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LIGHTNING CONDUCTORS.

To the Editor of the Meteorological Magazine.

SIR,—Having recently been appointed one of the Churchwardens of Bradestone Church, I have had the usual string of requisitions from the Archdeacon, amongst which is "Has the Church a lightning conductor?" After replying in the negative, I drew our rector's notice to the matter, and was surprised to hear from him that architects put forth the theory that *old* churches which *have never been struck* do not require conductors, as the probability is that they never will be struck. Now this is to me quite a new theory, and I should be glad to hear whether it has ever been brought to your notice. I am aware that some churches which have been struck have been so on *several occasions, e.g.*, Redenhall Church, near Harleston, Norfolk, and I think Oundle, in Northamptonshire. But certainly the reverse theory is news to me.—Yours very truly,

ARTHUR W. PRESTON.

Bradestone House, Brundall, Norwich, 20th May, 1898.

[We had never heard the suggestion, but are not prepared to say that it is wrong, and shall be glad to receive any evidence on either side. There is, however, the case of Rouen Cathedral,* struck in 1110, 1117, 1284, 1351, 1625, 1627, 1642, 1768, 1822, and never since it was provided with a conductor.

We have just seen in the newspapers the following paragraph, which appears unfavourable to the theory.—ED.]

"During a violent thunderstorm at Dartford on the evening of May 31st, a flash of lightning struck the tower of the ancient parish church, and caused serious damage. The flagstaff was shattered, and other portions of the woodwork were thrown upon the roof. The electric current passed down the rain-pipe, which is shattered,† to the ground, where a large hole was made. The damage is estimated at £300. The tower is the oldest part of the church, and was formerly a fortification, which had been built upon some Roman foundations."

* *Report of the Lightning Rod Conference*, p. 161.

† Therefore probably there was no conductor.

THE DRY WINTER IN THE S.E. OF ENGLAND.

(*Continued from page 56*).

INASMUCH as the exceptional drought did not extend to the N.W. of England or to Scotland, we have altered the heading so as to make that fact clear.

Appledore.—The water level of a large tract of low-lying land is kept down by powerful pumps at Appledore, under the care of Mr. E. Case, C.E. Mr. Mace sent us a copy of part of a letter which he had received from Mr. Case, viz.: "We certainly never had the water at such a low level in the month of March. No pumping has been required, which is unprecedented, and we merely ran the engine for a few hours on two or three occasions to see that it was in working order." We enquired how far back the record extended, and Mr. Case replied "The man in charge tells me that to his knowledge there has not been so dry a winter as the past for 30 years. As far as I can ascertain there has always been some pumping required."

Chilgrove.—The facts for this station, as shown by the table on p. 71, are very striking; they are as under :—

	Jan.	Feb.	Mar.	April.	May.	Mean, Jan.-March.
Average 43 years, 1853-97	194	194	193	181	147	194
1898.....	143	147	145	143	141	145
Deficiency in 1898...	51	47	48	38	6	49
Only years since 1852 *in which lower levels were recorded in any of these months.*						
1855.....	**130**	**138**	**132**	**135**	**138**	**133**
1859..... ...	**132**	157	157	156	156	149
1885.....	**134**	173	192	178	183	166
1891.....	**139**	159	175	171	162	158
1898.....	**143**	**147**	**145**	**143**	**141**	**145**

This shows that, during the first three months of 1898, the water level was lower than in any corresponding period since 1855.

Tenterden.—As, unfortunately, the corrections in the proof of the paragraph on page 53 were overlooked, it will be better to re-write it, incorporating such further facts as Mr. Mace has reported to us. Firstly, as regards the rainfall, the true mean by the Snowdon gauge for the period 1880-89 for the five months, October to February, both inclusive, was 14·07 in.; the fall in 1897-98 was 6·36 in., or only 45 per cent. of the mean; Secondly, concerning wells, the following facts have been mentioned by Mr. Mace: On March 21st, "Empty wells becoming more numerous, and rain water also deficient now." On March 24th, before the snow, "Our well has been almost empty for 57 days, I never knew it so for more than one day before, nor does Mrs. Mace who has lived in the house nearly 55 years. A deep well that was low last autumn has now 50 ft. or 60 ft. of water. The well at Summerhill has also been nearly dry for a long time." On May 6th, "The Hales Place spring still supplies the household, but in previous years 2,000 gallons a day have run to waste." Thirdly, as to the ditches and the sheep, we find the following

notes on March 22nd: "On Shirley Moor, between Tenterden and Appledore, I noticed dry ditches, but others, often dry in summer, had water in them. I learned that in Romney Marsh, there was already some running together of sheep, and likely to be more. Where ditches have been made out during recent dry autumns there is generally a little water, but others are in many cases passable. A man told me that he had no difficulty in getting across when coursing. The state of affairs is certainly most abnormal."

ROYAL METEOROLOGICAL SOCIETY.

THE monthly Meeting of this Society was held on Wednesday afternoon, May the 18th, at the rooms of the Royal Astronomical Society, Burlington House, Mr. F. C. Bayard, LL.M., President, in the chair.

Horatio H. Bentley, and Frederick George Haworth, M.B., C.M., D.P.H., were ballotted for, and duly elected Fellows of the Society.

Mr. R. H. Scott, F.R.S., read a paper on the frequency of rainy days in the British Islands. He had taken the number of rainy days in each month at 40 Stations for the 20 years 1876-95, and then divided that number by the total number of days in the month, and so ascertained the resulting percentage. The greatest excess of frequency is always on the extreme north and west coasts. The highest figures of all being found at Dunrossness (Shetland), and at Stornoway in most months, but especially in the late autumn and winter. In summer the figures for the west of Ireland are higher.

The map for the year exhibits the highest percentage, 70, in the extreme north, while all the Atlantic coasts, from Scilly up to the Pentland Firth, reach 60. Over England and Wales the values are, as a whole, fairly uniform. Leith and Shields come out as dry with 49, while all the South, Midland, and South-eastern stations, except Hastings, exhibit figures below 50. June and September are the two months with the best chance for rainless days, and November is the month with the greatest frequency of rainy days.

Mr. F. J. Brodie read a paper on the abnormal weather of January last, which was one of the most remarkable winter months on record. The month was singularly dry, with an absence of snow or sleet; a somewhat unusual feature in January even for any individual station, but far more remarkable as applying to the country as a whole. The special feature, however, was the striking absence of severe frost, the frequent prevalence of unusually mild weather, and as a result, the abnormal warmth of the month, especially in the more northern parts of the kingdom. The mean temperature was generally over the whole country about 5° above the average, while at many places situated in the more northern parts of the kingdom it was more than 6° above the average. The atmospheric pressure throughout the month was also very high, the mean being from two to three tenths of an inch above the average.

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

MAY.

ELEMENTS.	MONTHLY MEANS OR TOTALS.									ABSOLUTE READINGS.					
				MEANS 9 A.M. AND 9 P.M.						EXTREMES AT 9 A.M. AND 9 P.M.					
						Highest Month.		Lowest Month.		Highest.		Lowest.			
	Mean, 40 years	Highest Month and Date.	Lowest Month and Date.		Mean.	Value.	Date.	Value.	Date.	Value.	Date.	Value.	Date.	Mean of all Highest	Mean of all Lowest.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Barometer (cor. & red.)	29·978	30·236	29·784	9 a.m.	29·979	30·244	1896	29·781	1878	30·643	8th, 1881	28·980	1st, 1858	30·380	29·489
		1896	1878	9 p.m.	29·978	30·228	1896	29·787	1878	30·650	10th, 1881	29·083	1st, 1858	30·364	29·510
Shade Temp. Dry Bulb	53·3	58·6	49·2	9 a.m.	55·1	61·7	1868	50·5	1879	78·2	19th, 1868	38·7	10th, 1883	67·0	45·5
		1868	1879	9 p.m.	51·6	55·5	1868	47·2	1876	72·4	30th, 1895	35·5	3rd, 1877	62·6	41·8
Shade Temp. Max.	64·7	..	...	...	...	70·4	1868	59·3	1879	87·6	19th, 1868	42·5	1st, 1866	78·1	51·9
Shade Temp. Min.	44·4	...	...	...	...	49·3	1889	40·5	1876	60·3	31st, 1895	28·4	7th, 1892	54·5	33·8
Shade Temp. Wet Bulb	49·2	54·4	45·6	9 a.m.	50·1	56·3	1868	46·3	1879	65·1	18th, 1862	36·9	12th, 1897	59·6	41·4
		1868	1879	9 p.m.	48·2	52·6	1889	44·5	1876	63·8	30th, 1895	33·0	3rd, 1877	57·9	39·2
Solar Rad., black	106·1	...	...	...	...	114·0	1882	94·8	1886	131·5	26th, 1880	58·0	9th, 1883	124·0	71·1
Solar Rad., bright	75·6	...	...	...	...	81·8	1893	68·7	1879	98·7	30th, 1895	50·6	18th, 1891	90·5	58·2
Grass Minimum	40·3	...	...	...	...	46·9	1889	35·7	1876	56·8	30th, 1862	23·1	7th, 1892	51·5	28·8
Soil, 1 foot	52·3	...	...	...	...	56·6	1893	48·5	1879	60·9	31st, 1895	43·4	5th, 1877	57·3	47·6
Cloud	5·5	7·2	3·8	9 a.m.	5·9	7·7	'79, '87	4·2	1895	10	Every year	0	Various	10·0	0·3
		1869	1895	9 p.m.	5·0	7·2	1869	3·5	1895	10	Every year	0	Various	10·0	0·1
Rainfall	1·92	4·79	·14	9 a.m.	·96	3·22	1886	·01	1880	1·20	29th, 1879	·00	Every year	·38	·00
		1886	1896	9 p.m.	·96	2·18	1878	·02	1896	1·27	7th, 1878	·00	Every year	·40	·00

Max. Rainfall in 24 hours, 1·71 in., 7th, 1878. Mean max. daily fall, ·60 in.

SUMMER RAINFALL.

To the Editor of the Meteorological Magazine.

SIR,—The following account of this may be found interesting. Consider the rainfall of the four months May to August (which we may here call "summer") at Greenwich, since 1841. Any of these seasons with a rainfall over the average of 56 years (*viz.*, 8·69 in.) we may call "wet," and any under the average "dry."

Then, taking as years of maximum sunspots, 1848, 1860, 1870, 1884, and 1894, I find that the following holds good :—

1. *In every group of five consecutive years, having a sunspot maximum year third (or central), there have been more dry summers than wet.*

The data are these :—

	Rain.			Rain.			Rain.	
1846	7·50	d.	1858	7·70	d.	1868	5·81	d.
1847	5·52	d.	1859	8·18	d.	1869	6·34	d.
1848	10·13	w.	1860	16·18	w.	1870	4·89	d.
1849	7·35	d.	1861	6·46	d.	1871	7·74	d.
1850	7·82	d.	1862	9·44	w.	1872	9·79	w.

	Rain.			Rain.	
1882	7·34	d.	1892	8·50	d.
1883	5·76	d.	1893	5·93	d.
1884	5·64	d.	1894	9·85	w.
1885	5·60	d.	1895	6·19	d.
1886	8·30	d.	1896	5·34	d.

(In these tables d means dry and w wet.)

It will be asked, Does the corresponding and opposite statement for sunspot minima also hold good? The reply is as follows :—

2. *In every group (except one) of five consecutive years having a sunspot minimum year third (or central), there have been more wet summers than dry.*

Taking as sunspot minimum years, 1843, 1856, 1867, 1879, and 1890, the data are these :—

	Rain.			Rain.			Rain.	
1841	10·56	w.	1854	8·78	w.	1865	13.06	w.
1842	7·78	d.	1855	9·30	w.	1866	9·62	w.
1843	11·09	w.	1856	8·37	d.	1867	12·56	w.
1844	5·75	d.	1857	6·63	d.	1868	5·81	d.
1845	9·05	w.	1858	7·70	d.	1869	6·34	d.

	Rain.			Rain.	
1877	7·42	d.	1888	14·49	w.
1878	14·55	w.	1889	9·24	w.
1879	16·56	w.	1890	10·92	w.
1880	7·55	d.	1891	10·76	w.
1881	9·50	w.	1892	8·50	d.

The second of these groups is exceptional (more dry than wet). If we took 1855 for the central year instead of 1856, we should obtain conformity to the general type (more wet than dry).

Are we to consider these relations fortuitous? If they afford any presumption for future years, they might, I think, be found practically useful in some cases.

Some facts may here be given as to the continuance of a given type of summers (wet or dry). The longest homogeneous series is the *six* dry summers, 1882–87. Next we have *five* wet summers, 1851–55. Then there are two cases of *four* dry summers coming

together (1856–59 and 1868–71), and one of *four* wet summers (1888–91), two cases of *three*, &c. Thus, the persistence is seldom great.—Yours faithfully, ALEX. B. MACDOWALL.

ADDENDUM.—Since writing the above, I have looked into the previous data of Greenwich rainfall for 1815 to 1840, published in the *Proceedings* of the Meteorological Society. The value of these is, of course, inferior to that of the series since 1841, but the result of the inquiry may be given. Treating the summer values in the same way, in relation to the average for those 26 years (*viz.*, 9·01), I find one exception to each of the two rules above indicated; this makes, for the whole period 1815–1897, one exception to rule No. 1 and two to No. 2.

I have accordingly sought a still more comprehensive expression of relations, and offer the following:—

1. *In the first five years after sunspot minimum years, there have always been more dry summers than wet.*

This holds good since 1815 (*i.e.*, in seven cases); and it is to be borne in mind that the sunspot maximum follows the minimum at a shorter interval than the minimum does the maximum, usually three or four years.

2. *In each group of five consecutive years ending with a sunspot minimum year, there have been (with one exception) more wet summers than dry.* The exception is the five-year group ending in the sunspot minimum year 1823 (three dry summers to two wet).

Briefly, the fact which seems to emerge from the above is this: a tendency to *wet* summers when sunspot minima are approaching, and to *dry* when they have passed (or, in general, near maxima). We are now probably in the former case.

A LONG, IF NOT UNIQUE, WELL RECORD.

IN the first volume of this *Magazine*, on page 29 (issued May 16th, 1866), we gave (by the courtesy of the late Mr. Leyland Woods) details of the level of water in the well at his seat, Chilgrove, near Chichester, for the years 1853 to 1865. We recently heard that there were earlier records, and as the observations have been continued to the present time, there are, of course, more than 30 subsequent years. Mr. J. W. Woods has very kindly gone through the entire record, and sent us a copy. In so long a series (62 years) there are naturally some omissions, and the observations have not always been taken on the same day of the month, moreover the well was deepened in February, 1855, and it is uncertain whether it was lowered 10 or 12 feet. Recognizing these drawbacks, we yet believe the record to be so nearly unique that we have had the whole prepared for the press, converting Mr. Woods's records of depth into the corresponding height above Ordnance datum, as thereby the comparability of the values is ensured, irrespective of the deepening of the well. We have accepted Mr. Leyland Woods's values, viz: for the altitude of the brim of the well, 266 ft. above sea level; 135 ft. as the original, and 145 ft. as the present depth.

Approximate height (in feet above ⅄) of top of water in well at Chilgrove.

	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	YEAR
1836	..	174	211	231	214	174	165	152	*132*	139	169	216	..
7	201	239	227	181	162	154	*148*	149	138	135	134	137	167
8	138	140	165	167	157	152	145	*140*	139	135	133	180	149
9	201	210	204	*194*	179	168	159	151	146	183	212	226	186
1840	179	236	194	174	*158*	154	146	138	135	134	132	168	162
1	167	187	198	181	173	166	161	..	..	..	..	*261*	..
2	..	..	..	..	..	..	151	*146*	140	134	134	174	..
3	*207*	193	186	*168*	179	201	189	177	156	152	145	181	178
4	178	205	191	216	182	165	159	146	139	135	134	139	166
5	143	156	163	162	162	157	153	148	143	139	137	150	151
6	174	247	219	196	187	167	159	150	144	140	152	163	175
7	164	169	206	189	161	155	149	142	138	134	*130*	*130*	156
8	137	167	218	233	215	*189*	168	157	174	172	193	193	185
9	221	220	197	188	175	175	170	159	149	143	143	143	174
1850	185	171	190	177	183	176	166	159	151	148	143	155	167
1	179	..	..	..	..	..	..	..	..	..	*130*	*130*	..
2	..	133	..	..	..	..	..	..	..	..	226	264	..
3	266	211	191	181	183	174	171	171	180	229	215	185	196
4	185	191	179	169	161	155	148	146	145	144	*130*	*130*	157
5	*130*	138	132	135	138	139	136	134	*130*	132	156	165	139
6	197	196	177	175	165	162	160	152	147	151	152	183	168
7	192	180	172	168	161	153	147	142	138	146	154	159	159
8	159	160	161	161	156	152	146	142	138	134	132	131	148
9	132	157	157	156	156	157	146	141	136	135	159	197	152
1860	228	212	181	174	171	204	185	186	186	205	206	221	197
1	214	186	187	187	171	158	150	145	142	139	161	191	169
2	178	182	217	203	181	169	159	152	146	151	163	186	174
3	216	202	180	164	154	151	148	144	140	144	158	180	165
4	180	183	211	180	167	156	151	146	137	135	133	137	160
5	153	188	190	171	159	152	146	141	140	166	226	212	170
6	212	260	228	188	174	161	151	150	144	150	152	180	179
7	187	209	201	207	205	161	157	152	147	145	145	146	172
8	149	195	177	172	169	158	150	144	138	137	134	136	155
9	233	232	234	201	182	172	160	..	..	145	..	..	..
1870	..	..	..	..	..	156	152	151	137	..	..	..	..
1	167	..	..	..	..	170	161	161	161	160	157	155	..
2	153	257	222	206	191	176	161	155	149	144	194	229	186
3	259	240	224	208	192	176	160	144	141	137	133	143	180
4	143	151	166	171	165	159	153	147	141	135	135	213	157
5	213	214	235	213	186	163	157	150	147	144	144	214	182
6	185	175	200	219	191	177	168	159	152	143	141	137	171
7	246	252	225	199	198	186	176	164	158	152	148	226	194
8	220	203	206	199	182	174	170	163	154	149	145	211	181
9	218	239	205	184	179	193	205	232	217	205	173	167	201
1880	159	170	178	171	159	152	146	141	141	203	219	227	172
1	213	226	223	193	173	158	155	149	149	153	206	241	187
2	216	191	180	181	172	170	156	152	146	235	233	224	188
3	227	254	209	181	166	159	153	149	145	144	183	181	179
4	182	216	221	188	169	159	152	146	142	134	131	131	164
5	134	173	192	178	183	185	178	169	161	157	171	179	172
6	203	205	181	189	174	168	159	146	145	141	174	250	178
7	245	207	183	163	157	149	145	141	137	135	138	167	164
8	164	161	172	180	170	161	160	179	165	155	175	192	170
9	184	185	192	175	170	166	157	149	144	146	162	171	167
1890	204	192	174	164	162	157	152	149	147	143	140	139	160
1	139	159	175	171	162	159	147	144	158	232	228	242	176
2	201	183	169	157	154	148	143	139	136	135	165	192	160
3	179	195	197	174	158	149	143	140	134	133	132	145	157
4	225	216	202	181	164	154	143	144	140	145	243	216	181
5	219	196	167	164	162	159	151	145	142	139	166	199	167
6	190	178	195	186	164	155	142	141	142	162	163	204	169
7	211	225	238	205	184	171	158	146	142	138	135	135	174
8	143	147	145	143	141	..	..	..	..	..	..	..	..

THE HEAVY RAINFALL AT JEWELL, ANNE ARUNDEL COUNTY, MARYLAND, U.S.A., JULY 26TH & 27TH, 1897.

(From the Report for December, 1897, of the Maryland Section of the U.S. Climate and Crop Service.)

PROBABLY the heaviest rainfall ever recorded in Maryland fell at Jewell during the eighteen hours from 6 p.m. July 26th to noon of the 27th, the amount measured being 14·75 inches. In a personal interview with the voluntary observer, Mr. J. Plummer, some of the details of the storm were learned.

During the day of the 26th, the wind blew steadily from the north-east. A little before 6 p.m. a thunderstorm suddenly came up from the south-west, accompanied by a heavy downpour of rain, which continued with varying intensity through the entire night and until noon of the following day. The heaviest fall occurred between 6 p.m. and 9 p.m. of the 26th.

The rain gauge is of the standard 8-inch Weather Bureau pattern, holding when filled a 2-inch rainfall. In measuring the contents about noon of the 27th, the observer found the receiver filled and enough in the overflow to fill the receiver six times, with three-fourths of an inch left over, making a total of 14·75 inches. The exposure of the gauge is excellent, being on open ground, raised about 3 feet above the surface, and distant about 60 feet south-east from the two-storey dwelling of the observer. Jewell is situated in the southern extremity of Anne Arundel County, near the Calvert County line, and about three miles from Chesapeake Bay, in about 38° 40′ N. and 76° 32′ W., and about 25 miles S.E. of Washington. The surrounding country is generally rolling, with no marked contrasts in elevation. The vicinity of the station is about 160 feet above mean tide level.

This extraordinary rainfall was confined within narrow limits. There was but one standard rain gauge within a radius of twenty-five miles; there were, however, rough measurements made in the immediate neighbourhood, which tallied closely with the record of Mr. Plummer. On a farm about three miles to the south-west a half barrel, with a depth of about 15 or 16 inches, which was empty before the rain, was completely filled by the rain. Making due allowance for the difference in diameter between top and base, the rainfall must have exceeded 12 inches. At another point distant about two miles some milk cans, with a depth of about 12 inches, were filled to overflowing. The top diameter of these cans was less than that of the base; which again would indicate a rainfall exceeding 12 inches. The roads in the vicinity of Jewell were gullied in places to the depth of 4 and 5 feet by the rain. The lowlands were flooded, crops were destroyed and fences were carried away. The level of Lyons Creek was higher than it had ever been observed before.

The daily weather maps of the United States Weather Bureau for July 26th, 27th and 28th show an irregular and shallow area of low

pressure, nearly stationary over the Lower Lake Region and Middle Atlantic States, together with much cloudiness and rain. Pressure areas over the entire country were much broken up, with but slight differences between the highest and lowest barometer readings. At 8 p.m. of the 26th, during the time of heaviest precipitation, the lowest pressure was recorded at Cleveland, Ohio, 29·68 inches, bringing Jewell within the south-east quadrant of the storm area, and about 500 miles from the centre. The barometer was highest (30·10 inches) over the New England States to the north-east, and in Missouri (30·00 inches) to the south-west. At Baltimore, Philadelphia and Washington the prevailing winds were from the east and north-east on the 26th, 27th and 28th. During these days rain fell to the depth of over 3 inches at the following stations in the eastern portions of Maryland and Pennsylvania :—

Maryland.		Pennsylvania.	
Stations.	Amt. in inches.	Stations.	Amt. in inches.
Annapolis	3·15	Browers Lock	3·06
Baltimore	3·10	Dyberry	4·45
Fallston	3·65	Honesdale	3·22
Frederick	3·07	Philadelphia	3·70
Jewell	14·75	Pottstown	3·34
Solomons	3·84	Reading	3·15
Taneytown	3·38	Shawmont	3·39
Van Bibber	3·75		

O. L. F[ASSIG].

THE GLOOMY SUMMERS OF 1860 AND 1879, AND THE 19 YEARS' CYCLE.

To the Editor of the Meteorological Magazine.

SIR,—A misprint remained uncorrected, probably by my own fault, in the letter on page 57 of your May number.

The first line of the fourth paragraph ought to have run—as is fairly evident from what follows—"Thus, before 1860 there came the three brilliant summers of 1857, 1858 and 1859."

There can be no doubt that May, 1898, has followed very closely indeed the patterns set by May, 1860, and May, 1879. Whether the coming months will be equally obsequious, remains to be seen. If 1879 is to be followed *in detail*, we shall get no respite at all from gloom and moisture, and may look for some severe thunderstorms. Vide *Meteorological Magazine* and *British Rainfall* for that year, which most of your readers will have. N.B.—The references in these to 1860 will be found to be very numerous.

But if 1860 be followed *in detail*, the first half of July should be fine. A cartoon will be found in a *Punch* of that date in which Britannia or somebody is greeting a rising sun with the exclamation, "Why, Mr. Phœbus, where *have* you been all this time?"

But *Punch* was premature, and Mr. Phœbus took offence, and St. Swithin came with his watering-pot, and used it with such effect

that there was, in Rutland, hay ungathered in November, and snow on the beans!

A long and very severe winter followed both in 1860 and 1879.

I am, yours truly, H. A. BOYS.

North Cadbury Rectory, June 1st, 1898.

SIR,—As the subject of cycles is now under consideration (*vide* Mr. Boys' letter in the current number of your *Magazine*) the following extract may possibly be of interest to those of your readers to whom it is unknown. It is from Bacon's essay "Of Vicissitude of Things," and is as follows:—"They say it is observed in the Low Countries (I know not in what part), that every five-and-thirty years the same kind and suit of years and weathers comes about again; as, great frosts, great wet, great droughts, warm winters, summers with little heat, and the like; and they call it the prime; it is a thing I do the rather mention, because, computing backwards, I have found some concurrence."—Yours faithfully, G. E. E.

Wealdstone, R.S.O., Middlesex, May 22nd, 1898.

[It is impossible for us to print a tenth of the comments which Mr. Boys' letter has elicited, and we think that it will be better to defer further publication until our August or September number. But it may not be amiss to point out that it is a 19-years' cycle for which Mr. H. C. Russell pleads,* and in working on our Meteorological Catalogue we have just come upon the following card:—

RASPAIL, François Vincent.

Prévision du temps. Almanach et Calendrier Météorologique pour l'année 1865, suivi d'un Traité succinct sur l'art de prognostiquer le temps avec un certain probabilité.

(*Based upon the idea that the weather repeats itself every 19th year.*)

16mo. **Paris [1864]**

On reading one of our own copies of Raspail's Almanach, that for 1868, we are amused to see that this 19-years' theory dates back more than a century. Here is the paragraph *verbatim et literatim* (because one date † is certainly wrong):—

"Grand Jean de Fouchy, de l'Observatoire de Paris, ayant signalé, en 1674 [1774], à l'abbé L. Cotte, les rapports de

* *Met. Mag.*, 1897, p. 40.

† Grand-Jean de Fouchy was not born till 1707, and Cotte not till 1740.

la période lunaire de dix-neuf ans, avec le retour, an par an, des mèmes phénomènes de température moyenne, ce dernier s'appliqua à verifier cette donnée sur la série des observations météorologiques que l'Observatoire mit à sa disposition ; et il en dressa un tableau pour chaque année, à partir de 1805 jusqu'en 1898 inclusivement. C'est de ce travail que nous avons extrait ce qui concerne l'année 1868."

So also the interesting note by G. E. E. shows that Bacon had examined the 35 year period, of which apparently Dr. Brückner * (nearly 250 years afterwards) had not heard when he adopted 34 years and 10 months.

It is not very easy to see how 19 years and 35 years can both be well founded.]

REVIEW.

Weather Lore : a collection of Proverbs, Sayings and Rules concerning the Weather, compiled and arranged by RICHARD INWARDS, F.R.A.S. 3rd edition, revised and augmented. London : Elliot Stock. Large 8vo, 1898, xii.–234 pages, 1 plate.

WE spoke highly (*Met. Mag.*, Vol. XXVIII., p. 169) of the second edition of this work, and yet the present is undoubtedly considerably better. The frontispiece, giving reproductions of ten good photographs of clouds, superposed in the order of elevation which has been assigned to them, is original and effective.

The text has been thoroughly examined, and largely increased ; in fact, it would not be bad practice if all who have any collection of weather proverbs would go through them, and compare them with Mr. Inwards's book. If they find any *not* in *Weather Lore*, they should send them on to Mr. Inwards in readiness for his 4th edition. Unless they dive into early Latin authors like Fabritius of Padua, we do not think that they will have many to send, for the collection is now very large. Mr. Inwards does not say how many proverbs there are, but a rough calculation gives 3500 !

Two features of the book are of exceptional excellence, and show plainly that the author has not shrunk from work. The bibliography contains references to 154 books and articles, and the index occupies double columns on 20 pages.

Apparently Mr. Inwards was hurried while revising the bibliography, for though we have noticed only "mantel" for "mantle" in the first 200 pages, we have, on page 208 Chiswick for Criswick ; on 209, "Dr. M. G. Hellmann" for "Dr. G. Hellmann," and on 210, "M. A. Pointer" for "J. Pointer." It would be well if all volumes were as correctly printed.

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* See *Met. Mag.*, Vol. XXV., 1890, pp. 170–171 and 183.

CLIMATOLOGICAL TABLE FOR THE BRITISH EMPIRE, DECEMBER, 1897.

STATIONS. (*Those in italics are South of the Equator.*)	Absolute. Maximum. Temp.	Date.	Minimum. Temp.	Date.	Average. Max.	Min.	Dew Point.	Humidity.	Absolute. Max. in Sun.	Min. on Grass.	Total Rain. Depth.	Days.	Aver. Cloud.
	°		°		°	°	°	0-100	°	°	inches		
England, London	55·9	16	23·7	26	45·5	35·7	37·3	87	66·9	21·2	2·20	17	6·4
Malta	66·5	4	45·6	20	60·7	51·6	48·0	79	130·2	40·3	3·97	20	6·8
Cape of Good Hope	87·6	31	49·7	26	76·7	58·9	55·8	66	...	...	·56	4	3·0
Mauritius	86·6	8	70·1	8	84·4	74·7	71·1	78	134·8	66·1	4·53	18	6·6
Calcutta	78·9	28	49·0	17	75·7	55·8	53·7	66	136·0	39·2	·00	0	1·7
Bombay	89·1	20	66·0	28	84·6	68·7	62·8	65	134·1	54·0	·00	0	0·4
Ceylon, Colombo	90·2	1	71·5	8	86·3	73·2	72·4	84	149·0	68·0	8·89	13	6·8
Melbourne	107·3	30	48·2	11	80·3	57·6	52·1	61	157·9	38·5	2·26	5	4·2
Adelaide	110·8	16*a*	45·9	3	90·8	64·0	49·3	38	166·3	35·0	·03	2	2·4
Sydney	87·1	17	57·8	12	74·9	63·9	59·3	70	149·0	53·2	5·31	16	6·0
Wellington	76·8	24	42·0	2	66·6	51·9	48·8	69	135·0	34·6	·73	7	3·8
Auckland	77·0	27	46·0	28	70·0	55·9	53·5	72	137·0	43·0	·13	5	4·4
Jamaica, Kingston	91·3	16*b*	67·7	23	88·6	69·7	66·6	74	...	...	·09	3	2·0
Trinidad	...	...	...	...	...	...	...	...	...	...	...	...	...
Grenada	87·4	15	69·2	4	82·4	73·0	70·0	79	148·4	...	11·92	19	2·1
Toronto	54·2	10	—5·3	24	33·9	20·8	26·2	84	64·5	—11·0	3·66	17	8·3
New Brunswick, Fredericton	53·8	15	—10·7	4	30·6	13·8	15·8	75	...	...	3·14	11	6·4
Manitoba, Winnipeg	32·8	9	—28·0	18	13·6	—5·9	...	...	...	...	·55	9	5·8
British Columbia, Esquimalt	51·8	5	28·9	15	44·1	37·7	39·1	93	...	...	10·84	22	8·8

a—and 28. *b*—and 17.

REMARKS.

MALTA.—Mean temp. 55°·3, or 0°·9 below average. Mean hourly velocity of wind 11·0 miles, or 0·1 below average. L on 4 days. J. F. DOBSON.

Mauritius.—Mean temp. of air 2°·0 above, of dew point 3°·1 above, and rainfall ·44 in. below, their respective averages. Mean hourly velocity of wind 11·4 miles, or 0·5 above average; extremes, 71·0 on 5th and 1·7 on 11th and 27th. Prevailing direction E. to E. by N. L on 3 days and T and L on 24th. The mean of the rainfall at 32 stations was 50 per cent. above the average for December. T. F. CLAXTON.

CEYLON, COLOMBO.—Mean temp. 78°·5 or 0°·6 below, mean dew point 1°·6 above, and rainfall 2·40 in. above, their respective averages. Mean hourly velocity of wind 9·8 miles; prevailing direction N.N.E. T on 4 days, but no L. H. O. BARNARD.

Adelaide.—The hottest month on record, the mean temp. being 6°·4 above the average for 40 years; there were 17 days when the temp. reached 90° in the shade (greatest number previously being 15), and 9 were over 100°. R ·83 in. below the average. C. TODD, F.R.S.

Sydney.—Temp. 0°·5 below, humidity 1 above, and rainfall 2·66 in. above, their respective averages. H. C. RUSSELL, F.R.S.

Wellington.—Light showers and generally fine, bright weather, though strong winds prevailed from N.W. Earthshocks on 8th and 27th. Rainfall 3·08 in. below, and mean temp. 1°·6 below, the average. R. B. GORE.

Auckland.—The driest December on record. Mean temp. rather under the average of 30 years. T. F. CHEESEMAN.

JAMAICA, KINGSTON.—Average hourly velocity of wind 1·7 miles. Rainfall one-twentieth of the average; Island rainfall three-fifths of the average. Shock of earthquake on 14th. R. JOHNSTONE.

SUPPLEMENTARY TABLE OF RAINFALL, MAY, 1898.

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

Div.	STATION.	Total Rain.	Div.	STATION.	Total Rain.
		in.			in.
I.	Uxbridge, Harefield Pk..	2·38	XI.	Builth, Abergwesyn Vic.	5·66
II.	Dorking, Abinger Hall .	3·79	,,	Rhayader, Nantgwillt ...	4·82
,,	Birchington, Thor	3·17	,,	Lake Vyrnwy	6·27
,,	Hailsham	3·69	,,	Corwen, Rhug	3·59
,,	Ryde, Thornbrough	3·72	,,	Criccieth, Talarvor	4·45
,,	Emsworth, Redlands ...	3·38	,,	I. of Man, Douglas	3·51
,,	Alton, Ashdell	3·60	XII.	Stoneykirk, Ardwell Ho.	2·46
III.	Oxford, Magdalen Col..	2·38	,,	New Galloway, Glenlee	2·70
,,	Banbury, Bloxham	3·13	,,	Moniaive, Maxwelton Ho.	3·20
,,	Northampton, Sedgebrook	3·90	,,	Lilliesleaf, Riddell	1·59
,,	Duddington [Stamford].	2·74	XIII.	N. Esk Res. [Penicuick]	2·90
,,	Alconbury	3·26	XIV.	Glasgow, Queen's Park..	2·04
,,	Wisbech, Bank House...	2·71	XV.	Inverary, Newtown	2·75
IV.	Southend	2·62	,,	Oban, The Corran	...
,,	Harlow, Sheering..... ...	2·91	,,	Islay, Gruinart School ...	1·92
,,	Colchester, Lexden	2·85	XVI.	Dollar.....	2·60
,,	Rendlesham Hall	1·90	,,	Balquhidder, Stronvar...	2·67
,,	Rushall Vicarage	3·21	,,	Ballinluig	...
,,	Swaffham	3·15	,,	Dalnaspidal H.R.S.....	3·62
V.	Salisbury, Alderbury ...	4·68	XVII.	Keith H.R.S.....	3·41
,,	Bishop's Cannings	3·20	,,	Forres H.R.S.	2·44
,,	Blandford, Whatcombe .	3·83	XVIII.	Fearn, Lower Pitkerrie..	2·02
,,	Ashburton, Holne Vic...	4·48	,,	N. Uist, Loch Maddy ...	...
,,	Okehampton, Oaklands.	4·88	,,	Invergarry.....	1·58
,,	Hartland Abbey	4·76	,,	Aviemore H.R.S.	1·90
,,	Lynton, Glenthorne ...	4·37	,,	Loch Ness, Drumnadrochit	2·61
,,	Probus, Lamellyn	4·17	XIX.	Invershin	4·72
,,	Wellington, The Avenue	4·02	,,	Durness.....	...
,,	North Cadbury Rectory	3·32	,,	Watten H.R.S.....	3·44
VI.	Clifton, Pembroke Road	3·40	XX.	Dunmanway, Coolkelure	3·44
,,	Ross, The Graig	3·85	,,	Cork, Wellesley Terrace	2·24
,,	Wem, Clive Vicarage ...	3·88	,,	Killarney, Woodlawn ...	2·99
,,	Wolverhampton, Tettenhall	3·42	,,	Caher, Duneske	2·75
,,	Cheadle, The Heath Ho.	3 85	,,	Ballingarry, Hazelfort...	2·83
,,	Coventry, Priory Row ..	2·70	,,	Limerick, Kilcornan ...	3·36
VII.	Grantham, Stainby	3·15	,,	Broadford, Hurdlestown	...
,,	Horncastle, Bucknall ...	1·78	,,	Miltown Malbay	3·36
,,	Worksop, Hodsck Priory	2·12	XXI.	Gorey, Courtown House	3·42
VIII.	Neston, Hinderton	4·00	,,	Athlone, Twyford	3·09
,,	Southport, Hesketh Park	3·26	,,	Mullingar, Belvedere ...	4·41
,,	Chatburn, Middlewood.	3·38	,,	Longford, Currygrane...	4·00
IX.	Melmerby, Baldersby ...	1·88	XXII.	Woodlawn	3·59
,,	Scarborough, Observat'y	2·54	,,	Crossmolina, Enniscoe ..	3·56
,,	Middleton, Mickleton ...	2·11	,,	Collooney, Markree Obs.	4·35
X.	Haltwhistle, Unthank...	2·70	,,	Ballinamore, Lawderdale	3·16
,,	Bamburgh	1·95	XXIII.	Warrenpoint.....	3·20
,,	Duddon Valley, Ulpha School	4·53	,,	Seaforde.....	3·02
,,	Keswick, The Bank	3·17	,,	Belfast, Springfield	3·85
XI.	Llanfrechfa Grange	3·37	,,	Bushmills, Dundarave..	2·49
,,	Llandovery	4·06	,,	Stewartstown	3·30
,,	Castle Malgwyn	5·32	,,	Killybegs	5·88
,,	Brecknock, The Barracks	3·90	,,	Horn Head	3·96

MAY, 1898.

Div.		STATIONS. [The Roman numerals denote the division of the Annual Tables to which each station belongs.]	RAINFALL. Total Fall.	Difference from average 1880-9.	Greatest Fall in 24 hours. Dpth	Greatest Fall in 24 hours. Date	Days on which ·01 or more fell.	TEMPERATURE. Max. Deg.	Max. Date	Min. Deg.	Min. Date.	No. of Nights below 32°. In shade.	No. of Nights below 32°. On grass.
			inches.	inches.	in.								
I.	ENGLAND.	London (Camden Square) ...	2·26	+ ·36	·46	19	21	75·2	23	34·6	13	0	1
II.		Tenterden ...	3·40	+ 1·84	·68	13	18	74·0	23	35·0	13	0	4
,,		Hartley Wintney ...	2·76	...	·38	23	25	78·0	23	...	...	...	...
III.		Hitchin ...	2·82	+ ·87	·60	20	22	73·0	23	35·0	12	0	...
,,		Winslow (Addington) ...	3·37	+ 1·27	·64	20	22	72·0	23	32·0	13	1	3
IV.		Bury St. Edmunds (Westley)	2·84	+ 1·09	·31	1	19	67·0	24	36·0	13	0	..
,,		Norwich (Brundall) ...	2·78	...	·41	10	19	66·2	23	33·4	15	0	6
V.		Winterbourne Steepleton ...	3·56	...	·55	20	19	71·0	23	33·5	17	0	6
,,		Torquay (Cary Green)	3·17	...	·48	20	17	66·5	23	39·5	17	0	0
,,		Polapit Tamar [Launceston]..	4·36	+ 2·53	1·21	2	19	70·4	23	33·5	17	0	2
VI.		Stroud (Upfield) ...	3·32	+ 1·28	·44	20	22	72·0	23	38·0	12	0	...
,,		ChurchStretton(Woolstaston)	5·41	+ 2·54	1·61	23	20	68·0	29	33·5	19	0	3
,,		Worcester (Diglis Lock) ...	4·00	+ 1·72	1·09	20	22	...	..	...	...	...	...
VII.		Leicester (Rotherby Hall) ...	2·66	...	·60	20	23	...	...	...	...	...	...
,,		Boston ...	2·41	+ ·69	·38	5	17	75·0	22	33·0	2	0	...
,,		Hesley Hall [Tickhill]...	1·70	— ·34	·45	20	19	69·0	23	34·0	18*e*	0	...
VIII.		Manchester(PlymouthGrove)	2·81	+ ·46	·63	10	17	70·0	22	36·0	12	0	1
IX.		Wetherby (Ribston Hall) ..	2·61	+ ·66	1·10	20	10	...	...	...	...	...	...
,,		Skipton (Arncliffe) ...	3·49	— ·23	1·17	10	14	...	...	...	...	...	...
,,		Hull (Pearson Park).	1·82	— ·06	·47	20	15	64·0	22	34·0	18*e*	0	6
X.		Newcastle (Town Moor) ...	2·20	+ ·45	·66	21	12	...	..	...	...	...	...
,,		Borrowdale (Seathwaite)...	6·90	— 1·71	2·26	10	21	...	...	...	...	...	...
XI.	WALES.	Cardiff (Ely)...	3·29	+ ·44	·45	23	20	...	...	...	...	...	...
,,		Haverfordwest ...	4·11	+ 1·75	1·19	2	19	70·6	23	34·8	7	0	16
,,		Aberystwith (Gogerddan) ...	3·99	...	·92	10	15	74·0	23	...	...	...	...
,,		Llandudno... ...	5·16	+ 3·23	·72	22	20	67·0	24	40·0	2, 15	0	...
XII.		Cargen [Dumfries]	3·08	+ ·56	·84	10	10	67·0	24	30·0	16	3	...
XIII.		Edinburgh (Blacket Place)...	2·34	...	·57	2	18	65·1	7	33·8	18	0	4
XIV.		Colmonell	3·19	...	·99	10	16	71·0	24	29·0	13	...	...
XV.		Tighnabruaich ...	4·01	...	·72	10	17	64·0	20*a*	33·0	13*f*	0	...
,,		Mull (Quinish)...	2·76	— ·19	·46	10	20	...	...	...	...	...	...
XVI.		Loch Leven Sluices ...	2·20	— ·36	·50	3	10	...	...	...	...	...	..
,,		Dundee (Eastern Necropolis)	1·95	+ ·29	·65	10	10	66·9	28	31·8	18	1	...
XVII.		Braemar	2·02	— ·39	·32	2	21	62·0	23	27·8	20	9	22
,,		Aberdeen (Cranford)	3·10	...	·88	2	19	65·0	8	30·0	17*g*	5	...
,,		Cawdor (Budgate) ...	2·77	+ 1·02	·57	31	18	...	...	...	...	...	...
XVIII		Strathconan [Beauly] ...	3·71	+ ·62	·54	3	13	...	...	...	...	...	...
,,		Glencarron Lodge...	6·18	...	1·11	31	23	62·0	19*b*	29·5	14	2	...
XIX.		Dunrobin ...	3·36	+ 1·26	·85	10	18	58·8	7	32·0	16	1	...
,,		S. Ronaldshay (Roeberry) ...	5·27	+ 3·55	1·61	31	21	59·0	18	32·0	12*f*	2	...
XX.	IRELAND.	Darrynane Abbey...	2·77	...	·80	2	19	...	...	...	...	...	...
,,		Waterford (Brook Lodge) ...	2·47	+ ·24	·67	2	18	69·5	25	33·0	15	0	...
,,		O'Briensbridge (Ross) ...	2·67	...	·46	3	18	..	...	...	...	...	...
XXI.		Carlow (Browne's Hill) ...	3·34	+ 1·00	·88	2	19	...	...	...	...	...	...
,,		Dublin (FitzWilliam Square)	3·33	+ 1·40	·67	2	20	63·7	8, 25	36·0	16	0	0
XXII.		Ballinasloe	2·83	+ ·14	·47	2	20	65·0	22*c*	36·0	14*f*	0	...
,,		Clifden (Kylemore)	4·09	...	·63	2	19	...	...	...	...	..	...
XXIII		Waringstown ...	3·63	+ 1·19	·70	13	20	69·0	20*d*	33·0	15	0	7
,,		Londonderry (Creggan Res.).	3·73	+ 1·21	·45	16	21	...	...	...	...	...	...
,,		Omagh (Edenfel) ...	3·26	+ ·79	·67	7	20	70·0	24	32·0	12*f*	2	3

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

a—and 21, 24, 25. *b*—and 20. *c*—and 24. *d*—and 21. *e*—and 27. *f*—and 15. *g*—and 18.

METEOROLOGICAL NOTES ON MAY, 1898.

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

ENGLAND.

TENTERDEN.—The wettest May in 35 years, except 1878 and 1879; the only others with more than 3·00 in. being 1865, 1872 and 1891. The fourth week, however, was dry, with two days with temp. above 70°, but only 11 days were over 60°. Great abundance of blossom on trees and shrubs. The oak in leaf decidedly before the ash. Duration of sunshine 148 hours. Distant T on 23rd.

HARTLEY WINTNEY.—Wet, cold and ungenial, with no two consecutive rainless days. A short severe TS occurred at midday on 23rd, the L striking three trees and killing sheep; R only ·12 in. L also on 15th and 22nd, and a distant TS on 31st. Mean max. temp. 64°·2, mean min. 39°·0. Ozone on 27 days. Oak in leaf on 12th; hawthorn in flower on 14th; ash in leaf on 30th.

ADDINGTON.—Cold and wet, the number of rainy days having been exceeded only once in 27 years, in 1878. Only one day with temp. above 70°. H storm, covering the ground, on 13th. Sharp TS at 5 p.m. on 22nd.

BURY ST. EDMUNDS, WESTLEY.—Cold and rainy, with little sunshine. TS on 3rd; distant T on 12th and 31st.

NORWICH, BRUNDALL.—A showery month, with a remarkable absence of really warm days. Mean temp. 50°·3. Rainfall ·96 in. in excess of the average. Gale from E. on 19th. Distant T and L at 8 p.m. on 20th. Solar halo on 27th.

WINTERBOURNE STEEPLETON.—Unusually wet and apparently cold, though the mean temp. was not much below the average; but the days were much colder than the nights, comparatively. Mean max. 57°·7, or 4°·0 below, mean min. 44°·0, or 2°·1 above, the average of 5 years. The R was gentle, and when much fell it was continuous.

TORQUAY, CARY GREEN.—Rainfall 1·49 in. above, the average of 22 years. Mean temp. 0°·7, below the average. Duration of sunshine 170 hours, being 61 hours 20 mins. below the average; five sunless days.

POLAPIT TAMAR.—The wettest May for 20 years. A very heavy TS occurred on 2nd, accompanied by vivid L and torrents of R between 10.15 a.m. and 10.45 a.m., ·65 in. falling in 35 minutes; it was very dark and sultry during the storm, with absolute calm. Another TS occurred on 22nd, lasting only 10 minutes, when ·30 in. of R fell, with some half-melted H. The end of the month was finer, but with cold wind, generally northerly.

WOOLSTASTON.—A cold, backward month. A violent storm of T and L with heavy R occurred on 22nd, from 4.30 to 5.30 p.m., ·75 in. of R falling in the hour. On the following day a TS of unexampled severity raged from 7.15 to 8.35 p.m. R came down in sheets, 1·38 in. falling in an hour and 20 minutes. The roads were converted into foaming torrents, and were quite impassable. The damage and destruction were very great. Mean temp. 51°·5.

WALES.

HAVERFORDWEST.—The month commenced with storm and excess of R, ·89 in. falling in 5 hours on 2nd; broken weather generally prevailed until 22nd, when it culminated in a TS, severe to the E., but only slight over Haverfordwest. Fine weather set in after 22nd, with an increase of temp. and sunshine. Mean temp. below the average, and an unusual number of low grass readings. Crops looking well.

SCOTLAND.

CARGEN [DUMFRIES].—Cold, cloudy and changeable weather. The mean temp., 49°, is only 4°·5 higher than that of January, and the mean on 17th, 39°, was lower on only one day (10th) of that month. The R is above the average, and there was considerably less sunshine than usual. E. winds continued without interruption for 10 days (18th to 27th), during which period only ·36 in. of R fell, and pastures and hay crops made little progress. The ash was bursting into leaf at the close, reversing its position as compared with the oak, experienced last year. T with H showers on 31st. On 11th the bar. fell to 28·820 in., the lowest in May since observations began in 1860.

EDINBURGH, BLACKET PLACE.—Mean temp. 1°·3 below the average. Sunshine, humidity and rainfall normal. T and L on 3rd; H and L on 4th; Sleet and H on 31st. On 11th the bar. fell to 28·836 in., the lowest in May for 20 years.

COLMONELL.—Rainfall ·79 in. above, and mean temp. 1°·0 below, the average of 22 years.

TIGHNABRUAICH.—Rainfall normal. Mean temp. 1° lower than last year.

ABERDEEN, CRANFORD.—Cold, with little sunshine and N. and N.W. winds.

S. RONALDSHAY, ROEBERRY.—A very wet month; the wettest in 32 years, the rainfall being more than thrice the average of 31 years. The next wettest May was in 1892, when 3·68 in. fell. Mean temp. 45°·6, or 2°·0 below the average of 8 years.

IRELAND.

DARRYNANE ABBEY.—Very cold, except from 18th to 25th, and the end of the month dry. Rainfall about the average.

WATERFORD, BROOK LODGE.—Weather very unsettled. L at night on 24th. Distant T in E. from 11 a.m. to 2 p.m. on 25th. H showers on 13th and 30th.

O'BRIENSBRIDGE, ROSS.—Rather cold, and many sunless days, but vegetation fairly good.

DUBLIN, FITZWILLIAM SQUARE.—A cloudy, rainy, showery and cold month. A remarkable preponderance of polar winds. Mean temp. 51°·2, or 0°·8 below the average. High winds on 9 days. H on 5 days. T and L on evening of 23rd. Lunar halo on 4th; solar halos on 8th and 11th.

OMAGH, EDENFEL.—Unsettled and gloomy, with temp. somewhat below, and rainfall considerably above, the average; and it cannot be said that the weather in either of these respects improved as the month progressed—in fact, the mean temps. of May 31st and June 1st were identical with those of Christmas Day and December 26th last, and appreciably lower than that of many days in January. No damage, however, has as yet accrued to vegetation that a seasonable period would not more than redress.