksidia ...	2·47
„	Ryde, Thornbrough .....	5·82	„	I. of Man, Douglas .....	4·00
„	Alton, Ashdell .....	2·77	XII.	Stoneykirk, Ardwell Ho.	4·16
III.	Oxford, Magdalen Col...	3·50	„	New Galloway, Glenlee	3·48
„	Baibury, Bloxham .....	3·34	„	Melrose, Abbey Gate ..	2·48
„	Northampton, Sedgebrook	3·51	XIII.	N. Esk Res. [Penicuik]	2·95
„	Alconbury .....	2·89	„	Edinburgh, Blacket Pl..	2·53
„	Wisbech, Bank House..	2·71	XIV.	Glasgow, Queen's Park.	2·19
IV.	Southend .....	2·25	XV.	Islay, Gruinart School..	3·18
„	Harlow, Sheering .....	1·55	XVI.	Dollar .....	2·42
„	Colchester, Lexden .....	2·11	„	Balquhider, Stronvar..	3·95
„	Rendlesham Hall .....	2·32	„	Coupar Angus Station ..	2·85
„	Diss .....	2·69	„	Dunkeld, Inver Braan..	3·35
„	Swaffham .....	4·86	„	Dalnaspidal H.R.S. ....	5·54
V.	Salisbury, Alderbury ...	3·06	XVII.	Keith H.R.S. ....	3·94
„	Bishop's Cannings .....	4·09	„	Forres H.R.S. ....	3·01
„	Blandford, Whatcombe ..	4·11	XVIII.	Fearn, Lower Pitkerrie.	2·77
„	Ashburton, Holne Vic. ...	5·97	„	Loch Shiel, Glenaladale	7·39
„	Okehampton, Oaklands ..	6·14	„	N. Uist, Loch Maddy ...	2·69
„	Hartland Abbey .....	5·53	„	Invergarry .....	3·26
„	Lynmouth, Glenthorne ..	4·82	„	Aviemore H.R.S. ....	1·59
„	Probus, Lamellyn .....	4·03	„	Loch Ness, Drumnadrochit	2·36
„	Wincanton, Stowell Rec.	3·92	XIX.	Invershin .....	3·66
„	Weston-super-Mare .....	3·81	„	Scourie .....	4·56
VI.	Clifton, Pembroke Road	3·75	„	Watten H.R.S. ....	4·14
„	Ross, The Graig .....	2·92	XX.	Dunmanway, Coolkelure	3·53
„	Wem, Clive Vicarage ...	2·14	„	Fermoy, Gas Works ...	3·48
„	Cheadle, The Heath Ho.	4·96	„	Killarney, Woodlawn ...	3·44
„	Worcester, Diglis Lock	1·73	„	Tipperary, Henry's Street	1·08
„	Coventry, Coundon .....	1·85	„	Limerick, Kilcornan ...	1·91
VII.	Ketton Hall [Stamford]	2·41	„	Ennis .....	3·04
„	Grantham, Stainby .....	3·24	„	Miltown Malbay .....	3·21
„	Horncastle, Bucknall ...	2·39	XXI.	Gorey, Courtown House	2·10
„	Worksop, Hodsck Priory	3·98	„	Mullingar, Belvedere ...	2·30
VIII.	Neston, Hinderton .....	2·80	„	Athlone, Twyford .....	3·22
„	Knutsford, Heathside ...	2·59	„	Longford, Currygrane ...	3·71
„	Lancaster, Rose Bank ...	3·41	XXII.	Galway, Queen's Coll...	3·96
„	Broughton-in-Furness..	5·54	„	Crossmolina, Enniscoe..	3·24
IX.	Ripon, Mickley .....	2·22	„	Collooney, Markree Obs.	2·51
„	Scarborough, South Cliff	2·57	„	Ballinamore, Lawderdale	3·51
„	East Layton [Darlington]	2·48	XXIII.	Lough Sheelin, Arley ..	3·15
„	Middleton, Mickleton..	2·45	„	Warrenpoint .....	2·38
X.	Haltwhistle, Unthank..	2·80	„	Seaforde .....	2·31
„	Bamburgh .....	2·23	„	Belfast, Springfield ...	3·17
„	Newton Reigny .....	3·17	„	Bushmills, Dundarave...	4·04
XI.	Llanfrehfa Grange .....	3·51	„	Stewartstown .....	2·78
„	Llandovery .....	3·79	„	Buncrana .....	3·85
„	Castle Malgwyn .....	2·03	„	Lough Swilly, Carrablagh	5·82

JULY, 1893.

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		Max.		Min.						
				Dpth	Date			Deg.	Date	Deg.	Date	In shade.	On grass.	
		inches.	inches.	in.										
I.	ENGLAND.	London (Camden Square) ...	2.46	— .22	.46	8	17	90.7	7	47.3	15b	0	0	
II.		Maidstone (Hunton Court)...	2.37	+ .19	.35	16	16	...	...	...	...	...	...	
III.		Strathfield Turgiss .....	2.08	— .31	.54	11	15	86.2	7	45.5	29	0	0	
IV.		Hitchin .....	2.36	— .36	.36	26	17	87.0	9	43.0	28	0	...	
V.		Winslow (Addington) .....	4.00	+ .71	1.08	21	19	87.0	7	46.0	18c	0	0	
VI.		Bury St. Edmunds (Westley) ..	3.79	+ 1.22	1.40	11	18	83.0	12	45.0	28	0	...	
VII.		Norwich (Cossey) .....	4.32	...	.86	11	14	...	...	...	...	...	...	
VIII.		Weymouth (Langton Herring) ...	4.48	+ 2.33	1.37	15	14	76.0	1	51.0	18	0	...	
IX.		Torquay (Cary Green) ...	3.75	...	1.22	4	16	76.9	2	52.6	28	0	0	
X.		Bodmin (Fore Street) .....	4.70	+ .09	1.04	4	23	...	...	...	...	...	...	
XI.	WALES.	Stroud (Upfield) .....	3.13	— .44	.55	19	20	91.0	2	52.0	31	0	...	
XII.		Church Stretton (Woolstaston) ..	2.37	— .60	.40	8	16	80.0	7	46.0	15	0	0	
XIII.		Tenbury (Orleton) .....	1.85	— 1.01	.54	11	18	85.6	7	46.0	18	0	0	
XIV.		Leicester (Barkby) .....	2.70	— .29	.84	2	18	91.0	8	41.0	22d	0	0	
XV.		Boston .....	3.65	+ .86	1.06	8	15	88.0	7	48.0	29	0	...	
XVI.		Hesley Hall (Tickhill) .....	3.38	+ .71	.88	12	20	88.0	8	41.0	28	...	...	
XVII.		Manchester (Plymouth Grove) .....	...	...	...	...	...	...	...	...	...	0	...	
XVIII.		Wetherby (Ribston Hall) ..	1.32	— 1.86	.68	9	6	...	...	...	...	...	...	
XIX.		Skipton (Arncliffe) .....	5.14	— .50	1.41	18	22	...	...	...	...	...	...	
XX.		Hull (Pearson Park) .....	2.37	— .22	.94	8	14	77.0	2, 8	40.0	28	0	0	
XXI.	SCOTLAND.	Newcastle (Town Moor) .....	3.38	— .14	1.67	8	15	...	...	...	...	...	...	
XXII.		Borrowdale (Seathwaite) .....	10.46	— .53	3.20	18	22	...	...	...	...	...	...	
XXIII.		Cardiff (Ely) .....	3.55	— .51	.70	19	15	...	...	...	...	...	...	
XXIV.		Haverfordwest .....	2.71	— 1.50	.47	12a	11	80.7	2, 7	44.4	1	0	0	
XXV.		Aberystwith, Gogerddan .....	3.42	...	.54	18	15	84.0	6	39.0	26	0	...	
XXVI.		Llandudno .....	2.50	— .50	1.21	8	12	79.0	6	52.0	15e	0	0	
XXVII.		Cargen [Dumfries] .....	2.96	— .97	.96	18	14	80.0	7	43.0	21	0	...	
XXVIII.		Jedburgh (Sunnyside) .....	3.19	— .25	.47	8	21	82.0	7	42.0	20	0	...	
XXIX.		Old Cumnock .....	4.74	+ 1.22	1.92	8	18	...	...	...	...	...	...	
XXX.		Lochgilthead (Kilmory) .....	6.31	+ 2.01	2.13	8	18	...	...	39.0	22	0	...	
XXXI.	IRELAND.	Oban (Craigvarren) .....	...	...	...	...	...	...	...	...	...	...	...	
XXXII.		Mull (Quinish) .....	...	...	...	...	...	...	...	...	...	...	...	
XXXIII.		Loch Leven Sluices .....	2.50	— 1.12	.70	20	8	...	...	...	...	...	...	
XXXIV.		Dundee (Eastern Necropolis) .....	3.40	— .06	.85	8	18	73.2	8	44.6	23	0	...	
XXXV.		Braemar .....	3.16	— .05	.72	18	23	74.0	7	42.2	...	0	0	
XXXVI.		Aberdeen (Cranford) .....	3.25	...	.62	11	17	74.0	24	45.0	31	0	...	
XXXVII.		Strome Ferry .....	3.74	— .55	.79	18	18	...	...	...	...	...	...	
XXXVIII.		Cawdor [Nairn] .....	2.55	— .75	.42	17	22	...	...	...	...	...	...	
XXXIX.		Dunrobin .....	3.01	+ .16	.67	18	17	69.0	7, 8	47.0	27	0	...	
XL.		S. Ronaldsay (Roeberry) .....	2.89	+ .53	.83	18	16	66.0	2	47.0	26d	0	...	
XL I.	IRELAND.	Darrynane Abbey .....	2.98	...	.36	6	21	...	...	...	...	...	...	
XL II.		Waterford (Brook Lodge) ...	1.63	— 1.90	.55	10	17	76.5	3	46.0	15	0	...	
XL III.		O'Briensbridge (Ross) .....	2.05	...	.42	7	20	73.0	23	50.0	25	0	...	
XL IV.		Carlow (Browne's Hill) .....	1.75	— 1.77	.32	18	13	...	...	...	...	...	...	
XL V.		Dublin (Fitz William Square) ..	2.04	— .64	.87	12	14	74.5	23	50.0	22	0	0	
XL VI.		Ballinasloe .....	3.42	— .13	.82	18	16	74.0	2, 3	44.0	21	0	...	
XL VII.		Clifden (Kylemore) .....	3.87	...	.62	18	22	...	...	...	...	...	...	
XL VIII.		Waringstown .....	2.91	+ .61	.69	9	14	80.0	1, 21	48.0	26	0	0	
XL IX.		Londonderry (Creggan Res.) ..	4.47	+ .35	1.22	9	24	...	...	...	...	...	...	
L.		Omagh (Edenfel) .....	3.64	— .08	.73	18	18	76.0	1	43.0	20	0	0	

a And 16. b And 28. c And 23. d And 27. e And 29.

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

# METEOROLOGICAL NOTES ON JULY, 1893.

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.

SCRATHFIELD TURGISS.—A warm showery month, with abnormal agricultural conditions. The entire vegetable world a month in advance of any previous record. There will be no autumn flowers, they have all bloomed already; no hay anywhere. Distant TS on the 12th, and T on the 26th. Wheat cut on 13th.

HITCHIN.—The hottest July since 1868.

ADDINGTON.—The early part of the month was very warm, the max. in shade rising above 80° six times before the 9th; from that date until the end cooler. T rather frequent, and a sharp TS on 9th.

BURY ST. EDMUNDS.—A month of very partial storms. T on 8th, 11th, 25th, 30th and 31st.

LANGTON HERRING.—The wettest July since the register began in 1875, the previous wettest being in that year, when 3·66 in. fell. On the 15th 1·37 in. fell, the greatest fall in 24 hours since Aug. 20th, 1891. Mean temp. at 9 a.m. (63°·5) 0°·7 above the average of the 21 years. TS on the 4th, and T on 13th and 29th. Solar halo on the 2nd.

BODMIN, FORE STREET.—A rather wet month after the 4th, on which day 1·04 in. fell. There were 23 rainy days, which quite changed the appearance of the country. Wheat harvest very early, beginning in this district before the 12th.

WOOLSTASTON.—A beautiful summer month. Harvest commenced some weeks earlier than usual. Mean temp. 60°·5.

ORLETON.—A fine warm month; with one exception, the warmest July since 1878, the mean temp. being about 1°·3 above the average of 32 years. Many very hot days at the beginning of the month, the temp. rising to or above 70° on 20 days. T on 5 days; L on 1 day; lunar halo on 22nd.

BARKBY.—Although more R fell than in the preceding months, it was in such small quantities, and at such intervals, that the wind and warmth dried it up before it could soak the ground. T on the 2nd, 8th, 11th, 17th, 26th and 31st. Mean temp. 63°.

HULL, PEARSON PARK.—TSS on 2nd, 8th, 9th and 30th.

## WALES.

HAVERFORDWEST.—A very fine, warm month; sunshine above the average, and temp. above 80°·0 on two days, and above 70° on 11 days; the night temp. was high throughout. From the 9th to 31st R fell frequently in small quantities. The hay crop was a disastrous failure; the root crops in some localities promise fairly; grass lands have recovered in a manner scarcely hoped for; apples and pears abundant, also plums and blackberries, all at least one month before their time. Wind N.N.W., S.W. and E. No TSS. Corn harvest commenced; crops very light.

GOGERDDAN.—Showery and very growing weather during the last three weeks.

## SCOTLAND.

CARGEN.—The temp. of the first ten days was considerably above the average; afterwards it was much lower, and the mean of the month (59°·3) is only slightly above the average. The severe T and H storm which occurred at noon on the 8th was the marked meteorological incident of the month, and it is rarely that a storm of such severity is witnessed in this country. The hailstones were of extraordinary size, many measuring 1 to 1½ in. in diameter. Pieces of ice of irregular shape, measuring 2½ and 3½ in., are reported as having fallen in many places. Great destruction of glass, gardens and crops in the district resulted. The large hailstones showed a remarkable formation; the nucleus was of opaque white ice about the size of a pea, this was surrounded by perfectly clear ice—the clear ice being apparently an aggregation of separate

hailstones closely compacted round the nucleus—with a thin outer coating of white ice. The latter may have been owing to attrition. T on the 7th, 8th, 10th, 11th and 24th. Harvest operations commenced on the 22nd, and were general at the close.

JEDBURGH.—The weather was favourable, for though a good deal of R fell, it was required by the crops, and hay was saved with little or no injury. Cereals, turnips and potatoes look well, and corn cutting will be general early in August if the weather keeps good. T and L on the 8th, 9th and 25th.

ROEBERRY.—The first half of the month was very dry, the drought breaking up on the 14th, after which fine rains fell, which were much required for the crops, as they were beginning to assume a stunted appearance. Mean temp. in shade  $55^{\circ}6$ .

#### IRELAND.

DARRYNANE.—Much cooler, and rather windy. R still below the average.

WATERFORD. BROOK LODGE.—About the average number of rainy days for July, but the R a good deal less than the average. Harvest about three weeks earlier than usual. T and L on 12th, T on 13th.

O'BRIENSBRIDGE, ROSS.—A most favourable month, the R being so distributed that no delay occurred to hay harvesting. Temp. average. Winds moderate, mostly N.W. and S.W. Slight T on 10th.

DUBLIN.—A changeable, rather showery, but warm month, of high mean temp., and almost average R, with a decided prevalence of N.E. and N.W. winds. Mean temp.  $61^{\circ}6$  or  $1^{\circ}0$  above the average. High winds were noted on 9 days, but did not attain the force of a gale. Severe TSS occurred on 12th, and distant T was heard on the 13th.

EDENFEL.—Although July was not as summer-like as June, or even May, the weather was fresh, fine and generally favourable, and while the R was ample, it was not persistent enough to seriously impede the late hay harvest. The corn harvest has commenced in the county at an earlier date than within 40 years.

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#### EXTRAORDINARY STORM IN WALES.

ON Saturday afternoon, June 10th, an extraordinary storm was experienced in the neighbourhood of the Welsh gold mines, Gwynfynydd and Cwmhesian, situate about nine miles from Dolgelly. About two o'clock a severe thunderstorm broke over the place, accompanied by a deluge of rain, which, coursing down the precipitous hillsides, carried away footpaths and greatly damaged the parish and occupation roads. The storm continued for about an hour, and when it had ceased the miners were startled by hearing a roaring sound from the upper reaches of the Gwynfynydd Valley, and presently a huge torrent of water was seen rolling down the bed of the Mawddach, bringing with it stones and other *débris*. The water, which was from 3 ft. to 4 ft. deep, struck the bridge near the Morgan Mine, leaping over the buttresses into the roadway, and finally thundering over the Mawddach fall, a height of 85 ft., into the salmon pool below, which rose 6 ft. in as many minutes. The tributary streams of the Mawddach—the Eden and the Cair—were unaffected by the storm, and it is believed that the sudden and unprecedented flood was occasioned by the bursting of a waterspout in the higher reaches of the Gwynfynydd Valley. Fortunately no material damage was done, except to the roads, which in many places are impassable.