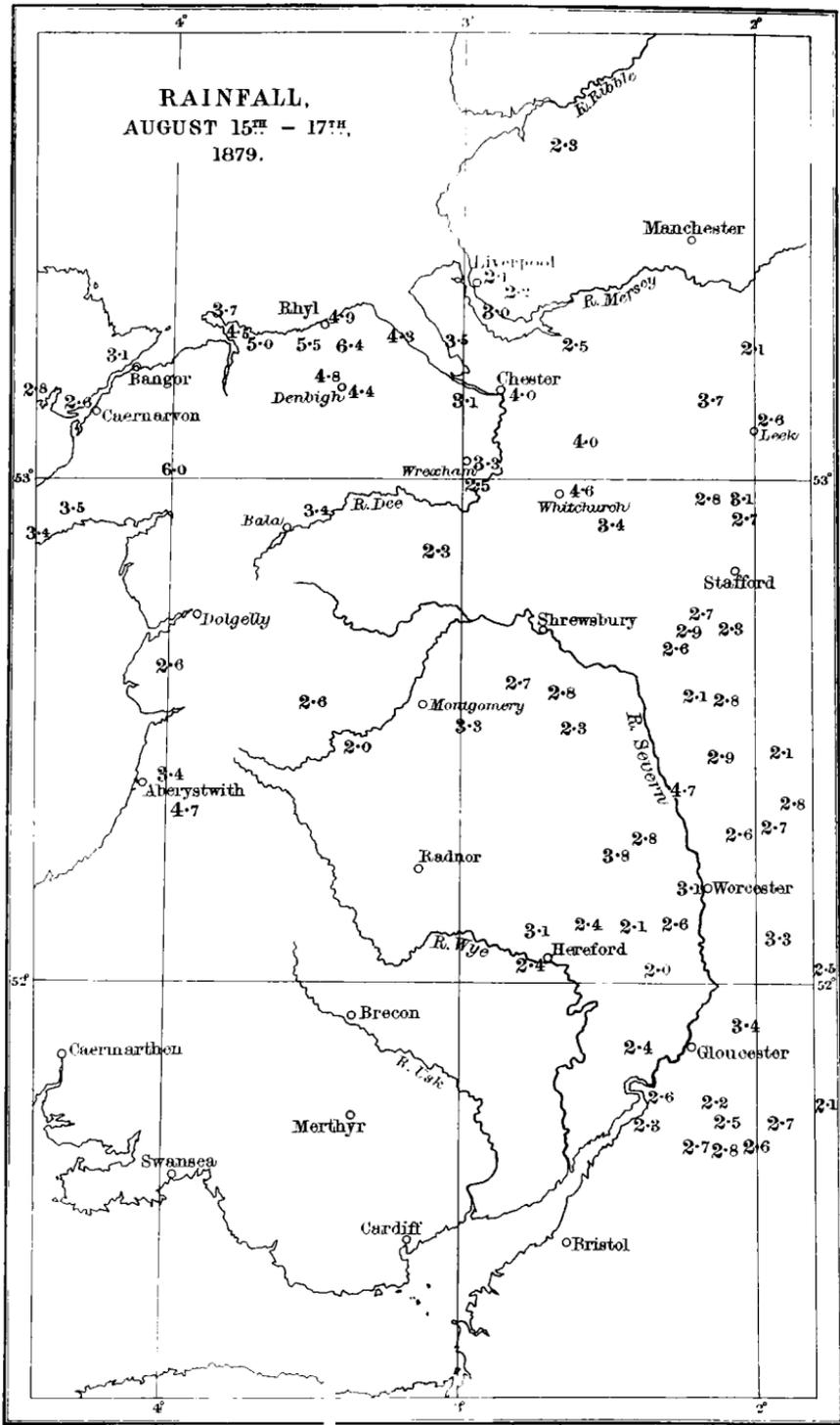
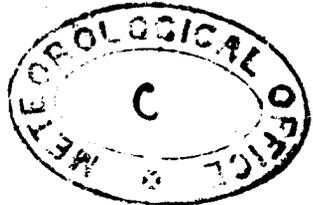


RAINFALL,
AUGUST 15TH - 17TH,
1879.



BRITISH RAINFALL, 1879.

ON



THE DISTRIBUTION OF RAIN

OVER THE

BRITISH ISLES,

DURING THE YEAR

1879,

AS OBSERVED AT ABOUT 2000 STATIONS IN GREAT BRITAIN
AND IRELAND,

WITH ARTICLES UPON VARIOUS BRANCHES OF RAINFALL WORK.

COMPILED BY

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

President of the Meteorological Society; Membre du Conseil de la Société Météorologique de France; Member of the Scottish Meteorological Society; Member of Council of the Royal Botanic Society; Member of Council of the Social Science Association; Registrar and Member of Council of the Sanitary Institute; Fellow of the Royal Colonial Institute; Hon. Mem. Watford Nat. Hist. Soc., &c.

LONDON:

EDWARD STANFORD, CHARING CROSS, S.W.
SIMPKIN, MARSHALL & Co., STATIONER'S HALL COURT.

1880.

LONDON :
G. SHIELD, PRINTER, SLOANE SQUARE, CHELSEA, S. W.
—
1880.

ERRATUM IN BRITISH RAINFALL, 1876.

Page 148.—Table IV., col. 6, Welwyn 2·50 in., and Letheringsett Hall 3·95 in.

ERRATUM IN BRITISH RAINFALL, 1877.

Page [88].—Table IV., col. 6, Welwyn 2·50 in., and Letheringsett Hall 3·95 in.

ERRATA IN BRITISH RAINFALL, 1878.

- Page [76].—Col. 5, last line but 2, Hodsock Priory, *for 1 hour read 2 hours, and therefore rate per hour only '36.*
- „ [90].—Table IV., col. 6, Welwyn 2·50 in., and Letheringsett Hall 3·95 in.
- „ [122].—Royston (Therfield Rectory), *for Rev. T. Edwards read Mr. T. Edwards.*
- „ [147].—Ullswater (Swarth Fell), *for 45·00 read 45·25.*
- „ 162].—New Ross, *for Hovetown House read Horetown House.*

P R E F A C E.

I HAVE received an unprecedented number of enquiries respecting "When is *Rainfall*, 1879, coming out?" It might be construed as expressing an opinion that the publication ought to be more prompt. I wish that that were possible, but see little prospect of it, and if any one thinks it ought to be done, I would advise his trying to compile a list of statistical works of equal extent published with greater promptitude. But the question may be construed as a compliment, and an indication of desire to possess the volume, and as such I accept it.

I called special attention last year to the article upon self-recording rain gauges, which is completed in the present volume, and am amply repaid for the trouble bestowed upon it by the following notice of the first part, in the leading meteorological journal in the world—the *Zeitschrift* :—

“Herr Symons hat sich ein grosses Verdienst erworben durch diese mühevollte Sammlung und zweckmässige Darstellung der Mittel zur Registrierung des Regenfalles und dadurch hoffentlich auch beigetragen, dass dieselbe an zahlreicheren Orten eingeführt wird, als dies gegenwärtig der Fall ist.”

It is obvious that in the conduct of so large a system as this rainfall one has become, everything depends upon perfect organization and most rigorous accuracy. It is equally obvious that it has got far beyond the limit at which one person could do all the work, and it therefore becomes as important as it is agreeable, to mention that my assistants strive as much and as successfully after accuracy as I do myself. Besides temporary (paid) help during the preparation of the present volume, I have been favoured with the honorary assistance of two of my observers, Mr. Alexander, formerly of Sudbury, and Mr. Slade, C.E., formerly of Barrow. In thanking them for their help, I may be permitted to add that (for safety's sake) small portions of their work were checked, and not a single flaw was detected.

G. J. SYMONS.

62, CAMDEN SQUARE, LONDON, N.W.,
June 17th, 1880.

R E P O R T .

ALTHOUGH personally conscious of the very great labour involved in keeping in perfect order the British organization for the accurate registration of the fall of rain, I sometimes feel, when it yearly becomes my duty to report what my assistants and myself have been doing, that after all it sounds very little. The love of accuracy is not so prevalent as I desire, and I fear that few persons would devote the care which we do to the examination of the records submitted to us. But I hold that if results are to be published at all, they should be as nearly perfect as it is humanly possible to make them, and errors detected subsequent to publication should always be published as errata. Personally I put little faith in authors who print masses of figures and never print lists of errata. The exhaustive checking of all our records makes an amount of work which really merits the term "fearful," sometimes brings down on me the ire of observers who have been caught tripping, and necessarily prevents the early appearance of this volume; but as long as the control remains in my hands I shall continue to hold accuracy as the first essential; completeness, promptitude of publication, &c., shall follow, but shall never come first.

Our Staff of Observers.—I am glad to be told that some readers regret the absence of the list of "Missing Returns." I thought that that list was scarcely of sufficient interest to justify publication, but as its restoration has been suggested, I have reconsidered the whole subject mentioned under the above heading last year, and have, under the title of "Changes in the Staff of Observers," set out in full the alterations which have occurred. The magnitude of this list will give a notion of the amount of correspondence involved even in one branch of our work.

Finance.—In this respect we seem neither to recede nor to make much progress. The following list contains about 30 more names

than were given last year, but that is due to a larger proportion of the subscriptions being paid in the early months of the year. The new names which we welcome in the following list scarcely replace those absent from death and other causes, and the facts remain as heretofore, that four-fifths of the cost of rainfall work is defrayed by one-seventh of the observers, that half the observers pay nothing at all, and that many branches of work wait, and will perhaps wait until my time is past, for funds to carry them out. I have recently, for curiosity, examined the case of one large English county, and found that more than two-thirds of the observers paid nothing, only one observer paid £1, and the total from the whole county was £3 10s. The county has an energetic superintendent, and is well supplied with stations, but it does not seem to have occurred either to the superintendent or to the observers, to see that the county at least defrayed the expenses connected with it, which at present it certainly does not. Of course I give no hint as to which county it is, but I shall be glad if these details lead to a little more attention being devoted to the subject.

LIST OF ALL SUMS OF £1 AND UPWARDS RECEIVED IN PAYMENT
FOR BOOKS, DIAGRAMS, &c., OR AS CONTRIBUTIONS TO THE
GENERAL EXPENSES OF RAINFALL INVESTIGATIONS IN 1880.

	£	s.	d.		£	s.	d.
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Adams, Prof., F.R.S. (2 years)	2	0	0	Bateman, J. F., Esq., C.E.F.R.S.	2	2	0
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" R. H., Esq.	3	11	0	Bayne, W. T., Esq.	1	2	6
Aire and Calder Navigation ...	1	6	0	Bayning, The Lady	1	1	0
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Ames, E. L., Esq.	2	0	0	Bentley, G., Esq.	1	1	0
" H. St. V., Esq.	1	0	0	Benyon, R., Esq.	5	0	0
Amyot, T. E., Esq.	1	10	0	Berridge, W., Esq.	1	12	0
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Barber, J. T., Esq.	2	0	0	Blamire, Rev. W. H.	1	6	0

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Boyd, Rev. Canon	1	1	0	Ellis, Hon. and Rev. W. C. ...	2	0	0
Boyle, The Hon. R.	1	1	0	Elwyn, Rev. W. M. H.	1	0	0
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Brighton Corporation	1	10	0	Eyre, Rev. W. L. W.	1	6	0
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[Subsequent receipts will be acknowledged monthly in the *Meteorological Magazine*. Cheques should be crossed National Bank, and Post Office Orders drawn on Camden Road, London, N.W.]

ON THE OBSERVATIONS OF RAINFALL MADE AT THE
ROYAL OBSERVATORY, GREENWICH,
IN THE YEARS 1841 TO 1879.

By W. C. NASH, F.M.S.

RAINFALL observations have been made at the Royal Observatory since the year 1815, but owing to the records for the earlier years (prior to 1841) being somewhat uncertain, they have not been included in this collection. The results given in the accompanying table are derived from the records by three different gauges. The value for January, 1841, is that given by a gauge of Crosley's construction, which exposes to the rain a surface of 100 square inches. From February, 1841, to March, 1861, the results are derived from monthly observations of a cylinder gauge, 8 in. in diameter; and from April, 1861, the results are the monthly sums of daily records by a similar gauge. From a comparison of several years' observations by these cylinder gauges it appeared that the difference of amount as measured by the two systems was almost inappreciable. The height of the receiving surface of Crosley's gauge above the ground is 1 ft. 8 in., and above the mean level of the sea 156 ft. 6 in.; and the receiving surfaces of the two cylinder gauges (which are planted about 3 ft. apart and near to Crosley's gauge) are 5 in. above the ground and 155 ft. 3 in. above mean sea-level.

For the years 1841 to 1848, and from 1865 onwards, the monthly record terminates at midnight of the last day; but for the sixteen years, 1849 to 1864, the monthly record terminates at 9 p.m.

Monthly Rainfall at the Royal Observatory, Greenwich, 1841 to 1879.

Years.	Jan.	Feb.	March	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Yearly Total.
1841	2·11	1·32	1·35	1·92	2·06	2·70	3·50	2·20	3·95	5·95	3·70	2·40	33·26
1842	1·02	1·05	1·90	0·43	2·09	0·95	2·96	1·78	3·99	1·41	4·25	0·74	22·57
1843	1·35	2·39	0·51	1·72	3·75	1·30	2·42	3·62	0·46	4·25	2·30	0·40	24·47
1844	2·42	2·32	2·30	0·35	0·30	1·56	2·18	1·71	1·19	4·01	4·50	0·36	23·20
1845	2·40	0·93	1·51	0·55	2·21	1·89	1·85	3·10	2·12	1·38	2·40	2·00	22·34
1846	2·82	1·47	0·88	3·05	1·50	0·50	1·50	4·00	1·79	5·13	1·52	1·13	25·29
1847	1·38	1·39	0·77	0·99	1·40	1·50	0·67	1·95	1·56	2·00	2·00	2·00	17·61
1848	1·20	2·60	3·10	3·44	0·40	3·50	1·98	4·25	2·38	3·50	1·20	2·55	30·10
1849	1·50	2·30	0·60	1·98	3·70	0·30	2·90	0·45	3·25	2·70	1·50	2·40	23·58
1850	1·20	1·40	0·40	2·25	2·30	1·00	2·82	1·70	1·35	1·58	2·18	1·35	19·53
1851	2·70	1·25	4·05	2·30	0·80	1·75	4·20	2·60	0·50	2·18	0·65	0·55	23·53
1852	3·60	0·90	0·17	0·49	1·90	4·60	2·25	4·35	3·80	3·75	6·00	2·20	34·01
1853	2·11	1·48	1·50	3·21	1·50	2·75	5·48	2·75	2·23	4·23	1·95	0·80	29·99
1854	1·40	1·21	0·32	0·59	3·51	0·91	1·75	2·61	0·98	2·42	1·90	1·41	19·01
1855	1·47	1·00	1·98	0·09	1·80	0·85	5·25	1·40*	1·95	5·20	1·50	1·10	23·59
1856	2·63	1·10	1·10	2·28	3·45	1·60	0·90	2·42	2·80	1·91	1·25	1·83	23·27
1857	2·60	0·20	0·83	1·40	0·33	2·70	1·10	2·50	3·40	4·20	1·35	0·55	21·16
1858	0·75	1·70	0·80	2·25	2·00	1·20	3·00	1·50	0·86	1·44	0·50	1·70	17·70
1859	0·80	0·86	1·35	2·17	2·35	1·40	3·30	1·13	3·80	3·60	2·90	2·17	25·83
1860	1·81	1·10	1·86	1·00	3·90	5·80	2·80	3·68	3·10	1·60	2·50	2·75	31·90
1861	0·55	1·80	2·15	0·83	1·79	1·90	2·20	0·57	1·46	0·88	5·07	1·25	20·45
1862	1·79	0·46	3·54	2·82	2·84	1·93	1·66	3·01	1·61	4·07	1·00	1·59	26·32
1863	2·71	0·50	0·70	0·45	1·25	3·91	0·88	1·82	2·95	1·82	1·59	1·08	19·66
1864	0·88	0·76	2·53	0·82	2·00	0·92	0·27	1·31	2·76	1·06	2·57	0·50	16·38
1865	3·32	1·75	0·85	0·40	4·37	2·45	2·27	3·97	0·16	5·90	2·39	0·87	28·70
1866	3·68	4·03	1·63	2·44	1·94	3·64	1·62	2·42	3·90	2·09	1·48	1·85	30·72
1867	2·79	1·22	2·28	2·16	2·34	1·77	5·81	2·64	2·92	2·14	0·42	1·97	28·46
1868	4·19	1·28	1·07	2·08	1·67	0·47	1·06	2·61	1·52	2·59	1·16	5·45	25·15
1869	2·92	2·34	1·41	1·01	3·43	1·15	0·55	1·21	3·08	1·77	2·38	2·77	24·02
1870	1·49	0·54	2·05	0·28	0·47	0·39	2·01	2·02	1·63	3·34	1·20	3·13	18·55
1871	2·05	1·09	1·10	3·03	0·68	2·95	3·25	0·86	4·12	1·37	0·57	1·23	22·30
1872	3·63	0·77	2·13	0·98	3·09	1·64	2·36	2·70	1·39	4·34	2·92	4·07	30·02
1873	2·45	1·93	1·33	0·61	1·49	2·56	1·85	3·18	2·52	2·55	2·58	0·31	23·36
1874	1·00	0·94	0·45	1·35	0·42	2·42	2·59	1·44	2·22	3·58	1·85	1·69	19·95
1875	2·99	0·82	0·56	1·55	1·46	2·28	5·28	2·28	2·66	4·13	2·90	1·06	27·97
1876	1·11	1·50	2·32	1·27	1·13	1·08	0·67	2·01	2·58	1·61	3·06	5·76	24·10
1877	4·35	1·71	2·23	3·35	1·38	0·68	2·46	2·91	1·14	1·78	3·53	1·76	27·28
1878	0·87	1·10	1·06	4·31	4·29	4·57	0·31	5·38	0·82	1·66	3·45	1·16	28·98
1879	2·59	3·82	0·60	2·60	3·36	4·29	3·72	5·19	2·87	0·76	0·91	0·65	31·36
Total	82·63	56·33	57·27	64·80	80·65	79·76	93·73	97·23	87·77	109·88	87·08	68·54	965·67
Max.	4·35	4·03	4·05	4·31	4·37	5·80	5·81	5·38	4·12	5·95	6·00	5·76	34·01
Mean	2·12	1·44	1·47	1·66	2·07	2·05	2·40	2·49	2·25	2·82	2·23	1·76	24·76
Min.	0·55	0·20	0·17	0·09	0·30	0·30	0·27	0·45	0·16	0·76	0·42	0·31	16·38

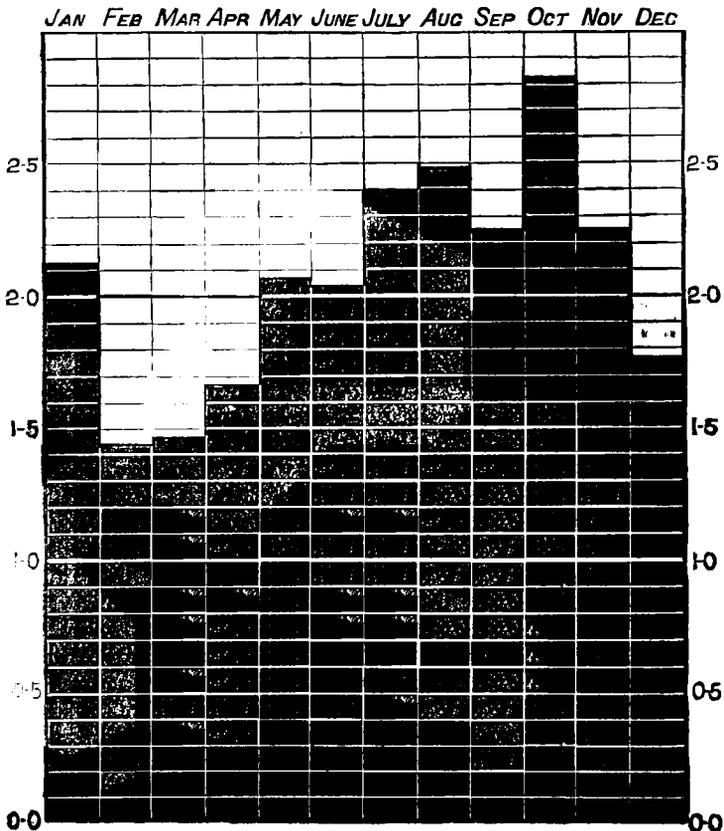
* The gauge was not measured at the end of August, 1855, and at the end of September the accumulated amount for the two months, August and September, (3·35 inches) was divided proportionally by reference to the record given by another gauge.

REMARKS UPON THE PRECEDING TABLE.

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

As is stated in the foregoing note, there is some uncertainty attaching to the early records of the fall of rain at the Royal Observatory, Greenwich. I hope, on a future occasion, to lay before my readers trustworthy figures for the earlier years, but at present I intend merely to submit graphic representations of the figures in the foregoing table—figures which I understand will (although in some instances they differ from those given in the Greenwich volumes) in future be adopted as the standard values for the Royal Observatory.

The first diagram represents the mean fall in each month, and is chiefly remarkable for showing that even a period of thirty-nine years



is not sufficient to yield a smooth curve. Some of the irregularities are apparently easy of explanation, others are quite the reverse. For instance, it is not at all obvious why the fall in January should be

half an inch greater than in either December or February; the amounts decrease from October to November by 0·6 in., from November to December by 0·5 in., and then there is a rise of 0·4 between December and January, followed by a fall of 0·7 between January and February.

February and March (especially if allowance be made for the shortness of the former month) are equally dry; then there is a nearly regular increase until June; the fall in May is, however, rather greater than a smooth curve would lead one to expect. July and August show a considerable increase, due no doubt to thunderstorms. In September, though the fall is above the average, it is less than either in August or October, because thunderstorms are more rare than in August, and the Autumnal wet period has not set in.

October asserts its usual British prerogative of being the wettest month in the year, and has, indeed, nearly double the fall of February.

In November and December the fall rapidly decreases.

Dividing the year into seasons, we obtain the following averages, viz. :—

Spring ..	=	March, April, May	=	5·20 in.
Summer	=	June, July, August	=	6·94 ,,
Autumn	=	September, October, November ...	=	7·30 ,,
Winter..	=	December, January, February ...	=	5·32 ,,

Or if we divide the year into only two seasons we have—

Summer	=	April to September	=	12·92 in.
Winter.	=	October to March.....	=	11·84 ,,

The next diagram shows the variations which have occurred in the total fall of rain in each year. The arrangement of the diagram is so simple and obvious that it would be waste of time to explain it. But some of the results are of considerable interest.

It has been suggested that when a long register of rainfall is examined the following proportions will be found to prevail :—

The wettest year will be one-third greater than the mean.

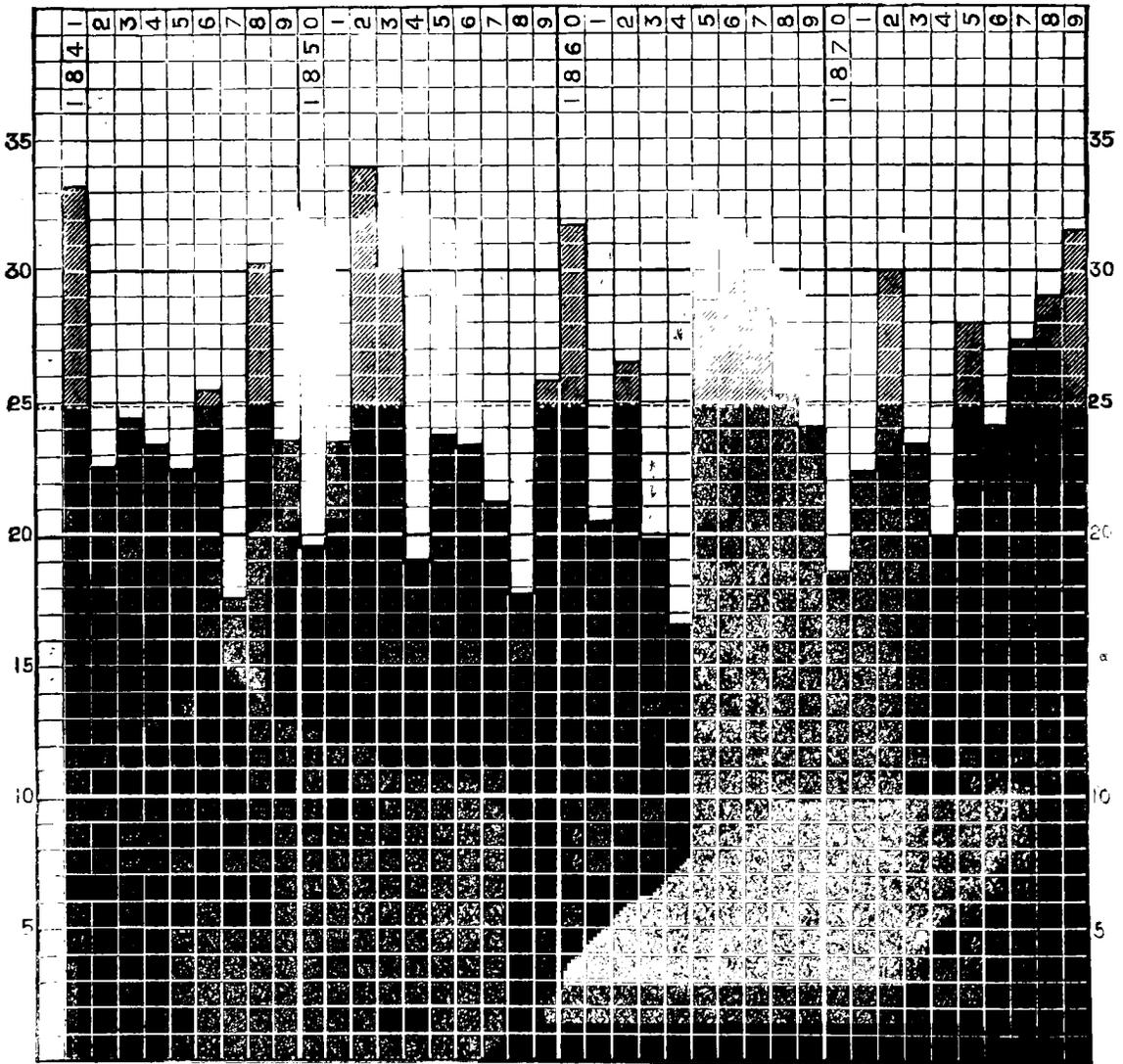
The driest year will be one-third less than the mean.

The driest group of three consecutive years will be one-sixth less than the mean.

Now let us apply this to the above table, and we find—

	Theory. in.	Fact. in.	Difference. in.
Wettest year.....	33·01 ...	34·01 ...	+1·00
Driest year	16·51 ...	16·38 ...	-·13
Driest three consecutive years	20·63 ...	20·71 ...	+·08

We do not on the present occasion touch upon the frequency or the reverse of such close agreement, or upon the geographical limits within which it prevails. The rule is one adopted by many English engineers, and the Greenwich table yields it remarkable support.



RAINFALL AT THE ROYAL OBSERVATORY, GREENWICH.

Lat. 51° 28' 38'' N. Long. 0° 0' 0''

Communicated by SIR G. B. AIRY, K.C.B., D.C.L., &c., Astronomer Royal.

No. of days on which rain fell.	1879	MONTHLY AMOUNT OF RAIN COLLECTED IN EACH GAUGE.								
		Self-registering Gauge of Osler's Anemometer.	Second Gauge at Osler's Anemometer.	On the roof of the Octagon Room.	On the roof of the Magnetic House.	On the roof of the Photographic thermometer shed.	Crosley's.	Cylinder partly sunk in the ground. read daily.	Cylinder partly sunk in the ground. read mntly	On the Royalist Police Ship.
		in.	in.	in.	in.	in.	in.	in.	in.	in.
12	Jan. ...	1·709	1·907	2·029	2·092	2·479	2·490	2·586	2·444	1·801
21	Feb. ...	1·913	2·438	3·120	3·567	3·576	3·945	3·815	3·620	3·529
14	March	0·230	0·370	0·474	0·438	0·563	0·635	0·603	0·570	0·451
16	April..	1·580	1·872	2·119	2·240	2·539	2·730	2·599	2·450	2·069
15	May...	2·208	2·350	2·748	3·017	3·304	3·685	3·361	3·338	2·579
20	June...	3·157	3·415	3·717	4·013	4·228	4·815	4·288	4·024	3·013
19	July...	2·109	2·184	2·663	3·395	3·551	3·930	3·723	3·570	2·475
20	Aug...	3·370	3·617	4·288	4·825	5·016	5·725	5·194	4·950	4·260
14	Sept...	2·226	2·237	2·522	2·721	2·853	3·235	2·874	2·745	2·329
12	Oct. ...	0·345	0·338	0·503	0·651	0·705	0·800	0·761	0·700	0·504
12	Nov ...	0·362	0·571	0·666	0·591	0·918	0·935	0·906	0·860	0·518
10	Dec. ...	0·152	0·193	0·443	0·554	0·626	0·560	0·652	0·670	0·599
185	Sums..	19·361	21·492	25·292	28·104	30·358	33·485	31·362	29·941	24·127

The heights of the receiving surfaces are as follows :

	Above the mean level of the Sea.		Above the Ground.	
	ft.	in.	ft.	in.
The two Gauges at Osler's Anemometer	205	6	50	8
Gauge on the roof of the Octagon Room	193	2	38	4
Gauge on the roof of the Magnetic House	176	7	21	9
Gauge on the roof of the Photographic Thermometer Shed	164	10	10	0
Crosley's Gauge	156	6	1	8
The two Gauges, partly sunk in the ground	155	3	0	5
	Above deck.			
Gauge on the "Royalist" Police Ship moored in Blackwall Reach	17	0	3	8

The gauge on the roof of the Magnetic House is a new gauge, brought into use at the beginning of the year 1879, and placed at very nearly the same altitude as the old Library gauge, the use of which was discontinued at the end of the year 1878.

January 17th, 1880.

WILLIAM ELLIS,
For the Astronomer Royal.

SNOW-FALL MEASUREMENTS, 1879-80.

By COL. WARD, F.R.A.S., F.M.S.

I SEND you my Snow-fall report—a short one, but remarkable for the small yield and extreme lightness of the instances tabulated. The *garde forestier* (our “forester,” in English), who is about the mountains daily, told me he never remembered such very light snow. Three inches pressed with a board went to less than half-an-inch thickness.

M. F. WARD.

Rossiniere, Canton Vaud, Suisse, Feb. 21, 1880.

DATE.	Yield in water.	Depth of fall.	Temperature during fall.	Remarks.	Inches of S = 1 in. R.
1879.	in.	in.	deg.		
Oct. 16	0·230	3·0	31·0—37·0	Dense flakes	13
Nov. 2	·660	6·5	33·0—31·0	Very dense	10
6	·190	2·5	20·0—28·0	Small snow	13
7	·220	3·5	31·0—34·0	Light flakes	16
12	·740	5·5	33·0—34·0	Dense snow and hail	7
13	·030	0·8	24·0—28·0	Light flakes	27
14	·250	5·0	16·0—29·0	Light fleecy flakes	20
17	·450	5·0	19·0—17·5	Dense powder	11
17	·130	3·0	19·0—29·0	Very light fleecy flakes	23
18	·080	1·0	32·0—34·0	Dense flakes	13
18	·430	4·0	32·0—31·0	Very dense	9
19	·400	4·0	31·0—32·0	”	10
19	·025	0·3	15·0—28·0	Small snow	12
Dec. 1	·080	1·0	12·0—20·0	} Single star crystals falling from vapour hanging about valley. Sky perfectly clear.	} 13 25
2	·020	0·5	20·0—14·0		
3	·810	7·5	16·0—19·0	Powder	9
5	·020	0·3	19·0—22·0	”	15
6	·300	8·0	15·0—25·0	* Very light fleecy snow	27
1880.					
Jan. 14	·080	2·8	11·6— 7·0	* ” ”	35
16	·090	3·5	15·0—24·0	* ” ”	39
17	·080	3·0	24·0—25·0	* ” ”	38
Feb. 12	·150	1·5	35·0—30·0	Dense.	10

* Described by a native as the lightest snow he ever saw fall here; when pressed down it went to almost nothing.

[We have computed the outside column of the above table, so as to render it in all respects comparable with those in our last volume (p. 14), and also with previous investigations. As Colonel Ward says in the above remarkably brief report, the special feature is the extreme lightness of the snow on January 14th to 17th. That a layer of snow more than 3 ft. thick should be required to produce 1 in. of water is certainly remarkable and unusual, but still the maximum value, 39 in. of snow for 1 in. of water, is only 4 in. greater than that observed in England by ourselves. (See *British Rainfall*, 1865 ; Appendix, page vii.)

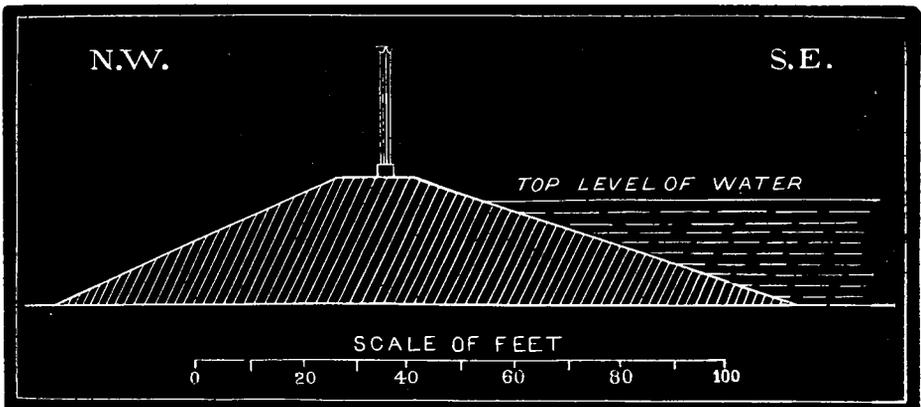
After considering hundreds of additional observations made during the long period of fifteen years, we are glad to find nothing of the slightest consequence to change in our statements respecting the density of snow. We said that it might be as little as 35 in. of snow to 1 in. of water. In the very exceptional case above reported by Colonel Ward, it was 39 in. to 1 in. We quoted the maximum density as 5 in. to 1 in. Last year Colonel Ward gave a case of 6 in. to 1 in., and in the above table there is a case of 7 in. to 1 in. We said that *on an average* 12 in. of snow would yield 1 in. of water, and nobody has yet shown that any other value is more correct. —ED.]

ROTHERHAM EXPERIMENTAL GAUGES.

The suggestion on pages 19 and 20 of *British Rainfall*, 1878, not having yet been carried out, these experimental gauges remain in the same position and condition as last year. There is, therefore, not much fresh to say about them or their results. But it may be well to re-state, in a somewhat clearer and more concise form than previously, the nature of the experiments, and the conclusions to which they appear to lead.

Locality.—The gauges are arranged in a line along the middle of the bank or dam, which is about one-seventh of a mile long and extends from S.W. to N.W. across a valley about 4 miles S. of Rotherham, in Yorkshire, and which bank, by damming up the stream against its S.E. face, forms Ulley Reservoir.

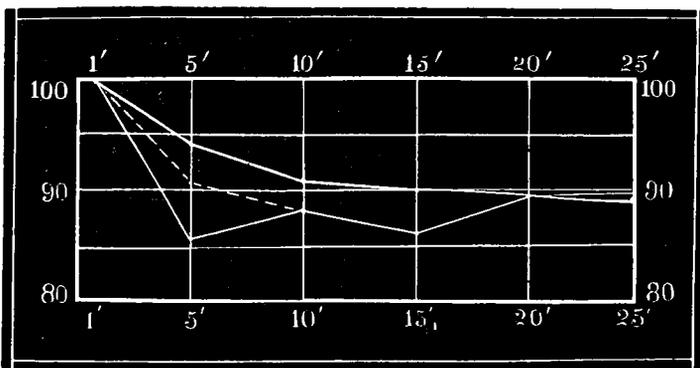
Nature of Instruments and Mode of Mounting.—The funnels are all 5 inches in diameter ; they are placed at 1 ft. above ground, and at each five feet, from 5 ft. to 25 ft. ; they are mere funnels, with a greater or less length of stout iron tube as support, and the water is stored for measurement in closed cases at the base. There are two gauges at each height, one is measured daily, the other monthly. The amounts are determined by weighing, and are read off to .001 inch. The style of mounting is shown by the annexed section, from N.W. to S.E., through the highest (25 ft.) pair of gauges.



Results.—Gauges placed on roofs have long been known to give very discordant results; some, *e.g.* those at High-street, Exeter, collect nearly as much as gauges on the ground; others, *e.g.* those on the top of the Royal Observatory, Greenwich, collect less than two-thirds of the fall on the ground. Gauges erected upon poles, and free from the influence of buildings, give much more accordant results than those on buildings, especially when not in very exposed localities. This subject is discussed at some length in *British Rainfall*, 1876, pages 34 to 37, and we think that, from the data there given, it may be assumed that the normal decrease for a 5-inch gauge may be taken as follows, and beneath it we give the means obtained (by a series of calculations which need not be printed) from four years' observations at Ulley Reservoir:—

Height	1 ft.	5 ft.	10 ft.	15 ft.	20 ft.	25 ft.
Normal ratio ...	100	94	91	90	89	88
Ulley ratios	100	86	88	86	89	89

These figures are laid down on the following engraving, in which the thick solid line shows the normal decrease, and the thin one the decrease at Ulley Reservoir. We showed last year that much of



the excessive decrease at 5 ft. was due to the fact that the gauges at that elevation are nearest to the centre of the bank and where, therefore, the depression of the natural surface of the valley below the level of the top of the bank is greatest. Or, to put it in other words, the level top of the bank, in consequence of the natural slope of the ground, forms a higher ridge where the 5-ft. gauges are, than it does in other parts. But even if we assume that this produces an error of 5 per cent., and we correct for it, and so get the curve as very faintly dotted, we still have the anomaly remaining, that the fall at

10 ft. and at 15 ft. is 2 per cent. *less* than that at 20 ft. and 25 ft., instead of 2 per cent. *more*, which is usually the case.

Conclusion.—The anomaly at 5 ft., which was fully investigated last year, coupled with the facts above quoted, appears to show that the gauges are virtually measures of the velocity of the wind passing over the bank. And we think that they not only show that the velocity of the wind increased as you advance towards the middle from each end of the bank, but also that the disturbing influence of the bank upon the wind currents does not reach very high; is greatest at 10 or 15 ft. above the ground, and is insensible at 20 ft. and 25 ft. If it were possible to erect a gauge *of the same pattern* at 50 ft., 100 ft., or even 200 ft. above the ground, we think it probable that it would collect within 1 or 2 per cent. of the same as that at 25 ft.; but of course that is a bit of theory which it is not likely to be in our power to verify.

RAIN GAUGE EXPERIMENTS, ULLEY RESERVOIR,
ROTHERHAM, 1879.

Lon. 1° 19' 9" W. Lat. 53° 22' 59" N. Altitude 184 ft. \bar{N}

FIVE MOUTHED GAUGE.

INCLINED
ROTATING
GAUGE.

Height above ground.	5ft.					5 ft.
	Facing East.	Facing North.	Facing West.	Facing South.	Horizon Centre.	45°
January	·922	·395	·203	1·284	·765	1·872
February... ..	3·333	1·591	·408	1·336	2·040	3·580
March	1·174	1·025	·229	·349	·835	1·878
April	3·186	2·100	·300	·350	2·418	4·128
May.....	·966	2·001	1·125	·234	2·348	2·822
June... .	2·386	1·200	·279	1·559	3·457	3·845
July.....	1·021	1·993	1·256	1·099	3·040	4·386
August	·716	·747	·666	1·348	2·804	3·514
September	·366	·359	·205	1·057	1·670	1·548
October	·190	·737	·485	·115	·670	1·054
November	2·930	1·540	·299	·164	1·466	2·370
December	·679	·518	·904	·589	·755	1·291
Totals	17·869	14·206	6·359	9·484	22·268	32·288

RAIN GAUGE EXPERIMENTS, ULLEY RESERVOIR (*continued*).

ELEVATED GAUGES.

Height above Ground ...	1 ft.			5 ft.			10 ft.		
	Read Daily.	Read Mnthly.	Diff.	Read Daily.	Read Mnthly.	Diff.	Read Daily.	Read Mnthly.	Diff.
January .....	.841	.819	—·022	.636	.705	+·069	.673	.530	—·143
February	2.244	2.183	—·061	2.076	1.899	—·177	1.943	1.838	—·105
March .....	.848	.789	—·059	.643	.650	+·007	.624	.600	—·024
April	2.322	2.362	+·040	2.169	2.115	—·054	2.097	2.109	+·012
May	2.403	2.526	+·123	2.168	2.165	—·003	2.228	2.287	+·059
June	3.468	3.443	—·025	3.072	3.094	+·022	3.024	3.207	+·183
July	3.107	3.087	—·020	2.613	2.482	—·131	2.729	2.769	+·040
August	2.853	2.805	—·048	2.637	2.657	+·020	2.665	2.697	+·032
September ...	1.708	1.727	+·019	1.539	1.492	—·047	1.565	1.603	+·038
October .....	.746	.762	+·016	.615	.664	+·049	.622	.663	+·041
November ...	1.554	1.541	—·013	1.403	1.408	+·005	1.252	1.330	+·078
December ...	.938	1.003	+·065	.713	.748	+·035	.796	.777	—·019
Totals	23.032	23.047	+·015	20.284	20.079	—·205	20.218	20.410	+·192

ELEVATED GAUGES (*continued*).

Height above ground ...	15 ft.			20 ft.			25 ft.		
	Read Daily.	Read Mnthly.	Diff.	Read Daily.	Read Mnthly.	Diff.	Read Daily.	Read Mnthly.	Diff.
January .....	.761	.692	—·069	.767	.716	—·051	.719	.800	+·081
February	1.897	1.835	—·062	1.908	1.760	—·148	1.956	2.037	+·081
March .....	.621	.573	—·048	.593	.400	—·193	.644	.650	+·006
April	2.010	2.047	+·037	2.020	1.973	—·047	1.979	2.045	+·066
May	2.188	2.160	—·028	2.204	2.089	—·115	2.225	2.061	—·164
June	3.126	3.067	—·059	3.228	3.100	—·128	3.146	3.188	+·042
July	2.663	2.579	—·084	2.771	2.553	—·218	2.719	2.706	—·013
August	2.611	2.549	—·062	2.679	2.595	—·084	2.666	2.700	+·034
September ...	1.537	1.503	—·034	1.566	1.525	—·041	1.574	1.598	+·024
October .....	.551	.662	+·111	.608	.635	+·027	.622	.603	—·019
November ...	1.250	1.300	+·050	1.244	1.194	—·050	1.353	1.169	—·184
December ...	.738	.684	—·054	.708	.689	—·019	.840	.770	—·070
Totals	19.953	19.651	—·302	20.296	19.229	—·1067	20.443	20.327	—·116

THE INTERNATIONAL CONGRESSES AND THE SIZE OF RAIN GAUGES.*

THE Congress at Rome having reversed the decision of that at Vienna respecting the size of rain gauges, it might at first sight appear needless to do more than chronicle the fact and refer our readers to the articles upon the subject which have appeared in these pages, viz., in *British Rainfall*, 1873, page 9, under the title of "The rain gauge question at Vienna," and in *British Rainfall*, 1874, page 23, under the title which we repeat at the head of the present article.

But the report by Dr. Mohn, upon which the Congress at Rome acted, is one of considerable value, and I cannot help thinking that, now that the question is settled, a brief history of its varied aspects will be acceptable.

The delegates at the preliminary meeting at Leipzig, in August, 1872, referred the question of size, &c. of rain gauges to a committee, consisting of MM. Ebermayer, Hann, Prestel and Schoder, who recommended that "a complete summary of the experience hitherto obtained should be prepared." Perhaps they had overlooked the paper which I had already sent in, giving precisely the data they required, and pointing out that extremely large gauges were needless.

When this recommendation of the Committee was brought before the general meeting, Mr. Buchan stated that the subject had already been exhaustively investigated in England, Dr. Bruhns, however, proposed that all rain gauges should be circular, 14 inches in diameter, and 8 ft. 2 in. above the ground. The recommendation of the Committee was ignored, and Dr. Bruhns's proposal was adopted.

* Report of the Proceedings of the Meteorological Conference at Leipzig. Stanford: London. 8vo. 1873.

Report of the Proceedings of the Meteorological Congress at Vienna. Stanford: London. 8vo. 1874.

Report of the Permanent Committee of the First International Congress for 1874. Stanford: London. 8vo. 1875.

Report of the Permanent Committee of the First International Congress for 1875. Stanford: London, 1876.

Mohn (H.), Bericht, abgestattet an den 2ten meteorologischen Congress in Rom. Ueber Grösse und Aufstellung des Regenmessers. 8vo.

Rapport sur les questions du programme du deuxième Congrès Météorologique International de Rome. Héritiers Botta, Rome large 8vo. 1879.

Report of the Proceedings of the Second International Meteorological Congress at Rome. Stanford: London. 8vo. 1879.

Before the assembling of the delegates at Vienna I sent a letter detailing our English experience at Calne, Strathfield Turgiss, and Hawsker, together with printed tables for distribution among the delegates, and I made the following remarks upon the proposal adopted at Leipzig :—

“ The recommendation that all gauges should be 14 in. (0·36m.) in diameter, and 8ft. 2 in. ($2\frac{1}{2}$ metres) above the ground, appears inexpedient for the following as well as other reasons :—

1. A gauge so placed will collect nearly 7 per cent. less than the true rainfall reaching the surface of the ground, and the advantage gained by so great an elevation is not obvious.
2. The use of a gauge having so large a receiving area possesses no advantage over that of one having one-fourth of the area.
3. So large a gauge does not accord with the suggestion of Dr. Mohn to the Leipzig meeting, nor with the practice of this country, of France, America, India, or Australia, in which countries, collectively, about 5000 gauges are in operation, very few of which exceed 8 in. (0·20 m.) in diameter, or 3 ft. (say 1 m.) above the ground.”

The subject (and I presume my letter) was referred to a committee, whereof M. Plantamour was president, M. Ebermayer, reporter, and MM. Buchan, Schenzl, Schoder and Wild were members. The proceedings of this Committee are thus reported :—

“ After a thorough discussion, the sub-committee thinks, with regard to those two questions, that it can propose the following rules of general applicability.

“ According to the comparative observations carried out in Scotland and England, rain gauges whose receivers have diameters of only three English inches are said to give results nearly the same (with not more than 2 per cent. difference) as such as have larger receivers (up to 24 in. diameter).

“ The sub-committee considers it best to propose for all rain gauges a circular receiver of one-tenth square metre surface (*i.e.* about 14 in. diameter), and to provide the edge with a strong turned ring of brass formed conically.”

This report was read at the general meeting on September 11th, 1873, and the “ Congress agreed by all votes (? all *other* votes) to one, to the proposal of the committee to adopt, as the best form for the receiver of the rain gauge, the circular one with the area of one-tenth of a square metre (diameter 14 in.).”

“ It was also adopted by a majority that the receiver of the rain gauge should be placed at a height of not less than one, and better of $1\frac{1}{2}$ metres above the ground.”

“ Mr. Buchan saw himself compelled to protest against this decision. The height of one foot and diameter of gauge from 3 in. upwards had been tested by investigations and experiments made

for many years, and as a result had been generally recommended by the Rainfall Committee of the British Association."

In *British Rainfall*, 1873, page 9, I announced the above decision, and stated that for many reasons it could not be generally adopted in this country.

In the early part of 1874 a circular was issued by Dr. Buys Ballot to the Directors of the Meteorological Systems of Europe, enquiring on behalf of the Permanent Committee to what extent the decisions adopted at Vienna had been carried out. It would occupy too much space to set out the answers in detail; the most important facts are that M. Bruhns abandoned his old square gauges and had all new ones placed at 1·5^m. (4 ft. 10 in.) instead of 2·6^m. (8 ft. 6 in.) above ground, and that Mr. Scott, on behalf of the Meteorological Committee, and Mr. Buchan, on behalf of the Scottish Meteorological Society, declined to obey the instructions of the Vienna Congress.

The Permanent Committee met at Utrecht September 11, 1874, —present MM. Buys Ballot, Bruhns, Jelinek, Mohn, Scott, and Wild, —and the following decision was arrived at :—

"In consideration of the objections which have been raised by Mr. Symons and other meteorologists against the dimensions of the rain gauges proposed by the Meteorological Congress, and with regard to the necessity for the establishment of numerous rain stations, which should be fitted out with simple instruments at moderate cost, it seems to the Permanent Committee to be advisable to recommend the next Meteorological Congress to consider afresh the questions regarding the dimensions and the height above ground of rain gauges."

In March, 1875, a very important notice (of which a translation is given in *British Rainfall*, 1874, p. 23) was inserted in the *Zeitschrift* of the Austrian Meteorological Society by Dr. Jelinek, in which, after stating the above facts, he said that henceforward the Austrian Institute would issue rain gauges of half the area recommended by the Vienna Congress.

At the above-mentioned Utrecht meeting an elaborate series of questions was framed in order to ascertain the practice of the various countries on many points. The questions referring to rain gauges were—

- (a.) What is the construction of your rain gauges? Of what material are they made?
- (b.) What size is the receiver of the rain gauges at your stations? Is it circular or square?

(c.) At what height above the ground are the receivers of your rain gauges ?

(d.) What is the price of such a rain gauge, including the measuring glass ?

(e.) What method is used in measuring snow ?

(f.) At what time of day is the fall measured ?

The replies are of considerable interest, and are epitomized in the following table :—

Country and Authority.	Patterns and Remarks on Construction.	Material.	Diam. of Circular Receiver	Length of side of square Receiver	Height of Receiver above ground.	Price.	Mode of measuring Snow.	Time of Reading.
Meteorological Society, London.	Glaisher's and Symons's	Copper	in. 8 & 5	in. ...	ft. in. 1 0	£ s. d. ...	Melted & water measured	9 a.m.
Meteorological Office, London. (R. H. Scott).	Glaisher's, with snow cylinder	Copper	8	...	1 9	2 2 0	melted	9 a.m. to previous day.
Norway (H. Mohn).	Old pattern	Zinc or tin	13½	...	1 4 to 13 0	...	melted	at break of day.
	New pattern	...	...	6	1 8	0 12 0	melted	at day-light.
Saxony (Dr. C. Bruhns).	Strong brass rim	Zinc	22½	...	4 11	3 0 0	thawed	early in morning
Württemberg (Dr. Sohncke).	...	Tin	...	13	3 3	...	melted	7 a.m.
Baden (Dr. Schoder).	...	Tin	10	...	4 11	0 18 3	See note ¹	7 a.m.
Russia (Dr. H. Wild).	Strong brass rim	Zinc	10	...	3 3	5 6 3	melted	7 a.m.
	Also cheaper ones	Zinc	10	...	...	0 15 8	...	...
Denmark (Capt. Hoffmeyer).	...	Zinc	14	...	6 3	0 17 0	Measured in cylindrical vessels	8 a.m.
Holland (Prof. Buys Ballot).	...	Zinc	9	...	3 3	0 8 4	See note ²	8 a.m.
Italy (Prof. J. Cantoni).	...	Copper	20	...	...	...	...	...

¹ A cylinder, 20 inches long, with a bottom to it, is put on the rain gauge and its contents are measured.

² If it is continually snowing, the gauge is taken in and another put in its place.

The Permanent Committee met in London in April, 1876,—present MM. Buys Ballot, Bruhns, Cantoni, Mohn, Scott and Wild,—and resolved that Prof. Mohn be requested to prepare a report upon Rain Gauges for the consideration of the Congress at Rome.

The following is a translation of Prof. Mohn's report :—

ON THE DIMENSIONS OF RAIN GAUGES, AND ON THE POSITION
IN WHICH THEY SHOULD BE PLACED.

BY DR. H. MOHN,

Director of the Royal Meteorological Institute of Norway.

AT the first International Congress held at Vienna in 1873, it was resolved that all rain gauges should be circular, 14 in. in diameter, and that the funnels should be 3 ft. 3 in., or better still, 4 ft. 10 in. (say 5 ft.) above the ground.

During the Congress, and also subsequently, serious objections to these resolutions have been taken by many meteorologists, and especially by the English. The Permanent Committee, therefore, at its meeting at Utrecht in 1874, thought it advisable to submit the question to the consideration of the second International Congress.

As regards the size of the funnel, the English meteorologists have ascertained that a much smaller funnel than that recommended may advantageously be employed.

Mr. Symons submitted to the Congress the results of experiments made with eleven different rain gauges, erected in three places, of which the local conditions were all widely different. According to these experiments, which extended over eight years, it appears that with gauges similar in all other respects, but with receiving surfaces varying from 3 in. to 24 in. in diameter, the results are nearly identical, the variation being less than 2 per cent. But with the two gauges of less than 3 in. diameter, the amount collected was deficient by about 5 per cent. Consequently Mr. Symons held that a gauge 14 in. in diameter was no better than one of 4 in. in diameter.

Mr. Buchan, in his written reply to the circular issued by the Permanent Committee in order to ascertain how far the decisions of the Vienna Congress had been adopted, stated "the rain gauges used by the Scottish Meteorological Society are circular, and 3, 5, 8 or 12 in. in diameter; and as experiments have proved that rain gauges from 3 in. to 24 in. in diameter only vary 2 per cent., the Council will continue to use gauges of the above-mentioned sizes, those of 14 in. diameter being needlessly large."

Mr. R. H. Scott, in replying to the same circular, says that English experience is conclusive against the necessity for so large a rain gauge as those proposed by the Congress. The 8 in. gauges hitherto used by the Meteorological Office would be retained, as experience showed that they perfectly fulfilled their purpose.

In accordance with these British investigations, the Director of the Austrian Central Meteorological Institute decided upon placing, side by side with the old 14 in. gauges, new ones of half that area. In Norway, the old rain gauges are about $13\frac{1}{2}$ in. in diameter, but smaller ones, square and about 6 in. along each side, have also been used, and are found to act perfectly well.

From the replies to the above-mentioned circular it will also be seen that, in addition to the countries above specified, gauges are used in Baden and in Russia of about 10 in. diameter, in the Netherlands of 9 in., in Italy of $12\frac{1}{2}$ in., and in Wurtemberg of about 14 in.

From the foregoing facts it is evident that the size of the receiving surface exerts no influence as long as the diameter does not sink below 3 English in., (or $0^m\cdot076$), which corresponds to an area of $0\cdot0045$ sq. met. This is most important, as the smaller gauges being less costly than larger ones, a greater number can be procured, and thus observations of importance to science and practical life can be carried on over a largely-increased area.

A further advantage of small gauges consists in their lightness and handiness. This is especially important in winter, when, in order to measure the snow, the observer has to take the whole apparatus into the house to melt it. When the gauge is large and heavy, the observer is strongly tempted, in order to avoid labour, to leave the gauge unmeasured for many days, if indeed not so long that it becomes entirely snowed up.

As regards the erection of rain gauges, Mr. Symons states, in the communication above mentioned, that a rain gauge, of which the receiving surface is 8 ft. above the ground, will indicate 7 per cent. less than one of which the surface is level with the ground, and after considering this, the members of the Vienna Congress adopted 3 ft. 3 in. as the minimum height, but said that they preferred 4 ft. 10 in. Mr. Buchan, however, voted against this resolution, stating that he considered that the height of 1 foot was on the one hand amply sufficient, and on the other hand, necessary. Subsequently, in the letter already referred to, he stated that the Scottish Meteorological Society was of opinion that 4 ft. 10 in. was too high, because the

wind at that height is stronger than nearer the surface, and therefore the rain gauges at 4 ft. 10 in. will collect less than those at 1 foot or below.

There are, however, several points to be considered in connection with this question.

If the rain gauge in a district where much snow falls stands too low, it will be snowed up, and it may also collect snow whirled along the ground, as often occurs in the Arctic regions—a phenomenon known at Vardo as “Jordfok.” Under these circumstances it is often impossible to decide whether the snow found in the funnel has fallen direct from the clouds or has been blown in. Similar uncertainty may attend the indication of the gauge after exceptionally heavy rains, owing to insplashing from the surface of the earth.

On the other hand, if the gauge be too high, other errors arise. Besides the circumstances mentioned by the above British meteorologists, that the stronger wind at the increased height produces a direct diminution in the rainfall, the wind will also during snowdrift carry out of the funnel some of the snow already deposited there. Moreover, a very high rain gauge will also be very cumbrous to bring into the house for the purpose of melting the snow.

From the answers to the circular issued by the Permanent Committee it appears that, while in England the usual height of the receiving surface is from 1 ft. to 1 ft. 9 in., in those other countries from which replies were received it is generally about 5 ft., and rarely less than 3 ft.

The material used for the construction of rain gauges is generally zinc or tin, except in England and Italy, where the undoubtedly better, but more costly copper is used.

The colour of the rain gauges is shown by the experiments made in Russia to be unimportant.*

From the foregoing it appears that the following conclusions may be drawn in reference to the size of the receiving surface, and to its height above the ground—the two most important points as regards the accuracy of rainfall measurement.

(1). The area of a tenth of a square metre (14 in. diameter), recommended by the Vienna Congress, is not necessary in order to obtain satisfactory results—a smaller area is equally good, provided it be not less than 3 in. in diameter.

* See Wild, Jahresbericht des physikalischen Central-Observatoriums fur 1873-74, page 12.

(2.) The rim of the gauge must be higher than the thickest layer of snow will ever reach to. In countries where snow never falls, the funnel may be lower, but must never be so low as for its results to be vitiated by insplashing. It is hardly possible otherwise to define the minimum height, for it is difficult to fix one suitable for all climates. The height should not be greater than is necessary in order to guard against the above evils.

As regards other circumstances, it is necessary that the rain gauge stand at a distance from any building, and equally open to winds from every quarter. Places where eddies occur, or snow is in the habit of accumulating, are of course to be avoided.

As regards the general conduct of the observations, it is certainly much to be desired that it should be adopted as a rule that the rain gauge should be read daily at a fixed hour, for example at the first morning observation hour. It is desirable that observers, who have not a specially-constructed snow gauge, should have two identical rain gauges.

As has been already observed, it is desirable to increase the number of rain gauges as much as possible, not only for the purposes of purely scientific meteorology and climatology, but also for many manufacturing and other practical objects, as for example agriculture, manufactures carried on by water power, and inland navigation. Hence it is desirable to make the observations as easy and as inexpensive as is possible, without trenching upon the conditions which science has shown to be necessary, in order to ensure accuracy.

At the Roman Congress, April, 1879, the foregoing report was referred to a committee, consisting of MM. Mascart (President), Cantoni, de Brito-Capello, Houzeau, Mendeleeff, Mohn, Palmieri, Schenzl, Snellen, Wild, and von Bezold (Secretary).

The President opened the discussion, MM. Mohn, Cantoni, von Bezold, Palmieri, Snellen and Zenger spoke upon it, and the following resolution was passed :—

The question was—“Is there any reason to change, after further experience, the decisions of the First Congress respecting the instruments and methods for measuring the quantity of rain or snow ?”

Resolution.—“*The Congress thinks that for stations of the second and third order, a diameter of eight or even of four inches is sufficient for the rain gauge.*”

“*As to the position of the rain gauges, the Congress confines itself to*

recommending that they should never be placed on a roof, but that they should be sufficiently elevated to be out of the influence of driving snow, and of the splashing of drops from the ground, while they must not be sheltered by trees or other neighbouring objects."

This resolution was considered at the general meeting on April 19, 1879. Mr. Scott said that he was pleased to learn that in accordance with the opinions on rain gauges frequently expressed by Messrs. Buchan and Symons, the size of the gauge now proposed was much less than that proposed by the Congress at Vienna.

The resolution was adopted.

Here for the present closes the narrative, and in so doing we are bound to mention that had Col. Ward not courageously faced both the trouble and the cost of the experiments commenced at Calne, evidence strong enough to bear down all opposition and to induce the reversal of the Vienna decision would not have been forthcoming. To him first, and subsequently to Mr. Griffith and to Mr. Stow, we are indebted for the evidence which is at last accepted by the assembled representatives of European Meteorology—*Magna est veritas, et prævalebit.*

THE BOHEMIAN RAINFALL ORGANIZATION.*

It affords us great pleasure to draw attention to one of the youngest, and yet of the most elaborate, rainfall organizations in the world.

The quarto publication was the first issued, and being almost entirely tables, may be dismissed with few words; its essential feature being that it is an almost unequalled storehouse of facts, of tables of daily rainfall at nearly 700 stations.

The other and smaller work gives a concise history of the establishment, organization and extent of the system, and we therefore translate a few paragraphs for the information and encouragement of our own staff.

In the first place, as the titles of the works indicate, the system of rain-gauge observations has been organized under the supervision of the Bohemian Forstverein, and the gauges are mostly placed at the lodges of the Foresters; the returns are sent in monthly to Dr. von Purkyně, Professor at the Forest-school at Weisswasser, and by him prepared for publication.

We may now summarize some paragraphs of the report.

Dr. von Purkyně considers it his duty to report the origin of the system which has been established with especial reference to the investigation of Forest climate.

There is for Bohemia a Government map (the K. K. Generalstabs-Karte), which is published in sheets like the English Ordnance map; these sheets are taken as the basis of the classification of the stations, and the sub-divisions are most methodical, the Editor desiring to have one station in each square mile! (That would give 120,000 gauges for the British Isles!)

Dr. von Purkyně kindly sends us an index map of Bohemia about

* Ombrometrische Beobachtungen der vom böhmischen Forstvereine in den Forsten Böhmens in verschiedenen Seehöhen und Expositionen errichteten stationen. Redigiert von Dr. E. von Purkyně. Prag, 1879. 4to.

Das vom böhmischen Forstvereine vorzugsweise im den Försterhäusern des Waldes errichtete ombrometrische Netz Böhmens im ersten Jahre seines Bestehens, 1879, von Dr. E. von Purkyně. Prag, 1879. 8vo.

3 ft. by 2 ft., on which the whole of the forests are tinted green, and every rain-gauge station is marked in red.

The author says that he hopes that the publication of the map will lead to vacant square miles being filled up.

He gives a list of the stations and observers, which contains (1) rotation number ; (2) number of the sheet of the map ; (3) number of the square mile in which the station is ; (4) name of the owner of the property ; (5) name of the lordship (herrschaft) ; (6) name of the station ; (7) altitude in metres ; (8) observer ; (9) names of the persons through whose influence the stations have been established.

Dr. von Purkyně says : “In no country of the earth has the co-operation of the landowners of the highest rank been displayed with equal munificence and cordial sympathy.”

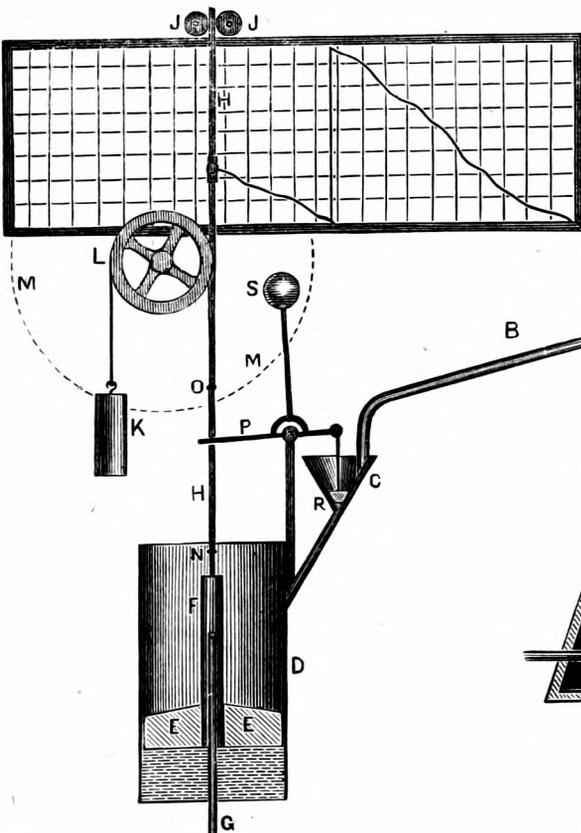
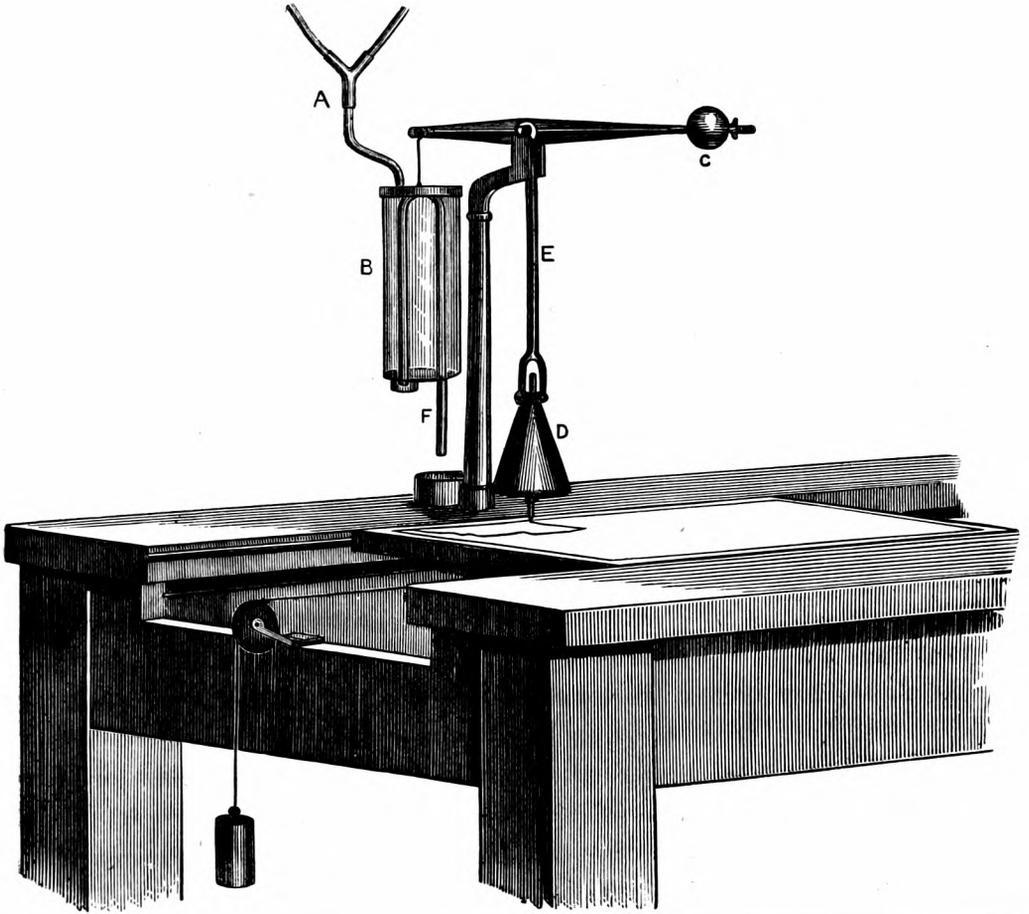
Referring to the quarto publication of daily values, he says that it will amount to about 400 pages per annum ; that the observations should be published in extenso, both to encourage observers, and because they indicate by uniformity the accuracy of the observers, and by variations the influence of altitude and of the prevalence of drying winds. These tables, moreover, give such a graphic representation of the track of weather as must be very interesting, and ought to lead to ample subscriptions towards the heavy cost of publication.

Some of the stations included in the system are old ones, and the author gives a list of them, with the dates at which observations were begun at each, and refers to the large number started in 1872 by Dr. Studnicka.

The pamphlet concludes with the following remarks :—

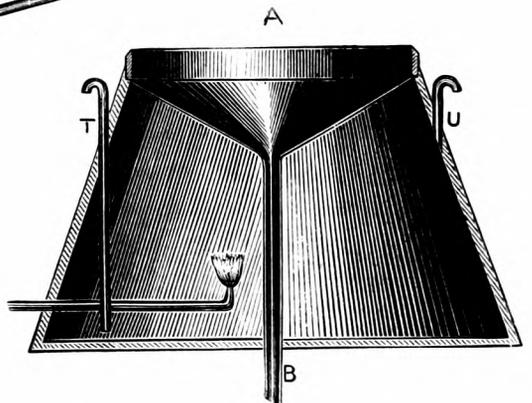
“Although our system has great gaps, they will probably soon be filled ; and the system, which already is the most extensive in Europe (for even England, though seven times the area of Bohemia, has less than double the number), will in every respect become a model one, if by liberal subscriptions the publication of the observations is ensured, and through this publication interest in the subject is further developed.”

(29) CAPELLO'S RECORDING RAIN GAUGE.



LOWENTHAL-LONSDALE'S
Self-recording Rain Gauge.

Scale of inches.
0 3 6 9 12



SELF-RECORDING GAUGES.

SINCE writing the article upon this subject in last year's volume, I have looked carefully for omissions in it or new forms of self-recording gauges, and have found three to add to the list ; but as two of these have been described since the article was written, the list given last year must, I think, be more nearly perfect than I at first supposed, and the three gauges may be described in continuation of the list without much disturbance of the chronological order.

(29). CAPELLO, J. DE B.

This gauge is very similar to No. 3 Osler's, except in the manner in which the recording pencil is attached. The rain is conveyed from two funnels by the branched pipe A into the bucket B, which is balanced when empty by the counterpoise C ; but as the rain fills the bucket it raises the counterpoise, and also moves the weight D to the right by the fixed arm E until the bucket is full, when it is emptied by the syphon F. The weight D is always vertical, as it is hung on pivots at the end of the arm E ; a metal tube slides through the middle of the weight, carrying at the lower end a pencil, by which the record is marked on a sheet drawn along by clockwork.

(30). LOWENTHAL-LONSDALE, PROF.

This gauge is necessarily drawn in a somewhat different style to the other instruments, as its chief characteristics lie in the internal details which could not be seen in a general view ; it is also drawn on a rather smaller scale. The water collected by the funnel A is conveyed by the pipe B to the receiver C, from which it flows into the cylinder D, raising the float E ; through the middle of the float runs a fixed tube F, which is open at the bottom but closed at the top, thus forming one leg of a syphon, the tube G, which runs through the bottom of the cylinder, being the other. To the top of the tube F is fixed a long rod H H, running through the guide-wheels, J J, at the top ; this rod of course rises with the float, and to it is fixed the pencil, which travels over a vertical recording-sheet drawn along by

clockwork. The float E, tube F, and rod H are nearly balanced by the weight K, which is attached to them by a cord passing over the pulley L; on the axis of this pulley is a hand, which registers the rain as it falls on a dial at the other side of the instrument; this dial is indicated by the dotted line M M.

On the rod H there are two little studs, N and O, and just as the float rises to the top of the pipe G, and the syphon comes into operation, the stud N raises the lever P, and closes the little valve R, so that the rain which falls while the cylinder D is being emptied is kept in the receiver C, instead of being carried away by the syphon. The weight S, falls a little to the right, thus keeping the valve closed until the cylinder is emptied, and the descent of the float draws down the stud O on to the lever P and opens the valve, the weight S then falls a little to the left and keeps it open until it is again closed by the stud N.

The cylinder holds one inch of rain when the syphon comes into operation, and the hand on the registering dial M returns to zero, but in doing so it moves a smaller dial which records the number of inches. At the top of the tube G is an arrangement for insuring the accurate discharge of the syphon, and to prevent dribbling. The details of this are too small to be shown in the engraving.

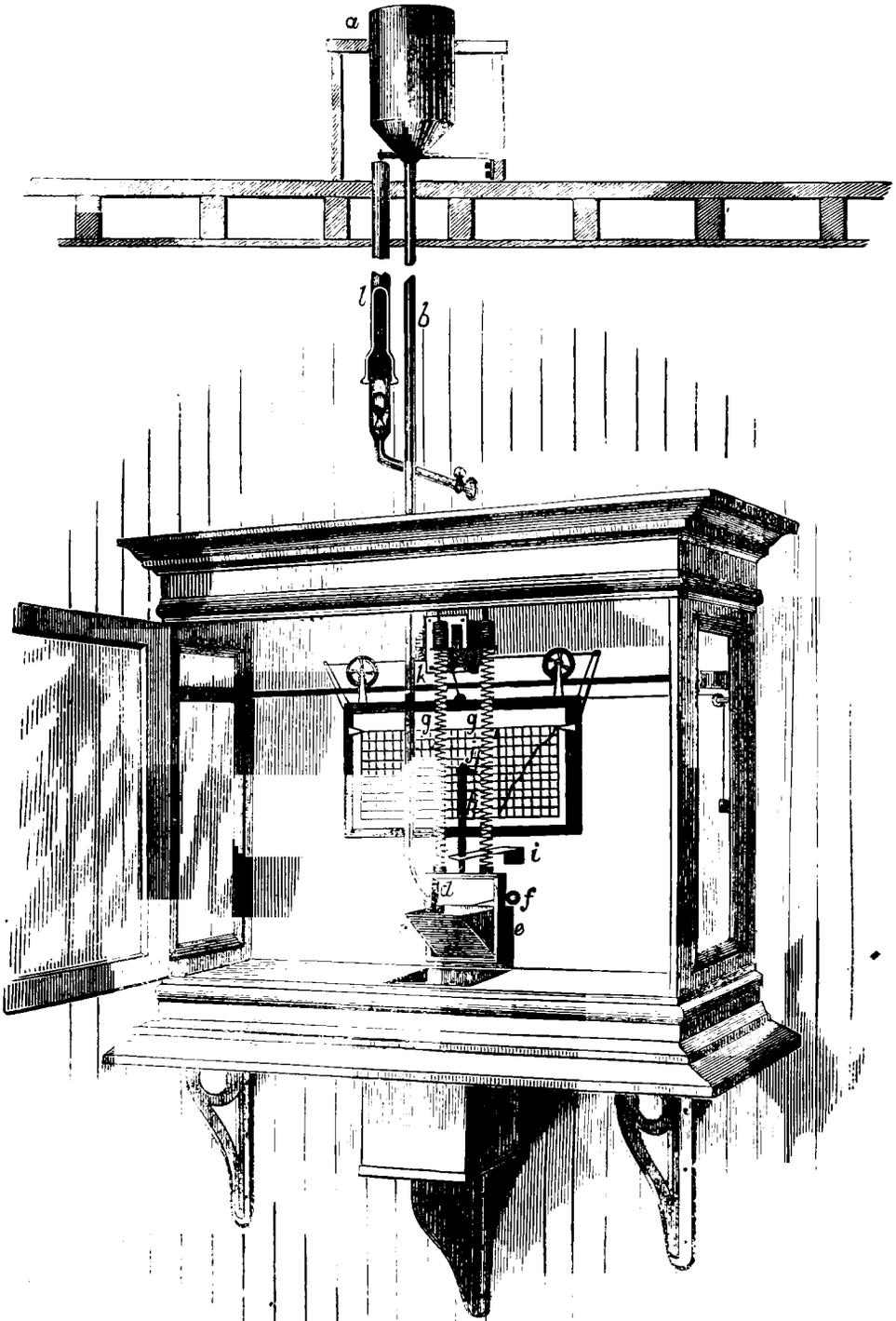
The funnel A is mounted on a box which is heated inside to melt snow or hail, and prevent it remaining in the funnel; T is a tube for conveying fresh air to the burner, and U is for the escape of the vitiated air.

(31) DRAPER'S RAIN AND SNOW GAUGE.

This gauge is in use at the Central Park Observatory, New York; it was designed by the Director, Mr. Draper, and is thus described by him in the report:—

“The first rain gauge constructed for the Observatory was on the principle of Tantalus' Cup; that is, when the receiving vessel had collected a certain amount of water it emptied itself into another by means of a glass syphon, and returned to the top of the register to receive a new supply. But sometimes it happened that small insects or pieces of leaves, &c., would choke the syphon, either retarding or stopping it from emptying the receiver. This led me to the construction of another, on the principle of a gravity bucket; that is, after a certain amount of water has been received in the bucket it tilts so as to empty all the water out, and after doing this

(31) DRAPER'S RECORDING RAIN GAUGE.



returns to its former position. This gauge multiplies ten times, so that rainfalls of one hundredth of an inch may easily be measured."

Description.—About 2 ft. above the roof is placed the usual circular rain-gauge receiver, marked *a*; it is 8 in. in diameter, funnel-shaped at the bottom, and leads into a block tin pipe, *b*, three-eighths of an inch in diameter. This gauge is mounted on a square box that will be described below. The pipe descends from the gauge to the receiving or gravity bucket, *c*, which is made of brass and is of a triangular prismatic shape, balanced just above and forward of its centre of gravity in a square frame, *d*, by two pivots, one of them marked *e*. These allow it to tilt when the water has reached a certain height or quantity. The leaden weight, *f*, is an adjustable counterbalance for the regulating of the tilting of the bucket. The square frame which carries this bucket is suspended to two steel springs, *g g*, placed as is shown in the drawing, that is parallel to the register sheet, the object being that when the bucket is emptying, the pencil rises from the register and makes no return mark. The upper ends of these springs are fastened by suitable means to the top of the case. Between the springs and attached to the square frame is an upright rod, *h*, going through a steadying bracket, *i*, and on its upper end an ink pencil, *j*, which delicately touches the sheet of paper moved sideways by the clock, *k*.

The square box mentioned in the preceding paragraph, not only affords a support for the gauge, but retains warm air admitted from the gas-burner in the room below by means of an iron pipe, *l*, which delivers the heated air close to the bottom of the funnel, melting any snow or sleet that may collect. There is also a metallic thermometer bar in it, which controls a valve at the lower end of the iron pipe, so that the temperature at the bottom of the gauge shall not rise above 40° Fahrenheit."

With regard to the forms of instrument described in last year's volume, it may be well to point out a few of the advantages and disadvantages of each, as in the previous article a simple description was given without any comment. Taking them in the order in which they were described, *i.e.*, chronologically, we have:—

(1). BEVAN, B., C.E.

Consisting of a pencil attached to the rod of a contracted float-gauge, and pressing against a long paper-covered cylinder—an

extremely simple, but rather cumbrous arrangement, the apparatus being about 5 or 6 ft. high, and the daily recording sheet—24 in. by 15 in.—would be inconveniently large.

(2). DONOVAN, PROF.

Last year I was able to publish an account of only what this gauge was said to accomplish, as I could get no description of its mechanism, and although I have since then made all possible search, I have been unable to obtain any information, and fear that there is no description of it in existence. Even Dr. Robinson, of Armagh, who was acquainted with Prof. Donovan, and has taken much interest in the matter, is unable to furnish any details. If the gauge fulfilled all the conditions specified, it would no doubt be a useful instrument, but of course it is impossible to pass an opinion upon a gauge of the construction of which I know nothing.

(3). OSLER, A. FOLLETT, F.R.S.

This gauge has always been constructed for registering the rain from a tower or roof, although it could probably be adapted for registering the rain near the ground. It works with an intermittent syphon, which has some objections, and it would be rather a large instrument to use simply for recording rainfall.

I find that the instrument of this pattern, in use at Greenwich Observatory, has been modified by the addition of a radius bar to the arm carrying the recording pencil, so as to overcome one of the slight sources of error; and I am very glad to hear from Mr. Osler that he is at present having a gauge made upon a pattern calculated to meet all modern requirements.

(4). DOLLOND, G.

This is a simple arrangement, and would probably work well, though not with extreme delicacy; it also requires the funnel to be some distance above ground, unless special arrangement be made for sinking the apparatus.

(5). KREIL, DR.

This instrument is very similar to Osler's, although the action is slightly different; it is constructed to register the rain at a considerable height above ground, and is rather large to use for a rain record alone, which only forms part of the original design.

The objection of the intermittent syphon is done away, but the efficacy of the tilting bucket depends a good deal on the arrangement and workmanship.

(6). FAGNOLI, DR. G.

The side tube in this instrument enables the observer to check the record upon the cylinder, but would in this country be liable to damage from frost. The instrument is not quite so large as Bevan's, but simply because it will not record so large a quantity of rain. It would not record a fall of 4 in.

(8). APPS, A.

One of the chief objections to this arrangement is, that the recording sheet must be equal in length to the cylinder in which the float rises, and consequently if the gauge is at all sensitive the recording sheet would be inconveniently large.

(9). SECCHI, PADRE.

This gauge is somewhat complicated, and as the curve on a disc would vary considerably with the distance from the centre, it would be very difficult to read off the traces accurately.

(10). HIPP, M.

This method would have several objections, especially the record not being continuous.

(11). BECKLEY, R.

This is a very elaborate instrument, and has several advantages; the funnel is designed to be less than two feet above ground, but it then requires special arrangements to be made for drainage, as the water is discharged below ground. It is strongly made, and the clockwork is carefully protected from the action of the weather by mercury joints and airtight case; the recording sheet is conveniently small, although the scale is tolerably open as the pencil returns to zero, when .20 in. has fallen. There must, however, be considerable friction in the working parts; it has the intermittent syphon with its attendant objections, and is to our mind a more complicated apparatus than is necessary.

(12). OSNAGHI, DR.

This gauge scarcely needs comment, as it is obviously inadequate to meet the requirements of a good recording gauge.

(13). CASELLA, L.

I have been testing the practical working of this gauge, and had it in daily use for about two months. From the satisfactory manner in which it has worked during that time, I think there is little to be desired by any one who wishes for an accurate and reliable instrument, but whether this desideratum can be obtained by a cheaper form of instrument is another question. The scale (both for time and quantity of rain) could of course be modified to any extent, but as at present arranged, with a daily recording sheet ruled 1 in. wide and 13 in. long, it will give a distinct record of rain falling at the rate of $2\frac{1}{2}$ in. per hour, and yet the record is so delicate, that with a fall of a hundredth of an inch in two hours the inequalities of the rate of the fall can be clearly seen. The emptying and return of the bucket only occupies four and a half seconds, so that very little rain is lost, and the recording pencil goes cleanly back to the zero line. It also has the advantage of being a very compact instrument, requiring no arrangement or fixing, and can be stood anywhere, the funnel being about 18 in. above ground. There are other advantages in the construction and details which are obvious from the description, and need not be commented upon here.

(15). RUSSELL, H. C.

There is little to say about this gauge besides what has already been said about Bevan and Apps, which it closely resembles, except that the scale proposed 2 in. for 1 in. of rain is too small to give an accurate record.

(17). HOUGH, PROF. G. W.

This is a very elaborate and delicate piece of machinery, involving the use of electrical apparatus, and apparently gives only the hourly variation in the weight of the receiving vessel.

(18). VON BAUMHAUER, E. H.

This also requires the use of electricity, and does not give a continuous record.

(19). BREGUET.

This is a very simple and probably effective arrangement if carefully made, though it might possibly be arranged in a more compact form, and so that the funnel could be nearer to the ground.

(20). ECCARD, A.

This gauge being almost identical with Apps', requires no

comment, except that the record not being continuous is a disadvantage.

(22). FINES, DR.

Although this gauge is said to be in great favour on the continent, it will not suit English ideas, as the record it gives is very incomplete considering the elaborate construction of the instrument.

(23). GIBBON, LIEUT. D. J.

This must have been an extremely delicate instrument, but much too elaborate for ordinary use, and very liable to get out of order.

(24). YEATES & Co.

This suggestion, besides involving the extra trouble of managing the electrical apparatus, would not give a continuous record.

(25). HOTTINGER & Co.

This is a pretty-looking piece of mechanism, but is not a good recording gauge. The paper has to hold the record of nearly 4 in. of rain, and as it is only six inches broad the scale is much too close for accurate work ; and the scale varies considerably as the counterpoise is raised. The point marking only at intervals of ten minutes gives a very imperfect curve.

(26). REDIER, A.

This is open to the same objections as Apps', plus the electrical apparatus, which is a useless elaboration unless intended to obviate the necessity for ruling the paper.

(28). LATHAM, BALDWIN, C.E.

This gauge undoubtedly gives a very accurate record of the rainfall, but must be very costly, and is perhaps rather too elaborate in some of its details for ordinary use, and I prefer a gauge running back to zero.

(29). CAPELLO, J. DE B.

This is a simple apparatus, and the ingenious manner in which the recording pencil is arranged overcomes the necessity for any parallel motion, as the pencil is not attached to an arm working from a fixed centre, as in many other gauges. The descent of the bucket and consequently the movement of the weight and pencil is, however, unequal, and therefore the space between the scale lines on the recording sheet has to be decreased towards the top, which, of course, renders the curve less easy to read accurately than it would otherwise be.

(30). LOWENTHAL, LONSDALE, PROF.

This gauge has had a large amount of thought bestowed upon it, and is very carefully arranged in all its details, many of which are undoubtedly advantageous. The valve in the inflow pipe overcomes one great objection to the intermittent syphon, and the registering dial is a great convenience, as it could be placed outside the case of the instrument, and the rain read off without having to examine the recording sheet. The amount held by the float cylinder (1 in.) before it is discharged would involve rather a large recording sheet or else a very close scale, but this could, of course, be modified by reducing the size of the cylinder. The funnel would have to be about 3 ft. above the ground, unless the cylinder were sunk and drainage provided for the water.

(31). DRAPER, D.

This gauge has the advantage of a tilting bucket and reasonably small recording sheet with an open scale, but it is not a compact instrument, and requires the funnel to be some distance above ground. Springs, unless carefully made, are liable to be irregular in their action, and the method by which the recording pencil is attached is unsatisfactory, as there appears to be no means of pressing it against the paper.

 SUMMARY.

Having discussed the gauges individually, it may be well to give a few remarks on the general principles and construction.

There are two broadly marked classes, float gauges and balance gauges; each of these admits of three sub-divisions.

In float recording gauges there are those in which the registration is limited by the width of the recording sheet, as Bevan's, Apps', &c., and others in which the recording pencil returns to the base line by mechanical action, as Dollond's and Bréguet's, and one (Lonsdale's) in which the float returns by means of an intermittent syphon. All float gauges are rather cumbrous and, with the exception of Prof. Lonsdale's, are limited by the length of the float cylinder; they also require the funnel to be some height above ground, unless special arrangement is made for placing and emptying them. Their motion is, however, equable, and requires neither mechanical correction nor inequality in the ruling on the recording sheet.

In balance gauges we have three very similar divisions: those that only register a limited quantity, as Hottinger's; those which are emptied by an intermittent syphon, as Osler's, Beckley's, &c.; and those which discharge their contents by a tilting bucket, as Kreil's, Casella's, &c.

It may be well to state here, with regard to the pencil returning to the base line of the recording sheet, that a rainfall record differs materially from barometric or thermometric curves, which rise and fall in relation to the base line of the recording sheet, whereas a rainfall curve always travels across the paper in one direction, although at a varying rate, consequently using or wasting a large amount of paper unless the pencil is made to return to the base line when a stated quantity of rain has fallen.

Of the various methods for accomplishing this object in balance gauges the tilting bucket is the most quick and certain in its action, while intermittent syphons are liable to dribble or become choked with leaves or dirt blown into the gauge, besides being rather slow in action, and in most cases draining off the rain that falls during the interval, which rain is, therefore, not recorded. Balance gauges are, in many respects, preferable, as they admit of a more compact instrument, and are, with one exception (Hottinger's), unlimited in the amount they will record; and, of course, the water discharged from the bucket or syphon can easily be reserved for subsequent measurement as a check. But in all of them, except Casella's and the improved form of Osler's, a slight error exists in the time scale, owing to the record being an arc instead of a straight line; and in most of them a similar error also exists, in a slight degree, in the rain scale, unless the recording sheet is ruled unequally.

CHANGES IN THE STAFF OF OBSERVERS.

This section is one of which it is very difficult to determine the length which is desirable. Were space of no object, we should like to record stations established *during* the year, but as will be seen, even a record of the new ones, of which we have complete reports for the whole year, occupies a very large space, and with the latter group we must rest content.

We have tried to render the list both of primary and of secondary use ; primarily, of course, its object is to enable readers of successive volumes to ascertain, when they miss any return which they may be seeking, why it is absent, and whether it is of any use to search in future volumes—to give, in fact, a sort of life history of each station, something after the style of M. Moritz's paper on the Caucasian stations, but as much more tersely as is the number of stations with which we have to deal greater than those in the Caucasus.

Another respect in which this list may be of great use, if our readers will be kind enough to help us, is in preventing any counties remaining for any length of time inadequately provided with stations. The list of "absent records" explains why each is absent; where the cause is a permanent one, a new station in lieu of the old one is almost always desirable ; and if there is not among the list of "insertions" any station in that neighbourhood, it is in the highest degree probable that one in that locality ought to be provided. Here, then, is a field in which almost everybody can help, and that help we shall thankfully accept.

Some figures in brackets will be noticed by the side of the name of each county ; those numbers represent the number of perfect records from the county published in the present volume.

The list is itself so long that we have been obliged to keep our remarks upon it very short—much shorter than we desire—but both time and space compel brevity.

MIDDLESEX (43).

ABSENT RECORDS.

Chiswick—*No reply*
 Haverstock Hill—*Observation book lost*
 277, Camden Road—*Observer removed*
 Stoke Newington (Reservoirs)—*Obs. bad*
 (Foulden Rd.)—*No reply*
 Harrow Weald Vicarage—*No reply*

INSERTIONS.

Isleworth (Spring Grove)
 „ (Dunster Lodge)
 Holloway (Manor Road)
 Hampstead (The Priors)
 Wood Green
 Colney Hatch
 Mill Hill School

SURREY (55).

Chilworth (Postford Ho.)—*Obs. ceased*
 New Wandsworth—*Observer removed*
 Battersea—*Observations discontinued*

Dorking (Holmbury
 „ (Abinger Hall)
 Nutfield Priory
 Godstone (Tyler's Green)
 Reigate Hill
 Titsey [Westerham]
 „ (Botley Hill) [Westerham]
 Chipstead (Parson's Green)
 Kenley
 Banstead Downs (Woodcote Farm)
 Weybridge (Oakfield)
 Cobham (Faircrofts)
 Addington
 Croydon (Church Street)
 „ (Brinstone Barn)
 „ (Thornton Heath)
 Chertsey (Burley Orchard)
 Mitcham

KENT (66).

Maidstone (East Farleigh)—*Observer dead*

Tenterden (Summerhill)
 Maidstone (Tovill House)
 Canterbury (Old Tree Hoath)
 Westerham (Betsom's Hill)
 Farnborough (Leaves Green)
 Staplehurst (Goudhurst)
 Sittingbourne
 Birchington (Thor)
 North Foreland Lodge
 Bickley (Highfield)

For eleven of the new stations in Surrey, and for two in Kent, we are indebted to Mr. Baldwin Latham, C.E., who has not only designed and worked an excellent self-recording rain gauge at Croydon, but has also established observations at about twenty stations over an area of perhaps 100 square miles surrounding his own station. We said in *British Rainfall*, 1878, that we hoped this year to give a map of the district, but we do not do so, because we are very desirous, if we can hit upon any method which will not be too costly, of adopting one uniform scale for all the maps showing the position of rain gauge stations given in these volumes. Of course we should like better still to give such a map as that issued by Dr.

Purkynè, but the cost would be far too great. We hope to be able to settle this question during the present year.

WEST SUSSEX (21).

Chichester (Shopwyke)— <i>Observer dead</i>	Arundel
„ (West Dean)— <i>Observer dead</i>	Chichester (Eartham House)
Horsham (Swallowfield)— <i>No reply</i>	
Milland House [Liphook]— <i>Observer left</i>	
Shillinglee Park [Haslemere]— <i>Observer left</i>	

The loss of the two records near Chichester is very serious, as both were unusually long registers. That at Shopwyke was perfect from 1850 to the end of 1878; that at West Dean was still longer, viz., from 1845 to 1878, or 33 years, and as a previous record was kept in the same village from 1834 to 1849, and consequently during five years both records were kept simultaneously, it is easy to compute the precise fluctuation of the fall at West Dean from 1834 to 1878, or for 45 years.

EAST SUSSEX (37).

Eastbourne (Manor House)— <i>G. overflowed</i>	Eastbourne (Osborne House)
Brighton (Cambridge Rd.)— <i>Observer dead</i>	Brighton (Blatchington Road)
„ W. W. Lewes Road— <i>No reply</i>	Lewes (Iford)
„ W. W. Goldstone Bottom— <i>No reply</i>	Warbleton Rectory
Hastings (Bleak Ho.)— <i>Observations ceased</i>	Lamberhurst (Scotney Castle)
„ Cemetery— <i>Observations ceased</i>	
„ Harmer's Res.— <i>Record imperfect</i>	
Newick (Ketches)— <i>Observations ceased</i>	

HANTS (50).

Selborne— <i>Observer dead</i>	Ventnor (Hospital)
Basingstoke (The Vyne)— <i>Observer dead</i>	Ryde
	Christchurch (Mudford)
	Alresford (Cheriton Rectory)
	Micheldever

BERKS (21).

Maidenhead (Cookham)— <i>Observer dead</i>	Wallingford (Blewberton House)
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HERTS (24).

Hemel Hempstead (Nashmills)— <i>G. overflowed</i>	Totteridge (Poynter's Grove)
Buntingford (Aspenden)— <i>Obs. ceased</i>	Hemel Hempstead (Gt. Gaddesden)

BUCKS (14).

Slough (Upton)
Aylesbury (Mentmore)
Olney (Filgrave)

OXFORD (19).

Chipping Norton (Chadlington)— <i>Obs. left</i>	Watlington (Swyncombe House)
„ „ (Kingham)— <i>Observer dead</i>	

NORTHAMPTON (24).

Rothwell (Braybrooke)— <i>No reply</i>	Northampton (Little Houghton)
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HUNTINGDON (5).

St. Neots (Waresley)—*Gauge overflowed* |

BEDFORD (17).

Silsoe—*Gauge overflowed*
,, (Wrest Park)—*Gauge overflowed* |

CAMBRIDGE (29).

No CHANGES.

ESSEX (26).

Chelmsford (Great Baddow)—*Observer left* | Epping (The Hemnalls)
Manningtree (Wix)—*Observations ceased* | Bradwell on Sea (Down Hall)
Manningtree (Lawford)

SUFFOLK (24).

Ipswich (Belstead Hall)—*Record imperfect* | Woodbridge (Rendlesham Hall)
,, (Woodbridge Road)—*Observer left* | Ixworth (Walsham-le-Willows)
Ixworth—*Observations ceased* | Botesdale (Rickinghall)

NORFOLK (49).

Wymondham (Hapton)—*Record imperfect* | Norwich (Postwick)
Watton (Ovington)—*Record imperfect*
Norwich (Honingham)—*Observer dead*
Hockering—*Observer dead* |

WILTS (25).

Swindon (Mechanic's Inst.)—*No reply* | Devizes (Southgate House)
,, (Bishops Cannings)
Calne (High Street)
Malmesbury (Charlton Park)

DORSET (17).

Weymouth (Langton Herring)
Sherborne (Folke Rectory)
Cranborne (Pentridge)
Gillingham

DEVON (73).

Newton Ferrers—*No reply* | Devonport (Rowden's Reservoir)
Plymouth (Old Town Street)—*No reply* | Torquay (Castle College)
Plympton (Rose Hill Ct.)—*Observations bad* | Horrabridge (Grimstone)
Bickington (Holbrook)—*Observer removed* | Teignmouth (Bitton)
Dartmoor (Med. Off. lawn)—*Observer left* | ,, (Woodway)
,, (Prison Farm)—*No reply* | Colyton
Ashburton (Widdecombe)—*Gauge moved*
Exeter (High Street)—*Observations ceased*
Okehampton (Goldburn)—*Observer left*
Tiverton (Exe Villa)—*Observer moved*
Martinhoe—*Not observed* |

We are much disappointed at the absence of the Dartmoor records. The late Mr. Treby supplied two gauges to the prison authorities, we have been there several times in order to keep all in good order, and on one occasion supplied out of a British Association grant four additional gauges; and Dr. Power previous to his illness and removal,

made arrangements for at least *one* of the gauges being regularly observed; but all seems to be of little use. The Meteorological Society has now established a paid station at Prince Town, and we shall get the records from it, even if all our own gauges have been thrown away.

CORNWALL (33).

Marazion
 Camborne (Crowan)
 St. Austell (Polcarne)
 Maker Vicarage [Devonport]

SOMERSET (32).

Minehead (Porlock)— <i>Observer left</i>	Yeovil
Frome (North End)— <i>No reply</i>	Wellington (Sunnyside)
Backwell— <i>Observations ceased</i>	Taunton (Hovelands Terrace)
	Radstock, Downside

GLOUCESTER (28).

Bristol (Cote House)— <i>Observations ceased</i>	Gloucester (Barnwood)
Cheltenham (Prestbury)— <i>Observer dead</i>	

HEREFORD (20).

Whitfield— <i>No reply</i>	Leominster (Farm)
Hereford (Tupsley)— <i>Record imperfect</i>	
„ (Stretton)— <i>Observer dead</i>	
Leominster (West Lodge)— <i>Gauge moved</i>	
Wigmore— <i>Observations bad</i>	

SHROPSHIRE (21).

Burford [Tenbury]—*Observations imperfect*
 Coalbrookdale (Horsehay)—*Obs. doubtful*
 Mt. Drayton (Norton in Hales)—*Recrd. impft*

STAFFORD (24).

Amblecote [Stourbridge]— <i>Obs. ceased</i>	Dennis [Stourbridge]
Biddulph Moor— <i>Record imperfect</i>	Cheadle (Farley)

WORCESTER (16).

Bromsgrove Cemetery— <i>Observer dead</i>	Northwick Park
Kidderminster (Winterfold)— <i>Observer dead</i>	Great Malvern
Hagley Rectory— <i>Observations incorrect</i>	„ „ (Madresfield)
	Kidderminster (Comberton Road)

WARWICK (19).

Kineton (Fenny Compton)
 Southam (Stockton)
 Coventry (Middlesboro' Terrace)
 „ (Stoke)
 „ (Walsgrave on Sowe)

LEICESTER (21).

Kibworth Harcourt— <i>Observations ceased</i>	Loughborough (Victoria Street)
Loughborough Water Works— <i>No reply</i>	

RUTLAND (7).

Uppingham (Ayston Hall)— <i>Obs. incorrect</i>	Ketton Hall [Stamford]
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LINCOLN (44).

Market Rasen— <i>Observations incomplete</i>	Lincoln (The Quarry)
	Grimsby (Aylesby)

NOTTINGHAM (17).

Retford (Grove Hall)— <i>Observer dead</i>	
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DERBY (35).

Chesterfield (St. Thomas')— <i>No observations</i>	Stuffynwood Hall [Mansfield]
„ (Tapton Grove)— <i>Obs. moved</i>	| Hathersage (Bamford)
Buxton (Poole's Cavern)— <i>No reply</i>	|

CHESHIRE (42).

Altrincham (Groby Rd.)— <i>Observer moved</i>	Siddington (Thornycroft Hall)
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LANCASHIRE (111).

Manchester (Flixton)— <i>No reply</i>	Liverpool (Grassendale, Garston)
Stalybridge (Brushes Clough)— <i>No return</i>	| „ (St. Michael's Hamlet)
Oldham (Gas Works)— <i>No return</i>	| Manchester (Urmston)
Bury (Gin Hall)— <i>Observations incorrect</i>	| „ (Alexandra Park)
Rochdale— <i>Observer left</i>	| „ (Newton Heath)
„ (Piethorne)— <i>No return</i>	| Bolton (Belmont Road)
Blackburn (Pickup Res.)— <i>Gauge leaky</i>	| Rochdale (Littleborough)
Kirkham (Weeton Res. Bank) <i>Gauge moved</i>	| Blackstone Edge
Garstang (The Parsonage)— <i>Observer moved</i>	| „ „ (Summit)
Grange (Kent's Bank)— <i>Observer dead</i>	| „ „ (Chilbourn)
Ulverston— <i>Observer dead</i>	| „ „ (Lenches)
Brathay Hall [Ambleside]— <i>G. overflowed</i>	| Blackburn (Daisy Green)
	| „ (Pleasington)
	| Burnley (Monkholm)
	| „ (Gawthorpe Hall)
	| Garstang (Winmarleigh Vicarage)
	| Lancaster (Hest Bank)
	| Barrow-in-Furness
	| Cartmel (Pit Farm)

YORKSHIRE (WEST RIDING) (138).

Sheffield (Richmond Hill)— <i>No reply</i>	| Rotherham (Thrybergh)
Holmbridge (Batley W.W.)— <i>No observs.</i>	| Ackworth School
Saddleworth Station— <i>Record imperfect</i>	| Wakefield (Alverthorpe Hall)
Strines Dale [Oldham]— <i>No observations</i>	| Todmorden (Stansfield Hall)
Denshaw [Oldham]— <i>No observations</i>	| Halifax (Castle Carr)
Goole— <i>Observer left</i>	| „ (Ovenden)
Bradford (Shay Green)— <i>Obs. ceased</i>	| „ (Widdop)
„ (Stairs, Oxenhope)— <i>R. imperfect</i>	| Leeds (Horsforth)
„ (Leeming Res.)— <i>R. imperfect</i>	| Slaidburn (Hareden Brook)
„ (Leeshaw Res.)— <i>R. imperfect</i>	| „ (Langden Brook)
Shipley (Victoria Park)— <i>Observations ceased</i>	| Skipton (Embsay Kirk)
„ (Moor Head)— <i>No reply</i>	| „ (Halton Gill)
Bingley (The Grange)— <i>Record lost</i>	| Langstrothdale (Cam Fell)
York (Bootham)— <i>Record imperfect</i>	
„ (Heworth)— <i>No observations</i>	
Nun Monkton— <i>Observer left</i>	
Settle (Langcliffe)— <i>Observer left</i>	
Ingleborough— <i>Observer dead</i>	
Ripon (Borrage House)— <i>Record imperfect</i>	
Kettlewell (Buckden)— <i>Record imperfect</i>	

YORKSHIRE (EAST RIDING) (18).

Langton [Malton]—*Observer gone* | Middleton on the Wolds

YORKSHIRE (NORTH RIDING) (37).

Thirsk (Kilburn)— <i>Observer dead</i>	Thirsk
Aysgarth (Thornton Rust)— <i>Obs. moved</i>	Helmsley (Nawton)
Richmond (Middleton Tyas)— <i>No reply</i>	Fylingdales Moor (Harwoodale Mill)
Brignall Mill [Barnard C.]— <i>Obs. ceased</i>	„ „ (Chapel Farm)
Middlesboro' (Grey Towers)— <i>No reply</i>	„ „ (Flask Inn)
Romaldkirk (Balder Head)— <i>Gauge leaked</i>	„ „ (Evan Howe)
„ (Hury Mill)— <i>Obs. ceased</i>	

The stations grouped under the head of Fylingdales Moor, for which we are indebted to Mr. E. Filliter, C.E., of Leeds, are of much importance, and we greatly regret to hear that it is probably the only year for which records will be available. We are glad to receive from Mr. Bamlett one record from Thirsk, and as he has established several gauges on the West face of the Hambleton Hills, we hope to be able to give records from that locality next year. There is still great need for stations between these and the coast.

DURHAM (23).

Sedgefield Asylum— <i>No reply</i>	Barnard Castle (Whorlton)
Widdybank [Brough]— <i>Observations ceased</i>	Durham (Ushaw College)
Middleton (Langdon Beck)— <i>Obs. ceased</i>	

NORTHUMBERLAND (45).

Shotley House— <i>No reply</i>	Haltwhistle (Shaft Hill)
North Shields (Earsdon)— <i>Observer dead</i>	Morpeth (Cresswell)

CUMBERLAND (47).

Scafell Pike— <i>Vitiated by frost</i>	Wythburn (<i>daily gauge</i>)
Esk Hause— <i>Vitiated by frost</i>	Helvellyn (Birkside)
Brant Rigg— <i>Vitiated by frost</i>	Keswick (Shu-le-crow)
Workington (Stainburn)— <i>Observer dead</i>	Whitehaven (Gilarron Hall)
Maryport (Risehow)— <i>Gauge stolen</i>	Aspatria (Brayton Hall)
Kirkandrews on Eden— <i>Observations ceased</i>	Stapleton (Westfield House)

We mentioned last year our indebtedness to Mr. Maitland for the re-establishment of the Scafell district gauges. He is still giving great attention to the efficient maintenance of the group; but what with the gauges being frozen up for two or three of the early months, and what with the foolery of someone who, perhaps, might be supposed to know better, he has had much trouble in keeping all straight. He has purchased some new gauges, and is now in the district personally superintending their erection.

WESTMORELAND (35).

Windermere (Holehird)— <i>No reply</i>	Windermere (Hazelthwaite)
Grasmere (Easdale Tarn)— <i>Obs. ceased</i>	Haweswater (Mardale Green)
Crosby Ravensworth— <i>No observations</i>	Milburn
Appleby— <i>No reply</i>	
„ (Morland Hall)— <i>No observations</i>	
Great Strickland [Penrith]— <i>Obs. ceased</i>	

MONMOUTH (12).

Newport (The Grove, Malpas)—*No obs.* | Chepstow

GLAMORGAN (13).

Cardiff (Crockherbtown)— <i>Obs. ceased</i>	|	Cardiff (East Moors)
„ (Ely)— <i>Observations ceased</i>	|	
„ (Lisvane)— <i>Observations ceased</i>	|	
Pontypridd (Treorchy)— <i>Record imperfect</i>	|	
Swansea (South Dock)— <i>Gauge leaky</i>	|	
Aberdare (Treherbert)— <i>Record imperfect</i>	|	
„ (Abernant)— <i>Record lost</i>	|	

CARMARTHEN (6).

Llanelly Water Works—*Record imperfect* | Llandovery

PEMBROKE (9).

|	Narberth Rectory
|	St. David's

CARDIGAN (3).

Lampeter (St. David's Coll.)—*R. imperfect* |

BRECKNOCK (5).

Crickhowell (Llangattock Park)—*R. imprft* |

RADNOR (2).

No CHANGES.

MONTGOMERY (6).

Llanidloes (Dolenog)— <i>Record imperfect</i>	|	Newtown (Cærsws)
Plynlimmon (Nantiago Mine)— <i>Obs. ceased</i>	|	
Montgomery (Llandyssil)— <i>Observer moved</i>	|	

FLINT (8).

Holywell (Maes-y-dre)—*Observer dead* |

DENBIGH (14).

|	Llangollen (Plas Berwyn)
|	Wrexham (Pack Saddle Reservoir)
|	„ (Cae Llwyd Reservoir)
|	Abergele (Garthewin)

MERIONETH (10).

Aberdovey—*No observations* |

CARNARVON (9).

No CHANGES.

ANGLESEA (5).

|	Menaifron
|	Llandyfrydog

ISLE OF MAN (4).

| Calf of Man

Our stations in the Isle of Man continue exclusively coastal. A

few inland stations, and especially a few on the mountains, would be very useful.

ISLES OF SCILLY (1).

NO CHANGES.

JERSEY (4).

NO CHANGES.

GUERNSEY (2).

NO CHANGES.

SCOTLAND.

WIGTON (2).

Wigton (N. Balforn)—*No observations* |

KIRKCUDBRIGHT (11).

New Galloway—*No reply* |

DUMFRIES (12).

Closeburn (Wallace Hall)— <i>Obs. ceased</i>	|	Ecclefechan (Kirkconnell Hall)
	|	Dumfries (Crichton Institution)
	|	Langholm (Westwater)

ROXBURGH (15).

NO CHANGES.

SELKIRK (3).

NO CHANGES.

PEEBLES (5).

|	Stobo Castle
|	Eddlestone (Partmore)

BERWICK (5).

Dunse (Mungo's Walls)—*Obs. ceased* | Berwick (Paxton House)

HADDINGTON (6).

Haddington (Milfield)— <i>Obs. incorrect</i>	|	Drem (Craigielaw)
Dunbar (Thurston)— <i>No reply</i>	|	

EDINBURGH (19).

Harehill— <i>Record imperfect</i>	|	Moorfoot Hills (Gladhouse)
Clubbiedean— <i>Record imperfect</i>	|	Penicuick (Edgelaw)
Ratho (Ingliston)— <i>Observer dead</i>	|	Liberton (Alnwick Hill)

LINLITHGOW (2).

NO CHANGES.

LANARK (8).

Lanark (Baronald)— <i>Observations ceased</i>	|
Glasgow (Cessnock Park)— <i>Obs. ceased</i>	|

AYR (9).

Girvan (Glendoune)— <i>Observations ceased</i>	|	Ballantrae (Glendrishraig)
Old Cumnock— <i>Record destroyed</i>	|	

RENFREW (20).

|	Paisley (Ferguslie House)
|	Wemyss Bay (Ferncliff)

DUMBARTON (7).

Alexandria (Caldarvan)— <i>Record imperfect</i>	|
Loch Long (Arddaroch)— <i>Obs. imperfect</i>	

STIRLING (4).

Ben Lomond— <i>Observations imperfect</i>	
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BUTE (4).

No CHANGES.

ARGYLL (33).

Inverary Castle— <i>Observer dead</i>		Ardrishaig
Forest Lodge [Tyndrum]— <i>No reply</i>		
Glen Etive (Druimachoish)— <i>Observer gone</i>	|	

CLACKMANNAN (1).

No CHANGE.

KINROSS (2).

| Cleish Castle

FIFE (11).

Cupar Asylum		Strath Miglo (Leden Urquhart)
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PERTH (31).

Callander (The Gart)— <i>No reply</i>		Kincardine (Tulliallan)
Perth Prison— <i>Record imperfect</i>		Menteith (Cardross)
Glenalmond— <i>Not received</i>	|	Errol (Fingask Castle)
	|	Blair Athole

FORFAR (14).

No CHANGES.

KINCARDINE (3).

Girdleness [Aberdeen]— <i>Record imperfect</i>	
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ABERDEEN (22).

Inverury Manse— <i>Record imperfect</i>		Aberdeen (Gordon's Hospital)
Peterhead— <i>No reply</i>	|	Skene (Kinmundy)
(Buchanness)— <i>Record imperfect</i>	|	
Old Deer Manse— <i>Gauge leaky</i>	|	
Kinnairdhead— <i>Record imperfect</i>	|	

BANFF (2).

No CHANGES.

ELGIN OR MORAY (9).

Elgin Institution— <i>Observations ceased</i>	|	Grantown, H.R.S.
	|	Aberlour (Elchies)

NAIRN (2).

Nairn (British Linen Bank)—*Observer dead* |

ROSS (WEST) (11).

Strome Ferry (Duncraig)—*Obs. incorrect* |
 Applecross Gardens—*No observations* |
 Auchnasheen, H.R.S.—*Record imperfect* |
 Gairloch (Auchtercairn)—*No reply* |

The absentees here are too numerous ; we hope that the interruptions are only temporary, but a few fresh stations are much needed.

ROSS (EAST) (7).

Garve, H.R.S.—*Record imperfect* |

INVERNESS (WEST) (17).

Beauly (Beaufort Castle)—*No reply* | Isle of Skye (Portree House)

INVERNESS (EAST) (8).

Dava, H.R.S.—*Returned in ELGIN* |

SUTHERLAND (8).

Dornoch (Ospisdale).—*Observations ceased* | Scourie
 Bonar Bridge (Invershin)—*Record imprft* | Tongue House
 Kinbrace H.R.S.—*Record imperfect* |

We are glad to receive again records from Scourie and Tongue, but the interior of the country is still almost destitute of stations.

CAITHNESS (9).

Wick (Pulteney House)—*Obs. ceased* |
 Thurso—*Observations ceased* |

ORKNEY (11).

No CHANGES.

SHETLAND (5).

| Sumburghead

IRELAND.

CORK (7).

Cork (Queen's College)—*Record imperfect* |

KERRY (8).

Tralee (Godfrey Place) *Observer moved* | Cara Lodge
 | Castlemaine (Keel Ho.)

WATERFORD (6).

Waterford (Roanmore Ho.) *Observer left.* | Waterford (Cappoquin)

TIPPERARY (8).

| Nenagh (The Lodge)

LIMERICK (2).

Limerick (Kilcornan) *Record imperfect* |

CLARE (4).

No CHANGES.

WEXFORD (5).

No CHANGES.

KILKENNY (6).

| Stoneyford (Inisnag)

WICKLOW (3).

No CHANGES.

CARLOW (3).

| St. Mullin [Graigue]
| Bagnalstown (Fenagh)

QUEEN'S COUNTY (3).

No CHANGES.

KING'S COUNTY (5).

| Banagher

KILDARE (0).

Naas (Ballymore Eustace)—*Observer dead* |

This leaves the county without a single station.

DUBLIN (9).

Dublin (Phoenix Park)—*Gauge changed* | Dublin (Belvedere Place)
| Kellsallaghan (Corrstown Ho.)

MEATH (3).

No CHANGES.

WESTMEATH (2).

Rathowen (Daramona)—*No reply* |

LOUTH (4).

CastleBellingham(Drumcashel)—*Obs. ceased* |

LONGFORD (1).

| Edgworthstown (Currygrave Ho.)

GALWAY (8).

| Galway (Queen's Coll.)

ROSCOMMON (0).

Holywell—*No reply* |

We greatly regret being unable to obtain any reply from this station, valuable partly from its possessing a continuous record from 1863, when we supplied it with a perfectly accurate gauge, and partly because now this county, like Longford, is left without any observer.

	MAYO (4).	
Doo Castle [Tobercurry]— <i>Obs. ceased</i>	|	
	SLIGO (4).	
	No CHANGES.	
	LEITRIM (5).	
	No CHANGES.	
	CAVAN (3).	
	No CHANGES.	
	FERMANAGH (3).	
	No CHANGES.	
	MONAGHAN (1).	
	No CHANGE.	
	ARMAGH (4).	
	No CHANGES.	
	DOWN (17).	
	| Kircubbin (Tubber-na-Carrig)	
	ANTRIM (9).	
Crumlin (The Schools)— <i>No reply</i>	|	
Belfast (Old Park)— <i>Observer dead</i>	|	
Ballymoney (Church Street)— <i>No reply</i>	|	
	LONDONDERRY (10).	
	| Londonderry (Abercarn Road)	
	| " (Creggan Reservoir)	
	| Limavady	
	| Coleraine	
	TYRONE (10).	
Cookstown (Ballymully)— <i>Observer dead</i>	|	
Strabane— <i>Observer left</i>	|	
	DONEGAL (9).	
Ballyshannon— <i>Observations ceased</i>	|	
Dunfanaghy (St. Helens)— <i>Observer left</i>	|	

The figures at the end of the names of the counties in the above list enable us to ascertain the total number of perfect records given in the general tables ; they are—

England	1452
Wales (including Monmouth)	113
Scotland	338
Ireland.....	166

Gross total..... 2069

DECREASE OF RAINFALL WITH ALTITUDE.

MR. DINES has been making occasional observations with the gauges described in *British Rainfall*, 1877, page 17, and has on more than one occasion found the fall upon the lee side of the top of the tower greater than that upon the ground. He has not been able to forward the results for publication this year, but we hope to receive them for our next.

Mr. A. O. Walker, of Chester, has for some time had two gauges recorded simultaneously—one on the ground, the other above the battlemented top of the shot tower at Chester Lead Works, 160 ft. above the ground. During the last two years these gauges have given—

	AMOUNTS.			RATIOS.	
	Ground. in.	Tower. in.		Ground.	Tower.
1878	29·58	16·91	.....	100	57
1879	30·04	17·60	.....	100	59

We suggested that two gauges should be placed upon the tower, which is 17 ft. in diameter, in order to ascertain whether, at that great height, the difference between the windward and leeward side would be found. Mr. Walker has had this done, and finds that it is the case. He writes, "The rainfall is always greater on the side furthest from the wind, *i.e.*, on the East side when the wind is from the West."

OBITUARY.

With the steady increase in the total number of observers, there necessarily comes also an increase in the number of deaths, but we are glad to find that our list this year is shorter than that in our last volume. We regret to find that the continuance of the records by the relatives of deceased observers is not increasing in frequency. Perhaps the expediency of endowing stations in perpetuity might be worthy of the consideration of some of the more wealthy observers, such for instance as the late Mr. Whitbread, whose observations are to be continued it is true, but only for a few years.

The asterisk against certain observers denotes that their observations were among the few contained in the first volume of *British Rainfall*.

List of Deceased Observers.

		Perfect yearly records.
Atkinson, A., Esq., Gainford, Darlington	C 1868-79 T	12
*Bell, T., Esq., F.R.S., The Wakes, Selborne, Hants	1850-79 imp T	29
Bell, T., Mr., The Cemetery, Carlisle	C 1860-78 C	20
Browne, J. H., Esq., Nairn	C 1874 imp -79 imp T	4
*Caie, J., Mr., Inverary Gardens, Argyll	1860	20
Case, J., Esq., Boxley Road, Maidstone	C 1869 imp -73 imp T	3
Chute, W. L. De W., Esq., The Vyne, Basingstoke	C 1866-78 T	13
Clark, Mrs., Landscore, Teignmouth	C 1866-79	14
*Cockayne, H. E., Esq., Dunmow	C 1851 imp -79	28
Eames, J., Esq., Lynch, Midhurst, Sussex	C 1866-79 C	14
Farrer, J., Esq., Ingleborough House, Yorks	1852-78 T	23
Fenton, J., Esq., Woodlawn, Castlewellan, Down	C 1875-78 T	4
Fortune, J., Esq., Ingliston, Ratho	C 1875 imp -78 T	3
Getling, G. B., Esq., Newport, Monmouth	C 1873-79 C	7
Gwynn, W. E., Esq., Plas-cwrt-hyr, Caermarthen	C 1864-70 T	7
Harcourt, Col., Buxted Park, Sussex	1847-68, 72-79	29
*Harrison, W. F., Esq., Bartropps, Weybridge Heath	C 1856-79 C	24
Harward, J., Esq., Winterfold, Kidderminster	C 1871-78 T	8
Homan, P., Mr., Ballymore Eustace, Naas	C 1875-78 imp T	3
Jarvis, R. F., Esq., The Downs, Dartford, Kent	C 1868-79 C	12
Jowers, F. W. E., Esq., The Halls, Cookham, Berks.	C 1867-78 T	12
Key, Rev. H. C., Stretton, Hereford	C 1860 imp -78 T	18
Litt, C., Esq., Stainburn, Workington	C 1865-78	14
Lockwood, Rev. J. W., Kingham, Chipping Norton	C 1865 imp -78 T	13
Mansell, Dr., Grange Road, Guernsey	C 1866-79 C	14
Matheson, Mrs., Ardross Castle, Alness, N.B.	C 1862-79 C	18
Matthews, J. H., Esq., Ulverston	C 1864-78	15
Moore, Dr., Glasnevin, Dublin	C 1871-79 C	9
Morrell, E. C., Esq., Broughton Lodge, Banbury	C 1867 imp -79	12
Palliser, C. W., Esq., Reclaimed Lands, Wexford	C 1860 imp -77 T	17
Peake, H. B., Esq., Cambridge Road, Brighton	C 1862-78 T	12
Porter, Rev. T. H., D.D., Ballymully Glebe, Cookstown	C 1875-78 T	4
Richardson, Rev. G., Kilburn, Easingwold	1878 T	1
Scott, Russell, Esq., Manor House, Eastbourne	C 1875 imp -79 imp C	4
Tasker, R. T., Esq., Melbourne, Derby	1873-74, 1876-78	5
Tripp, Rev. R. H., Altarnum, Launceston	C 1864-79 C	16
*Tyas, Rev. Dr., { Kingsley, Frodsham	C 1861-68 imp T	7
{ East Tilbury, Essex	1872, 1876	2
Ward, Rev. W. C., Honingham, Norfolk	1868-79 imp T	11
Whitbread, S. C., Esq., F.R.S., Cardington, Bedford	C 1846-79 C	34
Williams, J., Esq., Maes-y-dre, Holywell	C 1843 imp -78 T	35

RAINFALL AND METEOROLOGY

OF

1879.

INTRODUCTORY.

It is one of my fixed rules never to ask for data unless I see my way quite clearly to utilising it. There is quite enough *necessary* work to render it wrong to give any needless trouble. I do not ask of my correspondents any returns, except accurate ones of the fall of rain, but along with them, they kindly send me many notes of other meteorological phenomena. Considering the very large number of stations, and how widely they are spread over the country, there can be little doubt that their records of weather form a most important supplement to the (chiefly numerical) data published by the Meteorological Council, the Meteorological Societies, and the Registrars General of England and Scotland. These general notes respecting the weather are also very useful for reference, when considering the facts recorded in the later sections upon "Heavy falls of short duration," and "Heavy daily falls"; and lastly, observers who will lay their own observation book open by the side of the following pages, will find the explanation of many facts which they did not at the time understand, and will be enabled to trace from their origin to their close many phenomena of which but a part was observable at their own station.

My own responsibility as regards this part of the work is almost limited to seeing that the facts are accurately copied, accurately printed, and correctly arranged. I am proud to say that not one error has been detected in the seventy-four pages devoted to this subject in *British Rainfall*, 1878. May I and my assistants be equally fortunate in the present volume.

ON THE METEOROLOGY OF 1879,

WITH NOTES OF SOME OF THE PRINCIPAL PHENOMENA.

[These Notes should be read in conjunction with those on Heavy Rains in 1879.]

JANUARY.

- 1st.—*Addiscombe* (II). R from 1.30 p.m., H and S 11 p.m.; amount 1.12 in.—*Oxford* (III). Much S; high wind at night.—*Cambridge* (III). Heavy S.—*Diss* (IV). Heavy gale from S. by W. during night.—*Coston* (VII). Heavy fall of S in night.
- 2nd.—*Addington* (III). Ground deeply covered with S.
- 3rd.—*Hodsock* (VII). S before daylight, 3 in. deep.
- 4th.—*Hodsock* (VII). Min. in shade, 6°·3; on grass, 2°·2.
- 5th.—*Walton-on-the-Hill* (VIII). Severe frost; min. temp. 18°·0.
- 6th.—*Compton Bassett* (V). Dense fog throughout.
- 7th.—*Beaminster* (V). Heavy fall of S.—*Bristol* (VI). Heavy S.—*Shap* (X). Gale of wind all day.—*Carno* (XI). 12 in. of S.
- 11th.—*Addiscombe* (II). Lowest temperatures of month 18°·3, and on grass 9°·6.—*Kilconnell* (XXII). Thaw set in.
- 12th.—*Pinner Hill* (I.) Thaw.—*Diss* (IV.) Thaw, after 10 days' hard frost.—*Druid House* (V.) Gentle thaw.—*Walton-on-the-Hill* (VIII). Silver thaw at night.—*Gawthorpe Hall* (VIII). Thaw set in with strong wind.—*Llandoverly* (XI). Rapid thaw set in.—*Lochbroom* (XVIII). Rapid thaw.—*Cardonagh* (XXIII). Thaw.
- 13th.—*Bromley Common* (II.) Rapid thaw.—*Cambridge* (III). Sudden thaw.—*Compton Bassett* (V). Dense fog all day.—*Leaton Vicarage* (VI). General and rapid thaw.—*Llanfrechfa* (XI). Rapid thaw.
- 14th.—*Bristol* (VI). Stormy.
- 15th.—*St. Lawrence* (II). Lovely day; bees at work.
- 17th.—*Pinner Hill* (I). H, S and R.—*Compton Bassett* (V). High wind and heavy R.
- 18th.—*Addiscombe* (II). S all day and at night; amount, 3 in.—*Cambridge* (III). S from 9.30 a.m. to 5 p.m.—*Coston* (VII). S all day.—*Hodsock* (VII). -S during most of day, very wet and heavy, 1 in.

deep = 0.24 in. of rain.—*Miltown Malbay* (XX). Remarkably fine warm day.

19th.—*Muswell Hill* (I). S on ground $4\frac{1}{8}$ in. deep.—*Addiscombe* (II). S 1 in. deep.

22nd.—*Pinner Hill* (I). Very cold E. wind.—*Castle Lough* (XX). Very sharp frost.

24th.—*Littlehampton* (II). A little S.—*Hailsham* (II). Slight S.—*Melrose* (XII). S and H.

27th.—*Cosgarne* (V). Heavy fall of S.

FEBRUARY.

1st.—*Addiscombe* (II). A short shower of clear ice particles at 7 p.m., followed at about 10 p.m. by a heavy fall of frozen R lasting over an hour; amount .05 in.—*Littlehampton* (II). Driving S all day.—*Hodsock* (VII). Heavy S at night.—*Douglas* (XI). Blowing hard E.N.E

2nd.—*Londonderry, Knockan* (XXIII). $2\frac{1}{2}$ in. of S.

4th.—*Cardiff* (XI). The sun shone for the first time since Jan. 23.

5th.—*Addiscombe* (II). A short shower of clear ice particles about 4 p.m.—*Babbacombe* (V). S.S.W. gale.—*Douglas* (XI). S.E. gale.—*Delgany* (XXI). Bright sunshine.

6th.—*Stanley Vic.* (IX). The first night without frost since January 14th.—*Melrose* (XII). Gale from W.

8th.—*Druid, Ashburton* (V). Violent storm at 11 p.m.—*Babbacombe* (V). Solar halo at 2 p.m.—*Hodsock* (VII). Max. in shade $60^{\circ}2$; high wind.

9th.—*Addington* (III). Great flood.—*Bromley Common* (II). Very mild, bees out.

10th.—*Hodsock* (VII). Thick fog all day.

16th.—*Dunkeld* (XVI). 25 in. of S on the ground.

18th.—*Addiscombe* (II). A fall of soft H of unusual size 0.20 to 0.40 p.m., and a short shower of H 3.15 to 3.30 p.m.

19th.—*Babbacombe* (V). L 10.45 to 11 p.m.

20th.—*Addiscombe* (II). Smart squall of S 3.15 to 3.35 p.m. Some of the flakes in this squall quite 2 in. across. Heavy fall of S at night; amount .23 in.

21st.—*Addiscombe* (II). Depth of S on ground at 10.30 a.m. 3 in.—*Bromley Common* (II). The heaviest fall of S during the winter.

23rd.—*Hailsham* (II). S.—*Babbacombe* (V). E.N.E. gale in evening.—*Hodsock* (VII). Min. on grass $17^{\circ}2$.

24th.—*Addiscombe* (II). Lowest temperature of month $20^{\circ}9$, and on grass $6^{\circ}8$.—*Cheltenham* (VI). 3 in. of S.—*Hodsock* (VII). Min. in stand $17^{\circ}7$; heavy S early, 4 in. deep.

27th.—*Hailsham* (II). S.

MARCH.

1st.—*Addington* (III). The first really fine day for a long time.

2nd.—*Addiscombe* (II).—Lowest temperature of month on grass, $19^{\circ}1$.—*St. Lawrence* (II). Southampton water slightly frozen.

3rd.—*Wythburn* (X). Skating on Derwentwater Lake.—*Swarthfell* (X). Ullswater has been frozen over for 14 weeks the whole length from Pooley to Patterdale.

5th.—*Babbacombe* (V). S.W. gales.—*Seathwaite* (X). Great storm of wind and R.—*Melrose* (XII). Westerly gale; the Tweed flooded.

7th.—*Addiscombe* (II). Highest observed barometer of month, 30.614 in. at 9 p.m.

8th.—*Addiscombe* (II). Lowest temperature of month, $28^{\circ}6$.

9th.—*Addiscombe* (II). Humidity at 3 p.m., 45.

11th.—*Keith* (XVII). Four inches of snow.

12th.—*Cheltenham* (VI). A magnificent day.—*Sansaw* (VI). Grass min. 16° .—*Cheadle* (VI). Strong N.W. gale.—*Whorlton* (X). Gale.—*Elterwater* (X). R had been falling, and at 11 a.m. the ther. stood at 51° , wind W.; in one hour the temp. had fallen to 38° , and S fell in small quantities, the wind having veered to N.W.—*Watten* (XIX). About six inches of S, much drifted; perhaps the stormiest day of the winter.

14th.—*Cheadle* (VI). Max. temp. $32^{\circ}3$.—*Hodsock* (VII). Min. in stand, $26^{\circ}4$; S 1 in. deep.

15th.—*Nairn* (XVII) 7 in. of S on ground.

17th.—*Allan Rock* (XXIII). 2 in. of S.

18th.—*Enfield* (I). L.

19th.—*Bromley Common* (II). A splendid day.—*St. Lawrence* (II). Remarkable rise of temp., the ther. at 9 p.m. being 52° .—*Hodsock* (VII). Fog.

20th.—*Hodsock* (VII). Fog.

23rd.—*Merton Villa, Cambridge* (III). E.N.E. gale.—*Babbacombe* (V). E.N.E. gale.

24th.—*Addiscombe* (II). Some sleet till noon, S at night; amount, .04 in.; depth of S on ground at 9 a.m. (25th), half-an-inch.—*Addington* (III). Max. temp. 31° .—*Babbacombe* (V). E.N.E. gale.

25th.—*Addiscombe*. Light S nearly all day and at night; amount, .05 in.

26th.—*Babbacombe* (V). E.N.E. gale.—*Elterwater* (X). Skating on one of the tarns on Langdale fells; the water in the valleys was not frozen.

27th.—*Babbacombe* (V). E.N.E. gale.—*Cheltenham* (VI). T.—*Hodsock* (VII). S $1\frac{1}{2}$ in. deep.—*Miltown Malbay* (XX). Very severe frost.—*Ballinasloe* (XXII). T at night.

28th.—*Miltown Malbay* (II). Gale, S. and S.W.

29th.—*Abinger Hall* (II). Heavy storm of R and H.—*Cambridge, Merton Villa* (III). T 3 to 5 p.m.; L at 8 p.m.—*Babbacombe* (V). S.W. gale.—*Coston* (VII). L towards night.—*Hodsock* (VII). Max. in shade, $59^{\circ}\cdot 1$.—*Miltown Malbay* (XX). H and R; continuous T and sheet L during night.—*Kilconnell* (XXII). Storm from S. with T and L.

30th.—*Pinner Hill* (I). Stormy.—*Druid House* (V). Squally.—*Caistor* (VII). T and L.—*Hodsock* (VII). TS with R and H, 6 p.m.—*Manchester, St. Bede's* (VIII). Slight T at 4 p.m.—*Stanley Vic.* (IX). A thunder shower.—*Newcastle West* (XX). Stormy with H and L.—*New Barnsley* (XXIII). Stormy.

31st.—*Addington* (III). Very stormy with sharp H showers.—*Cambridge, Merton Villa* (III). T and L, 2.30 p.m.—*Diss* (IV). Distant T in afternoon.—*Hodsock* (VII). Max. in sun, $110^{\circ}\cdot 6$; slight H at 11 a.m.; TSS during day.

APRIL.

1st.—*Melrose* (XII). Lightning in p.m.

3rd.—*Bromley Common* (II). T.

6th.—*Shap* (X). T at 6 p.m.

7th.—*Littlehampton* (II). T and L at night.

8th.—*Hodsock* (VII). Solar halo 5.45 p.m., about 30° diameter, red inside.

11th.—*Newport, Isle of Wight* (II).—Max. temp. $41^{\circ}\cdot 7$.—*Court Barn* (V). T.—*Leaton Vicarage* (VI). $7\frac{1}{2}$ in. of S.

12th.—*Enfield* (I). More than 6 in. of S, doing considerable damage to trees and shrubs.—*Addiscombe* (II). Max. temp. $40^{\circ}\cdot 8$, min. $25^{\circ}\cdot 7$, and on grass $16^{\circ}\cdot 3$.—*Tenterden* (II). Extraordinary fall of S, commencing at 6 p.m.; depth on ground at 10 p.m., 2 in.; at 11 p.m. 3 in., and at 9 a.m. on 13th, 2 to 3 in.; yield of water .62 in.;

wind S.S.E.—*Newport, Isle of Wight* (II). Between 1 p.m. of the 12th and 10 a.m. of the 13th, a large amount of S fell, yielding .75 in. of water.—*Northampton* (III). Heavy fall of S.—*Cambridge* (III). Heavy fall of S.—*Earl's Colne* (IV). S.—*Diss* (IV). Heavy S nearly all day and night.—*Alderbury* (V). Snowing all day.—*Compton Bassett* (V). S showers the whole day.—*Langtree Wick* (V). Snowstorm.—*Sansaw* (VI). 6 in of S.—*Hodsock* (VII). Very cold day ; N.E. wind and S.—*Ennis* (XX). Continuous heavy fall of S.

13th.—*St. Lawrence* (II). S on hills.—*Addington* (III). Ground covered with S.—*Langtree Wick* (V). 1 in. of S on ground.—*Sansaw* (VI). 5 in. of S.—*Hodsock* (VII). Very cold ; N.E. wind and S ; min. in shade 23°·6 ; on grass, 14°·5.

14th.—*Littlehampton* (II). R, H and S.

15th.—*Addiscombe* (II). Sharp H shower for 10 minutes at 9.5 a.m., followed by R till 9.20 a.m. ; heavy R and S, amount .55 in.—*Addington* (III). TS at 2 p.m.—*Cambridge* (III). Heavy TS with R, 3 p.m.—*Diss* (IV). Heavy H storm at 2 p.m.—*Bincombe House* (V). Heavy TS.

18th.—*Diss* (IV). Sharp frost at night.

19th.—*Miltown Malbay* (XX). Heavy gale.

22nd.—*Addington* (II). Sharp frost ; min. 24°.

25th.—*Dublin* (XXI). Heavy shower at 5 p.m., with T and L.

26th.—*Cheadle* (VI). T in afternoon.—*Coston* (VII). T and L about 3 p.m.—*Hodsock* (VII). Max. in shade 60°·0, in sun 114°·6.—*Walton-on-the-Hill* (VIII).—Distant T.—*Stanley Vicarage* (IX). T showers.—*Whorlton* (X). T.—*Wolsingham* (X). A waterspout cloud passed over the valley of the Wear about two miles west of Wolsingham. In hanging down it had the appearance of a great black bag, tapering to the lower end, which seemed to revolve rapidly. It passed over to the opposite hill, and was dissipated without any extraordinary fall of R.—*Elterwater* (X). T in afternoon.—*Melrose* (XII). TS with H and R ; 1·11 in. fell in 3½ hours.—*Miltown Malbay* (XX). L and H.

27th.—*Pinner Hill* (I). T and L.—*Enfield* (I). A severe TS with H from 4.30 to 6 p.m.—*Littlehampton* (II). T and L with R from noon till 4.30 p.m.—*Worthing* (II). Heavy TS from 11·45 to 1 p.m., with heavy H.—*West Brighton* (II). Local storm of T, H and R ; amount 1·35 in.—*Addington* (III). TS, with H and S.—*Cambridge* (III). Heavy R with T, 3 to 4 p.m.—*Whatcombe* (V). Thunderstorms p.m.—*Holt* (V). From 4 to 5 p.m. first TS of the year ; T very long and loud, L very frequent and vivid.—*Pewsey* (V). T.—*Compton Bassett* (V). TS at

3 p.m.—*Babbacombe* (V). Heavy showers with T and H.—*Teignmouth* (V). T.—*Cheltenham* (VI). T, H and R.—*Llanfrechfa* (XI). TS.—*Miltown Malbay* (XX). T, L, H and R.—*Newcastle West*. (XX). T.—*Tubrid* (XX). T with H.

28th.—*Buckden* (IX). T.

30th.—*Diss* (IV). Sharp frost in early morning.—*Cheadle* (VI). T in afternoon.

MAY.

1st.—*Addington* (III). S.—*Wroxton* (III). About 2 in. of S on the ground at 8.30 a.m.—*Diss* (IV). Cold and bright with frequent H showers.—*Compton Bassett* (V). S and sleet.—*Cheadle* (VI). S and H, T.—*Hodsock* (VII). Slight showers.

3rd.—*Hodsock* (VII). Min. in stand, 23°·8.—*Miltown Malbay* (XX), Ice formed on water.

5th.—*Addiscombe* (II). Humidity at 3 p.m., 39.

6th.—*Diss* (IV). H.—*Coston* (VII). H and S occasionally.—*Wakefield, Stanley Vic.* (IX). S.—*Watten* (XIX). Stormy showers of H, S and R.

7th.—*Pinner Hill* (I). S and H.—*Addiscombe* (II). Light S at times from early morning to 11.45 a.m.—*Oxford* (III). S.—*Cambridge* (III). S showers.—*Wisbech* (III). H.—*Diss* (IV). S and H.—*Alderbury* (V). S showers.—*Compton Bassett* (V). Frost, bitterly cold air.—*Babbacombe* (V). Bitterly cold, S.—*Kilworthy Hill* (V). S.—*Cheltenham* (VI). Slight S, very cold.—*Coston* (VII). H and S occasionally.—*Caistor* (VII). H and S.—*Hodsock* (VII). Slight S showers.—*Buckden* (IX). S showers.—*Whorlton* (X). Very cold, S.—*Elterwater* (X). A little S.—*Corwen, Rhug* (XI). S and H.—*Portmadoc* (XI). S.—*Douglas* (XI). S.

8th.—*Littlehampton* (II). Ice as thick as a penny.

9th.—*Shap* (X). S.—*Douglas* (XI). S.—*Lochbroom* (XVIII). S and H.

10th.—*Addiscombe* (II). Lowest temperatures of month 29°·2, and on grass, 18°·4.—*Addington* (III). Sharp frost.—*Coston* (VII). Very sharp frosts; dahlias under glass injured.—*Hodsock* (VII). Min. on grass 14°·4.

11th.—*Cheadle* (VI). Smart H storm and T at 5.30 p.m.

12th.—*Melrose* (XII). L.

13th.—*Diss* (IV). Heavy shower with T.—*Hodsock* (VII). T.—*Melrose* (XII). T and L.

14th.—*Hodsock* (VII). T.—*Mullingar* (XXI). Heavy H shower.

17th.—*Whorlton* (X). Violent TS.

20th.—*Addiscombe* (II). Highest temperature of month 66°·6.

26th.—*Cheadle* (VI). Stormy day T.—*Hodsock* (VII). TS.—*Bushy Hill, Cambuslang* (XIV). T and H.

27th.—*Castle Lough* (XX). T.

28th.—*Hackney* (I). 1·26 in. of R in night, with T and L.—*Colney Hatch* (I). 1·09 in. of R fell, mostly between 11 p.m. and 2 a.m. on 29th.—*Pinner Hill* (I). T and L.—*Enfield* (I). Protracted TS, though not of great severity passed over this neighbourhood during the night of the 28th-29th; L was first seen about 9.30 p.m. From 11.50 p.m. to 2.30 a.m. the L was very vivid and the T occasionally loud; R commenced falling at 11.55 p.m., and continued in heavy splashes till 2.30 a.m. The total fall was ·87 in. At Winchmore Hill the fall was 1·01 in.—*Farnham* (II). R began at 7.45 p.m., and by 9 a.m. on 29th 1·11 had fallen; the greater part fell between 10.30 p.m. and 1 a.m.—*Thornielee, Red Hill* (II). Between 6 p.m. on 28th and sunrise on 29th 1·65 in. of R fell.—*Cobham* (II). In the 12 hours ending 9 a.m. on the 29th, 2·78 in. of rain fell.—*Ashtead Rectory* (II). T, L and R in night, 1·62 in.—*Weybridge Heath* (II). 1·60 in. of R fell after 9 p.m.; the heaviest fall since July 12th, 1868.—*Hersham* (II). 1·56 in. of R fell in night.—*Thornton Heath, Croydon* (II). R began about 8 p.m.; there was L and distant T, 10·15 p.m., accompanied by heavy R, which continued to fall until 3·30 a.m. I registered 1·47 at 9 a.m. on 29th.—*Addiscombe* (II). Heavy TS; R first began to fall 7·30 p.m.; amount 9 p.m., ·10 in.; steady R until 10.30 p.m.; very heavy downpour till 2.30 a.m.; at 3 a.m., R ceased; amount 9 p.m. to 9 a.m., 1·45 in.; total amount 9 a.m., 1·55 in.—*Beulah Hill* (II). R began at 8 p.m., and was heavy with L about 9 to 10 p.m., and 1·50 in. had fallen by 9 a.m. on 29th.—*Kew Observatory, Richmond* (II). The R storm of the night of the 28th-29th was the most severe experienced at this observatory since September 26th-27th, 1859. The self-registering gauge shows the fall to have been continuous from 7·50 p.m. to 3.10 a.m., though the rate varied somewhat from time to time; the total amount collected was 1·79 in. This can only be contrasted in our register with the storm previously mentioned, when 1·94 in. fell in 12 hours, *i.e.*, between 4 p.m. of the 26th and 4 a.m. of the 27th September. The maximum rate of fall was, however, exceeded on the morning of August 4th, 1878, when more than an inch was registered in two hours, during the passage of a TS.—*Scotney Castle* (II). Rainfall in night, 1·47 in.—*Tenterden* (II). 1·61 in. of R fell

during the night ; TS 9 to 10 p.m.—*Ashford, Bockhanger* (II). TS in night ; rainfall 1·46 in.—*Hythe* (II). TS in night ; R from 9.30 to midnight, 1·53 in., and from midnight to 2 a.m. on 29th, ·51 in. ; total 2·04 in.—*Bromley Common* (II). Heavy TS from 10 to 11 p.m.—*Littlehampton* (II). T and L at night.—*Forest Lodge, Maresfield* (II). TS with heavy R, 1·71 in.—*Russell Street, Reading* (II). R began at 8 p.m. and continued till 4.30 a.m. on 29th ; total fall 1·50 in.—*Purley* (II). R commenced about 7.15 p.m. and ended about 4 a.m. ; total fall, 1·45 in.—*Magdalen College, Oxford* (II). R in night, ·97 ; TS from 1 to 2.30 a.m. on 29th.—*Northampton* (III). A terrific storm in the night ; R, T and L, the latter very vivid.—*Northampton* (III). Floods much out in the low lands.—*Diss* (IV). T and L in night.—*Compton Bassett* (V). Heavy TS.

29th.—*Cambridge* (III). Sharp TS, 1 to 3 a.m. ; R very heavy.

31st.—*Cambridge* (III). Distant L.—*Wisbech* (III). T, L and R.—*Babbacombe* (V). Distant T.—*Hodsock* (VII). TS.—*Wath-upon-Dearne* (IX). Severe TS, doing much damage to trees.

JUNE.

1st.—*Littlehampton* (II). Half a gale all day.

2nd.—*Love Lady Shield* (X). Heavy H at 9.30 a.m.—*Elchies* (XVII). Surrounding hills covered with fresh S.

3rd.—*Addington* (III). T, R and H.—*Cambridge, Merton Villa* (III). TS with heavy R 5 to 6 p.m.

6th.—*Llanfrechfa Grange* (XI). Sharp TS.

7th.—*Addiscombe* (II). T 3 to 4 a.m.—*Tean Vicarage* (VI). Heavy R, 9 a.m. to 9 p.m., 1·01 in. ; 9 p.m. to 9 a.m. of 8th, ·45 in., total 1·46 in.—*Coventry* (VI). Heavy R, ·92 in., principally between 6 and 8 p.m.

8th.—*Hodsock* (VII). Distant TS.—*Elterwater* (X). Violent TS at 5.45 p.m.—*Miltown Malbay* (XX). T and L.

9th.—*Gawthorpe* (VIII). TS with large H.—*Bushy Hill, Cambuslang* (XIV). T and L.

10th.—*East Layton* (X). TS with H and tremendous R between 3 and 5 p.m.—*Elchies* (XVII). Severe TS 5 miles S.E. ; much damage done to crops and roads by H and R.—*Keith* (XVII). Heavy TS.

11th.—*Littlehampton* (II). TS.—*St. Lawrence* (II). T at 6.30 a.m.—*Bishop's Castle* (VI). TS with H and heavy R. ; 1·10 in. fell in 25

minutes, causing the greatest floods known for 50 years.—*Spondon* (VII). T and L, with heavy R; 1.24 in. in 40 minutes.—*Trevalyn Hall, Wrexham* (XI). TS, accompanied by heavy R, 1.70 in., the heaviest daily fall registered since the commencement of observations in 1867.—*Bushy Hill, Cambuslang* (XIV). T and L and heavy R.

12th.—*Sprowston* (IV). TSS in afternoon.—*Walton-on-the-Hill* (VIII). TS at 3 p.m.—*Gawthorpe* (VIII). Heavy TS.—*Stanley Vicarage* (IX). Severe TS.—*Dowra* (XXII). TS.—*Kilrea, Co. Derry* (XXIII). On June 12th a waterspout was observed in this neighbourhood; passing along the Bann valley, it crossed over Co. Antrim, taking the direction of the wind, which blew S.W. at the time. It presented the appearance of a dark, undulatory column, reaching from the clouds and tapering slightly to where it came in contact with the earth; it was seemingly about 1 yard in diameter midway up. The weather was very wet here on that day.

13th.—*Addiscombe* (II). T and L 0.48 to 1.30 p.m.—*Woldringfold* (II). Terrible TS over a small area south of Horsham.—*Reading, Purley* (II). Heavy TS passed to E.N.E.; rain from 4.30 to 5.15 p.m., .65 in.—*Oxford, Magdalen College* (III). TS.—*Diss* (IV). Heavy TS 7 miles to S.W.—*Compton Bassett* (V). TS at 1 p.m.—*Elchies* (XVII). Severe TS; much damage done by H and R.

16th.—*Arle-Bury, Alresford* (II). Very heavy R; .66 in. between 9 a.m. and 10.30 a.m.

21st.—*Northampton* (III). S.W. gale.—*Coston Rectory* (VII). High gale during afternoon and evening.—*Elterwater* (X). Severe TS from 2 to 5.30 p.m.—*Penrith, The Luham* (X). TS at 3 p.m.

24th.—*Muswell Hill* (I). TS with remarkably large H about 1 p.m., and tremendous R between 4.45 and 6 p.m.—*Addiscombe* (II). Showers 11 a.m. to 1.15 p.m.; T heard twice; R at night; total at 9 a.m. .77 in.—*Oxford, Magdalen College* (III). A storm of T, L, H and R.—*Northampton* (III). T, L, R and H.—*Cambridge, Merton Villa* (III). TS with R and H at 1 p.m.—*Sprowston* (IV). TS in evening.—*Compton Bassett* (V). T and L from 10 a.m. till evening; heavy R in afternoon.—*Kilworthy Hill* (V). TS, accompanied by R, H and wind.—*Hodsock* (VII). TS; heavy H to the south, none here.—*Forres* (XVII). TS.

25th.—*Wisbech* (III). TS, accompanied by very large hailstones.—*Diss* (IV). Heavy TS at 5 p.m.—*Hodsock* (VII). TS.—*Melrose* (XII). Severe TS.

27th.—*Shap* (X). A dreadful storm of wind and R, doing much damage to gardens, &c.—*Kilconnell* (XXII). Strong storm of wind with R from S.W.

29th.—*Sprowston* (IV). TSS in afternoon and evening.—*Hodsock* (VII). TS 4 p.m. ; very heavy R at 7 p.m. for about 10 minutes.—*Gawthorpe* (VIII). Heavy TS.—*Llanfrechfa Grange* (XI). Violent storm of R and H, with T and L.—*New Barnsley* (XXIII). T and H showers,

30th.—*Diss* (IV). S.E. gale and heavy R in morning.—*Bere Ferrers Rectory* (V). Gale from S.W. about 7 p.m. ; barometer fell .75 in., and 2 in. of R fell.—*Kilworthy Hill* (V). Storm of wind and R.—*White Lackington* (V). Violent gale with heavy R.

JULY.

1st.—*Babbacombe* (V). S.S.W. gale.—*Druid* (V). Heavy storm.—*Stanley Vicarage* (IX). Gale in night.

2nd.—*Enfield* (I). TS.—*Addiscombe* (II). Heavy showers ; T about noon ; H for one minute at 2.55 p.m. ; T between 4 and 4.30 p.m. and R at night ; amount, .31 in.—*Melrose* (XII). S.W. gale.—*Holt* (V). From the 23rd of June to the 6th of July, '14 days' continuous rainfall, amounting to 2.98 in.

6th.—*Enniscoe* (XXII). S.

8th.—*St. Lawrence* (II). Gale.—*Shap* (X). A great storm of wind.

9th.—*Caistor* (VII). TS.—*Elterwater* (X). TS.—*The Luham, Penrith* (X). TS with H.—*Shap* (X). TS.—*Douglas Castle* (XIV). T and L from 4 to 5 p.m.

10th.—*Hodsock* (VII). TS with very heavy shower of R 4 p.m.

13th.—*Bishops Castle* (VI). TS with heavy R.—*Coston Rectory* (VII). Very severe storm with T and L between 3 and 4 p.m.—*Walton-on-the-Hill* (VIII). A good deal of T and L in afternoon.—*Stanley Vic.* (IX). T and R.

14th.—*North Esk Reservoir* (XIII). Great flood, doing much damage.

19th.—*Wood Green* (I). Heavy R, 1.40 in., with sudden fall of barometer.—*Muswell Hill* (I). July 19th and 20th, heavy R, 1.20 in.—*Long Stratton* (IV). Heavy R ; amount, .73 in. ; on 20th, 1.25 in. ; on 21st, 1.52 in. ; and on 22nd, .26 in. making a total of 3.76 in.—*Caistor* (VII). TS.—*Hodsock* (VII). T.—*Middlesborough* (IX). Severe TS with heavy R.

20th.—*Muswell Hill* (I). Tremendous squall of wind and R ; about 2.15 p.m., followed by heavy showers.—*Abinger Hall* (II). TS with heavy R.—*Addiscombe* (II). TS 2 to 3.5 p.m. Very heavy R 10 a.m. and 4 and 5 p.m. and R at night ; amount .57 in.—*Bromley*

Common (II). T and high wind.—*Northampton* (III). Gale from S.E.—*Rushall Vic.* (IV). Very high floods.—*Geldestone* (IV). Heavy R; amount 1·36 in., and also on 21st, 1·57 in., causing much higher floods than ever before known here.—*Hillington Rectory* (IV). H and heavy R, with distant T and L.—*Hillington Rectory* (IV). Heavy R, 1·08 in., and also on 21st, 1·23 in.; total, 2·31 in.—*Cromer, Colne Lodge* (IV). Very heavy R, amounting to 2·43 in., which exceeds any other daily fall during the past 20 years by about 1 in.; there was also R before 9 a.m. on 20th (·30 in.), and after 9 a.m. on 22nd (·76 in.) so the fall in the three days amounted to 3·49 in.—*Holt* (V). Heaviest gale of the year on the 20th and 21st, doing damage to trees, telegraph wires, &c.—*Partney* (VII). S at 3 p.m. and R all night.—*Mickleley* (IX). TS for three hours.—*Newtownards* (XXIII). Destructive floods.

28th.—*Hodsock* (VII). Max. in shade, 77°·8; highest during year.

29th.—*Holt* (V). Highest temp. of the year, 79°·0.—*Great Torrington* (V). Max. temperature of year, but only 75°.—*East Layton* (X) TS.—*Gainford* (X). TS.—*Melrose* (XII). L 11 p.m.

30th.—*Addiscombe* (II). Highest temperature of month, 77°·4.—*White Lackington* (V). Mock sun.

AUGUST.

[The entries for the 2nd and 3rd are rather confused, owing to the storm commencing between 7 p.m. and midnight on the 2nd, and being most violent in the early hours of the 3rd. For details of the storm near Richmond, see the *Meteorological Magazine* for August, 1879.]

2nd.—*Pinner Hill* (I). TS with H.—*Enfield* (I). TS.—*Addiscombe* (II). TS 1.20 to 1.50 a.m. of 3rd. (About the time that the R ceased here the “Richmond hail storm” began).—*Bromley* (II). TS in night.—*Littlehampton* (II). Much L in night.—*Alresford, Arle-Bury* (II). Great TS.—*Strathfield Turgiss* (II). Heavy TS and H.—*Watford, Oaklands* (III). Midnight to 3 a.m. (3rd) TS with heavy R (1·16 in.)—*Hitchin, High Down* (III). TS in the night and early morning of 3rd, with heavy R, 1·91 in.—*Addington* (III). Very violent TS at night.—*Mentmore* (III). Fearful TS at 11 p.m. (R 2·29 in.).—*Northampton* (III). T, L and R at 9 p.m. and from 2 to 3 a.m. (3rd).—*Sandy* (III). Heavy TS.—*Cherry Hinton* (III). The R during the night and morning of the 3rd was exceptionally heavy (3·17 in.); the water courses were quickly filled, and the surrounding land was submerged.—*Cambridge, Beech House* (III). Unprecedented TS and

heavy R ; 3·60 in. fell in four and a half hours.—*Cambridge, Merton Villa* (III). Very severe TS from 10 p.m. to 4 a.m. (3rd) with heavy R (3·80 in.)—*Cambridge* (III). Very severe TS 9.50 till 11 p.m., and again from 1.40 till 4.50 a.m. of 3rd (3·11 in. of R).—*Diss* (IV). Tremendous TS, H, R and gale, first from S.E., then from N.—*Pickenham Hall* (IV). Sharp T and vivid L in early morning.—*Dickleboro' Place* (IV). T and L with heavy R.—*East Dereham* (IV.) Very severe TS —*Wells-next-the-Sea* (IV). One of the most awful TSS remembered, the Parish Church struck by L and burnt to the ground.—*Walsham-le-Willows* (IV). TS with H and heavy R, causing unprecedented floods, which washed away two clay-built cottages and injured the foundations of others.—*Alderbury* (V). T and L.—*Holt* (V). From 7 to 8.20 p.m. violent TS, and again from 0 to 3.30 a.m. on 3rd ; on both occasions accompanied by a high wind and heavy R.—*Compton Bassett* (V). High wind ; TS 6 to 9 p.m. and at midnight.—*Beaminster* (V). TS from 8 p.m. to 2 a.m. on 3rd.—*Fore Street Hill* (V). TS.—*Druid House* (II). TS with torrents of R.—*Babbacombe* (V). Very severe TSS.—*Kilworthy Hill* (V). T and L with high wind.—*Gittisham* (V). Very severe TS from 4 p.m. on 2nd to 3 a.m. on 3rd.—*Langtree Wick* (V). T.—*Cosgarne* (V). T and L in evening and night.—*Bath, Queen's Parade* (V). T and L.—*Bristol, Ashley Down* (VI). TS.—*Cheltenham* (VI). TS.—*Coston Rectory* (VII). R began about 8 p.m. ; distant T at 11 p.m. ; and about 1 a.m. on 3rd the storm broke with torrents of R and vivid L, and continued till nearly 5 a.m. The water rose rapidly, and the flood in the village was very high.—*Partney* (VII). TS in night.—*Caistor* (VII). T and L.—*Wakefield, Stanley Vic.* (IX). Severe TS in night.—*Solva* (XI). TS at night.—*Castle Malgwyn* (XI). T at night.—*Nantgwillt* (XI). T with very bright L 10 to 11 p.m.

3rd.—*Muswell Hill* (I). TS from 0 to 2 a.m.—*Addington* (III). Great flood.—*Wetherden Rectory* (IV). 2.30 a.m. to 4.15 a.m. incessant L and T with H and R ; amount 1·77 in., causing worse floods than any known for 20 years.—*Lowestoft* (IV). Fearful TS with heavy H from 3 to 5.30 a.m.—*Portland, Verne Citadel* (V). Very heavy TS with H.—*Shaftesbury* (V). Violent TS.—*Thorpe Arnold* (VII). Severe TS with heavy R.—*Loughboro', Victoria Street* (VII). Severe TS with heavy R (1·02 in.)—*Navenby* (VII). Severe TS 2 to 4 a.m. ; some cattle killed.—*Hodsock* (VII). TS with heavy R between 2 and 4 a.m.—*Findern* (VII). TS with heavy R ; 1·46 in. fell, chiefly between 3.15 a.m. and 3.45 a.m.—*Spondon* (VII). TS 1.30 a.m. to 4.35 a.m.,

with extremely vivid L.—*Walton-on-the-Hill* (VIII). Distant T in morning.—*Whorlton* (X). TS.—*Llanfrechfa* (XI). Very heavy T and L 1 to 3 and at 4 a.m.—*Melrose* (XII). T and L at 9 p.m.—*Douglas Castle* (XIV). T and L for 10 hours, commenced at 4 p.m.—*Cambuslang, Bushy Hill* (XIV). T and L.—*Glendrishraig* (XIV). TS with heavy R; amount 1 in.—*Newtownards* (XXIII). T.—*Bushmills* (XXIII). TS.—*Allan Rock* (XXIII). T and L.

5th.—*Compton Bassett* (V). TS with heavy R at 7 p.m.—*Kilworthy Hill* (V). T and L.—*Walton-on-the-Hill* (VIII). Heavy storm during night and 1·92 in. of R.—*Enniscoe* (XXII). The heaviest H shower I ever remember, and 1·42 in. of R fell in half-an-hour.

6th.—*Abinger Hall* (II). Heavy TS.—*Addiscombe* (II). TS 11·53 a.m. to 0·20 p.m., but very little R fell.—*Melrose* (XII). T and L at noon.—*Douglas Castle* (XIV). T and L from 2 to 4 p.m.

7th.—*Douglas Castle* (XIV). Heavy TS about six miles distant; three bridges washed away.

12th.—*Bushmills* (XXIII). TS with very vivid L; some cattle struck and a quantity of hay burned about two miles distant.

13th.—*Addiscombe* (II). Highest temperature of month, 75°·9.—*Aldbury* (V). TS.—*Compton Bassett* (V). TS at 9.30 a.m.—*Cheltenham* (VI). TS.—*Arnesby Vic.* (VII). Very heavy TS.—*Caister* (VII). T and L.—*Elterwater* (X). TS from 5.30 till 10 a.m.—*Shap* (X). Severe TS.—*Cambuslang, Bushy Hill* (XIV). T and L.—*Old Ballikinrain* (XV). TS.

16th.—*St. Lawrence* (II). L and T at night.—*Northampton* (III). T, L and R 3 to 4 p.m.—*Upfield, Stroud* (III). TS and R began 10 p.m. 16th, to 9 a.m. 17th, 1·46; continuous R till 6 p.m. and after 8 p.m. all night to 9 a.m. 18th, ·70.—*Battledown, Cheltenham* (III). The R fallen here has been, up to 9 a.m. on 17th, 2·14 in.; 9 a.m. on 18th, 1·23; total in 48 hours, 3·37 in.; R commenced a few minutes before 9 a.m. on 16th, continued till noon, and again began about 8 p.m. with heavy T and L, very blue in colour. This lasted till 10.30 p.m., but the R continued more or less heavy without intermission up to late on 17th. The Severn of course is flooded, and all the low-lying ground adjacent thereto.—*Cheltenham* (VI). TS and 2·32 in. of R.—*Ross* (VI). R began at 7 a.m.; up to 9 a.m., 16th, ·05 had fallen. Barometer low and falling; wind E.S.E.; clouds down on low hills as in winter; the middle of the day was finer; TS 8 to 10 p.m., but not heavy. The night was very boisterous with continuous heavy R from W., lasting with a break of 3 or 4 hours on

the afternoon of 17th till 11 p.m. on that day, or about 36 hours. The amounts were: 16th, 7 to 9 a.m., .05; 9 a.m., 16th, to 9 a.m. 17th, 1.58; 9 a.m., 17th, to 9 a.m., 18th, .32; total, 1.95. At Alcester 4 in. is reported in 24 hours. The Wye is flooded, but not to a serious extent.—*Bishop's Castle* (VI). R began at 10 p.m. and at 9 a.m. on 17th 1.50 in. had fallen (there had been a few showers in the daytime of the 16th, amounting to about 0.25 in.) R continued to fall till 7.45 p.m. on 17th, when it ceased and the night was fine. Rain-fall on 16th, 1.50 in.; on 17th, to 7.45 p.m., 1.00 in. = 2.50 in.; deduct .25 in. fell in daytime = 2.25 in. fell in 22 hours. Mr. Male, of More, tells me 3.25 in. fell in the same period, causing a flood such as we have never before experienced.—*Dodington, Whitchurch* (VI). R up to 9 a.m. on 17th, 3.42 in.; on 17th, 1.20 in. = 4.62 in.; of this quantity 2.60 in. fell on Saturday, August 16th, in 3 hours, from 4.30 p.m. The early part of the downfall was accompanied by a severe storm of T and forked L of a beautiful crimson hue. The heavy fall of R was somewhat local, as I find, on comparing my record with that at Cloverley, 6 miles S.E. from here, the amount here, in the same time exceeded that by 2 in. The storm came from the N.W.—*Tamworth* (VI). No T; R began late on 16th and continued till 11 p.m. on 17th.—*Orleton* (VI). Fine R 10 a.m. to noon; frequent R after, with loud T at 4 p.m.; heavy R all night; and till 8 p.m. on 17th; 36 hours = 2.76 in.—*Waresley, Hartlebury, Kidderminster* (VI.) Aug. 20, 1879. "Dear Sir,—I trouble you with some remarks upon a storm which fell over this locality last Saturday evening, 16th. The day had been moderately wet, but after 6 p.m. the rain became heavier, and at 8 p.m. fell, in sheets, like lead. I have lived in this house, on very high ground, 250 feet above sea-level, more than 20 years. I emptied my gauge, a common bottle, at 8 p.m. It was overflowing, so I could not tell what had fallen, and next morning at 8 a.m. it was running over again. The bottle overflows as soon as $2\frac{1}{2}$ in. have fallen (Casella made the gauge). Thus my bottle showed 5 in. up to 8 on Sunday morning, the 17th. But it had not been emptied for many days, as it had been so dry and fine; consequently the first emptying included rain on Saturday, and perhaps some previous rain. But at 6 p.m., Saturday the 17th, I saw a tub in one of my yards turned over and emptied to make way for a cart. My head groom is perfectly certain that no one touched the water in this tub after that time till I measured it at 8 a.m. on Monday morning, the 18th. The tub is

rather wider at the top than where the water lay ; but by calculating the superficial area and the contents, I found that 7·3 in. of water was caught in the tub from 6 p.m. Saturday till 8 a.m. Monday. I emptied the gauge on Monday at 8 a.m., and found 1·10 in. of water had fallen from 8 a.m. on Sunday ; consequently 6·2 in. had fallen from 6 p.m. Saturday to 8 a.m. Sunday. The parish has been wrecked. An impromptu meeting of ratepayers was called at 9 a.m. Monday, and more fully attended than known for years. Pools have burst, and only one road was open for traffic. There was lightning and thunder very near during the height of the storm. I send you this thinking it may interest you. I have kept a rain gauge and marked temperature at 8 a.m., many years.—I am, yours faithfully, JOHN WATSON.”

On receipt of the above letter I wrote to Mr. Watson, and sent him a long series of questions, to which he kindly replied very fully. It is needless to occupy space with all the details, but I think it is certain that the fall of rain at that spot was within a tenth of an inch of 7·10 in. ; it may have been only 7·00 in. or it may have been 7·20 in., but I am myself satisfied that the fall was between those two amounts.

Others may desire corroborative evidence. In the first place we will take Mr. Watson’s rain gauge, which, unhappily, only holds 2·50 in. [When will opticians give up selling such things?]

Very fortunately we have this year, for the first time, a record from Mr. Baker, of Kidderminster ; the two stations are four miles apart, and everybody knows how great a difference sometimes occurs even in *one* mile. However, here are the figures :—

	Kidderminster.	Waresley.	Tub.
		Rain Gauge.	
Storms of August 2nd and 3rd	1·21 in.	1·33 in. ....	...
Between August 3rd and 15th	·52 in. ....	... ..	...
August 15th, 9 a.m., to 16th, 9 a.m...	·26 in. ....	... ..	...
„ 3rd to August 16th, 8 p.m. ...	... ..	2·50 in. +	...
„ 16th, 8 p.m., to 17th, 8 a.m...	... ..	2·50 in. +	...
„ 16th, 9 a.m., to 17th, 9 a.m...	3·47 in. ....	... ..	...
„ 17th, 8 a.m., to 18th, 8 a.m...	... ..	1·10 in. ....	...
„ 16th, 6 p.m., to 18th, 8 a.m...	... ..	... ..	7·10
„ 17th, 9 a.m., to 18th, 9 a.m...	·96 in. ....	... ..	...
Gross totals ...	6·42 in.	7·43 in. +	...
Between 15th, 9 a.m., and 18th, 9 a.m.	<u>4·69 in.</u>	<u>(5·60 in. +)</u>	<u>7·10</u>

This indicates that the total amount which ran over on the two occasions was $1\frac{1}{2}$ in. The next piece of evidence is supplied by an extract from Mr. Watson’s second letter:—“In proof of the excessive

rainfall, I may mention that the turnpike road from Worcester to Kidderminster, two miles from the latter place, was a lake from the 16th to the 24th. This can never have happened before, as no outlet has ever been provided. The water forming this pool all came from off the land in the neighbourhood; not a pool or a stream to assist; entirely surface. This is the main road from Shropshire and Staffordshire, through Kidderminster to Worcester, and has always been a most important road."—*Hodsock* (VII). TS 7.30 p.m.—*Cholmondeley* (VIII). The R from 5 p.m. 16th till 3 p.m. on the 17th amounted to 3.99 in.—*Buglawton Vicarage, Congleton* (VIII). R up to 9 a.m. 17th, 2.35; do. 18th, 1.31. The quantity which fell between 5 p.m. on Saturday, 16th, and 5 p.m. on Sunday, 17th, was 3.42.—*Hindertons, Neston* (VIII). R commenced August 16th about 1.30 p.m.; amount measured on 17th, 8 a.m., 1.36 in.; from 8.30 a.m. to 6.30 p.m., 17th, 1.98; from 6.30 p.m., 17th, to 8 a.m., 18th, .12; total in 42½ hours, 3.46. I have never in my life seen so much water lying about, and the actual amount measured exceeds anything recorded in the last 10 years, at least during any one storm, in this part of the country. I suppose that in some districts such falls are more frequent.—*Fox Hill, Frodsham* (VIII). R began about 10 p.m. 16th, was nearly incessant to 9 a.m. 17th, 1.40; continued almost incessant throughout 17th, and at 9 a.m. 18th = 1.08.—*Holywell, Bagillt* (XI). 16th and 17th, heavy R amounting to 3.95 in.; much damage was done in Bagillt.—*Rhyl, Sedgley House* (XI). Gale of wind with heavy R from 1 p.m. 16th, till 7 p.m. on 17th; total R 4.88 in.—*Nant, Prestatyn* (XI). Heavy R; total, 3.67 in. in 28 hours on 16th and 17th.—*Trevalyn Hall, Wrexham* (XI). R commenced soon after noon on 16th, but ceased during the afternoon. At 6 p.m. it again set in heavily and continued without interruption until about 4 p.m. of 17th, when it very gradually stopped. The amounts registered are as follows to 9 a.m. :—Sunday, August 17th, 2.20 in. : Monday, August 18th, 1.08 in., a total of 3.28 in. from noon 16th to about 4 p.m. 17th. The average fall in the month of August here is 2.70 in. (1868–77), so that within 28 hours the fall exceeded the average of the whole month by more than half an inch. Regular observation of the rain gauge commenced at the beginning of 1868, and never during the 11½ years to the present time have so much as 2 in. in 24 hours been recorded. You will readily imagine the effect of this extraordinary amount of rainfall. The valley of the river Alyn (a tributary

of the Dee) was a sheet of water, the roads were in some places impassable, and houses were surrounded by the floods. In some cases the inhabitants had to betake themselves to the upper floors, and every one agrees that such a visitation has not been experienced for at least 40 years. The wind was S. to S.W. on Saturday, veering to W.N.W. that night.—*Glan y Wern, Denbigh* (XI). It commenced raining here about noon on Saturday, the 16th, and continued with little interruption until Sunday evening, the 17th. R up to 9 a.m., 17th, 2.43 in. ; up to 3 p.m., 3.88 in. ; and up to 9 a.m., 18th, 4.40 in., all which had thus fallen in forty-eight hours—more than the total of the very wet month of June last, in which there were with us here only six days without R. The last two days R were without T : a steady rainfall. The country is all under water. During the five years a rain gauge has been kept here, there has never before, in any one month, been so much as 6 in. registered.—*Nant-y-Glyn* (XI). 5 in. of R fell in the two days (16th and 17th) ; much damage was done by floods in the neighbourhood ; the railway viaduct at Llandulas was washed away.—*Bryn Erwyn* (XI). Rainfall on the two days (16th and 17th), 4.46 in.—*Llanfairfechan* (XI). 16th and 17th. Heavy R, causing great floods, which did much damage.—*Llandudno* (XI). 16th. Fine till 1 p.m., then heavy R with thunder clouds ; 17th. Thoroughly wet day and night. L in evening.—*Menafron* (XI). 16th. Fair till 1 p.m. ; R rest of day and throughout the night ; fall up to 9 a.m., 17th, 1.00 in. 17th. Heavy R throughout the day. Measured the fall up to 8 p.m. as a precaution against overflow ; total to that hour 1.47 in. ; subsequent fall 0.16 in., making total to 9 a.m. 1.63 in., or 2.63 in. in two days.

17th.—*Wisbech* (III). TS with heavy R ; .64 in. fell in about half-an-hour—from 1.30 to 2 p.m.—*Wentworth Castle* (IX). Heavy R ; 1.09 in. fell between 11.45 a.m. and 0.17 p.m.—*Whorlton* (X). TS and gale.—*Elterwater* (X). T and L from 3.40 to 6 p.m.

18th.—*Diss* (IV). Sharp TS at 3.15 p.m.—*Caistor* (VII). T and L.

20th.—*Addington* (III). Flood ; much hay carried away.

21st.—*Enfield* (I). TS.—*Addiscombe* (II). R from 10.30 a.m. ; TS 10.50 to 11.23 a.m., and 0.20 to 1.45 p.m.—*Tenterden* (II). Very severe and continued TS from 11 a.m. till 5 p.m.—*Littlehampton* (II). T and L all the morning.—*Eastbourne* (II). T and L.—*Wetherden Rectory* (IV). T and L.—*Diss* (IV). Distant but very violent TS to W.—*Hodsock* (VII). TS 6 to 7 p.m., with very heavy R for about 10 minutes ; total fall, 0.30 in., most of which fell in this shower.

23rd.—*Midmar, Blackstock* (XVII). During a slight TS, .51 in. of H and R fell within nine minutes.

24th.—*Miltown Malbay* (XX). T, L and H.

25th.—*Miltown Malbay* (XX). Storm with L, H and heavy R.—*Kilconnell* (XXII). Strong storm from S.W.

26th.—*Dowra* (XXII). Highest floods in the Shannon this year.—*Newtownards* (XXIII). S.E. gale.

28th.—*Addington* (III). Another great flood.—*Diss* (IV). Heavy gale from S.—*Wakefield, Stanley Vic.* (IX). A gale during the night.—*Miltown Malbay* (XX). Very severe S.W. gale.—*Kilconnell* (XXII). Very strong storm from S.W.—*Dowra* (XXII). Violent S.W. gale.—*Seaforde* (XXIII). A regular storm.—*Knockan* (XXIII).—Gale of wind.

30th.—*Walton-on-the-Hill* (VIII). T and L at 5 p.m.—*Drum Park* (XII). A waterspout burst over Drum Park Hill, doing much damage; about 4 in. of R fell here between 2 and 6 p.m.

SEPTEMBER.

1st.—*Holt* (V). First frost on grass since the 10th May.

2nd.—*Whorlton* (X). Gale.—*Budgate, Cawdor* (XVII). Very stormy.—*Glenfinnan* (XVIII). Strong gale, 3.77 in. of R.—*Killygarvan* (XXIII). Gale all day.

3rd.—*Melrose* (XII). S.W. gale.—*Glenfinnan* (XVIII). Strong gale, 2.58 in. R.—*Ballinasloe* (XXII). Slight T about 1.30 p.m.

7th.—*Melrose* (XII). T and L p.m.

8th.—*Cambridge, Merton Villa* (III). TS 3.30 p.m.—*Stanley Vic.* (IX). T.—*East Layton* (IX). T.—*Elterwater* (X). TS.—*Shap* (X). Storm of wind with T.—*Llanfrechfa* (XI). T and L at noon.—*Newcastle West* (XX). Storm N.W.—*Enniscorthy, Castle Boro* (XXI). Heavy R, amount 2.80 in.—*Dowra* (XXII). Blowing hard.—*Knockan* (XXIII). Severe storm with wind and R.—*Killygarvan Glebe* (XXIII). Gale all day.

9th.—*Elterwater* (X). T in night.

12th.—*Whorlton* (X). High wind.

15th.—*Addiscombe* (II). Dense fog till noon.

17th.—*Addiscombe* (II). Frequent faint L late in the evening.—*Cambridge, Merton Villa* (III). L after 9 p.m.—*Diss* (IV). Severe TS from 10 p.m. to 7.30 a.m.

21st.—*Babbacombe* (V). Solar halo.—*Ballinasloe* (XXII). Storm at night.

22nd.—*Babbacombe* (V). Solar halo and parhelia.—*Solva* (XI). Gale at night.—*Lochbroom* (XVIII). Very stormy.—*Newcastle West* (XX). Storm W.S.W.—*Miltown Malbay* (XX). Severe gale from S.S.W.—*Kilconnell* (XXII). Storm from S.

23rd.—*Boxford Rectory* (IV). Heavy R, 1·41 in. ; the greatest daily fall I have ever registered.—*Babbacombe* (V). S.W. gale in morning. *Melrose* (XII). High wind, S.W. ; H.—*Tomintoul* (XVII). Hurricane, damaging crops.—*Glenfinnan* (XVIII). Very violent gale ; 1·84 in. R.

24th.—*Addiscombe* (II). Heavy R at 4 p.m., and more or less R to 5.30 p.m. ; T 4.17 p.m.—*Cambridge, Merton Villa* (III). L in N. 7 to 8 p.m.—*Babbacombe* (V). Solar halo.—*Shap* (X). L at night.—*Miltown Malbay* (XX). TS with heavy R, and hailstones larger than marbles ; ·40 in. fell in twenty minutes.

25th.—*Babbacombe* (V). Solar halo and parhelia.—*Coston Rectory* (VII). Frost on ground.

26th.—*Keith* (XVII). Sharp frost.

27th.—*Coston Rectory* (VII). Sharp frost.

29th.—*Babbacombe* (V). Solar halo.

30th.—*Hodsock* (VII). First frost ; min. in stand, 30°·8.

OCTOBER.

1st.—*Watten* (XIX). Storm of wind.—*Miltown Malbay* (XX). T, L, H and R.—*Kilconnell* (XXII). Storm from S.W., veering to N.W.—*Killygarvan* (XXIII). Strong wind all day.

2nd.—*Holt* (V). Heavy squalls of wind with some T in the evening.—*Compton Bassett* (V). Squally ; T and L, with H and R at 6.30 p.m.—*Elterwater* (X). Heavy H showers.—*Nantgwillt* (XI). T.—*Castle Lough* (XX). T and H.—*Kilconnell* (XXII). Storm continued ; wind backing to S.W. ; heavy H showers.—*Dowra* (XXII). TS with H showers.

3rd.—*Babbacombe* (V). Solar halo.—*Hodsock* (VII). T.

10th.—*Addiscombe* (II). Dense fog till 10 a.m.

11th.—*Addiscombe* (II). Dense fog morning and evening.

12th.—*Addiscombe* (II). Highest observed barometer of month 30·568 in. at 9 a.m. Wet fog all day, and very dense during the evening.

15th.—*Druid House* (V). H showers at 6 p.m.

16th.—*Abinger* (II). Severe frost.—*Addiscombe* (II). Lowest temp. of month on grass 22°·6.—*Addington* (III). Frost blackening tender

plants ; temp. in air fell to 28°, and on grass to 24°.—*Babbacombe* (V).—Sharp frost.—*Cheltenham* (VI). Sharp frost.—*Walton-on-the-Hill* (VIII). Frost in early morning.—*Broadford* (XVIII). Very stormy.

17th.—*Addiscombe* (II). The fifteenth day without R, and ending the longest period of dry weather during the whole year.—*Hodsock* (VII). High wind.—*Melrose* (XII). High wind.

18th.—*Whatcombe* (V). H storm.—*Bassenthwaite, Mirehouse* (X). Shock of earthquake felt at 5 a.m.—*Newcastle West* (XX). Storm W.S.W.

19th.—*Babbacombe* (V). W.S.W. gale.—*Whorlton* (X). Gale.—*Shap* (X). A great storm.—*Melrose* (XII). High wind.—*Budgate, Cawdor* (XVII). Stormy.—*Lochbroom* (XVIII). Very stormy.—*Watten* (XIX). Stormy.—*Newcastle West* (XX). Storm W.—*Dowra* (XXII). Very stormy.

20th.—*Coston Rectory* (VII). High wind.—*Stanley* (IX). Gale.

25th.—*Inver Braan* (XVI). Sharp frost in night.

26th.—*Addiscombe* (II). Lowest temp. of month 30°·0. Some of the leaves of dahlias much injured. Dense fog early morning.—*Hodsock* (VII). Min. in stand 28°·2, on grass 24°·3.

27th.—*Miltown Malbay* (XX). Gale from S.E.

29th.—*Babbacombe* (V). E.N.E. gale.

NOVEMBER.

1st.—*Diss* (IV).—Showers of S, H, and R in morning.—*Babbacombe* (V). N.N.E. gale.—*Druid House* (V). H showers.—*Hodsock* (VII). Slight S.—*Watten* (XIX). Stormy, with H showers.—*Kilconnell* (XXII). Wind N.E., producing rather severe frost at night, most unusually early.

7th.—*Cheltenham* (VI). T.—*Cambuslang, Bushy Hill* (XIV). Solar halo 3 p.m.

11th.—*Elterwater* (X). T and H in evening.—*Douglas* (XI). S.W. gale.—*Melrose, Abbey Gate* (XII). Stormy.—*Douglas Castle, Newmains* (XIV). T from noon to 1 p.m.—*Killygarvan Glebe* (XXIII). Heavy gale.

12th.—*Diss* (IV). Gale from W. and N.W. ; ice.—*Coston Rectory* (VII). Very high wind.—*Walton-on-the-Hill* (VIII). Heavy gale in early morning from N.N.W.—*Watten* (XIX). Stormy, with H and R.

13th.—*Diss* (IV). N.W. gale, S and H.

14th.—*Abinger Hall* (II). Severe frost.—*Addington* (III). Very

sharp frost.—*Diss* (IV). Hard frost.—*Compton Bassett* (V). Sharp frosts.—*Druid House* (V). Ponds frozen.—*Langtree Wick* (V). Hard frost.—*Cheltenham* (VI). Lake covered with ice first time this winter.—*Walton-on-the-Hill* (VIII). Sharp frost.—*Wakefield, Stanley Vic.* (IX). Sharp frost.—*Shap* (X). Hard frost.

15th.—*Cambridge, Merton Villa* (III). Sharp frost at night.—*Coston Rectory* (VII). Very sharp frost.—*Elterwater* (X). Most of Elterwater covered with ice.

17th.—*Melrose, Abbey Gate* (XII). High wind, W.

18th.—*St. Lawrence* (II). Very warm; max. temp. $57^{\circ}\cdot 1$, min. 47° .—*Addington* (III). Very mild day, temp. at 9 a.m. 53° .

20th.—*Abinger Hall* (II). A heavy snowstorm.—*Addiscombe* (II). S till 11.45 a.m., and at night; total of 24 hours, $\cdot 38$ in.—*Bromley Common* (II). 6 in. of S fell.—*Hailsham* (II). Heavy fall of S.—*East Tisted Rectory* (II). 9 in. of S fell.—*Addington* (III). First S.—*Babbacombe* (V). Gale, E.N.E.—*Coston Rectory* (VII). S storms all the afternoon.—*Navenby* (VII). Severe storm of wind.

21st.—*Addiscombe* (II). S 9.30 a.m. to noon, and at night; total of 24 hours, $\cdot 28$ in.; depth on path $2\frac{1}{2}$ in., and on lawn 4 in.—*Cheltenham* (VI). Heavy fall of S, rather more than 8 inches.—*Hodsock* (VII). Storms of S.—*Castle Malgwyn* (XI). A very sharp and sudden frost.

22nd.—*Addiscombe* (II). S to 11 a.m.; amount 9 p.m., $\cdot 09$ in.; depth on path $5\frac{1}{2}$ in., and on grass 8 in.—*Hodsock* (VII). Slight S; min. in stand $20^{\circ}\cdot 4$, on grass 14° .

23rd.—*Addiscombe* (II). Lowest temp. of month $20^{\circ}\cdot 8$, and on grass $10^{\circ}\cdot 9$; these are the lowest temperatures registered here in November during the past 7 years.

24th.—*Druid House* (V). H.

25th.—*Babbacombe* (V). E.N.E. gale.

26th.—*Lochbroom* (XVIII). Lunar rainbow.

27th.—*Babbacombe* (V). E.N.E. gale in evening.

29th.—*Gordon's Hospital* (XVII). Heavy S storm, lasting until Dec. 5th.—*New Barnsley* (XXIII). S showers.—*Knockan* (XXIII). S showers.—*Allan Rock* (XXIII). Showers of S.—*Killygarvan Glebe* (XXIII). Squally, with S.

30th.—*Cheltenham* (VI). Ice firm for skating.—*Miltown Malbay* (XX). Slight S.—*Rathfryland* (XXIII). Slight fall of S.—*Knockan* (XXIII). Fall of S.—*Allan Rock* (XXIII). Heavy showers of S.

DECEMBER.*

1st.—*Addiscombe* (II). Soft H, 11.30 a.m. to 1.30 p.m. Depth on ground $\frac{1}{4}$ inch. S 6 to 7 p.m., and S at night.—*Hodsock* (VII). S 7 a.m. till 2 p.m.; 4 in. deep.

2nd.—*Addiscombe* (II). Lowest temp. of month on grass $1^{\circ}9$. This is the lowest temperature recorded here during the past seven years.—*Coston Rectory* (VII). A most extraordinary frost; temp. $-3^{\circ}5$ at 9 a.m.—*Thorpe Arnold* (VII). Temp. -6° .—*Bucknall* (VII). Min. temp. 5° ; max. 25° .—*Lincoln Water Works* (VII). Temperature at zero.—*Hodsock* (VII). Min. on stand $-1^{\circ}1$, on grass $-7^{\circ}8$.

3rd.—*Babbacombe* (V). Solar halo.—*Bingfield House* (X). Max. temp. 8° , min. temp. -10° .—*Castle Lough* (XX). S remaining on ground for several days.—*Miltown Malbay* (XX). Heavy fall of S. Ice 4 in. thick.—*Moneydig* (XXIII). Min. temp. 1° .

4th.—*St. Lawrence* (II). Gale from E.—*Addington* (III). Ice 4 in. thick.—*Ipswich, Bishop's Hill* (IV). Solar halo.—*Babbacombe* (V). Solar halo and parhelia. Heavy E.N.E. gale.—*Thixendale* (IX). Lowest temp. -3° .—*Melrose* (XII). Min. temp. -5° .—*Watten* (XIX). 6 or 8 in. of S on ground.

5th.—*Hodsock* (VII). S 4 to 7 p.m. $3\frac{1}{2}$ in. (new fall).

6th.—*Boxford* (IV). Min. temp. zero.—*Diss* (IV). Min. temp. 9° . *Whatcombe* (V). H storm.—*Dalby Hall* (VII). Min. temp. -3° .—*Findern* (VII). Min. temp. in air 2° .—*Aldbrough* (IX). Min. temp. $-6^{\circ}5$.

7th.—*Addiscombe* (II). Lowest temperature of month $13^{\circ}6$.—*Addington* (III). Min. temp. 5° .—*Little Houghton* (III). Min. temp. 2° .—*Cambridge, Merton Villa* (III). Temperature fell to -2° .—*Coston Rectory* (VII). Temp. -2° at 9 a.m.—*Thorpe Arnold* (VII). Temp. -1° .—*Bucknall* (VII). Min. temp. zero; max. 16° .—*Gedling Rectory* (VII). Temp. -4° .—*Hodsock* (VII). Min. in stand $-5^{\circ}8$; coldest in year.—*Derby, Christchurch Vicarage* (VII). Min. temp. -2° .—*Stanley Vic.* (IX). Ther. on ground down to zero.

8th.—*Loughboro', Victoria Street* (VII). Min. temp. in shade 2° ; on grass $-1^{\circ}4$.

9th.—*Babbacombe* (V). Solar halo.

11th.—*Addiscombe* (II). Soil in garden frozen to the depth of 10 in.

13th.—*Wath-upon-Dearne* (IX). Temperature -1° .

15th.—*Addiscombe* (II). More or less S to be seen on ground since November 20th, or on 25 consecutive days.

* For full details respecting the frosts of this month, see Mr. Marriott's paper in the *Quarterly Journal of the Meteorological Society* for April, 1880.

22nd.—*Addiscombe* (II). Very dense fog ; houses on the opposite side of the road invisible between 4 and 5 p.m. Highest observed barometer of month 30·813 in. at midnight.—*Dalnaspidal* (XVI). Gale.

24th.—*Lochbroom* (XVIII). Stormy ; T and L.—*Beauly, Achonachie Lodge* (XVIII). Distant T with S and H on high ground.—*Watten* (XIX). S.W. gale with H and R.

25th.—*Addiscombe* (II). Very dense fog all day from early morning. During the greater part of the day my garden wall became quite invisible at a distance of 50 yards.

27th.—*Hodsock* (VII). Barometer falling ; high wind with R, and very rapid thaw during night.—*Dent, Stone House* (IX). Hurricane, but no great damage was done.—*Keswick, Shu-le-crow* (X). Heavy R, 3·02 in., the greater part falling after 5 p.m. ; the river Greta rose rapidly, and high wind accompanied the storm ; at Rosthwaite, 6 miles distant, the roads were more flooded than ever remembered before.—*Haverfordwest* (XI). Great storm of wind, with T, L, H and R.—*Dalnaspidal* (XVI). Gale and heavy R.—*Forsinard* (XIX). Gale.—*Bushmills* (XXIII). Violent storm.

28th.—*Hereford, Richmond Place* (VI). Heavy gale.—*Whorlton* (X). Strong S.W. gale.—*Melrose* (XII). Severe S.W. gale during night.—*Dalnaspidal* (XVI). Violent gale 4.30 till 9 p.m.—*Tomintoul* (XVII). Hurricane.—*Keith* (XVII). Terrific gale from 6 p.m. to midnight.—*Elchies* (XVII). Hurricane that damaged houses and uprooted trees.—*Lochbroom* (XVIII). Very stormy.—*Glenfinnan* (XVIII). Very violent gale commenced about 6.30 p.m., and the worst was over by midnight. — *Aviemore* (XVIII). Fierce wind during evening. — *Forsinard* (XIX). Gale.—*Newcastle West* (XX). Violent storm and H.—*Miltown Malbay* (XX). Hurricane from 1 p.m. to 3 p.m., with L ; wind S.W.—*Killygarvan Glebe* (XXIII). Violent gale ; the most severe since November 22nd, 1877.—*Buncrana* (XXIII). Strong gale from S., increasing in violence and veering to S.W. and W. until it reached the climax at from 4 to 6 p.m.

29th.—*Fernhurst* (II). T in distance ; a violent storm occurred north of Haslemere.—*Fore Street Hill* (V). TS.—*Kilworthy Hill* (V). TS, with H and R.—*Court Barn* (V). T.—*Cosgarne* (V). T and L at night.—*Castle Lough* (XX). T.—*Miltown Malbay* (XX). Stormy ; heavy squalls with sharp H showers.

30th.—*Abinger* (II). Heavy storm of T, L and H for about half-an-hour about mid-day ; wind very strong.—*Addiscombe* (II). R and H,

10.25 to 10.50 a.m. ; TS, 0.45 p.m. to 1.15 p.m., followed by R, H and S showers till 3.30 p.m., and R at night.—*Birchington, Thor.* (II). Gale of wind from N.W., which lasted 20 minutes, with H, R and sleet.—*Bromley* (II). TS 1 p.m. ; gale.—*Littlehampton* (II). Rough S.W. wind ; violent squall at 10 a.m. ; at 1 p.m. T, L, H and R for half-an-hour.—*St. Lawrence* (II). L and T ; heavy squall H and R.—*East Tisted Rectory* (II). T and L.—*Arle-Bury, Alresford* (II). Awful T, L and H storm from N.W.—*East Worldham* (II). Terrific TS at 0.35 p.m., with heavy R and H.—*Strathfield Turgiss* (II). T and H.—*Addington* (III). Rough, stormy day.—*Cambridge, Merton Villa* (III). Very squally.—*Diss* (IV). A high atmospheric storm, shown by the sudden shifting of the wind, and the rapid passage of clouds in exactly opposite directions.—*Compton Bassett* (V). T and L in early morning, wild and rough.—*Bere Ferrers Rectory* (V). TS, with high wind and heavy R.—*Babbacombe* (V). TS with H.—*Druid House* (V). TS 8 a.m.—*Court Barn* (V). Very stormy.—*Langtree Wick* (V). Short heavy TS 6 to 8 a.m.—*Bodmin, Fore Street* (V). TS with H and heavy gale of wind.—*Bincombe House* (V). Severe TS with S, and heavy gale from S.W. to W.—*Cheadle* (VI). Stormy day. R, H, and S.—*Coston Rectory* (VII). Very high wind and R.—*Hodsock* (VII). Blustering, squally day, with heavy storms of sleet and R.—*Carno* (XI). Very stormy and wet. The highest flood known for 11 or 12 years.—*Miltown Malbay* (XX). Gale W. to N. Fierce H shower, with heavy R.—*Killygarvan* (XXIII). Severe gale.

OBSERVERS' NOTES ON THE MONTHS.

JANUARY.

I. *Hanworth*. Frost nearly the whole month.—*Camden Road*. Frost from the 1st to the 12th ; thaw till the 15th, when the frost returned, and, with the exception of a very slight thaw on the 26th and 27th, held till the close of the month. Mean temp. only $32^{\circ}0$, that for 1878 being $41^{\circ}0$; max. temp. below 32° on nine days. From the 20th to the 25th inclusive the thermometer never rose above freezing point.—*Pinner Hill*. Easterly winds prevailed nearly all the month.—*Enfield*. Frost almost without intermission from the 1st till the close of the month, and the ground was thickly coated with S at the close. The cloud canopy never broke during the last eight days.

II. *Abinger Hall*. Very cold, and the latter half of the month quite sunless, with very cold N.E. and E. winds.—*Addiscombe*. Exceptionally cold, rather dry, and somewhat windy, with a singularly dry atmosphere, and cloudy skies. It was remarkable for the long continuance of low temperatures and the unusual prevalence of north-easterly winds.—*Hythe*. Very wintry.—*Bromley Common*. Extreme variations of temp. at the beginning of the month, but from the 22nd to the 31st the range was only 12° . The whole month was almost sunless, but dry, with daily slight frost ; very little S.—*Littlehampton*. Long continued frost with N.E. winds ; meadows and gardens look very wretched ; no apparent growth of vegetables since November.—*Woldringfold*. A hard frost, without any very low temperatures.—*St. Lawrence*. The month began warm, with heavy R ; frost set in on 6th, and continued till 13th, when we had fog and heavy R. Frost began again on 16th and continued till close of month.

III. *Addington*. Frost every night and often all day from 2nd to 14th and from 16th to end of month. Vegetables much damaged, and numbers of shrubs destroyed that have stood for years.—*Northampton*. Severe frost for the first 12 days, followed by rapid thaw for three days ; frost returned again on 16th and continued till

end of month.—*Cambridge*. Severe weather prevailed throughout the month, with the exception of the three days, 13th to 15th. Mean temp. $31^{\circ}2$, being $8^{\circ}5$ below January, 1878, and 11° below January, 1877.

IV. *Diss*. Frost set in on 2nd, and, with one short interval (12th and three following days) continued to the end of the month. Skating was uninterrupted from the 3rd to the last day. The temp., although never extremely low, never rose above 35° , and seldom above 33° . The first three weeks, though cold, were not unpleasant, but the last week was dull and cheerless, with N.E. winds. Colds and bronchitis have been very prevalent, but there has been no epidemic of any kind.

V. *Holt*. The coldest month of the year; highest temp. $48^{\circ}7$ on 14th; lowest, $4^{\circ}2$ on 12th; mean, $31^{\circ}7$; lowest on grass, $2^{\circ}0$ on 12th. 24 frosty nights in stand; 29 on grass.—*Compton Bassett*. Bitterly cold; frost on 28 days; fog on five, and S on two.—*Babbacombe*. The rainfall ($6\cdot35$ in.) was more than in any month since November, 1877. Mean temp. ($36^{\circ}0$) was $6^{\circ}5$ below January, 1878, and $8^{\circ}9$ below 1877. The max. temps. were especially low, averaging only $39^{\circ}8$, and being below freezing point on four days.—*Kilworthy Hill*. A great prevalence of cold E. wind.—*Court Barn*. The most severe January for many years. Grass very scarce, and vegetation much injured. Many birds killed by frost and want of food.—*Taunton*. Very cold.

VI. *Bristol*. Very cold; mean temp. $31^{\circ}5$, nearly 8° below the average; rainfall an inch above the average.—*Cheltenham*. Alternate frost and thaw until the 21st, when frost set in again, and skating re-commenced, and continued till the end of the month; the days, from the 23rd, being gloomy, no sun at any time being visible; the thermometer keeping, with remarkable regularity, a few degrees below freezing point. Soft-billed birds have suffered much, where they have not been regularly fed.—*Sansaw*. Very cold, but generally bright.—*Cheadle*. Easterly winds prevailed on 23 days. Max. in shade below 32° on 19 days.—*Coundon*. Min. temp. below 32° on 29 days.

VII. *Coston*. Very cold and dull; ground white with S every day, except 1st, 2nd, and 13th to 17th. Mean temp. 28° , or 10° below the average of the preceding six years. Rainfall less than that of any January since 1873.—*Langton*. A great prevalence of cloud, and of foggy and misty weather; the sun and moon being rarely

seen.—*Hodsock Priory*. Very cold throughout; only three days on which frost was not recorded. Mean temp. $30^{\circ}4$; S on 13 days; rainfall below mean. Latter part of month dull and calm, with high barometer, and small daily range.

VIII. *Walton-on-the-Hill*. Exceedingly wintry; frost recorded every night but three.—*Manchester, St. Bede's College*. Severe frost throughout, with the exception of a slight thaw about the middle.

IX. *Stanley Vicarage*. Month remarkable for its low mean temp. ($30^{\circ}3$), and for the scarcity of sunshine. Only two days without frost. Birds and hares have been found dead in the fields, and a fox was seen in broad daylight chasing a flock of plovers. Polar winds prevailed.

X. *Whorlton*. Hard frost from the 4th to the end of the month.—*Allenheads*. The whole month was very severe.—*Easdale*. Very hard frost, with S.—*Mardale*. Hard frost and S during the whole month.—*Measand*. Very hard frost during the whole month, and much S in the latter half.

XI. *Cardiff*. Easterly winds prevailed from 17th to 31st, during which time there was almost an entire absence of sunshine.—*Castle Malgwyn*. Cold throughout, but a remarkable number of dry days especially in the latter part.—*Carno*. Very cold, more frost than has been known for many years.—*Douglas*. Intensely cold; mean temp. 34° . Rainfall considerably below the average of the last five years; S.E. gales on six days.

XII. *Dumfries*. Frost was continuous during the whole month, except on the 13th and 14th, when a sudden and partial thaw took place. Rainfall very small; mean temp. ($26^{\circ}9$) unprecedentedly low.—*Melrose*. Month chiefly characterised by a low mean temp. ($26^{\circ}4$); rainfall below the average.

XVII. *Tomintoul*. S on ground throughout the month.

XVIII. *Lochbroom*. Much frost and S. Sheep and deer are in the most miserable state, and the owners of both may reckon on an unusual loss.—*Glenfinnan*. Very low temp., especially during the first ten or twelve days, but with a good deal of sunshine and very little wind.

XIX. *Watten*. Very stormy weather during the first part of the month, frost, S and R succeeding each other alternately. During the latter portion intense frosts with calms.

XX. *Tralee*. Hard frost throughout the month, except on the 5th and 6th and 13th to 17th. A more severe winter than has been

known for the last 45 years.—*Castle Lough*. Very cold ; hard, dry E. wind after the 20th.—*Nenagh*. Easterly winds prevailed.—*Kilrush*. Very severe and changeable, very trying to the poor and delicate ; colds very prevalent and death-rate high.—*Miltown Malbay*. This month, opening with a black frost and closing with a blinding S storm, has been remarkable as the coldest experienced since 1855. The storms and gales were principally from S. or S.E., and were of an Arctic bitterness quite unexampled.

XXIII. *Seaforde*. Very cold ; the oldest person about here does not remember so severe a winter.—*New Barnsley*. A severe month, not a great depth of S, but the frost very keen.—*Bushmills*. Very severe month.—*Knockan*. Very severe.—*Stewartstown*. With the exception of two or three days we have had hard frost the whole month, and the S has never disappeared.—*Killygarvan Glebe*. Dry and cold, with hard frost and a good deal of cold wind, but no heavy gales. Three weeks' skating during the month.—*Buncrana*. Almost continuous frost and S the entire month, with prevailing E. wind.

FEBRUARY.

I. *Muswell Hill*. Very wet, the rainfall being more than double the average.—*Enfield*. The month, with the exception of the second week was, like its predecessor, very cold, and vegetation is consequently very backward.

II. *Dorking, Abinger*. Cold and wet, with very little sun.—*Addiscombe*. Exceptionally wet, and rather windy, with a humid atmosphere, and extremely cloudy skies. It was remarkable for frequent falls of R and S, a heavy fall of frozen R on one day, and a short but singularly dark fog upon another.—*Hythe*. Very wet and wintry.—*Bromley Common*. Wet, dull and cheerless, R falling nearly every day to the 21st. Temp. equable and never very severe.—*Littlehampton*. Wet and cold, no growth of vegetation.—*St. Lawrence*. Cold and wet, much interfering with farming operations and garden work. Continued frost from 20th to 28th.

III. *Addington*. Cold, dull and wet, the rainfall in excess of any February since 1871.—*Cambridge*. Frequent R till the 18th, then S showers prevailed. A thaw set in on the 2nd, after 17 days' frost, and from the 6th to the 11th the weather was very mild. Sharp frosts at night during the fourth week. Mean temp. 37°·6, nearly 4° below that of February, 1878.

IV. *Diss.* Very cold, though without any extremely low temperatures. There were some fine days in the second week, but the rest of the month was sunless and gloomy; there have been heavy floods, and the roads have been broken up by the alternations of frosts and thaws in a way which I do not remember to have seen before. Bronchitis, influenza, and bilious disorders prevalent.

V. *Pewsey.* A stormy month.—*Holt.* Very wet; R fell on every day but four.—*Compton Bassett.* Cold and stormy throughout, R or S falling on 25 days, and keen frosts occurring on 16 nights.—*Babbacombe.*—A wet month, only three days without R. Temp. about the average; from 5th to 14th warm, from 17th to 26th cold, with H and S showers, Dartmoor being covered with S, though none lay here. S.W. winds prevailed from the 5th to the 21st.—*Bodmin.* Very wet and cold.

VI. *Cheltenham.* A month of persistent rainfall, only five days on which neither R nor S fell. Temp. low.

VII. *Coston Rectory.* Very dull, with very little sunshine, and very cold except from the 6th to 11th, inclusive, and on the 28th; frequent snowstorms.—*Langton.* Wet, with much mist and fog, and low temp.—*Caistor.* S fell on 15 days.—*Hodsock Priory.* Warm and rather windy from 3rd to 12th, then cooler and the latter part cold, with frost every night. Mean temp. $36^{\circ}9$. Rainfall above average.

VIII. *Walton-on-the-Hill.* A cold and unsettled month.—*Alexandra Park, Manchester.* Much S.—*Burnley, Gauthorpe.* Cold and sunless.

X. *Allenheads.* Very stormy; S lying a foot deep for the greater part of the month.—*Woodlands, Elterwater.* Mean temp. $34^{\circ}6$; mean of the three months Dec., Jan. and Feb., $30^{\circ}6$.—*Shap.* Very dreary and cold, with much frost and S.—*Mardale.* S, and very rough weather.—*Measand.* Beginning of month rainy, middle snowy, latter part mild with some R.

XI. *Cardiff.* The first half of the month was warm and genial, the latter half decidedly cold.—*Douglas.* Bitterly cold, with heavy falls of R and S. Wind easterly every day but 10th and 11th. S on the mountains all the month.

XII. *Dumfries.* Cold and wintry; noticeable for the absence of high wind.—*Melrose.* Unusually stormy; scarcely a day without S, so that with the low mean temp. farm and garden labour has been entirely stopped.

XVII. *Tomintoul.* S has remained on the ground here for nearly three months, and is unparalleled for duration and severity.

XVIII. *Loch Broom*. A fine winter month, but very severe on sheep.—*Glenfinnan*. Low temp. ; much frost, and very little wind.

XIX. *Watten*. Frost almost continuous ; but fine winter weather, excepting the storm from 15th to 17th.

XX. *Tralee*. Very severe month.—*Tipperary*. A wet month.—*Newcastle West*. Spring work is very backward, owing to the constant cold and excessive rainfall.—*Kilrush*. Very wet, wild and changeable, and consequently very unhealthy.—*Miltown Malbay*. At the beginning of the month the ground was covered with S, which, where the drifts lay heavy, remained more than a fortnight unmelted. The weather during the second week was soft and open, and from the 15th to the 25th was nearly one nor'-wester, with S, H, R and frost.

XXIII. *Belfast, New Barnsley*. Weather very variable ; frost very severe at the beginning of the month. S showers frequent ; very little R.—*Killygarvan*. A pretty dry month, with some strong wind and a few nights' hard frost. Mean temp. $36^{\circ}\cdot 2$, about $4^{\circ}\cdot 5$ below the average.

MARCH.

I. *Enfield*. Very windy. Vegetation still very backward. Frost on 16 nights.

II. *Abinger*. A very cold but dry month, which has enabled all garden operations to be got forward.—*Addiscombe*. Rather cold, singularly dry, and very windy, with rather more than the usual amount of bright sunshine. It was remarkable as being the fifth cold month in succession, and for its exceptionally light rainfall.—*Tenterden*. The driest March but one in 16 years. Very fine and warm from 6th to 10th ; dull and cold from 21st to 28th. No high wind.—*Hythe*. Cold and wintry ; woods and hedges leafless at the close.—*Bromley Common*. Very dry, with but little sunshine. I do not remember a March so free from the usual gales. Vegetation very backward. The 22nd and 23rd were (to the feelings) the bitterest days we have had throughout the whole winter.—*Littlehampton*. Cold and dry. Very little growth of vegetation. Extraordinary abundance of worms and slugs.—*St. Lawrence*. Fine and dry ; the rainfall being considerably below the average. Wind easterly for 15 days.—*Southampton, Cadland*. The driest March since 1860.

III. *Addington*. The early part of the month generally fine ; good

weather for both field and garden work. From the 22nd to the end extremely cold; a brisk east wind making it almost unbearable. Vegetables much injured by the cold.—*Cambridge, Merton Villa.* Weather, as usual, variable; many bright and drying days. Fourth week most winterly, with piercing wind from E.N.E.; icicles a foot long were seen unmelted at mid-day of the 24th.

IV. *Diss.* Fine weather up to the 11th; from 5th to 11th bright, warm, and magnificent, then cold and winterly, with much S, and bitter winds to the 27th, the last few days wet and raw. The lambing season seems fairly favourable, the bitter cold and wet of the latter part of the month affecting only the youngest. Influenza and bronchitis prevalent.

V. *Holt.* Very dry, only .78 in. of R.—*Compton Bassett.* The first half of the month piercingly cold but dry, the latter half rough and unsettled, with frequent S and R showers, and several sharp frosts.—*Babbacombe.* Very dry, temp. variable, generally mild till the 21st and on the last three days, but very cold from the 22nd to the 27th, with strong E.N.E. winds and gloomy weather. Fine and bright with a high bar. from 6th to 11th.—*Taunton.* Very cold and dry.

VI. *Bristol.* Mean temp. $40^{\circ}6$, about the average; rainfall less than half the average.—*Cheltenham.* Fine and warm till 14th, followed by extremely raw disagreeable weather; temp. then rose rapidly till the 22nd, when cold disagreeable weather with S and wind again set in.

VII. *Coston.* Another cold month, with some periods and days of fine weather; the cold wind of the 22nd to 27th was very trying. Everything very backward, no sign of green on the hedges.—*Hodsock Priory.* A very dry month, especially the first part; what moisture did fall was mostly S. The latter part of the month cold. Vegetation very backward, no signs of green in hedges at end of month.

VIII. *Walton-on-the-Hill.* A very cold month.

X. *Mardale.* Very cold.

XI. *Castle Malgwyn.* Very cold, with much easterly wind.—*Douglas.* Bitterly cold, S on the hills throughout. Not a leaf out in the hedges, and the grass as brown as in December.

XII. *Dumfries.* The first half of the month was humid, with occasional high winds from S.W.; in the latter half white frosts and S showers were frequent, with cold easterly winds. The mean temp. ($37^{\circ}7$) was below the average, and the month generally was ungenial.—*Melrose.* Most unfavourable for out-door work, in consequence of the frost and S. Mean temp. $34^{\circ}9$, 4° below the average.

XVIII. *Loch Broom*. A severe month, disastrous to the farmers.—*Glenfinnan*. Very cold, excepting the wet period of the first few days. The heaviest snowfall of the winter occurred between the 13th and 15th, and was immediately followed by high wind, causing much drift.

XIX. *Watten*. Stormy and cold throughout.

XX. *Tralee*. Remarkably dry and cold.—*Tipperary*. A dry month ; intensely cold during the last week.—*Castle Lough*. Generally cold, with smart frosts at night. The week commencing on the 18th was particularly cold, with easterly winds.—*Kilrush*. Very changeable, but not bad for agricultural work, though unhealthy.—*Miltown Malbay*. The first days were mild, followed by raw, cold and drizzly weather till the 17th ; from that date to the close unexampled for wintry severity.

XXIII. *Newtownards*. Cold and ungenial ; spring unusually late.—*New Barnsley*. Remarkable weather ; some parts of the month spring-like, from 25th to 27th as severe as any part of the winter, but farming operations are well forward.—*Killygarvan*. Stormy, with some very cold winds and frost, but not much R or S. Temp. about 3°·5 below the average.—*Buncrana*. Prevailing winds first part of month S.W., latter part E. & S.E.

APRIL.

I. *Muswell Hill*. Rainfall 0·69 in. above the average of seven years. A very heavy fall of S on the 12th, nearly 5 in.—*Enfield*. Remarkably cold and wintery, vegetation very backward, frost on 11 nights, and on grass on 22.

II. *Abinger*. A month of S and R, with very little sun or warmth.—*Addiscombe*. Exceedingly cold, singularly dull and wet, with uniformly light airs and a humid atmosphere. It was remarkable as being the sixth cold month in succession, and for the almost entire absence of any unseasonably warm days.—*Hythe*. Cold and ungenial.—*Bromley Common*. Showery and almost sunless ; rainfall 1·74 in. above the mean of 16 years. Everything very backward. A plum-tree, which has been my guide for some years, was just two months later than in 1877.—*St. Lawrence*. An ungenial month, with great lack of sunshine and the nights very cold. Rainfall considerably above the average. The flowers of primroses and cowslips most profuse. Vegetation generally about three weeks late. Nightingales more abundant than I ever noticed before.

III. *Addington*. Cold and ungenial; vegetation of all kinds very late.—*Oxford, Magdalen College*. T with H and R.—*Cambridge*. A stormy inclement month. TSS on 15th and 27th. Vegetation very backward. Remarkably severe S storm on the evening and night of 12th.

IV. *Diss*. Much bitter winterly weather throughout the month. Heavy snows remaining on ground in the second week, with sharp winds from N. and E. Vegetation remarkably backward; young cereals nipped and brown. Hardly any spring flowers till after the middle of the month. Bronchitis, influenza, and rheumatic affections very prevalent.

V. *Compton Bassett*. Very cold and ungenial, with frequent night frosts.—*Langton Herring*. Mean temp. $45^{\circ}\cdot 2$, or $2^{\circ}\cdot 8$ below average of seven years.—*Babbacombe*. Cold, wet and winterly, in fact the sixth month of the prolonged winter. Vegetation was very backward, but made rapid progress in the last week. Frost occurred on three nights in the air, and on twenty on the grass. Wind variable, but generally S.W. from 4th to 9th and 25th to 26th, and N.E. from 10th to 15th and 27th to 29th.

VI. *Bristol*. Very cold; mean temp. $42^{\circ}\cdot 6$, fully $4^{\circ}\cdot 5$ below the average. Rainfall about 1 in. above average.—*Sansaw*. Very cold. Vegetation backward.

VII. *Coston*. Another very cold month; frost on 20 nights; S storms at Easter; N.E. winds prevalent at end of month; vegetation very backward.—*Hodsock Priory*. Cold; mean temp. $42^{\circ}\cdot 0$. Rainfall rather above average. The first week warm and fine; then a fortnight of cold, unpleasant weather, with frequent S; and lastly, a week of warm but dull weather, with cold nights. North-easterly winds prevalent.

VIII. *Walton-on-the-Hill*. A very cold month.

IX. *Stanley Vic*. A dreary month; the season is late.

X. *Whorlton*. Very cold, scarcely any flowers appearing.—*Elterwater*. Rainfall below the average; season remarkably backward.—*Easdale*. Weather very dry.—*Mardale*. Very fine dry weather, but E. winds. No grass.—*Shap*. Very dark and cold throughout. Bitter cold E. and N.E. winds and frosts at night.

XI. *Llanfrefcha*. Very cold, with much frost; vegetation very backward.—*Castle Malgwyn*. Cold, with a prevalence of E. and N.E. wind; a little S, but it soon melted.—*Carno*. Very cold.—*Douglas*. Bitterly cold E. and N.E. wind the whole month. S fell on

three days in Douglas, but has been visible on the hills ever since November 12th.

XII. *Carsphairn*. Unusually cold, with very severe frost at night.—*Crichton Inst.* Mean temp. very low and ungenial, with easterly winds, frequent white frosts and S.—*Melrose*. Remarkably cold; mean temp. $38^{\circ}6$; rainfall above the average; wind light, mostly from N.E.

XVIII. *Lochbroom*. Very dry and cold; good for the cultivation of the soil, but disastrous to sheep-farmers and stock-holders, for not a blade of new grass is yet to be seen.—*Glenfinnan*. The driest April for 13 years; wind nearly always easterly, but never high. Temp. low generally, but a good deal of sunshine towards the end. Ground very dry, vegetation very backward.

XIX. *Watten*. Intensely cold easterly winds, such as have not been experienced for years, and frequent frosts at night.

XX. *Tubrid*. Cold, dry and dull; agricultural operations, and vegetation generally, very backward.—*Castle Lough*. Cold up to 20th, with occasional frosts at night; vegetation very backward.—*Kilrush*. This month would have been a good March, but was much too cold for April. Scarcely a sign of vegetation in the open. Colds and influenza prevalent.—*Miltown Malbay*. The month opened harshly with frost and bitter winds, and till the 20th was unexampled for severity; about an inch of S on the 12th and 13th.

XXII. *Kilconnell*. An almost constant easterly wind prevailed during the whole month, a most unusual circumstance, which has acted as a great check on vegetation, so that the appearance of the country is at least one month behind.

XXIII. *New Barnsley*. Very cold, wind E. and N.E. nearly all the month; not much frost, but vegetation very backward.—*Bushmills*. Cold, resembling the end of February or beginning of March, rather than April.—*Killygarvan Glebe*. Pretty fine, no heavy R or high wind, but a good deal of cold wind and occasional frosts at night. Mean temp. 5° below the average.—*Buncrana*. Very fine, though somewhat cold wind, chiefly from the E.

MAY.

I. *Muswell Hill*. Rainfall 1.09 in. above the average of the preceding seven years; number of days on which it fell also large.—*Enfield*. Vegetation remarkably backward, the hawthorn not being in

bloom, and many oak trees hardly in leaf. Frost in air on seven nights, and on grass on sixteen.

II. *Addiscombe*. Most exceptionally and persistently cold, extremely wet and dull, with a rather dry and windy atmosphere. It was remarkable as being the seventh cold month in succession, and for an extraordinarily heavy rainstorm on the 28th.—*Bromley Common*. Cold, dull and showery; vegetation fully a month behind; arrival of the birds of passage unusually late.—*Littlehampton*. Unprecedentedly changeable. Magnificent promise of fruit. Cuckoo and nightingale rarely heard.—*St. Lawrence*. Vegetation about three weeks late. Nights cold for the first ten days.

III. *Addington*. Month generally very cold and backward; trees very late in coming into leaf.—*Cambridge*. Very wet and cold; remarkably cold with S on the 7th; vegetation very backward.

IV. *Diss*. First half cold and cheerless, the latter half warmer and brighter, with vast improvement in the appearance of the young crops; a fair promise for strawberries, apples and pears. Influenza, severe colds, bronchitis, and rheumatism abundant.

V. *Holt*. Rainfall above average, last few days of the month very wet.—*Compton Bassett*. Cold, wet, and very ungenial, specially unfavourable for the grass crop.—*Langton Herring*. The seventh month in succession in which the mean temp. has been below the average, the deficit being $2^{\circ}\cdot3$.—*Babbacombe*. Cold, ungenial, and showery; there were seven nights with frost on grass, and the temp. rose above 60° only on three days. N.E. winds were prevalent till the 10th, and S.W. and N.W. from 11th to 26th. Vegetation very backward till the middle of the month, when it advanced rapidly.

VI. *Bristol*. Very cold and wet; rainfall an inch above the average. Mean temp. $48^{\circ}\cdot5$, $3^{\circ}\cdot5$ below the average.—*Cheltenham*. Dull and unpleasant.

VII. *Coston*. Another cold, wet month. Vegetation made some progress during the latter part, but at the close was still backward.—*Hodsock Priory*. The first fortnight dry with frosty nights, the latter part very wet, with warmer but dull weather. Mean temp. $47^{\circ}\cdot2$, still below the average. Vegetation very backward.

VIII. *Walton-on-the-Hill*. Cold and unsettled.—*Gawthorpe*. A good growing month, with the exception of a cold E. wind for about a week.

X. *Whorlton*. Cold, but with a few warm days.—*Elterwater*. Rainfall below the average; season still very backward.—*Mardale*. Fine,

but cold, with frosts at night.—*Shap.* Very dry, with bitterly cold winds and frost at night.—*Measund.* Early part of month dry and cold, latter part mild with some R.

XI. *Castle Malgwyn.* Very cold throughout, severe frosts at the beginning. Vegetation fully a fortnight late.—*Carno Tybrille.* Very cold and wet.—*Douglas.* Vegetation very backward; on the 31st many trees, even sycamores, quite leafless.

XII. *Carsphairn.* Very cold for May.—*Crichton Inst.* May commenced with frosty mornings, and the month throughout was cold and damp. The mean temp. ($43^{\circ}1$) is very low, and though showers were frequent, the rainfall is below the average. T was heard on two or three occasions, and H fell frequently.—*Melrose.* Cold, dry, and backward. Mean temp. $41^{\circ}9$, 4° below the average. Fruit blossom promises well, but is late.

XVIII. *Lochbroom.* Very fine on the whole, though the air continued rather cold. Crops are rapidly progressing, and grass is becoming abundant.

XIX. *Watten.* Very cold and ungenial throughout, but favourable for forwarding farm work.

XX. *Tralee.* Temperature very low all the month.—*Newcastle W.* Vegetation very backward owing to the low temperature.—*Castle Lough.* Weather generally cold; frost on the grass on more than one occasion; season three or four weeks later than usual.—*Kilrush.* Very harsh; vegetation retarded by frosts and high and cold winds. Influenza very prevalent.—*Miltown Malbay.* The month opened with frost, and the temp. continued very low to the end. Wind generally ranged from N. to E., and occasionally blew strongly for days together. Vegetation never before known to be so backward.

XXIII. *Newtownards.* Unusually late season. Farmers have not been able to sow swedes on account of continuous rain.—*New Barnsley.* Very cold; prevailing wind N. and N.W.; nights frosty; vegetation making little progress; crops all fully three weeks later than last year.—*Killygarvan Glebe.* Cold, with more than average rainfall; strong cold winds and some frost in the early part. Season nearly a month behind the average.

JUNE.

I. *Muswell Hill.* Total rainfall more than double the average for the preceding seven years.

II. *Abinger*. Very little sun ; crops scarcely moving.—*Addiscombe*. Persistently cold, extremely wet, and singularly dull, with a particularly humid and very windy atmosphere. It was remarkable as being the eighth cold month in succession, and for the entire absence of any unseasonably warm days.—*Hythe*. Wet and backward.—*Bromley Common*. Wet and cold. The fact of the thermometer not yet having reached 70° this year is, I should think, unprecedented. No grass cut yet.—*Littlehampton*. Very cold and wet ; strong winds throughout.—*St. Lawrence*. Very wet month ; rainfall 2·66 in. above the average of ten years, 1868-77.—*Southampton, Cadland*. The wettest June since 1860.

III. *Addington*. By far the wettest June we have had for years ; R fell on 24 days, keeping the ground constantly wet.—*Oxford, Magdalen College*. Wet, cold, and cloudy ; R fell on 27 days, and the total was 1·56 in. above the average of 10 years.—*Northampton*. Very wet.—*Cambridge, Merton Villa*. Exceedingly wet ; rainfall greater than in any month since Oct., 1865. The land being saturated, no work could be done on it. Mean temp. only 57°.

IV. *Sheering*. The wettest June in the last 16 years.—*Ipswich*. Very wet and cold. Vegetation very backward ; only a few wheat ears to be found round Ipswich on the 28th.—*Diss*. Very wet and cool for the the time of year. Land very wet and foul with weeds. Barley crops pale and sickly ; wheat looking better ; grass much grown and ready for the scythe, but no possibility of hay-making for want of sun. Garden produce scanty and backward. Many TSS during the last week, with heavy showers, wind, and unsettled weather. Neuralgia, rheumatism, colds, and bronchitis prevalent.

V. *Holt*. Rainfall of month 4·65 in., measured on 25 days. Max. temp. only 69°·5. A boisterous month, with several TSS.—*Compton Bassett*. Very wet, cold, and cloudy ; only four days without R. All the crops are backward, and suffered much from the incessant R.—*Bere Ferrers Rectory*. Exceptionally wet, with frequent high winds and heavy R.—*Babbacombe*. Excessively damp, cold, and gloomy ; more like November than June. The rainfall (7·34 in.) is more than quadruple the average of 15 years, and much greater than that of any other June during that period. Mean temp. (55°·1) was low and equable, and the ther. did not once reach 70°. Strong S.W. winds were prevalent, and gales blew on the 12th, 21st, 27th, and 28th.—*Cleveland*s. Rainfall nearly three times the average.—*Taunton*. The heaviest rainfall in June for 24 years.

VI. *Bristol*. The rainfall was very excessive, and exceeded the average by about $2\frac{1}{2}$ inches.

VII. *Coston Rectory*. Another wet month; rainfall 2·10 in. above the average of six years. Crops very backward in consequence of continued bad weather.—*Hodsock Priory*. Another cold, wet month, the max. shade temp. being below the mean daily max. for June for the previous four years; but temp. tolerably uniform throughout the month, with much dull showery weather.

VIII. *Walton-on-the-Hill*. The coldest June on record; shade temp. reached 70° on only one day.—*Blundellsands, Park Corner*. Very wet; R registered on 21 days.

IX. *Stunley Vic*. R fell on 25 days, and the amount was ·85 in. above the average; mean temp. nearly 4° below the average. Vegetation is fully a month late. Sunshine is greatly needed.

X. *Whorlton*. Cold, wet, and windy.—*Shap*. Cold, dark, and wet.

XI. *Llanfrechfa Grange*. Remarkably wet, grass crop three weeks late.—*Haverfordwest*. The amount of R for this month exceeds by 1·36 in. that of June, 1872, which was the greatest fall measured in June since I commenced recording in 1862.—*Castle Malgwyn*. Hardly any sun, and a remarkable number of rainy days. Fruit and vegetables very much behind; altogether a June to be remembered for wet and for wind.—*Nantgwiltt*. The largest June rainfall since I have kept a gauge (*i.e.*, 1868), but not equal to the fall of June, 1860, when 9·47 in. was registered in this district.—*Carno*. Exceptionally wet and cold.

XII. *Carsphairn*. Wet and cold; no genial summer heat.—*Crichton Inst*. Cold, wet, and windy; R fell on 19 days; mean temp. low, and altogether the month was disagreeable and backward.—*Melrose*. An ungenial month; very little sunshine; mean temp. (49°·5) below the average, and rainfall 2 in. in excess.

XX. *Glenville*. Rainfall more than double the average, not one dry day after the 3rd.—*Tralee*. Unusually wet and very cold, ruinous for corn harvest.—*Tipperary*. Wet, cold, and inclement.—*Castle Lough*. The latter part of the month was cold, with high winds.—*Newcastle West*. Singularly cold and wet.—*Kilrush*. Singularly bad and changeable; very poor hopes as regards the crops.—*Miltown Malbay*. The month opened with white frosts, materially retarding vegetation; on the 7th warm weather set in, and vegetation made extraordinary progress, but this only lasted for about a week, and was followed by broken weather with high winds.

XXII. *Kilconnell*. The wettest month at this time of year that the "oldest native" can remember. Strong S.W. winds prevailed towards the close.—*Ballinasloe*. Very wet, with constant high winds, doing much damage to the potato crop.

XXIII. *Newtownards*. Rainfall almost three times the average. Turnip sowing not completed; and the hawthorn not in bloom till 14th; crops fully a month late.—*New Barnsley*. Month opened very favourably, but after the 7th showers prevailed nearly all the month.—*Knockan*. Cold and wet.—*Killygarvan Glebe*. Wet and cold month, with high wind, but vegetation made rapid progress; season about a fortnight late.

JULY.

I. *Muswell Hill*. Heavy rainfall, making the fourth month in succession with more than the average fall.—*Enfield*. The first three weeks cold and ungenial, and the agricultural prospects are very gloomy; a great quantity of hay still uncut.

II. *Abinger Hall*. Remarkable for the absence of sun, the prevalence of cold winds and the quantity of R; vegetation almost at a standstill.—*Addiscombe*. Extremely cold, singularly wet, and exceptionally dull, with a strangely humid and extraordinarily windy atmosphere. It was remarkable as being the ninth cold and the third extremely wet month in succession.—*Hythe*. Very wet and cold. *Stourmouth*. R. every day from 1st to 23rd inclusive.—*Bromley Common*. Showery and cold, excepting the last few days, when the temp. suddenly rose. Everything extremely backward, much grass remaining uncut at the end of the month. Very few butterflies and not one wasp seen. No TSS.—*Littlehampton*. Very cold and rough the early part of the month, apple and currant trees losing their leaves, and the fruit withering. Potatoe disease first seen on the 24th.—*Southampton, Cadland*. Heaviest fall since 1871.

III. *Addington*. Very unsettled, with much R and at times very cold; hay much damaged; temp. very low.—*Oxford, Magdalen Coll.* Cloudy sky and low mean temperature.—*Northampton*. The early part very wet; the latter part hot and oppressive with occasional TSS. Much meadow hay lost; corn crop in general large and good in quality. Floods in the Nene Valley.—*Cambridge, Merton Villa*. Another month of heavy rains; no hot weather till the last three days; flood on the 22nd.

IV. *Sheering*. The most rainy July (4·21) for the last 16 years, July, 1875 being the nearest to it, when 4·18 in. fell. The total fall for the seven months (January–July) has been 21·55 in., every month except March having been above the average.—*Lowestoft*. Sunless and rainy throughout; wind persistently S.W.—*Diss*. Remarkable for cold and wet; winter clothing quite necessary till the last week. Very extensive floods in Diss and its neighbourhood, which seriously interrupted communications. The hay crop, which was large, was much damaged, but some was secured in good order. Considering the wet, the corn is looking much better than might have been expected, and is but little laid. Weeds are abundant everywhere; garden produce is not abundant, but the strawberries managed to ripen well without the sun. Peas and beans are tolerably plentiful, but potatoes are much diseased. I fear that the young partridges are all drowned. The neighbourhood is singularly healthy, and were it not for a brisk epidemic of measles, the doctors would have nothing to do.—*Sprouston*. Very wet and cold; hay much damaged by the R, but corn is not much knocked about, as the season is very backward.

V. *Pewsey*. Stormy.—*Compton Bassett*. Cold, wet and windy, with very little sunshine until the last week. — *Langton Herring*. Remarkable for low temperature.—*Beaminster*. Cloudy and overcast.—*Babbacombe*. Another cold, wet, cloudy and damp month, with frequent fogs. A short period of fair weather from the 22nd to the 25th was almost the only break in a dreary month, and it enabled the hay harvest, though late, to be secured. W.S.W. winds prevailed generally; the temp. was equable, and only rose above 70° on two days.

VI. *Bristol*. Very cold and wet; mean temp. 57°·1 or 4° below the average; rainfall 1·09 in. above average.—*Cheltenham*. Dull, showery and cold till towards the close, when the weather became beautiful, allowing a good deal of hay to be got in in fine condition by the 31st.

VII. *Coston Rectory*. Another cold, wet month; rainfall greater than that of any July in the past seven years, except July, 1875. Mean temp. lower than that of any July during the same period. Hay harvest only just beginning at the end of the month.—*Hodsock Priory*. Wet, with high winds, and the day temperatures below the mean, the thermometer rising above 70° only on the 28th, 29th and 30th.

VIII. *Walton-on-the-Hill*. Exceedingly cold, wet and unsettled; shade temp. reached 70° on only five days; max. temp. 75°·5.

IX. *Stanley Vicarage*. From the 1st to the 28th the weather was cold, wet and most unfavourable to vegetation. Strawberries have in many cases been unable to set their fruit, and it is highly probable that the flowering of wheat and barley was injured.—*Mickley*. Continual storms throughout the month and scarcely any sunshine.—*Thirendale*. Particularly dull, stormy and cold.

X. *Elterwater*. Temp., like that of June, much below the average. *Mardale*. Very dull, with showers daily ; no hay got in at the end of the month.—*Shap*. Very cold and wet, with high winds, which have done a great deal of harm. Very little hay housed at the end of the month ; corn never before known to be so late in shooting.—*Measand*. Wet and unseasonable.

XI. *Llanfrechfa*. Very wet ; haymaking about three weeks late.—*Castle Malgwyn*. Very wet and sunless, though not a great quantity of R fell.

XII. *Carsphairn*. Only six dry days during the month, a smaller number than in any July during the last 14 years.—*Crichton Inst*. Wet and cloudy, with little sunshine ; occasional high winds, and the month on the whole was breezy ; pressure and temp. both low. Only one TS.—*Melrose*. Cold and wet ; crops very late.

XIV. *Douglas Castle*. Very little sunshine this month.

XVIII. *Lochbroom*. A splendid growing month, but not good for haymaking.—*Glenfinnan*. First week cold, wet and stormy, succeeded by a period of dry, warmish, but not bright weather.

XIX. *Watten*. Cold, cloudy and calm.

XX. *Tralee*. Wet, cold and stormy.—*Castle Lough*. During the first three weeks the temp. was low, and high winds were frequent.—*Newcastle West*. Cold and damp, except a few days at the end of the month, and very little sunshine. Agriculture consequently very backward.—*Kilrush*. Wet, wild and stormy. Hay a very poor crop. Potatoes large but very soft.

XXI. *Kilsallaghan*. Very wet, the country in parts under water, and the crops and hay everywhere very late.

XXII. *Ballinasloe*. Generally dull and overcast, and very cold ; crops and hay late, but not much damaged.

XXIII. *Seaford*. Very cloudy, with only a few days of sunshine.—*Newtownards*. Rainfall very heavy ; hay crop has not been saved in most cases. Grain crops very late, but promising.—*New Barnsley*. Wet, cold, damp, miserable weather, varied occasionally by a few hours of sunshine, just sufficient to warm the air, but not to dry the

ground ; heavy clay land is a perfect bog ; crops are at a standstill and prospects at present very gloomy.—*Bushmills*. Rainfall considerably above the average, and scarcely an hour's sunshine ; the crops are three weeks late.—*Knockan*. Terribly wet.—*Stewartstown*. Rainfall more than double the average.—*Killygarvan*. Wet, cold, and stormy month. Mean temp. 5° below the average.—*Buncrana*. Very wet, cold, and unseasonable, but the crops still look well.

AUGUST.

II. *Abinger Hall*. Remarkably wet and cold, with high winds and very little sun.—*Addiscombe*. Particularly cold, extremely wet, and very dull, with a very humid and exceedingly windy atmosphere. It was remarkable as being the tenth cold, and the fourth extremely wet, month in succession.—*Hythe*. Wet and windy. Harvest just beginning at the close.—*Bromley Common*. Wet and miserable. Hay not all taken up on the 31st, and some fields of corn ready to be cut. Potatoes very bad.—*Littlehampton*. A most lamentable month for farmers. No birds singing, no flies, slugs innumerable, hay not "got up" by the time that harvest is generally finished ; fruit shrivelled or destroyed ; potatoes worse than they have been for 18 years.—*West Brighton*. Wettest August for almost 30 years.—*Southampton, Cadland*. Heaviest fall since 1860.

III. *Addington*. The month was bad for ripening the corn and securing the hay crop ; the meadows have been flooded time after time, and hundreds of tons of hay carried away by the stream, and a great deal of what is left is only fit for the manure heap. Potato crop much diseased, and fruit and vegetables suffering much from the wet and cold.—*Oxford, Magdalen Coll.* Potato crop an entire failure. Floods out as in winter.—*Cambridge, Merton Villa*. A heavy total of rainfall, the greater part being due to the extraordinary fall during the memorable display of L of the 2nd-3rd ; fine weather only in second week and at close of month ; very wet and unsettled from 16th to 28th.

IV. *Diss*. A month of disturbance. Hay harvest not nearly completed at end of month, and much of the crop (which was large) spoiled or washed away. Corn harvest hardly commenced ; barley bad and beaten down ; fruit of all sorts very scanty ; potatoes diseased. The public health, which was singularly good, broke down towards the end of the month.

V. *Holt*. The heaviest rainfall of any month in the year, 5·45 in. fell.—*Compton Bassett*. Cold, squally, and wet, with several heavy TSS, which caused considerable delay in harvest operations. Potato disease everywhere.—*Langton Herring*. Very wet, 1°·6 colder than the average; wheat cutting in this parish not commenced at end of month.—*Babbacombe*. Very wet, damp, foggy, cloudy, and gloomy, most unfavourable for agriculture. The rainfall (5·49 in.) was more than double the average for the month. The five months (April to August) have been remarkably wet, their total rainfall amounting to 22·73 in., with 113 wet days; from March 24th to August 28th there have not been four consecutive dry days at any time. The bar. and temp. in August were low and equable; W.S.W. winds were prevalent, and blew with the force of a gale on the 22nd, and from 25th to 29th. The max. temp. only rose above 70°·0 on one day, the 13th (71°·1), which was the warmest day of the summer. The last two days were fine, enabling the remains of the hay crop to be saved—though in bad condition, and the cutting of barley to be commenced.—*Weston*. The fall in August this year is greater than in any other month that I have registered.

VI. *Bristol, Ashley Down*. Very wet, rainfall 4 in. in excess of the average. The wettest August since 1865.—*Cheltenham*. Month characterized by heavy rainfalls, that on the 16th (2·32 in.) caused a great flood, doing immense damage to the hay, and carrying quantities away. Much hay not even cut at the end of the month; wheat-cutting commenced on 30th.—*Sansaw*. A month of unusually low temp.—*Stockton*. Wheat not cut till 29th, hay still on the ground.

VII. *Coston Rectory*. Another wet month, harvest not begun in this district, even at the end of the month.—*Hodsock Priory*. Mean temp. below the average, but higher than July; rainfall high. No corn cut at the end of the month.

VIII. *Walton-on-the-Hill*. An excessively wet, cold, and unsettled month throughout.

IX. *Wakefield, Stanley Vic.* Temp. of month 3°·9 below the average. The harvest is full six weeks late.

X. *Whorlton*. TS and gales frequent, heavy R in latter part of the month.—*Elterwater*. A very trying time for the haymakers, but from all accounts not nearly so bad as that experienced in the Midland counties and south of England. A good deal of hay not secured at end of month.—*Murdale*. Only two days without R during the whole month.—*Shap*. Wet, cold, windy; not at all like summer weather.—*Measand*. Rainy, with high winds in the latter part.

XI. *Llanfrechfa*. Harvest fully three weeks late ; a good deal of hay well saved in the second week.—*Castle Malgwyn*. Month characterized by absence of sun, and an extraordinary amount of R, causing two high floods.—*Gogerddan*. Very wet ; on four days the fall exceeded 1 in.—*Nantgwillt*. Very wet month, but not so wet as August, 1878, and August, 1860.—*Carno*. Very wet.—*Gurthewin*. Great damage was done by floods, roads, bridges, and viaducts being washed away.

XII. *Carsphairn*. Unusually cold for August.—*Melrose*. The month was very backward, almost no sunshine ; mean temp. 3°·7 below the average ; wind chiefly from W., and moderate in force.

XVIII. *Lochbroom*. Dark, wet, cold, and gloomy ; everything looks cheerless, and crops will be late if they ripen at all.—*Glenfinnan*. General absence of bright sunshine, but by no means wet for August ; very little wind. The latter half of the month marked by dull, close, muggy weather.

XIX. *Watten*. Dull and wet.

XX. *Tipperary*. Wet and cold.—*Castle Lough*. Constant rains, with occasional gales. Although there has been no very excessive rainfall, still the persistency with which it rained from all points of the compass has been most disastrous to farming prospects. No ripening weather, and the corn at the end of the month was still quite green. Potatoes perfectly blighted.—*Kilrush*. Wet, cold, wild, and stormy.—*Miltown Malbay*. The only approach to warm weather we have had this year was at the beginning of this month ; it continued warm and moist up to the 24th, when a TS occurred with nearly 2 in. of R in 24 hours, followed by colder weather with heavy falls of R. The ground, which never dried during the year, could not absorb this great rainfall, and the lowlands were heavily flooded, doing immense damage to hay, corn, and potatoes, and making mire of the bogs, where nearly all the turf for fuel is lying wet. The potato crop is a complete failure, and corn is still green ; the hay is not two-thirds of a crop, and not a third is yet cut. On the whole we have all the portents of a famine year for man and beast. The end of the month very unsettled, with H showers, T and L.

XXIII. *Seaforde*. Some very heavy showers, and a great deal of wind.—*Newtownards*. Only one dry day from 16th to 30th, inclusive. During May, June, July, and August 20·21 in. of R fell, while in the corresponding period of 1878 only 9·97 in. was registered. Corn still quite green, except in a few fields. Early potatoes almost all

rotten, late potatoes not larger than marbles, and uneatable.—*Belfast, New Barnsley.* Potato crop suffering very much; turnip crop nil; grain looking well, but cannot ripen.—*Killygarvan Glebe.* A much better month than June or July, although the temp. was very low; rainfall below the average, but much high wind, especially in the last week.

SEPTEMBER.

I. *Muswell Hill.* The rainfall exceeded the average of the last seven years by about an inch. The dry weather from August 30th to September 6th, both inclusive, gave eight consecutive days without R, a longer period than has occurred since July 23rd, 1878.

II. *Abinger Hall.* There have been longer intervals of fine weather this month than last, which have enabled some of the fruit crops to ripen and the harvest to advance. A large quantity of corn still out and uncut.—*Addiscombe.* Cold, but equable in temperature, wet and dull, with light airs and a very humid atmosphere. It was remarkable as being the eleventh cold and the sixth wet month in succession, for its frequent fogs and for an exceptionally heavy fall of R on the 23rd.—*Hythe.* Early part very fine, latter part wet, with a few fine days. Much corn standing in fields at end of month, some uncut. Hops all but a failure.—*Littlehampton.* Fine and wet days alternately. Root crops wretched; the tops of carrots, parsnips and beets look well, but the roots are very small; potatoes never so bad.—*Southampton, Cadland.* Rainfall 1·03 in. above the average of 19 years.

III. *Addington.* Moderately fine, but not sufficiently so to counterbalance the bad effects of previous ungenial months. Out-door fruits ripened very badly, plums numerous but without flavour; the same may be said of peaches; and pears, though plentiful, are so small that they are scarcely likely to be of use. A considerable quantity of grain still in the fields; crops in many instances very poor.—*Stonor Park.* A very bad month for harvest operations; not much more than half the crop cut, and only about one-third carried. Fruit trees of all kinds look very bad and unhealthy, and yield a very thin crop of inferior quality; forest trees look very green and healthy.—*Merton Villa.* Heavy R fell at intervals during month, and with heavy dews and cloudy days greatly hindered harvest work.

IV. *Diss.* During the first half of the month the weather, although

by no means warm, was fair and dry, and considerable progress was made with the harvest, but much, both of wheat and barley, was soft in the grain and unfit for cutting. In the latter half of the month it became much mildewed, and the heavy rains prevented further operations, so that at the end of the month a great quantity of corn remained uncut, while the quality of that which was secured was very inferior. Garden produce scanty, and potatoes scarce. Water was still deep on the lower lands at the end of the month, and quantities of spoiled hay was on or below it. Bronchial affections and rheumatism rather prevalent, also measles, but on the whole the month was healthy.

V. *Compton Bassett*. During the first week fine and dry; afterwards dull, gloomy, and showery.—*Babbacombe*. The only month with any continuance of fair weather since March. Rainfall slightly below the average, and fell mostly during the night. The first and third weeks were dry; the second and fourth wet. Temp. generally low. Frosts occurred on the grass on the first three nights, being the earliest I have ever observed.

VI. *Cheltenham*. Damp, with occasional periods of very beautiful autumnal weather. First peach ripe on south wall on 26th; first nectarine on the 29th, more than a month later than last year.

VII. *Coston Rectory*. Another wet month, and the harvest prospects are very dull.—*Hodsock Priory*. First week fine and warm, then showery weather, followed by dry weather with heavy dews and misty mornings; last ten days showery. Temp. perhaps less below average than the rest of this summer. Harvest did not begin till about 15th, most cut by end of month, but very little carried.

VIII. *Wolton-on-the-Hill*. Very unsettled, except from the 13th to 20th.

X. *Whorlton*. Very fine generally, wind ranging between S.W. and N.W.—*Shap*. The land is in a miserably cold and wet condition. Harvest began about the 20th; crops in general very heavy, but corn not very ripe.

XI. *Llanfrehfa Grange*. Cold and wet; very bad weather for harvest; very little wheat housed by the end of the month, and some not ripe.—*Castle Malgwyn*. A little more sun than in the preceding months, but not so bright as the average.

XII. *Crichton Institution*. Cold and wet; rainfall much above the average; mean temp. low; winds generally light from S. to S.W.; frost occurred on three mornings.—*Melrose, Abbey Gate*. The finest

month this year ; mean temp. about the average ; rainfall scarcely half the average. Harvest, which is usually completed this month, not half finished.

XVIII. *Loch Broom*. A miserable month for hay-making and harvesting. Scarcely a stack to be seen by the end of the month, and the great bulk unripe and uncut. Potatoes good and sound.—*Loch Maddy*. A particularly wet month.

XIX. *Watten*. The most satisfactory month of the year. Generally fine, with an increase of sunshine ; dry and free from fogs.

XX. *Glenville*. Good weather on the whole for a late harvest after the 11th of the month.—*Henry Street, Tipperary*. Only a few fine days.—*Kilrush*. Very changeable and severe month, particularly for the agricultural classes ; accounts from the surrounding country very bad.—*Miltown Malbay*. Only four days of sunshine during the month fit for harvesting. The month was remarkable for absence of sun, and for almost daily rainfall, damaging all farm produce.

XXI. *Trim*. Heavy flood at the beginning of the month, which swamped all the low lands.—*Kilconnell*. Very unsettled the whole month ; from the 12th to the 19th was fine, but almost sunless ; during the rest of the month R and storms prevailed.—*Ballinasloe*. Floods very high at the beginning of the month, 2·12 in. of R having fallen in the four days 5th to 8th.—*Dowra*. The continuous and heavy rainfall on the 6th, 7th and 8th raised the highest floods seen in this locality since the year 1860.

XXIII. *Newtownards*. Much grain still uncut at end of month ; very little gathered. Potatoes almost nil ; turnips very small.—*Killygarvan Glebe*. Rainfall, and number of days on which it fell, above the average ; some high wind and the temp. low.—*Buncrana*. Strong wind prevailed during the greater part of the month, increasing on the 7th and 23rd to violent gales from S.E. to S.W.

OCTOBER.

I. *Muswell Hill*. A dry month, following six with rainfalls considerably above the average.

II. *Abinger*. Altogether a good month ; arrears of work are being brought up.—*Addiscombe*. Cold, most exceptionally dry, and dull, with a seasonably windy, and humid atmosphere. It was remarkable as being the twelfth cold month in succession, for the unusual prevalence of north-easterly winds, and for frequent fogs.—*Hythe*. Very

fine.—*Harbledown*. Finest month in the year ; wind generally N.E. or N.W. ; thick fogs at the end of the month.—*Bromley Common*. Very dry month, but with little sun ; foggy at times.—*Forest Row*. Though little R fell, the weather was frequently misty or damp.—*St. Lawrence*. Fine and dry, except for one week, beginning on the 18th. Rainfall 2.65 in. below the average of 10 years ; great scarcity of sun.

III. *Addington*. The least rainfall in October during the last nine years ; great want of sunshine, many days being foggy ; although the rainfall was small, the land dried very slowly, and was difficult to work.—*Stonor Park*. A very fine month for harvest work ; two nights with frost severe enough to injure tender plants.—*Northampton*. The smallest rainfall in October since 1866, when I commenced observing.

IV. *Sheering Rectory*. The driest October in the last 16 years, and the driest month since May, 1876.—*Ipswich, Bishop's Hill*. Although not the brightest, it has been the driest October I remember.—*Rendlesham Hall*. A fine, dry month.—*Diss*. Fine, but cold. Harvest was not completed till the third week, and even at the end of the month beans were standing in the fields. The wheat crop in this neighbourhood has been a failure, but the barley in places better than was expected. The roots are small. Garden produce is scanty, and potatoes are generally bad. Game is scarce, and partridges are few and far between. Public health is excellent, as indeed it has been during the whole of this wet, cold year.

V. *Compton Bassett*. Fine and open for the season ; temp. rather low. The first frost of the autumn occurred on the 16th, when the temp. fell to 26°, which destroyed tender plants.—*Babbacombe*. Very dry ; in the 14 days ending 16th, no R fell, and this was the longest dry period since one of 25 days ending October 9th, 1877. Temp. slightly below the average, making the twelfth consecutive cold month. Fine bright weather prevailed in the first week, but afterwards it was generally dull, gloomy and misty. Westerly winds, with rather low and unsteady bar., prevailed on 1st and 2nd, and from 17th to 25th. E.N.E. winds, with high steady bar., from 5th to 16th, and after 26th, being strong in the latter period.

VI. *Cheltenham*. A pleasant month on the whole, but a few days foggy. By the end of the month elms and oaks alone kept their foliage, all other trees being bare or very much thinned.—*Sansaw Hall*. A pleasant, generally bright, and warm month, many most beautiful and warm days.

VII. *Coston Rectory*. A great improvement in the weather ; rainfall less than in any October since 1873. The cold, wet nights somewhat hindered the harvest, but the rainfall being small, and the winds drying, there was very little left out at the end of the month.—*Hodsock Priory*. The driest month since May, 1876, except March, 1878. Temp. rather low. Harvest completed about 20th.

VIII. *Walton-on-the-Hill*. By far the driest October on record.

X. *Whorlton*. Very fine and warm generally.—*Easdale*. Very fine weather.—*Mardale*. Fine and dry.—*Shap*. Dry, but for the most part cloudy, dark and cold ; some hard frosts at night.—*Measand*. Very fine and mild.

XI. *Llanfrechfa*. Remarkably small rainfall.—*Castle Malgwyn*. Fine throughout, rainfall below the average.—*Nantgwillt*. By far the driest October since I have kept a gauge.

XII. *Crichton Inst.* A pleasant month, with a low rainfall ; winds generally light.—*Melrose*. Remarkably fine ; rainfall only about half the average. Mean temp. (42°) slightly below the average. Wind moderate, chiefly from the W. Farmers secured their corn crops before the end of the month, about a month late ; potatoes lifted in excellent condition.

XVI. *Inver Braan*. The most brilliant and lovely October I remember to have experienced in Scotland. The crop in this neighbourhood has proved a fair one ; the amount of straw unusually great, but in the higher valleys the grain has not ripened well.

XVII. *Tomintoul*. Harvest mostly in stook at end of month.

XVIII. *Loch Broom*. A month of the most varied weather, but on the whole bad for farming.

XIX. *Watten*. Good harvest weather during the first half of the month, both dry and mild, then a week of wet followed by a week of very dull weather.

XX. *Glenville*. A choice month.—*Tipperary*. Fine.—*Castle Lough*. Corn cutting commenced in this locality at the beginning of the month. Two or three sharp frosts occurred at the latter part of the month. Spanish chesnuts, walnuts, and in many instances even acorns, merely formed and dropped off the trees.—*Newcastle West*. Very fine.—*Kilrush*. A very good month on the whole ; of great service to farmers. Fairly healthy, but colds prevalent.—*Miltown Malbay*. After the 3rd, a fortnight of the finest weather we have had this year occurred, which gave farmers the opportunity of partially saving and storing the crops, which otherwise would have been lost.

From the 16th to the 27th, very dirty rotting weather prevailed. On the whole, October was the mildest, sunniest, and best month of the year.

XXIII. *Newtownards*. Corn all gathered in this district by the end of the month.—*Seaforde*. Heavy fog from 5th to 8th.—*New Barnsley*. Early part of month fine and dry, with dense fogs from 6th to 9th; unsettled and stormy from 13th to 23rd; remainder of month fine Autumn weather. The land was drier at the end of the month than it had been since the end of April. Potato crop a failure; a great deal of corn not got in by end of month.—*Killygarvan Glebe*. A pretty fine month, but rather too calm for farmers, only one storm, and rainfall two inches below the average; temp. about 1°·5 below the average; fog from 6th to 8th.—*Buncrana*. Altogether, the month was unusually fine, and most advantageous for harvest operations, which were completed by the end of the month.

NOVEMBER.

I. *Muswell Hill*. A very small rainfall. On the first 19 days of the month only ·06 in. fell; so dry a period has not occurred since July, 1878. 5 in. of S on ground on 21st.—*Enfield*. Frost in air on 17 nights, and on grass on 25; S on nine days. The weather was mild during the first 12 days, and from the 22nd to the end severe frost prevailed.

II. *Abinger Hall*. The month, up to the 20th, was very genial and dry, allowing the arrears of work to be made up, but from that date to the end the weather was truly arctic, and all out-door labour at a standstill.—*Addiscombe*. Very cold, singularly dry, and rather bright, with a very calm, and dry atmosphere. It was remarkable as being the thirteenth cold, and the second very dry month in succession; for an exceptionally heavy fall of S, for the season, in one day; and for the very low temperature registered during the early morning hours of another.—*Hythe*. Dry and wintry. Temperature fell below freezing on 14 nights.—*Bromley Common*. Winds north-easterly. Severe frosts in the latter part. Mean temp. 37°·6, or 2°·9 below the 20 years' average. Frost on 18 nights.—*Littlehampton*. Cold and dry, well suited for garden work and farming, but on the hills too dry to sow seed. Forest trees retained their leaves at the end of the month, and fruit was still hanging unripe. Frost on 19 days.—*East Grinstead*. Only ·02 in. of R, the rest of the total (1·64 in.) obtained

from melted S.—*St. Lawrence*. Remarkably dry and cold month. The smallest amount of R ever recorded in November; the 18th was very warm, the max. temp. being as high as $57^{\circ}\cdot 1$, and the min. 47° , but on the 20th it again turned cold, and continued so.—*Southampton, Cadland*. Lowest fall since 1860.

III. *Addington*. One of the coldest and driest Novembers we have had for years.—*Stonor Park*. Very mild till 10th, when it became much colder. Wind N. till 10th, then N.W., and stronger.—*Cambridge, Merton Villa*. Another fine, dry month; weather most favourable for getting in the seed wheat. A little S during the fourth week. Frosty nights prevailed in the latter half of the month.

IV. *Sheering*. The driest month since March, 1874.—*Ipswich, Bishop's Hill*. The dry weather of October continued up to the 20th, and was followed by S and sleet, in numerous small falls.—*Rendlesham*. Wind principally N.E. and N. Some storms of S and sleet at the end of the month.—*Diss*. A month of severe winter weather. Between the 3rd and 11th field operations were practicable, but after that date the land was either too wet or frozen, so that the sowing of wheat was impossible. Rheumatism and bronchial affections prevalent.

V. *Holt*. A very dry month, with a rainfall of only 0.42 in.—*Compton Bassett*. Dry and cold, and very little R or S falling; outdoor work went on prosperously.—*Langton Herring*. Very dry; mean temp. $5^{\circ}\cdot 3$ below the average of the last seven years.—*Bere Ferrer's Rectory*. Exceptionally fine.—*Babbacombe*. Extremely dry; the rainfall being only one-seventeenth of the average. Temperature low, but variable; mild weather prevailed from 7th to 10th, and on 18th and 19th, but it was very cold on the 14th, and after the 20th. A great fall of temperature occurred from the 18th to 20th, the shade max. falling from $59^{\circ}\cdot 8$ on the 18th to $38^{\circ}\cdot 9$ on the 20th. Slight S on five days, but not enough to cover the ground. Fine bright, cold weather from the 12th to the 16th, and on 22nd and 23rd. Bar. very high; prevailing winds N.E.—*Taunton*. The finest November I remember, and October being almost equally fine, the change was an especial blessing to farmers.

VI. *Cheltenham*. Generally dry; temperature low during latter part of month.—*Sansaw Hall*. One of the finest and most enjoyable Novembers I have ever experienced.—*Coundon*. The last field of wheat in this parish was cut and carried between October 26th and November 2nd. Golden drop, plums, damsons and pears on trees and unripe on the 15th, after every leaf had fallen.

VII. *Coston Rectory*. Rainfall much below the average of past six years; bar. very high nearly the whole month. From the 1st to the 19th very fine; the 17th and 18th especially mild. On the morning of the 20th S began to fall, and did not entirely disappear during the rest of the month.—*Hodsock Priory*. The first half dry and mild, the latter part showery and cold, with frequent and severe frosts. Pressure high throughout; northerly winds preponderant; mean temp 39°·5, being 1°·5 higher than November, 1878, whereas each of the preceding twelve months had been colder than the corresponding months of the previous year.

VIII. *Walton-on-the-Hill*. By far the driest November on record.

IX. *Wakefield, Stanley Vic*. Weather perfect for agricultural purposes, and the seed got in with the greatest convenience.

X. *Whorlton*. Generally cold; damp about 13th, fine and warm on 18th, followed by cold and S till end of month.—*Mardale*. Very dry.—*Shap*. Cold and windy, with small rainfall; all the rivers frozen.—*Measand*. Dry and frosty.

XI. *Llanfrechfa Grange*. Somewhat cold, with an unusually small amount of R.—*Castle Malgwyn*. Very fine; rainfall below the average.—*Nantgwiltt*. Very dry, though there was a considerable amount of S, but it did not lay at any time.—*Carno*. Very cold and severe.—*Douglas*. A very beautiful month, with many days of almost cloudless sunshine; remarkably free from fogs and gales (generally so constant here in November); barely a frost (except on grass) and no S; good roses, carnations, calceolarias, gladioli, phlox *Drummondii*, and a pink double thorn in flower at the end of the month.

XII. *Chrichton Institution*. Rainfall small and the month generally dry and cold; more than half the nights of the month were frosty, and the cold of the last three or four days was of great severity.—*Melrose Abbey Gate*.—Beginning of month fine; S and sleet showers in latter part; mean temp. about the average; rainfall considerably below, winds moderate.

XVIII. *Loch Broom*. A fine open winter month until the last four or five days, when S and frost prevailed.—*Glenfinnan*. On the whole very fine; early part and till the 20th very mild; some days exceptionally so; afterwards calm, with temp. ranging about the freezing point; last two or three days sharp frost.

XIX. *Watten*. First week stormy; remainder on the whole mild, but changeable.

XX. *Glenville*. The driest November I have ever seen, and half

the total quantity fell on one day.—*Tipperary, Henry Street.* Very dry.—*Kilrush.* Very dry, and on the whole very fine and cold ; very trying to the poor and aged, owing to the badness and scarcity of fuel.—*Miltown Malbay.* Less R fell this month than in any other month of the past four years. Very mild, calm weather up to the 18th ; thence to the end dry, cold and frosty ; a light fall of S on the night of the 30th.

XXII. *Kilconnell.* Extraordinarily dry.—*Dowra.* A month of delightful weather.

XXIII. *Newtownards.* Weather unusually fine ; very cold at the end of the month.—*New Barnsley.* The finest month of the year ; land getting quite dry, scarcely any fogs ; good weather for farming.—*Knockan.* Fine and dry.—*Killygarvan Glebe.* A fine month ; not much R and only one gale.

DECEMBER.

I. *Uxbridge, Harefield.* There was a thick fog day and night from the 14th to the 28th.—*Muswell Hill.* Rainfall little more than one-third of the average.—*Enfield.* Frost on 27 days in air, on 30 days on grass. The min. on the 7th ($7^{\circ}9$) was the lowest reading since Jan. 3rd, 1867. Fogs were prevalent from 15th to 27th, that on the 25th was remarkably dense, and froze on the trees to the thickness of $\frac{3}{4}$ inch.

II. *Abinger.* Remarkable for its extremely low temp, the ther. twice registering 5° .—*Addiscombe.* Most exceptionally and persistently cold, singularly dry, and rather dull, with a somewhat dry and exceedingly calm atmosphere. It was remarkable as being the 14th cold and the third very dry month in succession, for the severe cold of the first seven days, the extremely low temperature registered on the surface of the S on the 2nd, the high readings of the bar. on the 13th and 22nd, the very dense fogs of the 22nd and 25th, the sudden change of weather that took place when the frost broke up on the 27th, and for a short but violent TS on the 30th.—*Hythe.* A severe wintry month, only four nights with the min. temp. above 32° . Water in the springs of the lower greensand in this neighbourhood very low at the end of the month, due to the deficient rainfall of the last three months of the year.—*Bromley.* Dense fogs, calm and a remarkably high bar. have distinguished this month, as much as its severity and the TS on the 30th. Mean atmospheric pressure

higher than in any other month of the last 30 years. Temp. of month $9^{\circ}1$ below the mean of 20 years.—*Littlehampton*. The month began with hard frost and fogs, so that meadows, &c., morning after morning had the appearance of being covered with S. Vegetables seemed all killed by the frost, but the ground being dry they recovered in the warmer weather. Few flocks of wild fowl, and an apparent scarcity of small birds.—*St. Lawrence*. Very fine, with remarkably high bar. from 6th to 29th.—*Alresford, Arle Bury*. Much S, and absence of fog during the month.

III. *Addington*. Dry and very cold. the most intense frost occurring on the morning of the 7th, when the temp. fell to 5° . Vegetables suffered very much.—*Cambridge, Merton Villa*. Much severely cold weather; with one exception, frost was registered nightly till the 27th. Scarcely any S or R, with the exception of the S fall on the 5th.

IV. *Sheering*. Heavy fogs till the 27th, when the frost gave way.—*Ipswich, Bishop's Hill*. Another very dry month, with some S and much fog.—*Diss*. A month of severe and nearly unbroken winter weather. Ice of great thickness, and plenty of skating; on the 13th, 14th, and 15th there was a slight thaw, but not enough to entirely interrupt the sport. The lowest temp. registered in my garden was 9° on the 6th. During some of the fogs which occurred in the third week the height of the bar. was remarkable; at 9 a.m. on the 22nd it stood at $30\cdot75$ (corrected). Sickness on the increase. Bronchitis, rheumatism, and bilious affections being very plentiful.—*East Dereham*. Frost unusually severe.

V. *Alderbury*. On 25 nights the temp. fell to or below 32° .—*Holt*. A very cold month, with scarcely any R till towards the end of it; mean temp. $32^{\circ}7$. Fourteen days more or less foggy.—*Compton Bassett*. Remarkably dry, but intensely cold up to the 26th, the winds being polar, and the frosts severe. The last five days were showery and squally.—*Babbacombe*. Dry and very cold; the 14th consecutive cold month, but the temp. was $0^{\circ}9$ higher than that of Dec., 1878. A heavy easterly gale blew on the 24th, and was followed by intense frost; N. or E. winds prevailed till the 26th, but were interrupted by S.W. winds on the 5th, 7th, 9th, 10th, 14th, 21st and 24th, causing much variability of temp. Mild wet weather and S.W. gales occurred on the last five days; bar. remarkably high most of the month, the max. reading being $30\cdot802$ in. on the 22nd, the highest I ever observed.—*Taunton*. During the whole 24 years

for which I have rainfall records, there have only been four instances of the fall in three consecutive months being smaller than that of Oct., Nov., and Dec. this year, and those instances all occurred in summer.

VI. *Cheltenham*. A month remarkable for its small rainfall, and the wonderful calmness of the atmosphere; on 19 days no breath of air was perceptible. Ice quite firm on 1st, and continued so with slight interruptions till the 27th, when a permanent thaw set in. Close of year remarkably mild and damp.—*Coundon*. Exceedingly high barometer during the whole month.

VII. *Coston Rectory*. Very cold; mean temp. 28° ; bar. very high. Nearly all the laurels injured, and probably killed, by the severe frost.—*Bucknall*. Mean temp. of month $29^{\circ}7$.—*Partney*. Very cold and gloomy, with much mist and fog.—*Hodsock Priory*. The first fortnight intensely cold, succeeded by dry weather, with temp. a few degrees above freezing point; a rapid thaw on the night of 27th; and the last few days warm, with S.W. gales. Very little R during month except on last two days; mean temp. $30\cdot9$. Evergreens suffered much from frost, especially laurels.

VIII. *Walton-on-the-Hill*. Very cold up to the 27th, mild afterwards.

X. *Whorlton*. Very cold at the commencement, fine and warm from 25th, high wind towards the close.—*Elterwater*. Very dry until the 27th; skating began on the lakes on Nov. 29th, and continued, with little intermission, through December.—*Shap*. During the early part of the month hard frost prevailed, and all the rivers were covered with ice. The five last days were almost one continuous storm of wind and R, filling the rivers, and in some places causing floods.—*Measand*. Weather during beginning and middle of month dry and frosty, latter part wet with very high winds.

XI. *Castle Malgwyn*. Frost very severe, rainfall rather below the average.—*Douglas, I. of Man*. Violent S.W. gale on last five days, with much R, squalls sometimes terrific.

XII. *Crichton*. The cold of December was long continued and exceptionally severe, the mean temp. being only a little above freezing point. The winds were moderate until the 28th, when there were a succession of gales, accompanied by heavy rains till the end of the month. Little S fell, and during the frost the readings of the bar. were high.—*Melrose*. The beginning of the month was extremely cold, with S. There was a good deal of fog about the middle, and severe gales with heavy R towards the end. Mean temp. $27^{\circ}6$, or

4°·3 below the average, and the extreme min., —5° on the 4th, is the lowest temp. recorded in the last nine years.

XVII. *Cluny Castle Gardens*. Very frosty for the first two weeks, and severe gales at the latter end of the month, especially that of the 28th.

XVIII. *Lochbroom*. Very stormy, cold, and variable, the last five days being particularly stormy.—*Glennfinnan*. Hard frost with some S during the first half of the month, which was otherwise fine, bright, and calm. For the last ten days the temp. was much higher.—*Ariemore*. Severe frost at beginning of month.

XIX. *Watten*. Much S, with intense frosts, at beginning of month, fine in middle, and stormy at close.

XX. *Cork, Blackrock*. Mean temp. 38°·4, 6°·6 higher than that of December, 1878; frost on 16 nights; lowest temp. recorded 17°.—*Glennville*. A most unusual continuance of dry weather in the early part of the month. From Sept. 26th to Dec. 19th (12 weeks) less than 2 inches of R fell, so that the people (previously in despair about their fuel) were able to *save* turf at a time when such an event was quite unprecedented.—*Tipperary*. An intense frost (twice interrupted by slight thaws) set in at the beginning of the month, and lasted till the 20th, and the weather during that period was fine.—*Castle Lough*. Some very cold days at the beginning of the month, warm, wet and stormy at the close.—*Newcastle West*. Very fine and mild from the 4th to the 25th; cold from the 1st to the 3rd, and tempestuous from the 26th to the 31st.—*Kilrush*. A fine, dry, frosty month, but very trying to the poor.—*Miltown Malbay*. For the two first days the frost was intense, the ice being six inches thick; on the 3rd and 4th about six inches S fell, followed by a thaw with light R from N.W. Thence to the 27th very enjoyable weather, frost and thaw alternating. On the 10th a shower of meteors continued falling in a N.W. direction for some hours. Weather broke on 27th, heavy R falling for six hours; 28th, 29th, 30th very stormy, with R, H and L, the wind being piercingly cold. Very dry month up to 27th, good for ploughing.

XXII. *Kilconnell*. First part of month frosty, last few days very stormy, with H.—*Carrick-on-Shannon*. Frost from 1st to 13th, and 15th to 21st.—*Dowra*. Frost from 1st to 19th; no ice to bear after 20th. Very stormy from 27th to end.

XXIII. *Seaforde*. Very stormy from 27th.—*Newtownards*. Intense frost from 1st to 12th. R and high wind from 27th to 31st.—*New*

Barnsley. Very fine till the 20th, from 20th to 26th changeable, from 27th to end very stormy, with showers.—*Bushmills.* Very severe frost during the first three weeks, the last week rainy.—*Allan Rock.* From 1st to 9th hard frost, with the exception of slight thaw on the 5th; remainder of month only occasionally frosty.—*Stewartstown.* Rainfall below the average.—*Killgarvan Glebe.* Very hard frost the first half of month, then fine till Christmas, afterwards very high wind with R. Rainfall more than 2 in. below average.—*Buncrana.* Very fine and frosty until 28th, which day commenced with a strong gale from S, increasing in violence and veering to S.W. and W., until it reached the climax at from 4 to 6 p.m., when it moderated, but the wind continued strong to the end of the month.

OBSERVERS' NOTES ON THE YEAR 1879.

ENGLAND.

DIVISION I.—MIDDLESEX.

ISLEWORTH.—A year of unusual amount of bad and inclement weather, with absence of sunshine, prevalence of fog, low temperature, and, for the first three quarters, low barometer. In January frost, S, dull and cold weather prevailed. February, much the same weather, with excess of R. In March cold and inclement weather continuing, with some extremes of temperature; spring very backward. April and May, excess of R, with TSS about; the last 10 days of May more seasonable. During the next three months great excess of R, with TSS and unsettled weather. In September the rain abated, but the weather was unusually dull and hazy. In October the weather generally improved, but variable and cold winds prevailed. In November and December low temperature, severe winter weather but dry, and high barometer. A year of culminating disaster to agriculture and garden crops, of luxuriant growth in fruit trees, but of weak and unripened wood. A year of two winters and no spring or summer.

HANWORTH.—Extraordinary year for R and cloud; few things ripened; apples and pears about one fourth of an ordinary crop, many vegetables, such as tomatoes and vegetable marrows, would not ripen at all; potatoes nearly all rotted; throughout the summer, air very damp. Great floods in valley of the Thames; hay inferior and difficult to save.

HAMPSTEAD, ROSSLYN HOUSE.—Fine spring, very wet summer and autumn till middle of September, very little sunshine during the year, and no fruit ripened to perfection; no continued summer weather.

UXBRIDGE, HAREFIELD.—Year remarkable for the great absence of sunshine; there were only 92 days on which the sun shone for more than two hours. There was a very marked absence of wind

from the middle of September till the last three days of December. The average temperature of every month during the year was below the monthly average of 10 previous years, and the mean temperature of the year was $4^{\circ}7$ below the average of 10 years.

MUSWELL HILL.—The rainfall during the year reached the large total of 34·36 in., which is 4·94 in. above the average of the preceding seven years; R was recorded on 204 days, which is an unusually large number.

PINNER HILL.—Cold, wet summer; very little sunshine.

ENFIELD.—The first nine months were wet and very ungenial, the last three very dry. The year, on the whole, was very cold, with a remarkable absence of sunshine; rainfall 2·39 in. above the average of previous five years.

DIVISION II.—SOUTH EASTERN COUNTIES.

GODALMING, FERNSIDE, WITLEY. — Less R fell in March, October, and December than we have ever had before in those months, and more in June than has been the case since a record has been kept here.

ABINGER HALL.—The year has been wet and comparatively sunless, and, added to a severe winter, has told very much upon all kinds of vegetation, and damaged the prospects for next year.

DORKING, HORSHAM ROAD. — Rainfall not so much above the average as the wet summer led one to expect.

TANFIELD LODGE, CROYDON.—The year 1879 was very remarkable for the extreme variations throughout it, as may be seen from the following facts. March had the smallest rainfall for 20 years, and so also did October; the third quarter of the year had the highest record during 20 years, and the last quarter the lowest record. The first eight and also the first nine months gave the highest record during the same period; in the 28 days of February there were the same number of days on which $\cdot 01$ or more fell, viz., 22 as in the 63 days of the last three months of the year.*

CROYDON, ADDISCOMBE.—Highest observed barometer 30·813 in., December 22nd; lowest 28·864 in., February 10th; mean at 9 a.m. 29·957 in. Temperature (Stevenson screen), highest $77^{\circ}4$, July 30th; lowest $13^{\circ}6$, December 7th; mean (max. and min.) $46^{\circ}3$.

* The rainfall in the last quarter was exceeded by that of six separate months out of the year, viz., by February, May, June, July, August and September.

mean humidity at 9 a.m. 83; lowest at 9 a.m. 52, January 10th. Greatest fall of R in 24 hours 1·55 in., May 28th; number of rainy days 197, number of days on which S fell and was entered in rainfall columns, 38.

BENENDEN.—Great want of sun even in dry periods. A good deal of hay well secured at the end of July. Harvest, especially pea crop, spoilt by wet in August. Ground very dry in November until 20th.

TENTERDEN, SUMMERHILL.—Very cold, not one warm week; S fell in eight months; vegetation much retarded by cold. Insects numerous, and small birds scarce.

TENTERDEN.—More S than usual; remarkable absence of storms, May 28th, August 21st, and September 7th being the only ones of importance. Very wet February, April, May, June and August also far above the average. Nearly four weeks without R worth noting from July 22nd to August 15th. October, November and December all very dry; only one day in each month on which the fall exceeded ·25 in. Much dew and fog.

HYTHE.—Springs very low at the end of the year, due to the deficiency of rainfall in the last three months.

SELLING, HAREFIELD.—Corn crops, hay, and wall-fruit all very bad.

SELLING, GOSMERE.—A very disastrous summer and early autumn; latter part of the autumn very dry; frost very severe in December; the peculiarity of the year being the great absence of sunshine.

CANTERBURY, BRIDGE STREET.—Cloudy and sunless in a remarkable degree, with a low mean temperature; vegetation weak, fruits small, and deficient in flavour.

RAMSGATE, THE VALE.—The rainfall of the year about the average, the summer months unusually wet, but the three last months of the year remarkably dry; potatoe crop spoiled, but grass land extraordinarily productive.

BROMLEY COMMON.—A wet, sunless year, but the last three months unusually dry, with a remarkably high barometer. Dense fogs, and calm in December till the last week, when there were gales with H and T. S on the ground from November 20th to December 27th.

ERITH, CROSSNESS.—The first quarter of the year the rainfall was slightly above the average both in amount and frequency; during the second and third quarter it was nearly double the average, but the fourth quarter was very dry, being less than one third the average.

LITTLEHAMPTON. — Wretchedly wet and gloomy. Disease in potatoes worse than ever known by me. Fruit, flowers and vegetables all far below average. Nothing ripened; frost earlier and longer continued than I have before remarked. Barometer very high. Health of district remarkably good.

RUSTINGTON.—The wettest year on record.

WORTHING.—The fall for the year is 4·44 in. above the average of the previous 10 years.

MIDHURST LYNCH.—The South Downs were clad with S on March 1st, and also on Good Friday and Easter Day; and S fell on November 20th and 21st to a depth of nearly 12 in., and remained on the ground nearly a month; rainfall in the six months commencing April, 30·48 in.

FERNHURST.—Frost continued, with short intervals of thaw, from 20th November to 24th December.

WEST BRIGHTON.—Very wet summer. Last three months of the year very dry. No R from October 25th till November 19th inclusive, with the exception of ·01 in. on the 1st of November.

GLYNDE PLACE.—Rainfall about 1·70 in. above average of last 20 years.

HAYWARDS HEATH.—The year is remarkable, not for the amount of R nor for the number of wet days, but for the period during which the wet weather lasted; instead of as usual having the wet at the beginning and end of the year, the bulk came between the end of March and the end of August. From March 24th to August 18th inclusive, there were 108 wet days and 19·62 in. of R; in the rest of of the year 91 wet days and 12·64 in. of R.

MARESFIELD, FOREST LODGE.—Rainfall 4·56 in. above the average of previous 23 years. On five separate occasions I registered a fall of upwards of 1 in., an almost, if not quite, unprecedented experience.

EAST GRINSTEAD.—Very cold throughout; winter months dry except February. Summer months, April to September, very wet.

NEWPORT, I. OF WIGHT.—The rainfall was above the average, but not particularly so; temperature below the average.

CHRISTCHURCH, MUDEFORD.—Mean temperature of the year 5° below the average. The rainfall is also below the average of previous 10 years.

SOUTHAMPTON, CADLAND.—This has been the wettest year since 1872, and is 7·95 in. above the average of previous 19 years.

SOUTHAMPTON, WOOLSTON LODGE.—With the exception of March,

excessive wet prevailed till end of September, followed to the end of year by exceptional drought ; in fact the fall for October, November, and December was the smallest I have ever recorded for three consecutive months. Max. temp. for year only 75°.

SOUTHAMPTON, RED LODGE.—The last three months of the year fine and dry.

MICHELMERSH RECTORY.—Rainfall during the last three months of the year only 1·90 in., or rather more than 8 in. below the average.

OVINGTON.—Rainfall during the summer months (April to September) 26·76 in., which is more than double the amount that fell during the six winter months (January–March, and October–December), viz. 12·19 in.

EAST TISTED.—Wonderfully cold, wet and ungenial. Wheat crop an almost unprecedented failure. Hay generally abundant, but very bad. No orchard or wall fruit ripened properly, nor has the wood apparently for next year. Strawberries abundant and fairly good.

ALRESFORD, ARLE-BURY.—Very wet summer and dry autumn.

TYLNEY HALL.—An extraordinarily wet summer, but rainfall of the year very little above the average ; more than half the fall in the year was in the four months, May–August.

BLACKWATER, HURSTLEIGH.—Unusually wet for the first nine months of the year, and very dry during the last three.

NEWBURY.—Wet, dull, chilly, and generally ungenial weather.

PURLEY.—Very exceptional year ; very little sun. Fruit quite flavourless. As a general rule very healthy.

STREATLEY VICARAGE.—Dark, cheerless, cold and wet.

EAST ILSLEY.—Excessive rainfall in the summer months, and small quantity of R in the last three months of the year.

LONG WITTENHAM.—Very wet summer ; three last months of the year unusually dry ; the fall for the whole year 6·5 in. above average ; the fall during the last three months more than 4 in. less than average.

DIVISION III.—SOUTH MIDLAND COUNTIES.

SOUTHGATE.—Cold with great prevalence of cloud and very little summer weather. Much R during the first nine months, and great scarcity of fruit.

WATFORD, WANSFORD HOUSE.—The fifth year in succession of exceptionally heavy rainfall, and with the heaviest fall of the five,

the greater part falling during the first nine months ; total fall about 10 in. above the average.

BERKHAMPSTEAD.—This was the wettest year since 1852, although the last three months were remarkably dry.

MUCH HADHAM.—First nine months very wet, with very little sunshine. Crops of corn bad. Great absence of small birds.

DATCHWORTH RECTORY.—Year remarkable for extremes of rainfall. There were four months in which the fall was less than 1 in. and a last quarter of perhaps unprecedented dryness, and yet the total fall was almost equal to the very wet year 1877.

HITCHIN.—This would have been the wettest year ever known, if the last three months had not been so exceptionally dry.

DATCHET, RIDING COURT.—The greater part of the R fell in the four summer months, May to August, causing the worst harvest I have ever known.

LANGLEY.—Rainfall 8·25 in. above the average of the previous eight years. The year contained the driest consecutive three months (total 2·10 in.) and the wettest consecutive three months (total 14·98 in.) that I have ever recorded.

ADDINGTON.—1879 will be long remembered for the great rainfall of the first nine months ; the last three months rainfall was much below the average. The first nine months gave 28·50 in., nearly 4 in. more than the corresponding period of the wet year, 1872. The last three months yielded only 2·33 in. of R. Vegetation of all kinds suffered very much from the excessive rainfall, want of sunshine and low temperature. I fear a permanent injury has been done to some trees, such as peaches, the wood never getting ripe ; even now (31st December) they have not shed their leaves ; in fact some are quite green, in spite of frost. Many floods during the season, causing farmers great loss of hay. In this part sheep have suffered to a very great extent from *rot*, I suppose caused by the wet season.

ADSTOCK FIELDS.—Very much R during the first nine months and exceedingly dry during the last three.

THORNTON HALL.—The year was bad for farmers and gardeners, not so much through the quantity of R, as through its continuance and the absence of sun.

ASTON ROWANT.—The rainfall in June, July, and August is the heaviest I have known for 50 years, and the year was the most unfavourable for all agricultural operations that I have known during that period.

STRATTON AUDLEY PARK.—Very little S fell during the year, and there was only one day on which the fall of R exceeded 1 in.

BLOXHAM GROVE.—The year has been remarkable for the continuous rainfall during the six summer months, and also for the absence of sunshine and lowness of temperature; altogether a very disastrous season for the farmers.

BROUGHTON.—The year was remarkable for the great rainfall of the summer months, which is larger than in any summer during the last 12 years, and for the constant damp, the R being continuous rather than heavy, and for the remarkable dryness of the last quarter, which had less rainfall than any other consecutive three months on my register. In consequence of the last quarter being so dry, the total rainfall is only 0·42 in. above the average of 10 years—1868-1877.

EASTON NESTON.—Weather very disastrous to all crops.

CASTLE ASHBY.—Rainfall greatly in excess in the summer; harvest deficient; hay crop greatly damaged, some hay not cut at all; last quarter of year dry and cold.

HARGRAVE.—The year has been remarkable for the great rainfall during the months—May to September, accompanied by low temperature, want of sunshine, and disastrous consequences to agriculture.

GODMANCHESTER, FARM HALL.—Very wet, succeeded by severe frost.

BIGGLESWADE.—This year has been remarkable for the great rainfall during the summer months; immense damage was done by floods, and the farmers have suffered greatly from the wet season, combined with low temperature and absence of sun.

BEDFORD.—With the exception of 1875, this is the wettest year that has occurred since 1852; it has also been the most disastrous, owing to the excessive rains in summer and the low temperature that accompanied them.

CAMBRIDGE, MERTON VILLA.—This year is remarkable for the very heavy rainfall of the four summer months—May-August, causing a very late and deficient harvest; in the last three months of the year the rainfall was much below the average.

CAMBRIDGE, SIDNEY STREET.—Very wet, cold, and sunless.

CHATTERIS.—The peculiarity of the year is the great rainfall of the six summer months commencing with April—viz., 22·15 in.

MARCH.—Rainfall about 3 in. above the average of seven years.

COLDHAM HALL.—Year remarkable for the extreme discrepancy between the rainfall of the first nine months (25·88 in.) and the last three (2·46 in.). No fall above 1 in. occurred during the year.

DIVISION IV.—EASTERN COUNTIES.

COLD NORTON.—Bad year for all agriculture. Greater floods during summer months than usually occur during winter months.

HIGH RODING RECTORY.—Rainfall about $4\frac{1}{2}$ in. above the average of 14 years.

DUNMOW.—Rainfall 7 in. more than the average ; most disastrous to hay, corn, roots, and fruit.

BRAINTREE, FENNES.—The most disastrous year ever remembered for the cultivators of heavy land, heavy rainfall occurring in the season when the hay and corn were ripening or being gathered.

BOXFORD.—First nine months of year very wet.

BISHOP'S HILL.—First nine months unusually wet ; last three months unusually dry ; total rainfall above the average. A very dull year in every sense of the word ; very little sunshine. Agricultural produce of all kinds very bad and very small in quantity.

GRUNDISBURGH.—The coldest year since 1861, when I commenced observations, and the wettest year since 1872.

BURY ST. EDMUNDS.—Rainfall for the year above the average. October–December very dry, total fall for the three months being only 2·6 in., while the average for 10 years during that period is 10 in.

CULFORD.—Spring and summer very cold and sunless, with much R, resulting in floods ; winter set in early, with low temperature during December till 27th.

HALESWORTH.—More than four-tenths of the R fell in the three months of June, July and August, usually the driest in the year. This sufficiently accounts for the bad quality of all corn this season.

DISS.—A cold, wet spring and summer, with scanty fruit and garden produce ; a late, long, and bad harvest, interrupted and delayed by frequent floods, acres of hay being spoiled or washed away, and the cereals ripened but imperfectly ; the floods of July 21st and the fearful storm and flood of August 2nd will not soon be forgotten ; immense damage was done by L, wind and R.

GELDESTON.—The total fall for the year is 5·75 in. above the average of 14 years. Floods much above any known for 50 years.

GELDESTON RECTORY.—Spring and summer cold and wet.

Autumn cold with severe frosts. The Waveney Valley has been flooded during the whole year, and the water has risen 9 in. higher than ever known before. The harvest late and ungenial ; fruits late and only half ripened.

WEST DEREHAM.—A nasty, drizzly, cold, uncomfortable year ; no summer, and very little sun ; disastrous to corn, fruit, and crops generally.

PICKENHAM HALL.—Cold, wet summer ; harvest three weeks or a month later than usual.

NORWICH, DICKLEBOROUGH PLACE.—First nine months generally cold, rainy, and unfavourable for vegetation.

MATTISHALL.—Remarkably wet and cold summer, rainfall about 2 in. above the average of past 10 years.

EAST DEREHAM.—The temperature has been low and the rainfall excessive, especially so during June, July, and August.

FELTHORPE.—An exceptionally cold summer.

HILLINGTON RECTORY.—A dreary, sunless, and wet year, nothing like it since 1860. The winter left late and returned early. The excess of R from March to September was great, while in the last three months there was a serious deficiency. The dews were exceptionally heavy in the autumn.

LEATHERINGSETT HALL.—Summer cold and ungenial.

WELLS-NEXT-THE-SEA.—Spring bleak and wintry, summer late and cheerless, with very little sunshine, with the exception of three weeks in August and September.

DIVISION V.—SOUTH-WESTERN COUNTIES.

STEEPLE ASHTON.—The year on the whole has been a miserable one as regards climate, eight months were very wet and four months (viz., March, October, November and December,) very dry.

HOLT.—Cold, very severe at the beginning of the year, and also in November and December ; June and August very wet ; October, November and December unusually dry.

COMPTON BASSETT.—The year was chiefly remarkable for its protracted winter, its late and cold spring, its wet and sunless summer and autumn.

LANGTON HERRING.—The year was remarkable for the excess of R in the first three quarters, especially in the summer months, and still more remarkable for the drought in the fourth quarter, especially November, when only .08 in. of R fell.

OSMINGTON LODGE.—Rainfall 3·39 in. above the average of past 13 years. October, November and December wonderfully fine.

WIMBORNE.—A wretched summer, temperature persistently low, and a most marked absence of sun; potato crop half an average and much diseased. Wall-fruit quite a failure; bees either died or had to be fed.

PLYMOUTH, NAVIGATION SCHOOL.—Rainfall about 10½ per cent. above the average of 15 years.

HEMERDON.—June and August remarkably wet; November and December exceedingly dry.

BERE FERRERS.—Remarkable absence of TS during the year.

LAMORNA.—In February, June and August the rainfall was above the average, whilst in March, October and November the fall was much below it.

BABBACOMBE.—A wet, cloudy and very cold year. The first nine months (with the exception of March) were very wet, the total rain-amounting to 38·56 in.; the last three months were very dry, only 2·46 in. falling. There was no summer but a fine autumn, and most crops, especially fruit, were a failure.

KINGSTEIGNTON.—Total rainfall less than in any year since 1874, with the exception of 1878.

BOVEY TRACEY.—Entirely exceptional, both for summer R and low temperature, and for winter drought.

EAST BUDLEIGH.—Year remarkable for the excessive rainfall in June, July and August, the small fall in October, November and December, the absence of floods (although the river Otter was brim-full for many weeks in summer) and the disastrous effect of the wet and cold season on crops, and especially on wheat and potatoes and on the quality of hay.

CLEVELANDS.—Rainfall 4·84 in. above the average of twelve years, 1868-79.

BRAMPFORD SPEKE.—First eight months unusually wet and cold, last three very dry but still colder than usual; all crops bad; fruit flavourless and insects scarce. The following table shows the relation of the rainfall in each month to the average of the previous fourteen years :—

Month.	Fall in 1879.	Average fall in 14 previous years.	Diff.
January	4·44 in.	4·21 in.	+0·23 in.
February	4·53 „	2·97 „	+1·56 „
March.....	0·63 „	2·68 „	—2·05 „
April	3·66 „	2·52 „	+1·14 „
May	2·82 „	2·27 „	+0·55 „
June	6·03 „	1·62 „	+4·41 „
July	3·86 „	2·31 „	+1·55 „
August	4·34 „	2·72 „	+1·62 „
September.....	3·39 „	3·70 „	—0·31 „
October	1·23 „	4·07 „	—2·84 „
November	0·20 „	3·61 „	—3·41 „
December	1·00 „	3·96 „	—2·96 „
Total	36·13 in.	36·64 in.	—0·51 in.

CLAWTON, COURT BARN.—A very unproductive year for agricultural produce, especially all green crops, potatoes and wheat.

GITTISHAM.—June, July and August very wet; October, November and December exceptionally dry. Great absence of sunlight throughout the year, and the scanty crops are probably due in a great measure to this cause.

GREAT TORRINGTON.—Remarkable absence of sun; on only ten days did the temperature reach or exceed 70°.

LITTLE SILVER.—Remarkable for the excessive rainfall in the summer months and for the disastrous effects of the cold and wet on potatoes, wheat and sheep; much hay also was spoilt.

LITTLEHAM, HEALE HOUSE.—The total rainfall was *much less* than that of 1877 or 1878, and the number of days on which R fell also less. This seems astonishing when we have been thinking of 1879 as a very wet year, but the largest totals were in June, July and August, and then the mischief to the harvest was done. In a period of nearly 9 weeks, from 27th October to 27th December, only 1·11 in. of rain fell.

ST. AGNES.—The largest fall of R during July, August and September that I have ever recorded, although there have been several years with larger total falls; the absence of sunshine had a very injurious effect on plants and birds.

TREVARNA.—The wettest June I have known since I commenced a record in 1865. We had no summer weather, and the crops of every description are bad.

EMPACOMBE.—Excess of wet, with low temperature, during the summer months. Fruit, cereal and root crops very bad, and sheep have suffered severely.

NEW QUAY.—Rainfall slightly below the average.

BODMIN, CASTLE STREET.—At the end of September the fall of rain had exceeded the average of 29 years by 13 in., but, owing to the unexampled scarcity of R in October, November and December, the total fall during the year exceeded the average by only 2·53 in.

WEEK ST. MARY.—Winter and summer cold and wet, spring cold and dry, autumn dry.

SEABOROUGH.—Wet and cold year; very unproductive in corn, grass, fruits and flowers.

BINCOMBE HOUSE.—June, July and August cold, cloudy, and stormy; October and November very fine, dry and cold, with high barometer.

WHITE LACKINGTON.—Only five times in May, June and July were there two consecutive fine days.

ILMINSTER.—Year cold and damp, with very little sun.

TAUNTON, LYDEARD HOUSE.—It has been a curious year, with so much R in June, July and August, and the three dry months at the end of the year, so that the total amount is below that of several other recent years. The 3·21 in. which fell on the afternoon and night of the 2nd of August caused a great flood here, as you may suppose, but there was not much damage done by it.

EXFORD.—Although, on the whole, the rainfall was less than usual, the year was remarkable for the wetness of the summer months; there was a general absence of sunshine throughout the year, with a corresponding lowness of temperature.

BURNHAM.—Cold and wet; no proper summer.

BATH, LITERARY INSTITUTION.—The rainfall is 5·30 in. above average of previous 19 years.

DIVISION VI.—WEST MIDLAND COUNTIES.

CLIFTON, SOUTH PARADE.—This is the sixth consecutive year of excessive rainfall.

KEMPSFORD.—The coldest and wettest summer I remember since 1860.

CAINSCROSS.—Wet summer, dry autumn, and very cold November and December.

SAUL LODGE.—In the first nine months of the year the rainfall was 4 in. above the average. There was a singular deficiency of sunshine throughout the year, and a manifest dearth of small birds.

frozen over to bear across for the first time in *December* since 1844; it was, however, frozen over in Feb., 1855. As regards the summer and harvest, it seems to have resembled 1799, 1816 and 1860. In 1799 there were, as now, 14 consecutive months below average temperature, and this has not happened since. Then the rainy weather, though not heavy, continued till November 13th, and many crops were ungathered. 1816 was colder in June and July, and the harvest time was more unfavourable than this year. 1860 was very wet to end of August, but finer in September.

BRYNGWYN.—Remarkably wet summer and extraordinary rainfall in June, 7·26 in.; the temperature has been low throughout the year.

HEREFORD, RICHMOND PLACE.—A cold, sunless year, and the wettest on record since observations were commenced in 1818; the mean temperature of every month was below the average.

THINGHILL.—Owing to the moderate amount of rain which fell in March, October, November and December, the total for the year does not seem excessive, but the fall in June and August exerted a ruinous effect on the hay and grain crops.

CLEOBURY MORTIMER.—Wet and cold summer; March and three last months dry and fine.

MORE RECTORY.—A most abnormal year; severe and prolonged winter and wet and windy summer.

PREEN MANOR.—The beginning and end of the year were dry; June, July and August very wet; the hay crop was got in with great difficulty, and, owing to these three months being cold as well as wet, the harvest never properly ripened.

FITZ MANOR.—One of the wettest years on record; always raining, though not heavily; the sun seldom seen; fruit flavourless. The harvest not completed in the middle of October, and much wheat unsown on account of frost.

SEDGLEY.—Cold throughout, spring and summer unusually wet.

TAMWORTH.—The most disastrous year for farmers ever known in England; no sun or summer, nothing but continuous rains.

SHROBNALL.—Rainfall 3·58 in. below the average.

FARLEY.—Very wet summer and fairly dry autumn.

LEEK.—The year has been cold and sunless, and although the total rainfall is little above the average, it appeared very wet.

EVESHAM.—Cold and wet, except October, November and December.

KIDDERMINSTER, COMBERTON ROAD.—The summer has been an exceptionally wet one.

BARRELL'S PARK.—Rainfall 1·95 in. above average of eight years.

COVENTRY.—Spring very late and summer months cold and rainy, with heavy floods. Temperature much below average; corn late and ill ripened.

DIVISION VII.—NORTH MIDLAND COUNTIES.

ASHBY MAGNA.—Long continued damp and excess of R during first nine months; very little R in last quarter. The total fall is only 1·50 in. above average. The temperature was exceptionally low.

ARNESBY VICARAGE.—Excess of wet during the harvest months. Large hay crop; very bad cereal crop.

FLECKNEY.—A cold, cloudy, damp and disastrous year.

LEICESTER, BELMONT VILLAS.—Rainfall rather irregularly distributed, the fall during the six months, April to September, being about three quarters of the average.

DALBY HALL.—Remarkable year, being cold and sunless throughout.

LOUGHBORO', VICTORIA STREET.—Rainfall nearly 1 in. below the average; the fall in the last three months was 5 in. below the average.

COSTON RECTORY.—A very cold wet year, especially spring and summer, hindering agriculture very much, making the crops very deficient; mean temperature of the year, 43°·3, which is 6°·7 below the average of past six years.

BELVOIR CASTLE.—The excessive R and small amount of sunshine during the summer months caused the failure of cereal and fruit crops, but both the beginning and end of the year were dry, so the total fall of R is only a little above the average.

UPPINGHAM.—Rainfall slightly below average of 5 previous years.

KETTON HALL.—The year has been very dull. October was the finest month; the temperature has been low in proportion to the deficiency of sunshine, and on the whole it has been a trying season for vegetation and crops generally.

TYDD GOTE.—Unusual absence of sun and continuous R have resulted in a very barren year.

PODE HOLE.—One of the most fearfully wet years ever known, harvest fully a month late, a vast deal of corn damaged, and quality very poor.

GRANTHAM.—A very dull year, the atmosphere almost always carrying an excess of moisture, more from the prevalence of cloud and absence of sunshine than from any unusual quantity of R; dense mists have also been very frequent.

BLOXHAM.—Remarkable for cold, wet, sunless weather, and the failure of fruit and corn crops.

BUCKNALL.—Rainfall excessive from April to October, and the year one of marked agricultural disaster; intense frost set in at an unprecedentedly early date.

DODDINGTON.—Though the year has been remarkable for such a wet, cold, sunless summer as we have not experienced since 1860, yet, owing to the dryness of the early and latter months, the total rainfall has been less than the average of the three previous years.

LOUTH.—Mean temperature 3° below the average, rainfall 1·27 in. less than the average.

APPLEBY VICARAGE.—Rainfall slightly above the average of 20 years.

WHITEMOOR HOUSE.—Remarkably dull, sun but little seen. Maximum temp. of year 79°·0, min. 2° below zero, and mean 44°·0.

WORKSOP, HODSOCK PRIORY.—The year was characterised by an almost continuous low temperature and absence of sunshine, and the consequent unusual lateness of vegetation. The mean temperature was 45°·3 or 3°·0 below the average of the previous three years. The first quarter was dry, the frost lasting well into February; the second and third quarters were wet, the rainfall for the six months (April to September inclusive) being 17·74 in. All flowering shrubs and plants blossomed most profusely, though very late; but a good deal of the wall fruit was destroyed by the late frosts, and what was left never ripened thoroughly, owing to the absence of sunshine. There was a good crop of strawberries and similar fruit, but many rotted on the beds. Hay was good, but much was never thoroughly dried. Harvest was fully six weeks late, the crops were bulky, but the corn was deficient in quality and not thoroughly ripened, and the damp weather in September interfered greatly with getting it in. Scarcely any young partridges survived the wet summer, and other birds doubtless suffered also, so that they are much less plentiful this winter than last. The autumn was fine and dry, but the intense frost in December did much harm among the evergreens, especially the laurels, and more delicate of the coniferæ.

BRETBY PARK.—Not one summer day during the year.

TRENT COLLEGE.—In 1879 we had the coldest January, the wettest February, and the driest March (except March, 1875) in the Trent record.

DERBY, CHRISTCHURCH VICARAGE.—The year has been remarkable for absence of sunshine.

SPONDON.—Very cold, damp and sunless; frost in every month except August.

BELPER, FIELD HEAD HOUSE.—A very wet summer, with but few floods on the Derwent; cold autumn, but exceptionally dry from the end of September. Heavy hay crop, corn harvest very bad and not all gathered before the end of October.

HARDWICK HALL.—A cold, sunless spring, followed by a wet, cold, sunless summer; a fine cool autumn and winter (so far), the most severe since 1860.

STONEY MIDDLETON.—A cold year, remarkable for its many rainy days, but not for the amount of rainfall.

BARLOW RESERVOIR.—A wet year, very bad crops of both hay and corn, caused in a great measure by sunless days and by being gathered nearly two months later than usual. A very severe winter.

DIVISION VIII.—NORTH WESTERN COUNTIES.

CHOLMONDELEY.—Cold, with very little sun; the crops of fruit, vegetables, &c., a month later than usual.

PULFORD.—Last three months of the year very dry, and the total fall during the year, below the average, although the fall in the first nine months was greatly in excess. There was very little sunshine, hence the grain crops were deficient both in quantity and quality.

BOSTOCK HALL.—A cold sunless year.

MACCLESFIELD.—The mean temperature of the year was 2°·5 below the average; January and April were very cold; March (the only month above) was 0°·1 above the average. February, June, July, and August had more than the average rainfall.

ASTLE HALL.—A cold and wet year, with the exception of the last three months.

WINNINGTON.—June, July, and August were unusually wet and sunless; October, November and December were more than usually dry, so that the total rainfall for the year is reduced to the ordinary average.

HINDERTON.—A remarkably cold and rather wet year. Rainfall 14·6 per cent. above the average of the previous 17 years.

FOXHILL.—Rainfall less than the average of seven years, the deficiency being due to the slight fall in the first three and last three months, the fall in the other six months being considerably above the average for that period. Very little sunshine, very little T, very few TSS, and a very bad harvest.

ALLERTON, GREENHILL.—The year was remarkable for the heavy rainfall during the summer months, and the equally unusual dryness of October, November and December.

BREEZE HILL.—Temperature remarkably low throughout the year.

WITHINGTON.—Dry and frost in the early part of the year. Wet summer, cloudy autumn; fine cold November and December.

ARDWICK.—Remarkably gloomy sunless summer, and although the rainfall was about the average, or less, yet there were 201 days on which rain was registered.

MANCHESTER, ST. BEDE'S COLLEGE.—Wretchedly wet and cold weather.

BLUNDELLSANDS.—Cold weather and very little sun; a bad season for farming operations. June was exceptionally wet.

BEECH HILL.—Rainfall in June, July and August above the average; in all the other months the fall was below the average, and the total for the year is also under the average.

BOLTON, THE FOLDS.—Rainfall 4.42 in. below the average of previous 48 years.

BOLTON, ARKWRIGHT STREET.—Rainfall below the average; in fact, there are only two years in the decade 1869-79, with a less rainfall.

BOLTON, BELMONT ROAD.—The summer was the coldest and wettest I ever recorded.

ROCHDALE, DRAKE STREET.—The total rainfall of the year 1879 was 3.5 in. below the average, but the distribution was far from normal; the winter and spring quarters were both rather drier than the average of 15 years, but the summer quarters, June, July and August, received nearly half the year's amount, viz., 16.42 in., the average being 9.0 in.

CROOKE HALL.—The year was remarkable for want of sunshine and for low temperature. The total rainfall was not above the average, but it was excessive in June, July and August. All crops bad, deficient both in quantity and quality.

BLACKPOOL, SOUTH SHORE.—The rainfall is 1.20 in. below the average of previous 24 years, but the evaporation is 6.87 in. below the average for the same period, which will account for the wet and damp harvest weather.

ELSWICK LODGE.—During the year there was less rain, fewer wet days (except 1878, when the number of wet days was the same), and lower mean temperature than in any of previous seven years. A dull and damp summer ; fruit very small and poor.

DOWNHAM HALL.—Total rainfall below the average, but the summer was wet and nearly sunless.

HALTON PARK.—Rainfall in September, October, November, and December exceptionally small. Barometer high in October and November, generally accompanied by fog.

STORRS HALL.—A wet summer, combined with cold during nearly the whole year, has constituted it a very disagreeable as well as a very disastrous year to all concerned in agriculture.

HOLKER GARDENS.—Spring very cold, rainfall moderate until June and July, which were the two wettest months in the year, their relative temperatures being very low for summer months. Sun heat sadly deficient ; large crop of fruit, but difficult to ripen—small and lacking flavour.

PIT FARM.—All the crops promised above an average until the wheat got into full flower, and then the large rainfall and almost entire absence of sunshine spoil the yield.

BROUGHTON HALL.—Rainfall in four summer months, June to September, 22·07 in., while only 19·31 in. fell in the other eight months ; the total for the year is the lowest observed since 1868, and is more than 11 in. below the average of the intervening years.

DIVISION IX.—YORKSHIRE.

RANMOOR.—A cold, wet year ; trees just coming into leaf at the end of May ; first hay cut July 25th. December was the finest month ; it had no fogs, and a good deal of sunshine, though it was intensely cold.

WATH-UPON-DEARNE.—All the year very sunless ; unusually severe frosts in January and December. Year noted for its low temperature and absence of sunshine, and severe frost in the middle of September.

WEST MELTON.—A wet summer, in fact altogether a wet year but not much S.

STANLEY VICARAGE.—Rainfall 2·60 in. below the average ; temperature 3° less than last year, and a great deficiency of sunshine ; hence vegetables were poor and the harvest was bad.

THORPE.—The rainfall is 5 in. less than the average for the previous 10 years, though R fell on about 10 days more than in either of the past three years.

BRADFORD, FARCLIFFE.—A very dull, damp, and depressing year, noted for great absence of sunshine and for much cloud, even when not raining. Garden produce small, and inferior in quality.

BASHALL LODGE.—Rainfall 3 in. less than in any of the previous 14 years, and $11\frac{1}{2}$ in. below the average of that period. The amount that fell in June, July, and August was double the amount that fell in the previous five months.

ILKLEY, ASHBURN.—A year without a summer; the last three months calm and dry.

EMBSAY KIRK.—There was an excess of R during the summer months, but the total for the year is below the average.

CONISTON COLD.—Remarkably cold and unproductive year.

ALDBOROUGH.—Rainfall 4.19 in. below average of eight years (1872–79), but the fall occurring chiefly in the summer months injured the hay and corn most seriously.

OUGHTERSRAW.—Dry frost till the end of May; much R in June, July, August, and September, but not greatly in excess of average. A good hay harvest. Not a bad year except for lambs.

DENT, STONE HOUSE.—The first four months very frosty, and the fall principally S. May and June slightly frosty; November and December fine, bright and frosty.

BRIGG FLATTS.—An extraordinary number of wet days in June, July and August, when the hay should have been secured, and more foggy than usual here in October and December. Barometer generally high during the latter part of the year.

SEDBERGH THORNE.—A very bad year for the farmer, as much R fell about hay time. The total for the year is very small, and there has been only one year (1875, when it was 46.25) with less rainfall since 1866, the commencement of the record.

PATRINGTON.—It has been a very wet summer; nothing ripened, for want of sun; very like 1860, only colder.

HULL, BEVERLEY ROAD.—A cold, dull, sunless year. The fall up to April 30th was about the average, but the following months to September were all above the average, with very little sun, very disastrous to the crops. The fall in October, November, and December was considerably below the average, the total for the three months being less than half the usual fall during that period, but the sunless character of the year still continued.

HULL, DERRINGHAM.—A cold and backward spring, wet and unfruitful summer, a dry autumn, with early and severe winter, the first week in December being the coldest ever recorded in Hull. There was also an unusual prevalence of cloud throughout the year.

Comparative Table of Hull Rainfall.

Month.	1860.		1872.		1879.	
	Inches.	Days.	Inches.	Days.	Inches.	Days.
January	3·44	13	3·05	23	·84	9
February	·93	11	2·32	22	3·02	22
March	2·31	17	2·40	18	·89	12
April	·68	11	2·45	16	1·13	14
May	2·03	13	1·36	16	3·54	19
June	4·46	23	1·91	16	3·57	22
July	1·29	10	4·79	14	3·52	18
August	5·68	21	2·26	17	3·24	19
September	3·05	10	3·31	20	2·26	15
October	1·33	9	3·04	22	·75	17
November	2·69	18	3·85	22	1·61	15
December	2·84	17	3·15	24	·77	11
Year	30·73	173	33·89	230	25·14	193
1st Half-year.	13·85	88	13·49	111	12·99	98
2nd Half-year.	16·88	85	20·40	119	12·15	95
May to Aug. ...	13·46	67	10·32	63	13·87	78

Comparative Table of Mean Temperature.

Month.	1860.			1872.			1879.		
	Mean		M'nthly Mean.	Mean		M'nthly Mean.	Mean		M'nthly Mean.
	Min.	Max.		Min.	Max.		Min.	Max.	
January	34·8	41·9	38·1	33·0	44·8	38·7	27·1	34·2	30·4
February	31·3	41·5	36·0	37·0	47·7	41·9	32·7	41·4	36·6
March	35·0	46·6	39·8	36·1	52·6	43·4	33·9	47·5	39·7
April	36·6	51·5	42·5	38·9	57·0	46·4	36·0	50·2	41·6
May	46·6	63·1	53·1	39·9	60·8	48·6	39·3	57·0	46·4
June	49·9	63·2	54·5	47·3	68·9	56·3	48·3	65·7	55·2
July	51·5	66·8	57·2	52·3	74·7	61·6	50·4	65·7	56·1
August	51·9	64·3	56·4	50·4	69·0	58·0	51·5	67·2	57·4
September	46·2	60·2	51·9	48·9	63·4	54·8	46·8	62·9	53·5
October	44·3	55·6	48·9	40·8	53·7	46·2	40·8	55·4	47·1
November	37·3	45·0	40·7	38·1	49·5	43·4	34·6	45·2	39·5
December	32·6	38·9	35·7	36·1	44·2	40·1	25·1	39·1	32·1
Year	41·5	53·2	46·2	41·5	57·2	48·3	38·8	52·6	44·6
1st Half-year.	39·0	51·3	44·0	38·7	55·3	45·9	36·2	49·3	41·6
2nd Half-year.	44·0	55·1	48·5	44·4	59·1	50·7	41·5	55·9	47·6

BRANTINGHAMTHORPE.—Particularly damp and sunless summer and autumn.

COTTINGHAM.—The year has been reputed a wet one, but the quantity of R is less than the average, and the wetness of the land seems attributable to the smallness of evaporation rather than to the amount of R.

BEVERLEY.—Weather throughout the year abnormal. Cold, wet, little sun, weeks of frost and S, blossoms blighted, no fruit; grain crop, especially wheat, almost destroyed.

GREAT GIVENDALE.—A year of very little sunshine and most unfruitful, everything being more than a month late.

THIXENDALE.—Very little sunshine during the year; mean of daily cloud 7·3 (maximum 10·0).

FOXHOLES RECTORY.—Very severe weather in the early part of the year, followed by a cold, late spring, and wet, sunless summer, but a finer autumn until the middle of November, when severe weather set in.

GANTON HALL.—A very cold, wet, sunless year; nothing has done well here.

MALTON.—Rainfall nearly 5 in. below the average.

HAWES, LUNDS.—The rainfall and number of days are smaller than in any other of the past five years.

RICHMOND, THE GROVE.—No very heavy falls during the year, and the last four months very dry.

FORCETT PARK.—A cold, damp year on the whole, but October was a fine month, with more sunshine than usual.

DIVISION X.—NORTHERN COUNTIES.

WHORLTON, THE GREEN.—Very severe cold during winter and spring, wet summer, fine and warm October, severe and cold December.

HEIGHINGTON.—Rainfall 3·81 in. below the average, although the fall in February, June, July and August was above.

SEAHAM VICARAGE.—The year was a bad one, disastrous to vegetation, not because the rainfall was excessive, for it was below the average of 20 years, but because a great part of it fell in the summer months, and the number of wet days is the greatest with one exception since 1867.

SEAHAM HALL.—The coldest year observed for 30 years, and with least sunshine; nearly all vegetable crops a failure.

SUNDERLAND, WEST HENDON HOUSE.—This is the fifth consecutive year with rainfall above the average, and the excess was nearly all in the summer months, the fall in the latter part of the year being below the average.

NORTH SHIELDS, CLEMENTHORPE.—Spring and summer very cold; September and October very fine; November wet; December severe though not so cold as 1878.

BINGFIELD HOUSE.—Cold late spring and summer; crops of smaller fruits abundant, but poor in flavour.

BELLINGHAM, HESLEYSIDE.—The year, besides being rainy, has been the most sunless which I can recollect during a period of 50 years. The mean temperature was only $40^{\circ}6$ against $44^{\circ}2$ in 1878.

BRENCKBURN PRIORY.—The coldest year ever known here, and had it not been for a fine six weeks commencing 20th September, there would have been no harvest worth the name.

HOWICK HALL.—A very unfavourable season.

PAWSTON.—The rainfall for June and July was excessive; that for September and October remarkably small.

BRAYSTONES.—Rainfall 6.48 in. below the average of previous fifteen years.

ST. BEES, ABBOTS COURT.—Rainfall 3.70 in. below the average.

WHINFELL HALL.—Rainfall 10 in. below the average of the 23 preceding years, but so distributed in the summer months as to render harvesting difficult, especially that of the hay.

BASSENTHWAITE, MIREHOUSE.—A cold, sunless summer, but hay crop and harvest better than in the south of England.

COCKERMOUTH.—The rainfall of the year was considerably below the average of previous 17 years. July, August, and September were wet months; more R fell in July than in any previous July for 17 years. The whole of the year was cold, dark, and sunless; the temperature of every month was below the average, and the mean temperature of the year $3^{\circ}3$ below average, and the coldest of a period of 18 years.

COCKERMOUTH, HIGHAM.—The driest year but one (1867) since a record was commenced here in 1864.

COCKERMOUTH, BROUGHTON GRANGE.—Unusually damp, dull summer; very dry spring and autumn.

PENRITH, THE LUHAM.—The great absence of sunshine was the most remarkable feature of the year, although less R fell than in any previous year since I commenced a record in 1872.

BLENCOWE SCHOOL.—During January the barometer was unusually high, and again during October, November, and December. January was an extremely cold month (mean temp. $27^{\circ}\cdot 1$), with little downfall of either S or R. The Cumberland lakes were all frozen over, and skaters had a fine time of it. February was like its predecessor—cold and bleak. Scarcely any work was done on the farm. Turnips were completely spoiled. The severe weather lasted till the middle of March, when a thaw set in (17th). Farm work went on again, and the land was ready for the seed by the close of the month. The hard frost had worked wonders with the soil, which crumbled under the plough, and was in first class condition for the seed—decidedly better than for many years. The seed was got in in this locality in first class order. April, however, turned out a miserable month, only one day (26th) relieving the general gloom, which was warm, moist, and “thundery;” monthly mean only 40° . The cold weather lasted with little interruption till the 17th of May, when finer weather set in and crops of all kinds went on well. So also all kinds of fruit trees—blossoms abundant. June witnessed several thunderstorms, but fine “growing” weather. The month of July was wet, and so was the latter part of August—the hay harvest being especially kept back. Crops here of all kinds—except perhaps turnips, which were small in size—were abundant, but mostly spoiled by the bad weather, especially the corn crop, which was housed in bad condition. The total rainfall ($30\cdot 49$ in.) was far below the average of the last eight years ($41\cdot 86$ in.); there were few heavy falls, and the number of wet days was small.

MARYPORT, WYNDHAM ROW.—Dry spring and autumn; dull damp summer.

WHELPRIGG.—A severe winter, a cold, ungenial spring, a sunless summer, a fine autumn.

STAVELEY.—A very dry spring; April and May exceptionally dry; June, July and August disastrously wet. Altogether an exceptional year of very bad results for the farmer, gardener, and bee keeper.

BRATHAY VICARAGE.—Rainfall for the year below the average.

AMBLESIDE, NOOK COTTAGE.—Rainfall for the year below the average. The first part of the year was dry, but a wet period commenced with a TS on the 21st June, and continued until the middle of September; the weather was then fine till the 27th December, but there was heavy rain, amounting to 6 in., in the last five days of the year.

KIRKBY STEPHEN.—Notwithstanding the year 1879 being “a year of deluges,” the total fall was 10 in. below the average.

REAGILL.—The winter of 1878-9 was very long and severe; numbers of small birds perished. Cold summer; on the 2nd of June the mountains were thickly covered with S. Autumn fine; on only nine days during the year was the temperature 70° or higher, the max. being 75°.

DIVISION XI.—MONMOUTH, WALES AND THE ISLANDS.

LLANFRECHFA, GRANGE.—Very low temperature all the year except one week; fruits did not ripen; much rain in the earlier months, but October and November dry.

MERTHYR TYDFIL.—Spring and summer quarters exceptionally wet, winter quarters exceptionally dry.

TEGFYNYDD.—One of the wettest summers on record.

LLANDOVERY.—Remarkable for a very wet summer and an exceedingly dry winter, with an early frost, which lasted a long time and was very severe.

HAVERFORDWEST.—Spring very severe, with frost and S up to May 6th, followed by one of the coldest, and the wettest, summer on record during a period of 30 years. October and November were remarkably fine and very dry; hard frost in December.

ST. DAVID'S.—The time of sowing was fair, but abundance of rain and want of sunshine made the harvest late and unprofitable; the spring season also was late.

CASTLE MALGWYN.—A very damp, sunless year, vegetation three weeks or a month behind, but the total rainfall is not above the average.

NANTGWILT.—The rainfall of the year nearly 5 in. below the average of five years, 1871—75. This is owing to the small amount which fell in January, October and November, the fall in June, July and August being 9·87 in. above the average.

DOLENOG.—The year was wet and cold, and yet the aggregate fall is light; the summer months were all very wet.

BRYN ALYN.—The rainfall during June, July and August was excessive, especially in August; but the small amount which fell in the last four months of the year prevented the total being above the average.

NANTLYS.—June, July and August very wet, the fall in those

months being 9·17 in. above the average; the remainder of the year was dry, so that the rainfall of the whole year was only ·82 in. above the average of 12 years.

RHYL.—June, July and August, little sun and large amount of rain.

WYNNSTAY GARDENS.—The past year was a most extraordinary one here; long-continued frost at beginning and end of the year, with a cold, cloudy, dripping summer, made it one continued winter. The leaves of roses, peaches, and many older trees are bleached with frost, yet cannot separate from the trees in consequence of immaturity.

PLAS POWER.—TSS and very heavy rains in June, July and August.

BRYMBO.—The last quarter of the year was the driest I have observed for 17 years; maximum temp. of year 74°, minimum 15°.

ROSSET, TREVALYN HALL.—Total rainfall exceeded the average of 10 years, 1868—77, by only ·06 in. The distribution of the rainfall over the year was most abnormal, a great excess occurring in the summer months, and a considerable deficiency in the autumn; June and August were extraordinarily wet; October was singularly dry. The year was remarkably cold; max. temp. in shade, 79°·4, min. temp. 11°·0.

PENIARTH GARDENS.—A very cold, wet, sunless year.

DOLGELLY.—Very wet and cold, causing great injury to vegetation.

NANNAU PARK.—One of the coldest and most ungenial years that I remember.

BRYN GWYNANT.—The first quarter was very dry, with hard frost and S; the spring was very cold and dry, everything backward. The summer throughout was very wet and cold, with very little sunshine. Rainfall in July was 12·19 in. above the average; there was a good crop of plums and gooseberries, but apples were an entire failure. The autumn was, on the whole, cold and dry; hard frost in November and December; thaw set in on 27th December, followed by floods.

MENAIFRON.—January exceptionally dry and August excessively wet, falls of 1 in. and upwards being registered four times during the month.

JERSEY, ST. HELIERS.—Much R during the first nine months and very little during the last three months.

JERSEY, ST. AUBINS.—Year cold throughout; mean temp. 49°·5, which is 3°·2 below the average. Rainfall excessive in February and June; October, November and December very dry.

SCOTLAND

DIVISION XII.—SOUTHERN COUNTIES.

CARGEN.—First five months and last three months very deficient in rainfall, but in June, July, August and September the fall was greatly in excess of the average. Mean temperature of the year $2^{\circ}3$ below the average, and amount of sunshine 200 hours below average.

CRICHTON INSTITUTION.—Rainfall greatly below the average.

WANLOCKHEAD.—Though the total rainfall for the year is below the average, the period when the hay crop was being secured was exceedingly wet. Potatoes, carrots, turnips, &c., were almost a total failure on account of the low temperature of the summer.

TEVIOTHEAD MANSE.—The year was characterised by the lateness and severity of the winter; by the very frequent rainfall of the summer; by the lateness of the harvest, which extended to the second week of November; by the remarkably fine weather of that season; and by the excessive cold of the early part of December.

JEDBURGH, SUNNYSIDE.—Cold, wet, and ungenial year.

MELROSE, ABBEY GATE.—Agriculturally a bad year from want of solar light. Rainfall scarcely the average, but June, July and August were very wet. Maximum temperature of the year 78° on 12th August. Min. -5° on December 4th; mean temp. $40^{\circ}7$.

GALASHIELS, WOOP LAW.—Rainfall under the average, but great excess in three summer months, and disastrous results to crops; temperature low in spring and summer, and great want of sunshine throughout the year.

DIVISION XIII.—SOUTH-EASTERN COUNTIES.

EAST LINTON.—The greatest rainfall occurred in the three summer months, June, July and August, instead of the three following months, as is usually the case.

ABERCORN.—Deep and prolonged S and cold in spring; very wet summer. Large fruit, good in appearance but deficient in flavour; small fruit, very good crop; vegetables deficient in growth and quality.

DIVISION XIV.—SOUTH-WESTERN COUNTIES.

WISTON.—A most unproductive year; great deficiency of turnips, potatoes and grain.

LANARK, RIDGE PARK.—Rainfall about 2 in. below the average.

BOTHWELL CASTLE.—The rainfall this year has been 1·09 in. below the average of 34 years, but the summer was remarkably cold and sunless, and the crops were late and inferior.

GLENDRISHAIG.—A cold spring with much frost and frequent falls of S; a wet sunless summer; crops bad, especially turnips.

PINMORE.—Rainfall 4·05 in. below the average.

CARSEHEAD.—Very low temperature throughout the year, with wet summer months.

NEWTON MEARNS.—Although the total rainfall for the year is not large, the proportion which fell during the summer months is excessive, and not only was the summer wet, but it was also one of the coldest on record, and many kinds of crops and fruit did not ripen.

DIVISION XV.—WEST MIDLAND COUNTIES.

HELENSBURGH.—Very cold year, with very little sunshine.

CAMERON HOUSE.—Although almost constant drizzling rains prevailed from the end of April to the middle of October, there were no floods, and the only heavy rains were in September and December; although, therefore, the season, generally speaking, was one of the dampest and coldest, there being very little sunshine; the rainfall is below the average of 40 years. There were hardly any TSS during the year.

AUCHNABA.—The months of November and December were unusually dry for the West Highlands, and the whole year's fall is below the average. The corn crops were good but late, and the wet in September and October caused them to be got in in very bad condition. The turnips and potatoes are very short in quantity.

POLTALLOCH.—The weather during January, February and March was piercingly cold, hard frost, and S, R and H falling frequently. April, May and June also were very cold, and the last six months were wet as well as cold, the temperature falling below freezing both in June and August.

EDERLINE.—The year was remarkable for its continued low temperature and want of sunshine.

TARBERT, STONEFIELD.—Frost, with only three or four days' intermission from 22nd October, 1878, to 20th May, 1879.

ISLAY, EALLABUS.—Rainfall below the average; grain crops pretty

well secured, but rather light. The winter to the end of the year was good for stock and healthy, grass was abundant, but not fattening nor good for milk; potato crop about an average; turnips much below the average; great absence of small birds.

MULL, QUINISH.—Rainfall below the average of ten previous years, in spite of the heavy rains of July and September. The first six months of the year were unusually dry, as were also October and November.

DIVISION XVI.—EAST MIDLAND COUNTIES.

AUCHTERMUCHTY.—Very severe winter; temperature has not been so low since 1860.

MOUNTQUHANIE.—Very sunless up to the middle of September, then bright and dry; unusual frost in the beginning of December; thermometer fell to zero on the 3rd.

LANRICK CASTLE.—The total rainfall was not so large as in some previous years, for although the summer was cold and sunless, there were no great falls of rain; it was more a continued drizzle. The harvest was very late, but the crops in this quarter were gathered in in very good order during the month of October.

BLAIR ATHOLE.—Want of sunshine, and consequently cold weather, was the characteristic of the year.

DIVISION XVII.—NORTH EASTERN COUNTIES.

FETTERCAIRN.—First quarter of the year stormy, with S; second quarter wet; third quarter wet and cold; fourth quarter very fine, but intense frost and S from 27th November to 13th December.

BRAEMAR.—A dark and damp year, but total amount of rainfall the least on record.

DRUMOAK, DRUM CASTLE.—Cold and sunless year; no fruit properly ripened; grain crop very late and deficient in weight; turnips and potatoes far under the average.

LOGIE, COLDSTONE MANSE.—Rainfall 3 in. below the average of previous ten years, though the number of wet days is above the average for the same period. The early part of the year was marked by the small number of hours of sunshine, and to this is attributed the deficiency and immaturity of all cereal crops in this district.

TILLYPRONIE.—A very cold cheerless year throughout.

ABERDEEN, GORDON'S HOSPITAL.—During the first four months of the year snow-storms very frequent, and up to the middle of August unusually few sunny days ; from the middle of August until the end of the year weather generally calm and fine.

MIDMAR, BLACKSTOCK.—Very cold, wet, and cloudy till September ; after that dry.

CLUNY CASTLE GARDENS.—The year was remarkable for its low temperature and want of sunshine ; crops of all sorts inferior in quality and quantity.

TILDYDESK. — The year was remarkable for the considerable amount of R during the summer months, and its abnormal deficiency during the last three months. The extremely disastrous character of the year agriculturally has arisen not so much from the absolute amount of R that fell in the spring or summer, as from the continued cold and moisture of the atmosphere, and the almost entire absence of sunshine.

OLD DEER.—The rainfall is below the average, but the weather has been cold and wet throughout the year ; therefore the crops looked as if they would not come to maturity, but they were saved by a few weeks fine weather in September and October ; and there was a fair amount of grain, but it was very light.

KEITH (H.R.S.).—The most unpropitious year for agriculture experienced for a number of years ; protracted snow-storms in January and February ; and from the 1st of March to the end of August temperature was much below the average. Crops of all kinds were bad, and in the upland district the corn did not come to maturity before it was destroyed by the frosts at the end of October.

ELCHIES. — Remarkably low temperature during the summer months and want of sunshine until after the last week in August. Very late harvest, crops immature.

DIVISION XVIII.—NORTH-WESTERN COUNTIES.

LOCHBROOM.—A uniformly wet year from end to end ; no great floods, but an almost constant drizzle. The total rainfall for the year is below the average, but the number of wet days is above. Very little sunshine during the year.

ARDROSS CASTLE.—January, February, and March were snowy throughout ; spring and summer cold and wet ; autumn was good till the middle of December.

PORTREE.—The first two months were remarkable for heavy S and severe frost ; the whole year was cold, but the rainfall was less than in any other year since 1860.

DUNVEGAN.—The first two months of the year were exceptionally dry.

LOCH MADDY.—Frost and S in the beginning of the year.

INVERNESS, CULLODEN HOUSE.—Seasons cold, late, and ungenial.

DIVISION XIX.—NORTHERN COUNTIES.

ASSYNT, ACHUMORE. — The rainfall this year is the smallest in amount that I have registered in six years' observations. During the first six months of the year the fall amounted to only 19·7 in., the average for five preceding years being 35·8 in. ; the remaining six months the fall was 47·1 in., the average being 46·4 in.

WATTEN STATION.—A hard and exceptionally protracted winter ; a cold, wet, and late spring ; a humid, cold, and sunless summer ; a good but late autumn, with very low temperature.

SANDWICK MANSE. — Rainfall 4·77 in. below the average of previous 39 years ; the mean temperature 43°·7 ; was 2°·1 below the average of 52 years.

EAST YELL.—Peculiar for dry weather in March, May, July, and December.

IRELAND.

DIVISION XX.—MUNSTER.

BLACK ROCK.—A cold and unpropitious year, with very little real summer weather. Harvest much later than usual.

Rainfall, 1879.

<i>Excess over average of 14 years, 1865 to 1878.</i>	<i>Less than the average of 14 years, 1865 to 1878.</i>
January 3·43 in.	March 1·85 in.
February 1·49 „	May 0·50 „
April 1·23 „	August 0·37 „
June 6·74 „	September 0·35 „
July 2·44 „	October 3·63 „
	November 3·83 „
	December 3·39 „
Total..... 15·33 in.	Total..... 13·92 in.

CORK, SUMMERHILL.—The weather here last year was remarkable in many respects, if not exceptional. The winter of 1878–9 was the coldest, as well as the most protracted, in my recollection. The amount of rainfall in the last three months of the year was the smallest registered in Cork during a corresponding period for 15 years, and was probably unprecedented.

CORK, ROYAL INSTITUTION.—One of the wettest and most inclement summers in the memory of “the oldest inhabitant.”

GLENVILLE.—Rainfall below the average, but the greater part fell during the summer months, and this, with a great absence of solar heat, made the year very unpropitious, especially for root crops.

DROMORE CASTLE.—Rainfall less than in any year since 1875, when observations were commenced here; dry weather at the beginning and end of the year, and rainy in the middle. The summer was characterized by low temperature and want of sunshine; a late autumn and very fine winter.

SUMMERVILLE.—During the four summer months, June to September, just half the total R of the year fell, and the weather was cold and unseasonable with a great absence of sunshine, but the three succeeding months were unusually fine, with slight rainfall.

CAPPOQUIN.—Rainfall less than the average, though January and February were very wet, and the summer was wet and sunless, causing the failure of crops in a great measure.

CLONMEL, GLENAM.—Unusually wet and cold summer, with a great absence of sunshine; dry, fine autumn.

TIPPERARY, HENRY STREET.—Cold, wet summer, which greatly damaged the crops, but the last three months of the year were perhaps the finest on record; very severe frost in December, but little S.

KILLALOE, BALLINA.—Spring months good on the whole; summer and autumn very bad, wet, with low temperature; winter so far unusually fine.

CASTLE LOUGH.—The early months cold; in the summer months the rain was so constant that people will scarcely believe that the total for the year is below the average; it is, in fact, the lowest amount for five years; the absence of heat, added to the constant rain, was most disastrous.

NEWCASTLE WEST.—Although the year was generally regarded as a wet one, the rainfall was less than in any of the three previous years; the principal difference was its warmer and drier winter and colder and wetter summer.

JANEVILLE.—A cold, rainy summer, with very little sunshine.

KILRUSH.—Cold and wet year. Agricultural produce of the poorest and worst description.

MILTOWN MALBAY.—Spring was nearly all frost, S, R and stormy; summer followed suit, it was cheerless, sunless, cold and stormy, May and June being frosty, with a fall of S in July; nearly every day in July, August and September was wet, destroying the crops and making pulp of the peat fuel. October fair; November the finest of any for years; December dry up to the last five days. Not much T. The most disastrous year since 1846.

DIVISION XXI.—LEINSTER.

LONGRAIGUE.—June, July, August and September were unusually wet, exceeding the average by 6·79 in. October, November and December were very dry, being 9·75 in. below the average.

BRAY, FASSAROE.—Very cold spring; cold, wet summer; harvest perhaps the latest this century in Ireland; potato crop poor. The months of October, November and December were very fine, and turf could be dried and harvest saved; had these months been wet, the distress in the country would have been almost equal to that in 1847.

BAGNALSTOWN, FENAGH HOUSE.—Year throughout very cold and damp; vegetation very backward among tender plants, but hardier and native plants very luxuriant. Crops generally late, owing to wet and cold; season very bad for seeds ripening, and appearance for fruit crop next year rather unfavourable.

ABBEY LEIX, BLANDSFORD.—Rainfall not above the average of six years, but most persistent from middle of May to middle of September; temperature very low during the summer, which was probably the cause of the failure of the crops.

STRADBALLY, POLESBRIDGE.—Continued R and very little sun during the summer months.

DUBLIN, FITZWILLIAM SQUARE.—Rainfall ·50 in. above the average of previous 10 years, owing to the great excess in the summer months; in the last quarter of the year the fall was nearly 5·0 in. below the average of that period. The mean temperature was 2°·7 below the average, and the amount of cloud about 10 per cent. above.

BALBRIGGAN.—Rainfall below the average of previous 10 years. The year generally was cold; only a few hot days.

TRIM.—Severe cold up to the end of March, the remainder of the year moist and gloomy, without sun to ripen the crops.

STEPHENSTOWN.—Too wet for haymaking and harvest, both were very late.

DIVISION XXII.—CONNAUGHT.

CREGG PARK.—Great absence of sun during the summer, and vegetation suffered very severely ; very dry weather, with plenty of sunshine after the end of September, which greatly saved the potato crop and enabled the supply of turf to be dried.

KILCONNEL RECTORY.—Though the amount of rainfall is less, than last year, there has been less sunshine and therefore more apparent damp. The spring and winter were the driest seasons of the year.

TUAM, GARDENFIELD.—The summer was cold and wet, and the crops were greatly injured ; the winter was very severe, and many shrubs and trees were killed.

WESTPORT.—There was a remarkable absence of heat in the summer and autumn ; the harvest was a month later than usual.

DIVISION XXIII.—ULSTER.

RED HILLS.—The total rainfall was below the average ; crops were ruined by the continuous wet of May, June, July and August ; January and December, instead of being the wettest, were the driest months in the year.

DOWRA.—Fine when R and S would be expected, and cloudy and heavy R when fine weather would be expected, and was necessary for an average harvest.

FLORENCE COURT.—The rainfall was about the average ; severe frosts at the beginning of the year ; vegetation in the spring very late ; the summer months, June, July, August and September, very wet, which had a very bad effect on the crops, and caused turf for fuel to be almost useless. October and November mild and dry with some severe frosts.

NEWRY, EDWARD STREET.—The excessive rainfall of the summer had a prejudicial effect on the crops.

HILLTOWN.—The almost continuous rain during the spring and summer caused almost all the crops to be a total failure.

NEWTOWNARDS.—The year has been characterised by a wet cold

summer, which produced disastrous effects on the harvest; two-thirds of the total rain for the year fell in the five summer months, May to September; last three months very dry.

SYDENHAM, ALMA HOUSE.—The rainfall of 1879 was 0·65 in. above the average of the previous 13 years as recorded at this station. The early winter and spring months were cold and frosty (minimum readings as low as 8° to 16° being not unfrequently noted) with a rainfall below the average. A gentle thaw afforded a favourable seed time in March. April was also dry, but cold, S being recorded on 12th. The fall for May was above the average, but with June a period of unprecedented humidity set in, the fall, 6·01, being no less than 3·66 in. in excess of the mean. July and August also were extremely wet. This excessive moisture, accompanied as it was by low temperature and an unusual absence of sunshine, produced a rank green vegetation, with but slight appearance of cereal ripening even at the end of August. These conditions continuing during September, the crops, though immature, had to be cut in many cases quite green. Root crops suffered severely, turnips and mangold being in many cases not worth the ingathering, and potatoes, whilst showing abundance of haulm, yielded small immature and diseased tubers, scarcely averaging half a crop. Hard frosts and dryness characterised the last three months of the year, the fall in October being no less than 2·87 in., in November 2·48 in., and December 2·18 in. below the average. Frost continued with but slight interruption for this entire period, and as it was unaccompanied by S in this district, skating was largely indulged in, the very low minimum reading of 11° being recorded on 2nd and 4th December.

BELFAST, NEW BARNSELY.—Severe weather in the early part of the year; spring very backward and cold; autumn miserably cold and wet. November the finest month in the year.

MONEYDIG.—A dry cold spring, wet summer, and dry mild autumn; from 13th May till 27th September it was wet and cold; potatoes and turnips very poor crop. The peat fuel is mostly still in the bogs. Grass lands yielded only about half the average; oats good crop, but late. October and November drier than same months of previous 15 years.

DRENAGH.—Rainfall below the average; driest year since 1871; temperature low throughout the summer.

LIMAVADY.—Total rainfall for the year unusually low; con-

siderably more rain fell in the four summer months, May to August, than in the whole of the other eight months.

COLERAINE.—Rainfall in the summer months, May to September, very excessive; winter months very dry.

STEWARTSTOWN.—The rainfall for the year was about the average, yet it did much injury, as the greater part came when it was not wanted.

CONVOY HOUSE.—The year was remarkable for extremely low temperature in the early winter and spring; severe frosts, S and cold winds; the summer cold and wet, and most ungenial severe frosts again in December. The amount of R for the year was not excessive, but it fell over a large number of days and gave the appearance of a greater fall than really took place. The weather throughout the year was generally dark and gloomy and unfavourable for both gardening and agriculture. Fruit was nearly a total failure.

BALLYARE HOUSE.—The total rainfall was small, but the year was considered a wet one, as there was such constant R in July, August and September, and there was no drying weather all the summer or autumn. The winter was very calm and dry till just about Christmas.

KILLYGARVAN.—The first four months of the year were dry, but very cold; the summer wet, stormy, and cold to the end of September. October and November were fine months. A very hard frost from the 1st to the 14th December; afterwards fine till Christmas, and stormy for the last few days of the year. The rainfall was 3·42 in. below the average.

BUNCRANA, ROCKFORT.—The wet and cold of the two principal summer months, June and July, seemed fatal to the green crops, but the corn crop was most abundant.

HEAVY RAINS IN SHORT PERIODS.

The following list is a rather short one, which tends to show that there were not so many torrential rains during the year as usual, and such was to a certain extent the case, as the summer months, when heavy downfalls generally occur, were characterized more by continued wet than by the heavy thunder showers which as a rule contribute the larger proportion of the total fall in those months. But several heavy falls of rain occurred in the night of August 2nd-3rd during which the rate of fall was not observed, or no doubt the list would have been considerably augmented. Many of the entries in the table appear by no means remarkable, but with the small amount of information on the subject at our command, it is impossible to be sure that such is the case. We have frequently endeavoured to impress upon observers the importance of noting heavy showers, but apparently without much success, and until the number of records is greatly augmented, this portion of the work must remain more a collection of interesting and instructive facts, than a chronicle of what took place during the year.

We do not this year give a separate notice of the storm gauge readings at Camden Square, because the facts observed are not of sufficient importance. The only very heavy fall was that on June 24th, which heads the following list, and the details of that fall were vitiated by the time which was required to melt the hail, of which it was largely composed.

Heavy Falls in Short Periods.

Date.	Division.	Station.	Amount.	Duration.		Rate
				hr.	min.	per hour.
June 24 ...	I.	Camden Square	in. .27	hr. ...	min. 3½	in. 4.63
Aug. 17 ...	IX.	Sheffield Sharrow .....	.31	... 5		3.72
Sept. 8 ...	II.	Tenterden .....	.11	... 5		1.32
Aug. 23 ...	XVII.	Midmar, Blackstock .....	.51	... 9		3.40
Aug. 17 ...	IX.	Sheffield, Sharrow .....	.28	... 10		1.68
Sept. 7 ...	VIII.	Torver Rectory .....	.27	... 10		1.62
July 20 ...	IV.	Hillington Rectory .....	.31	... 12		1.55
Aug. 26 ...	I.	Camden Square .....	.17	... 12		.85
July 20 ...	II.	Addiscombe .....	.21	... 13		.97
June 13 ...	V.	White Lackington .....	.43	... 15		1.72
June 11 ...	XIV.	Cambuslang, Bushy Hill.	.37	... 15		1.48
June 30 ...	V.	Arlington Court	1.48	... 20		4.44
Sept. 24 ...	XX.	Miltown Malbay .....	.40	... 20		1.20
July 19 ...	IX.	Middlesborough .....	.20	... 20		.60
June 11 ...	VI.	Bishop's Castle	1.10	... 25		2.64
Aug. 5 ...	XXII.	Enniscoe	1.42	... 30		2.84
Aug. 17 ...	III.	Wisbeach .....	.64	... 30		1.28
Aug. 17 ...	III.	Tetworth Hall .....	.44	... 30		.88
Aug. 17 ...	IX.	Wentworth Castle	1.09	... 32		2.04
June 11 ...	VII.	Spondon	1.24	... 40		1.86
June 13 ...	III.	Reading, Purley .....	.65	... 45		.87
June 13 ...	II.	Woldingfold	1.72	... 55		1.88
June 13 ...	V.	South Petherton .....	.75	1 ...		.75
Aug. 3 ...	IV.	Wetherden Rectory	1.77	1 45		1.01
May 28 ...	II.	Hythe	1.53	2 30		.61
Aug. 16 ...	VI.	Whitchurch	2.60	3 ...		.87
Aug. 2 ...	III.	Watford, Oaklands	1.16	3 ...		.39
Aug. 30 ...	XII.	Irongray, Drum Park ...	4.00	4 ...		1.00
Aug. 2 ...	III.	Cambridge, Beech House.	3.60	4 30		.80

HEAVY FALLS IN 1879.

PART I.—CHRONICLE.

NOTE.—The letter **M** throughout this article is used as an abbreviation of the term “Maximum daily rainfall during the year.” The day being in all cases, where not otherwise specified, the rainfall day, terminating at 9 a.m. on the succeeding civil day.

JANUARY 1ST.

The year began with a heavy fall at many stations. At about fifty, chiefly in the south and south-west of England, it was the **M**, but neither the amounts nor the per-centages were large. The largest amount and also the largest per-centage was 1·84 in. or 6 per cent. at Burcote (Oxfordshire).

JANUARY 19TH.

A heavy fall in the south-west of Ireland; **M** at Kenmare (Kerry) 3·90 in. or 6·6 per cent, and at Darrynane Abbey (Kerry) 2·90 in., or 6·1 per cent.

APRIL 7TH.

A local fall in Central Aberdeenshire; **M** at Cluny Castle 2·13 in. or 6·4 per cent., and at Dun Echt Observatory the same amount, 2·13 in., or 6·8 per cent.

MAY 28TH.

One of the principal falls of the year, the **M** at 63 stations. The fall was not an excessively heavy one anywhere, and was chiefly confined to Middlesex, Surrey and Kent. The only amounts exceeding 2·00 in. are—

				in.	per cent.
Hythe,	Kent	...	...	2·04	or 5·3
Sevenoaks,	„	...	...	2·00	5·4

JUNE 2ND.

A local fall between Eastbourne (Sussex) and Folkestone (Kent); **M** at Ore, near Hastings (Sussex) 1·93 in. or 5·6 per cent.

JUNE 7TH.

A very unimportant fall, but still the M at 57 stations in various parts of the country. Many of the amounts very small, thereby showing of course a remarkable absence of heavy falls during the year. The most noteworthy illustration of this is afforded by the return from Moorgate Grove, Rotherham (York, W.R.), where no greater fall than 0·67 in. occurred on any day in the year. The M was at Plas Power, Wrexham (Denbigh), but was only 1·77 in., or 5 per cent.

JUNE 16TH.

The M at about a dozen stations in Waterford and Tipperary ; the absolute M was, however, at Courtown House (Wexford), 2·20 in., or 5·5 per cent.

JUNE 30TH.

The M at a few more stations than that of May 28th, and the amounts larger. Only four of the M in May exceeded 1·75 in., but on June 30th there were twenty-three such cases. We give all the M which exceeded 2 in.

				in.	per cent.
Div. V.	Whatcombe, Dorset	...	...	2·08	or 4·5
	„ Minterne,	„	...	2·16	4·5
	„ Melbury,	„	...	2·01	5·0
	„ Bere Ferrers, Devon...	...	...	2·11	3·8
	„ Holne, Ashburton, Devon	...	...	2·94	3·9
	„ Druid	„	...	2·35	4·0
	„ Tavistock, Devon	...	...	2·17	4·0
	„ Kilworthy, „	...	...	2·15	3·7
	„ Ilsington, „	...	...	2·24	3·9
	„ Pentillie, Saltash, Cornwall	...	...	2·63	4·4
XI.	Llanfrechfa, Newport, Monmouth	...	...	2·32	4·4
	„ Golden Grove...	...	...	2·10	4·1

JULY. 13TH.

Although there was not an inch of R recorded at any English station on this day, not even at the nearest station to the village of which we are going to write, yet at this spot the fall must have been enormous. We are indebted to our correspondent at Staunton-on-Wye (Hereford), the Rev. H. W. Phillott, for the facts whence the following epitome has been drawn up. Bredwardine Church is about 2½ miles W. of Staunton-on-Wye, in lat. 52° 6' N. and long. 2° 57' W., on the banks of the Wye and 210 feet above mean sea level. Due West from Bredwardine the ground rises, for half-a-mile gently, and then rapidly for a mile, the highest point being about 600 feet above

the sea. A brook starts from part way up the hill and flows eastward through a culvert and into the river Wye, and about 300 yards before reaching the culvert it is joined by another very small brook. These two brooks jointly drain the eastern slope of the hill, perhaps altogether about 500 acres. About 2 p.m. on July 13th a cloud settled on the hill, or, according to another account, two clouds met on the hill; there was a flash of lightning, a peal of thunder, and then, during 10 minutes, such a fall of H and R that the fall was heard in two villages, respectively distant $1\frac{1}{2}$ and $2\frac{1}{2}$ miles. But at these villages, and at Bredwardine, which was within a mile, the rainfall was quite moderate. The greatest fall was on an 11-acre turnip field on the top of the hill; there was no hole indicative of a waterspout, but the whole field was scoured by the rush of water. Some of the effluent water rushed into a cottage garden and washed away eight or ten inches of the soil (even potatoes and onions were picked up at the bottom of the hill). Then the water flooded the road from two to three feet deep, and finally got into the brook above mentioned. At the widest part this brook is 7 feet 6 in. broad; it is deeply cut in the soil, but has seldom more than 4 in. of water in it. We have no information as to the depth to which this brook was filled, but as above mentioned, the water from the (estimated) 500 acres all passes through a culvert into the river Wye. This culvert was 2 feet 4 in. wide and 1 foot 6 in high, and it was blown up for about the space of a square yard by the pressure of the effluent water.

JULY 19TH.

The M at several stations in the north-east of Ireland, especially in county Down, but the amounts unimportant; the M was at Flurry Bridge (Armagh) 1.97 in. or 4.5 per cent.

JULY 21ST.

The M at some stations in the north of Norfolk, but the amounts were unimportant except at Colne Lodge, Cromer (Norfolk), where the fall was 2.43 in. or 8.9 per cent, and as there had been heavy rains on the previous day considerable floods resulted.

AUGUST 2ND.

The most important M as regards highness of per centage—in other words it was by far the heaviest fall in a dry district.

The fall occurred between Reading and Norwich, and was very heavy over Cambridge. All the gauges in the town record upwards of 3 in., and at Granchester Mill the fall in 24 hours was very nearly 4 in. A heavy local storm occurred near Taunton (Somerset) and at the mouth of the Severn. The M occurred at 119 stations on this day, and at the following exceeded 2 in. or 7 per cent. :—

Division.	Station.	County.	Fall.	Per cent.
			in.	
II.	Reading	Berks	2·42	7·3
„	Welford, Newbury	„	2·01	5·4
„	Cookham, Maidenhead.....	„	2·07	5·7
III.	Berkhampstead	Herts	2·50	7·1
„	Great Gaddesden	„	2·36	7·2
„	Kensworth	„	2·34	7·2
„	Therfield, Royston	„	2·03	6·4
„	Royston	„	3·00	10·0
„	High Wycombe	Bucks	2·12	6·5
„	Aylesbury	„	2·30	5·9
„	Mentmore	„	2·29	8·2
„	Swyncombe.....	Oxon.....	2·36	6·7
„	Tetworth, St. Neots.....	Huntingdon...	2·24	7·3
„	Huntingdon	„	3·75	11·6
„	Old Warden	Bedford	2·48	8·0
„	Wrestlingworth.....	„	2·35	8·2
„	Cardington	„	1·91	7·1
„	The Rectory, Sandy.....	„	2·55	8·9
„	The Lodge, „	„	2·22	8·2
„	Tempsford	„	2·45	8·9
„	Granchester Mill	Cambridge	3·92	11·9
„	Fulbourne	„	3·40	10·8
„	Cherryhinton	„	3·17	10·3
„	Beech House, Cambridge.....	„	3·60	12·0
„	Merton Villa, „	„	3·80	12·3
„	Sidney Street, „	„	3·13	10·9
„	Trinity College, „	„	3·11	10·0
„	Hardwicke	„	2·75	10·4
„	Observatory, Cambridge	„	3·19	10·0
„	Papworth Everard, Caxton.....	„	2·13	6·5
„	Stretham, Ely, Cambridge	„	2·50	8·9
IV.	Rushall, Scole.....	Norfolk	2·48	8·0
„	Norwich	„	2·13	6·8
„	Dickleboro' Place, Norwich	„	2·15	6·6
„	Cossey	„	2·15	6·8
V.	Lydeard House, Taunton.....	Somerset	3·21	8·7
„	Cothelston House, „	„	3·55	8·5
VI.	Credenhill Court	Hereford	2·40	8·9

Five rain gauges were allowed to run over on this occasion, and the records were thereby lost. The annual totals of all these records have been omitted from the general tables, but they are given in the table of imperfect records at the end of the volume.

The stations at which the gauges were allowed to overflow are the following, and it will be noticed that the capacity of all the gauges is far below the minimum stated in Rule XVI., viz., *four inches*.

			Amount entered.
Nash Mills, Hemelhempstead	Gauge will hold only	2·50 in.	2·50 in.
Rothamstead (large gauge) ...	„ „ ?		3·00 in.
Waresley, St. Neots ...	„ „	1·75 in.	2·30 in.
Silsoe	„ „	2·62 in.	2·62 in.
Wrest Park	„ „	2·80 in.	3·50 in.

I wish that it were possible to impress upon observers the serious injury which they do to their own work by continuing to rely solely upon gauges of such small capacity. Five records were thus spoiled in 1872, six were thus spoiled in 1875, and here are five others on one day. We thus have sixteen registers utterly spoiled, within seven years. It is impossible to speak more plainly than in the article upon “Rain Gauges Overflowing,” in *British Rainfall*, 1875. I, therefore, merely ask observers to read Rule XVI., and subsequently Rule II., and to act upon them.

AUGUST 5TH.

The M at about 40 stations chiefly in Wales, Lancashire, the south-west of Scotland, the Isle of Man and Dublin. It was, however, not an important fall, the only cases exceeding 2 in. or 6 per cent. were—

		in.	per cent.
Div. X.	Lowther Castle, Penrith	2·00	or 6·1
„ XI.	Nannau, Dolgelly	2·18	3·5
„ „	Bryn Gwynant.....	2·60	2·4
„ „	Rhianva (Anglesea).....	2·10	5·7
„ XII.	Carsphairn.....	2·30	4·6
„ XIV.	Pinmore, Girvan, Ayr.....	2·35	4·8

AUGUST 16TH AND 17TH.

Reference to the full details of this very heavy fall which are given on pages [15] to [19] will show that the great fall began in the afternoon of the 16th, and continued until the evening of the 17th. At southern stations in Gloucestershire and Hereford, for instance, slight R began about 7 a.m., and it rained gently until the heavy fall came on in the evening. The slightness of the fall in these early hours is shown by the small entries in the column of the following table headed “15th,” to which, of course, amounts falling before 9 a.m. on the 16th belong. The 9 a.m. observation on the 17th necessarily cuts the total fall into two portions. Under the column

for 16th we have the produce of the gentle fall (at some stations) during the early part of the 16th, and such part of the great fall as occurred in the afternoon, evening and night of the 16th, and in the early hours of the 17th. The last column, headed 17th, gives the fall after 9 a.m. on that day.

In the following table we give the figures for no stations except those which had at least three inches in the two days.

Rainfall on August 15th, 16th, and 17th.

Div.	Station.	County.	15th.	16th.	17th.	Total.
VI.	Battledown, Cheltenham ...	Gloucester...	...	2·14	1·23	3·37
„	Burghill, Hereford	Hereford ...	...	2·75	·35	3·10
„	Stoke Bliss	„	...	1·86	1·96	3·82
„	More Rec., Bishop's Castle..	Salop .....	...	1·80	1·49	3·29
„	Adderley, Market Drayton..	„	...	2·36	·99	3·35
„	Dodington, Whitchurch.....	„	...	3·42	1·20	4·62
„	Tean Vic., Cheadle	Stafford.....	·15	1·22	1·73	3·10
„	Evesham	Worcester...	·11	1·90	1·27	3·28
„	Worcester	„	...	2·50	·58	3·08
„	Kidderminster	„	·26	3·47	·96	4·69
VIII.	Cholmondely, Nantwich ...	Cheshire ...	...	2·63	1·36	3·99
„	Buglawton, Congleton	„	·03	2·35	1·31	3·69
„	Lead Works, Chester	„	·01	2·18	1·55	3·74
„	Newton Nurseries, Chester..	„	·02	2·32	1·65	3·99
„	Hinderton, Neston	„	·01	1·36	2·10	3·47
„	St. Michael's, Liverpool.....	Lancashire..	...	1·42	1·58	3·00
XI.	Goginan, Aberystwith	Cardigan ...	...	2·40	2·34	4·74
„	Gogerddan, „	„	...	1·76	1·65	3·41
„	Hawarden, [Chester]	Flint .....	...	1·80	1·34	3·14
„	Nantlys, St. Asaph	„	...	3·75	2·61	6·36
„	Bagilt, Holywell	„	·32	2·20	1·75	4·27
„	Rhyll	„	·03	2·80	2·11	4·94
„	Plas Berwyn, Llangollen ...	Denbigh ...	·20	1·25	1·98	3·43
„	Trevalyn Hall, Wrexham ...	„	...	2·20	1·08	3·28
„	Glan-y-wern, Denbigh	„	...	2·43	1·97	4·40
„	Vale-street, „	„	·12	2·81	1·87	4·80
„	Garthewin, Abergele	„	...	2·69	2·80	5·49
„	Nant y glyn, Colwyn	„	...	2·36	2·64	5·00
„	Bryn Euryn, Abergele	„	...	2·63	1·83	4·46
„	Bodfaen, Pwllheli	Carnarvon...	...	2·00	1·36	3·36
„	Cefn, Llangybi	„	...	1·54	2·95	3·49
„	Pen-y-gwryd	„	·50	3·00	2·50	6·00
„	Llandudno	„	...	1·91	1·76	3·67
„	Rhianva, Beaumaris	Anglesea ...	...	1·38	1·68	3·06

On the accompanying map, however, we give all the amounts which exceed two inches, and an examination of that map, coupled with perusal of the Observers' Notes on pages [15] to [19], and of the above comments, will place our readers in possession of the whole of the facts of the case.

We find a fall of *seven inches* near Kidderminster (not put upon the map, because the accuracy of the observation might be disputed, although we personally accept it) of four and three quarter inches near Aberystwith, of more than four and a half inches at Whitchurch, and of from four to nearly *six and a half inches* over the greater part of North Wales. Looking at these facts, and remembering the enormous volume of water which they represent, the source of surprise should not be that the Llandulas, and one or two other minor bridges, were washed away, but that far greater disasters were not produced.

AUGUST 19TH.

A rather unimportant **M**, although it occurred at about 50 stations. It was an equable **R** of from 1 to 2 in. over the south of England and South Wales. Max. amount 2·07 in. or 4·4 per cent. at Singleton, Chichester (Sussex). Max. per centage 4·5 per cent. at Arundel (Sussex).

AUGUST 30TH.

A waterspout burst on the hill above Drum Park (Dumfrieshire). The amount collected by the gauge at Drum Park was 4·00 in. or 8·4 per cent., and it all fell in about four hours. No large amount is reported from any other station for that date.

SEPTEMBER 6TH AND 7TH.

Rather heavy but not exceptional rains prevailed in Ireland on both these days.

SEPTEMBER 23RD.

The **M** at 48 stations in the east and south-east of England, but in no case amounting to 2 in. **M** amount and per centage 1·86 in. or 6·7 per cent. at Lowestoft (Suffolk).

OCTOBER 2ND.

A heavy fall in the English lake district; 3·51 in. fell at Seathwaite, and at Bridge End, Langdale (Lancashire); 4·05 in. or 4·1 per cent. was recorded.

DECEMBER 27TH. •

This was a more widespread **M** than that of October 2nd, but it was in nearly the same district. The **M** extended from about 10 miles south of Kendal, across the Solway Firth, and a short distance into

the south-west of Scotland. The amounts exceeded 3 in. at the following stations :—

		in.	per cent.
Div. X.	Seathwaite, Borrowdale, Cumberland ...	4·02 or	3·6
„ „	Barrow Ho., Keswick.....	3·23	5·5
„ „	The Wood, Windermere, Westmoreland	3·05	5·3
„ „	Patterdale Hall, Ullswater	3·27	4·7

DECEMBER 30TH AND 31ST.

Heavy rains in the mountain districts of Wales. **M** amount, 2·88 in. or 3·9 per cent. at Tydraw, Treherbert (Glamorgan); **M** per centage 4·7 or 2·04 in. at Bala (Merionethshire).

PART II.—ABSTRACT.

Two facts strike us rather forcibly when considering the following tables, and it may be well to mention them for the use of our readers.

First, it must be recollected that it is only by establishing absolute identity of practice that comparisons of phenomena can be instituted with advantage; that it is therefore necessary that some one hour be decided upon for the daily measurement of the amount of **R** fallen, and that whatever hour might have been selected, it would infallibly cut into two equal or unequal parts the majority of heavy rains exceeding twelve hours in duration. As we desire to know the total fall in twenty-four hours, it is obvious that our object is inevitably difficult of attainment. A good illustration of this difficulty occurred on August 16th-17th, and has already been mentioned.

The second difficulty arises from the number of rain gauges which are still in use which are unable to hold falls of four or five inches when they occur, as occur they certainly will, even in the driest part of the country. Nearly every year we lose some of the most important data through the neglect of this subject. There can be little doubt that several of the records vitiated by the overflow of the gauges ought to appear in the table of Maximum Falls, and thus observers who do not provide against such falls not only damage their own records, but also spoil an important part of the collective results obtained by the whole body.

TABLE I. gives the amounts recorded for single days during 1879 at the sixteen stations where the largest amounts were observed. It will be noticed that at all the sixteen the fall in 24 hours exceeded 3·10 in., that at ten of them it exceeded 3·50 in., and at three was

4 inches or upwards, and yet that the majority of the stations are dry ones ; indeed five of them are in Cambridgeshire, one of the counties in which the ordinary rainfall is least.

TABLE II. shows that the heavy falls have been greater than in 1878, and rather above the average, but not nearly so remarkable as in 1875 and 1872 ; it also shows that the heavy falls which claim notice in Table I. this year are much larger per-centages of the total yearly fall at the respective stations than usual, in fact they are large beyond any precedent during the previous fourteen years. This arises from the concurrence of two separate, and I believe unconnected, facts, (1) the occurrence of an unusually heavy rain in Cambridgeshire ; (2) the occurrence of a dry year in the Lake District, the records from which often claim a large part of Table I.

TABLE III. shows even more markedly than Table I. the exceptional character of the Cambridge fall. It will also be seen that at nearly every station in this table one-tenth of the entire yearly rainfall fell in twenty-four hours.

TABLE IV. is an abstract of Table III., and it shows that the highest per-centages this year average 10·9 per cent., a figure only once before exceeded, viz., in 1867, when the average was sent up to 11·0 per cent. by the tremendous fall which occurred in that year near Sittingbourne.

TABLE V. gives the final results for about a thousand stations, and compares them with those for the previous fourteen years. The result may be summed up in four words, "In no respect remarkable."

TABLE I.—*Maximum Falls in 1879.*

Date.	Div.	Stations.	Depth.	Per cent.	Fall in year.
Oct. 2 ...	VIII.	Little Langdale	4·05in.	4·2	96·62in.
Dec. 27 ...	X.	Seathwaite.....	4·02 ,,	3·6	110·70 ,,
Aug. 30 ...	XII.	Drum Park	4·00 ,,	8·4	47·65 ,,
„ 2 ...	III.	Granchester Mill	3·92 ,,	12·0	32·73 ,,
Jan. 19 ...	XX.	Kenmare	3·90 ,,	6·6	59·39 ,,
Aug. 2 ...	III.	Merton Villa, Cambridge ...	3·80 ,,	12·3	30·96 ,,
„ 16 ...	XI.	Nantllys	3·75 ,,	12·0	31·28 ,,
„ 3 ...	III.	Huntingdon ...	3·75 ,,	11·8	31·89 ,,
„ 2 ...	„	Beech House, Cambridge ...	3·60 ,,	11·9	30·29 ,,
„ „ ...	V.	Cothelston House, Taunton..	3·55 ,,	8·6	41·31 ,,
„ 16 ...	VI.	Kidderminster	3·47 ,,	11·0	31·60 ,,
„ „ ...	„	Whitechurch	3·42 ,,	10·0	34·25 ,,
„ 2 ...	III.	Fulbourne Asy., Cambridge..	3·40 ,,	10·8	31·63 ,,
Dec. 27 ...	X.	Patterdale Hall.....	3·27 ,,	4·7	70·07 ,,
„ „ ...	„	Barrow House, Keswick	3·23 ,,	5·6	57·86 ,,
Aug. 2 ...	V.	Lydeard House, Taunton ...	3·21 ,,	8·7	36·91 ,,
„ „ ...	III.	Observatory, Cambridge	3·19 ,,	10·1	31·50 ,,

TABLE II.—*Comparison of Maximum Falls with those in previous years.*

MEAN.				ABSOLUTE.			
Years.	Depth.	Per Cent.	Mean total fall at these stations.	Depth.	Per Cent.	Station.	Division.
	in.		in.	in.			
1865 ...	3·67	6·4	61·8	6·41	5·5	Seathwaite.....	X.
1866 ...	3·40	4·4	86·2	6·38	3·6	Seathwaite.....	..
1867 ...	3·17	9·0	42·5	4·78	17·7	Hartlip	II.
1868 ...	3·32	6·1	65·9	5·60	4·8	Camusinas.....	XV.
1869 ...	3·68	5·0	77·7	6·70	4·5	Seathwaite.....	X.
1870 ...	3·20	7·5	43·8	6·00	17·1	Tongue	XIX.
1871 ...	3·08	5·7	61·6	4·24	9·6	Melbury.....	V.
1872 ...	4·10	6·6	73·1	5·82	3·2	Seathwaite.....	X.
1873 ...	2·97	6·2	60·7	4·20	2·9	Seathwaite ...	..
1874 ...	3·96	4·6	86·5	5·32	4·4	Bryn Gwynant	XI.
1875 ...	4·52	7·8	63·9	5·33	9·7	Newport W.W.	..
1876 ...	3·37	5·9	57·6	4·50	5·5	Foffany	XXIII.
1877 ...	3·77	4·6	93·4	4·98	5·3	Skye, Portree..	XVIII.
1878 ...	3·57	7·4	57·2	4·24	8·6	Springfield ...	XI.
Mean ...	3·55	6·2	66·6	5·32	7·3	.....	...
1879 ...	3·66	9·5	50·4	4·05	4·1	Little Langdale	X.
Diff. ...	+·11	+3·3	-16·2	-1·27	-3·2	.....	...

TABLE III.—*Maximum Per-Centages in 1879.*

Date.	Div.	Stations.	Per Cent.	Depth.	Fall in year
Aug. 2 ...	III.	Merton Villa, Cambridge ...	12·3	3·80in.	30·96 in.
.. ..	..	Granchester Mill, Cambridge	12·0	3·92 ..	32·73 ..
.. 16 ...	XI.	Nantllys, St. Asaph	12·0	3·75 ..	31·28 ..
.. 2 ...	III.	Beech Ho., Cambridge	12·0	3·60 ..	30·29 ..
.. 3 ...	..	Huntingdon	11·8	3·75 ..	31·89 ..
.. 16 ...	VI.	Kidderminster	11·0	3·47 ..	31·60 ..
.. 2 ...	III.	Sidney Street, Cambridge ...	10·9	3·13 ..	28·68 ..
.. ..	..	Fulbourne, ..	10·8	3·40 ..	31·63 ..
.. ..	..	Cherryinton, ..	10·7	3·17 ..	29·54 ..
.. 4 ...	..	Hardwick	10·4	2·75 ..	26·45 ..
.. 2 ...	..	Observatory, Cambridge.....	10·1	3·19 ..	31·50 ..
.. ..	..	Trinity Coll., ..	10·1	3·11 ..	30·81 ..
.. 16 ...	VI.	Whitchurch	10·0	3·42 ..	34·25 ..
.. 2 ...	III.	Royston	10·0	3·00 ..	30·06 ..
.. 16 ...	XI.	Sedgely Ho., Rhyll	10·0	2·80 ..	28·10 ..
.. ..	VI.	Burghill, Hereford	9·5	2·75 ..	28·91 ..

TABLE IV.—*Comparison of Maximum Per-Centages with those in previous years.*

MEAN.				ABSOLUTE.			
Years.	Per Cent.	Depth.	Mean total fall at these stations.	Per Cent.	Depth.	Station.	Division.
		in.	in.		in.		
1865 ...	9·9	2·62	28·4	13·0	4·40	Fleckney	VII.
1866 ...	8·1	2·31	29·3	10·0	2·48	Burton	VI.
1867 ...	11·0	2·85	25·3	17·7	4·78	Hartlip	II.
1868 ...	8·6	2·55	30·1	11·0	4·00	Tongue	XIX.
1869 ...	7·9	2·17	27·9	10·0	3·40	Tillydesk	XVII.
1870 ...	10·0	2·34	22·9	17·1	6·00	Tongue	XIX.
1871 ...	9·0	2·43	26·8	11·5	3·62	Warter	IX.
1872 ...	8·1	3·43	42·5	10·0	3·70	Hillington Hall	IV.
1873 ...	9·7	2·39	24·7	11·8	2·77	Oscott.....	VI.
1874 ...	9·2	2·16	23·7	11·9	2·50	Welwyn.. [Hall	III.
1875 ...	10·2	3·76	37·5	13·2	3·95	Letheringsett	IV.
1876 ...	7·4	2·49	33·7	8·5	3·70	Cragside	X.
1877 ...	8·2	2·73	33·1	9·3	3·09	Wellington ...	VI.
1878 ...	10·2	3·05	30·0	11·8	3·90	Haverstock Hill	I.
Mean...	9·1	2·66	29·7	11·9	3·74	.....	...
1879 ...	10·9	3·31	30·5	12·3	3·80	Cambridge M.V	III.
Diff. ...	+1·8	+·65	+·8	+·4	+·06	.....	...

TABLE V.—*Comparison of the Mean of all the Maximum Falls in 1879 with similar data for previous years.*

Year.	Number of Returns.	Mean Percentage.	Mean Amount.	Mean Total Fall in year.	1867 being assumed =100.	Ratio of Rainfall to the Mean.	Total Fall being assumed =34 in. Mean Max. =
1865	481	5·1	1·70 in.	33 in.	106	102	5·00 per cent.
1866	590	3·7	1·48 ,,	40 ,,	129	119	4·35 ,,
1867	584	4·6	1·44 ,,	31 ,,	100	100	4·24 ,,
1868	676	4·3	1·43 ,,	33 ,,	106	106	4·21 ,,
1869	637	4·2	1·42 ,,	34 ,,	108	101	4·18 ,,
1870	687	4·9	1·30 ,,	27 ,,	81	82	3·82 ,,
1871	752	4·9	1·49 ,,	30 ,,	98	97	4·38 ,,
1872	743	3·4	1·59 ,,	47 ,,	151	136	4·68 ,,
1873	809	4·6	1·35 ,,	29 ,,	94	95	3·97 ,,
1874	1010	4·4	1·41 ,,	32 ,,	103	96	4·15 ,,
1875	1081	5·0	1·83 ,,	37 ,,	119	108	5·38 ,,
1876	1112	3·9	1·49 ,,	38 ,,	123	114	4·38 ,,
1877	1180	3·8	1·56 ,,	41 ,,	132	125	4·59 ,,
1878	1186	4·3	1·49 ,,	35 ,,	113	95	4·38 ,,
Mean ...	823	4·4	1·50 ,,	35 ,,	112	105	4·41 ,,
1879	978	4·2	1·52 ,,	36 ,,	116	97	4·47 ,,
Diff	+155	-·2	+·02 ,,	+ 1 ,,	+ 4	- 8	-·06 ,,

MONTHLY MAPS OF RAINFALL, 1879.



JANUARY.



FEBRUARY.



MARCH.



APRIL.



MAY.



JUNE.

For explanation see page [109].

MONTHLY MAPS OF RAINFALL, 1879.



JULY.



AUGUST.



SEPTEMBER.



OCTOBER.



NOVEMBER.



DECEMBER.

For explanation see page [109].

MONTHLY FALL OF RAIN IN 1879.

CONSIDERABLE importance being attached by many persons to the details of monthly rainfall, we give information respecting it in four different forms.

(1) On pages [27] to [59] we print verbatim the descriptions of each month, furnished by observers in all parts of the country.

(2) On the seven pages immediately following this note we give the total fall in each month at two hundred and thirty-two stations, *i.e.*, nearly three thousand monthly values.*

(3) We give a series of twelve maps, one for each month. These are, we believe, so clear as to need only a line or two of explanation. The dots, and plus and minus marks are placed over the position of certain stations. When the fall at any station is within an inch of the average, the fact is shown by a dot; when it is an inch or more above the average, the + sign is used; and when the fall is deficient to the extent of an inch or more, the — sign is employed.

(4) In conclusion, we give a brief description of the distribution of rain over the British Isles during each month, based chiefly upon the foregoing data.

* The stations are as nearly as possible identical with those given in previous volumes, and they have been selected with a view to giving, as far as practicable, an equable distribution of stations over the whole of the British Isles.

MONTHLY RAINFALL AT 232 STATIONS IN THE BRITISH ISLES DURING 1879.

ENGLAND.

Div.	County.	Station.	Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Total.
I.	Middlesex	London (Camden Sq.)	2.87	3.77	.91	2.72	3.46	4.76	4.17	5.11	3.67	.79	.73	.86	33.82
II.	"	Uxbridge (Harefield)	2.65	4.04	1.15	2.91	3.50	5.18	3.57	5.85	2.66	1.11	.56	.57	33.75
"	Surrey	Guildford (Guildown)	2.44	2.95	.53	2.76	3.49	5.71	3.30	5.36	3.08	1.01	1.03	.49	32.15
"	Kent	Tenterden	2.73	4.26	.82	3.27	3.61	3.14	2.87	3.56	3.27	.87	.79	.96	30.15
"	"	Hythe	2.85	5.89	1.08	2.97	4.81	4.19	4.23	4.13	3.92	1.13	1.25	1.71	38.16
"	"	Seven Oaks (River Hill)	2.97	3.68	.80	3.39	3.33	3.66	3.22	5.07	3.01	1.00	1.85	.94	32.92
"	"	Faversham (Osprings)	2.36	3.55	.69	2.55	2.56	3.97	2.97	3.51	3.20	.55	1.00	.94	27.85
"	Sussex	Worthing	2.89	3.83	.68	3.02	2.75	4.52	3.16	5.18	3.52	.87	.76	.95	32.13
"	"	Maresfield (Forest Lodge)	3.06	3.99	1.15	4.19	3.69	4.02	4.09	5.23	3.57	.79	1.15	1.17	36.10
"	Hants	I. of Wight (St. Lawrence)	4.38	3.79	.80	3.44	1.97	4.15	3.66	5.59	3.52	1.11	.59	.91	33.91
"	"	Droxford	4.06	5.00	.77	3.18	2.79	5.89	4.54	6.95	4.33	1.09	.68	.83	40.11
"	"	Basingstoke (The Vyne)	3.71	3.65	.62	2.94	3.74	4.62	3.16	5.82	2.93	.91	.82	1.08	34.00
"	Berks	Newbury (Welford)	3.29	4.33	.62	3.02	3.33	4.80	4.02	6.81	3.50	.87	.76	1.17	36.52
III.	Herts	St. Albans (Bayfordbury)	2.87	3.53	.87	2.53	2.90	4.62	3.46	4.44	2.77	.61	.65	.69	29.94
"	"	Royston	2.40	3.11	.78	2.59	3.00	5.10	3.46	5.44	2.28	.59	.73	.58	30.06
"	Bucks	High Wycombe	3.22	3.56	.82	3.03	2.79	4.19	4.25	6.05	2.77	.52	.28	.68	32.16
"	"	Buckingham (Adstock)	2.31	3.27	1.15	2.63	1.71	5.08	3.80	3.60	2.55	.70	.92	.76	28.48
"	Oxford	Oxford	3.13	3.08	.98	2.35	2.77	4.63	3.68	5.05	2.87	.94	.67	1.08	31.23
"	Northampton	Wellingborough	2.29	2.79	.76	2.99	2.86	3.88	3.63	4.00	2.78	.63	1.36	.80	28.77
"	Bedford	Bedford	2.37	2.85	.77	1.90	2.93	4.55	3.90	3.86	2.80	.65	.88	.45	27.91
"	Cambridge	Ely (Stretham)	1.42	1.98	.71	2.14	3.27	4.95	4.21	5.09	2.11	.76	.97	.22	27.83
"	"	Wisbech	.61	2.62	.61	2.46	3.25	4.79	5.28	3.72	2.93	.74	1.30	.55	28.86
IV.	Essex	Waltham Abbey	1.86	3.33	1.19	2.64	2.80	4.46	3.83	4.02	3.00	.70	.64	.36	28.83
"	"	Chelmsford	2.36	2.89	.81	2.95	3.22	4.55	3.69	3.75	3.48	.73	1.12	1.25	30.80
"	"	Rivenhall	2.35	2.77	1.00	2.59	2.72	4.57	3.74	3.35	2.68	.86	1.31	.82	28.76
"	Suffolk	Hadleigh Boxford	2.13	2.94	.92	2.53	2.24	4.14	4.04	3.42	3.41	.66	1.38	.57	28.38
"	"	Ipswich	2.07	3.19	1.05	2.46	2.01	3.69	4.25	3.41	3.84	.67	1.77	.60	29.01
"	"	Saxmundham	1.92	3.47	.98	2.40	1.79	2.86	4.91	3.79	2.50	1.17	2.20	1.15	29.14
"	"	Acle	.68	2.72	1.10	2.06	2.37	2.98	5.46	5.06	3.30	1.67	1.74	1.56	30.72
"	Norfolk	Swoffham	1.04	2.42	1.05	2.40	3.30	4.53	5.37	5.81	3.34	1.15	1.91	.81	33.13
"	"	Holt	.84	2.34	.70	1.95	2.48	2.93	4.34	2.90	2.72	1.36	1.86	.99	25.41

ENGLAND—(continued.)

Div.	County.	Station.	Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Total.
V.	Wilts	Salisbury	3.54	3.93	.40	2.44	2.42	4.95	3.15	5.32	3.63	.72	.42	.85	31.77
"	"	Fewsey	3.40	3.80	.67	3.07	3.54	5.05	4.09	5.07	3.28	1.07	.42	.96	34.42
"	"	Trowbridge(SleepleAshton)	3.08	3.21	.48	3.30	2.79	4.56	3.02	4.98	3.21	1.07	.48	.86	31.04
"	Dorset	Weymouth (Osmington)...	5.68	4.49	.55	2.73	2.29	6.46	3.65	6.45	4.47	1.23	.18	.89	39.07
"	"	Wimborne (Chalbury).....	4.32	3.87	.35	2.44	2.17	5.20	3.20	4.87	3.52	.84	.16	.81	31.75
"	"	Shaftesbury	3.72	4.07	.63	3.82	3.99	5.82	4.59	5.71	4.29	1.29	.51	1.38	39.82
"	Devon	Kingsbridge	7.57	6.18	.76	4.71	2.93	8.28	5.01	7.04	4.26	1.32	.96	1.76	50.78
"	"	Dartmoor (Lee Moor)	8.62	8.18	1.47	4.65	4.36	13.38	8.74	9.76	8.40	3.23	.64	2.82	74.25
"	"	Bovey Tracey	7.11	7.37	.92	3.94	3.43	8.39	3.90	5.25	3.97	1.15	.26	1.78	47.47
"	"	Cullompton (Bradminch)...	4.40	5.11	.76	3.27	2.68	6.10	4.33	5.25	3.45	1.55	.33	1.29	38.52
"	"	S. Molton (Rose Ash)	3.09	4.54	1.31	2.43	2.83	6.11	4.72	5.52	3.60	2.85	.64	2.14	39.78
"	Cornwall	Penzance	8.42	5.91	1.39	2.87	2.39	6.93	3.98	6.45	4.81	2.33	2.32	2.27	50.07
"	"	St. Agnes	5.10	4.18	1.99	2.19	1.40	4.51	4.68	4.61	3.89	2.47	.98	1.68	37.68
"	"	Stratton (Week St. Mary)	4.94	5.60	.70	2.24	2.48	5.85	4.44	5.83	4.13	2.72	.50	1.58	41.01
"	Somerset	Ilminster	4.34	4.42	.40	4.31	3.19	6.36	2.59	4.33	3.53	1.32	.38	1.36	36.53
"	"	Glastonbury (Street)	3.87	3.91	.71	2.99	3.10	4.56	4.38	4.62	3.47	1.42	.40	.84	34.27
"	"	Dunster	3.32	4.43	.79	2.56	2.74	4.51	1.94	4.35	2.49	1.54	.64	1.45	30.76
Vl.	Gloucester	Clifton	4.31	3.92	1.10	2.86	3.22	5.14	3.67	7.32	3.91	1.28	.59	1.34	38.66
"	"	Stroud (Upfield)	3.01	4.57	1.02	2.44	2.74	6.02	2.93	5.87	3.08	.96	.72	.77	34.13
"	"	Fairford (Hatherop Rec)	3.03	3.74	1.27	2.55	2.99	5.24	3.33	6.78	3.27	1.02	.57	.86	34.65
"	"	Moreton-in-Marsh	3.18	3.01	1.17	3.13	2.37	5.78	3.27	6.01	3.05	.94	1.14	.95	34.00
"	Hereford	Ross (Rocklands)	2.85	3.95	.75	1.98	2.62	5.47	2.80	5.78	3.43	.83	.76	.91	32.13
"	Salop	Ch. Stretton (Woolstaston)	1.54	2.83	1.55	2.82	2.25	6.13	3.12	6.23	3.92	1.59	1.22	1.52	34.73
"	"	Wellington	1.84	1.59	.83	2.64	1.94	3.22	4.20	6.87	2.29	1.32	.88	.74	28.36
"	"	Owstrey	1.54	4.34	2.40	4.72	2.05	6.45	3.79	6.62	3.34	.94	1.20	1.78	39.17
"	Stafford	Tunworth	2.01	3.12	.84	2.54	2.59	5.19	3.42	4.45	3.15	.93	1.16	.71	30.11
"	"	Burton (Horniglow)	1.78	2.79	.66	2.41	2.05	4.41	2.13	4.98	2.76	.93	1.12	1.10	27.12
"	"	Stoke (Barleston)	1.21	4.40	1.09	1.95	2.43	5.90	4.46	6.38	2.59	1.62	1.20	1.05	54.28
"	Worcester	Malvern	2.71	3.48	1.09	3.17	2.29	5.66	2.52	6.39	4.20	1.05	.76	.90	34.22
"	"	Tenbury (Orleton)	2.31	3.35	.81	2.96	2.88	6.03	3.44	6.21	3.25	1.07	.99	1.16	34.46
"	"	Stourbridge (Longlands)	1.85	3.01	.62	2.37	2.98	4.76	3.39	6.65	3.63	1.28	1.08	.86	32.48
"	Warwick	Leamington (Blackdown)..	2.77	2.69	1.03	3.14	2.69	4.60	4.21	4.56	2.81	1.51	1.17	.63	31.81
"	"	Wiley Rectory	2.15	2.95	.98	2.46	2.91	5.14	4.08	4.65	3.60	.84	1.35	.75	31.86
"	Leicester	Loughborough	1.44	2.52	.97	2.72	2.62	4.59	3.02	3.45	3.58	.72	1.01	1.06	27.70
Vll.	"	Hanston [Grantham]	1.35	2.57	1.02	2.98	3.44	3.94	3.57	3.59	3.14	.99	1.42	1.34	29.35

ENGLAND—(continued.)

Div.	County.	Station.	Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Total.
VII.	Rutland	Oakham (Burley)	1.53	1.99	1.00	3.48	3.83	4.02	3.54	3.27	3.09	1.03	.77	.91	28.46
"	Lincoln	Horncastle	1.23	2.85	.77	2.43	4.94	4.00	4.00	2.00	5.09	1.21	1.82	.67	31.01
"	"	Brigg (Appleby Vic.)	1.22	2.71	.79	1.42	3.33	3.37	3.77	3.48	2.57	.73	1.87	1.06	26.32
"	Notts	Mansfield	1.61	3.01	.97	2.67	3.64	4.77	3.27	3.39	2.62	.98	1.59	1.15	29.70
"	Derby	Buxton	2.20	4.72	2.69	3.27	3.29	6.81	6.43	8.42	4.77	3.05	2.06	4.19	51.90
VIII.	Cheshire	Congleton	1.65	2.82	1.36	2.21	2.58	4.33	4.01	7.92	2.10	1.99	1.41	2.03	34.41
"	Lancashire	Manchester (Withington)	1.53	2.72	1.37	2.11	1.98	4.94	3.32	5.24	2.91	2.08	.94	2.61	31.15
"	"	Ormskirk (Rufford)	1.34	2.73	1.36	2.32	2.00	3.44	4.35	6.97	3.44	1.93	.91	2.03	32.82
"	"	Burnley (Brierfield)	1.24	2.56	2.31	1.55	1.69	5.06	5.90	5.75	2.82	3.57	1.41	3.51	37.37
"	"	Garstang (Vale House)	1.42	3.27	1.85	1.42	2.82	4.55	6.09	7.01	3.64	3.28	.99	2.12	38.46
"	"	Grange (Nutwood)	1.88	2.87	2.30	1.33	1.73	4.90	6.50	3.13	4.31	2.78	1.43	2.46	35.67
IX.	York, W.R.	Rotherham	1.35	2.38	1.12	2.90	2.81	3.56	3.66	3.50	1.69	1.05	1.51	1.37	26.90
"	"	Huddersfield (Dalton)	.86	2.36	1.86	2.89	1.73	4.57	3.23	4.18	1.57	1.56	1.71	2.41	28.93
"	"	Leeds (Methley Park)	1.25	2.92	1.21	2.48	2.21	2.68	3.94	2.14	1.75	1.10	1.14	1.84	24.66
"	"	Pateley Bridge (Castle St.)	1.57	4.51	2.95	3.04	1.52	5.16	5.06	5.02	2.48	1.44	2.14	2.75	37.64
"	York, E.R.	Malham Tarn	2.69	3.51	3.69	2.21	2.55	6.92	7.21	9.44	3.93	3.84	2.32	3.01	51.12
"	"	Patragton	1.09	2.82	1.05	1.45	3.06	3.79	3.35	2.55	2.61	1.48	1.85	.72	25.82
"	"	Brantinghamthorpe	1.91	4.05	1.05	1.70	3.00	3.65	4.56	4.33	2.52	1.37	2.30	1.10	31.54
"	"	Pocklington (Warter)	1.86	3.79	1.18	1.86	3.13	3.56	4.57	4.05	2.93	1.10	2.30	1.13	31.46
"	York, N.R.	Ganton	1.24	3.80	1.05	1.95	3.93	3.47	3.26	2.62	2.17	1.02	2.79	1.36	27.76
"	"	Northallerton	.95	2.62	.85	2.37	1.74	2.77	3.78	3.47	1.15	.94	1.34	1.05	23.03
"	"	Lockwood Beck	1.47	2.46	.85	2.05	3.26	2.71	5.30	2.98	1.15	1.34	3.99	.89	28.45
X.	Durham	Gainford	.89	3.69	1.18	1.86	1.35	3.60	3.38	3.02	1.43	.62	.98	.90	22.90
"	"	Hartlepool (Hart Res.)	1.07	1.80	1.10	1.81	1.36	2.91	3.41	3.97	.91	.52	2.00	.85	21.71
"	"	Wolsingham	1.57	3.12	1.58	2.77	2.21	4.71	5.11	3.46	1.38	.83	2.36	1.02	30.12
"	Northumberland	Haltwhistle	.67	2.52	2.55	2.00	2.28	4.28	4.51	4.54	1.53	1.77	1.78	2.33	30.76
"	"	Stamfordham	1.46	1.34	1.33	2.60	2.62	3.58	4.22	4.83	.99	.88	2.73	.46	27.04
"	"	Alwinton (Harbottle)	1.27	3.44	1.86	2.59	1.76	4.84	4.65	3.96	1.32	.69	2.30	1.66	30.34
"	"	Howick	1.59	3.55	.84	2.15	2.73	3.80	5.56	3.63	.86	.91	3.06	1.14	29.82
"	Cumberland	Seathwaite (Borrodale)	3.34	7.93	12.14	4.76	4.67	9.93	13.60	12.99	16.67	8.03	3.87	12.77	110.70
"	"	Scauley Hall	1.54	2.78	1.95	1.13	1.98	4.40	5.29	3.38	3.14	1.69	1.57	1.87	30.72
"	Westmoreland	Kendal	1.93	3.61	3.54	1.67	1.89	6.15	6.12	5.44	4.09	2.74	1.61	4.39	43.18
"	"	Kirkby Stephen	1.02	2.48	2.64	1.47	1.28	4.38	4.16	5.27	2.58	1.55	1.70	2.96	31.49
"	"	Lowther Castle	.87	2.05	2.83	1.94	1.85	3.06	5.17	7.04	2.49	1.34	1.38	2.88	32.90

WALES AND THE ISLANDS.

Div.	County.	Station.	Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Total.
XI.	Monmouth	Newport	4.82	6.62	1.10	3.11	3.03	6.98	4.35	8.89	5.18	1.27	.68	2.17	48.20
"	"	Abergavenny	3.21	5.81	1.07	2.67	3.00	7.31	2.57	5.37	4.98	1.11	.64	1.09	38.83
"	Glamorgan	Cardiff	5.09	6.71	1.36	2.81	3.70	7.75	4.96	8.69	5.72	1.98	.56	3.21	52.54
"	"	Ystalyfera	3.41	6.78	3.19	2.36	2.95	9.57	6.01	10.22	7.22	2.28	.63	5.21	59.83
"	Cardarthen	Carmarthen Asylum	3.53	4.94	2.75	2.47	3.14	8.91	3.92	9.23	5.70	1.84	.70	2.65	49.78
"	Pembroke	Llandavery	2.97	3.70	3.13	1.46	3.39	6.84	5.76	7.18	5.57	2.84	.71	4.40	47.95
"	"	Stackpole Court	4.69	5.25	1.28	2.78	3.33	5.86	3.73	6.57	3.91	2.07	.88	2.33	42.68
"	"	Fishguard (Castle Hill)	3.59	5.75	2.22	2.80	3.55	6.73	4.08	6.55	5.96	1.88	1.51	1.91	46.53
"	Cardigan	Aberystwith (Gogerddan)	1.59	4.17	2.95	1.69	2.76	4.31	5.43	9.53	4.00	3.02	1.35	2.58	43.38
"	Brecknock	Brecknock	2.56	5.65	1.53	2.36	3.20	7.39	4.83	6.44	4.26	1.64	.80	3.07	43.73
"	Radnor	Rhayader (Nantgwilt)	3.53	7.05	4.00	2.60	3.48	8.89	7.88	8.16	5.27	2.80	1.51	4.96	60.13
"	"	Heyhope	1.56	9.51	2.31	1.56	3.53	4.99	4.20	5.66	4.16	1.87	.43	1.80	41.58
"	Montgomery	Carno	2.30	5.04	3.06	2.52	2.35	6.79	6.09	8.14	4.81	2.36	1.53	4.40	49.39
"	Flint	St. Asaph (Nantllys)	.77	2.08	.94	2.60	1.91	3.61	3.38	9.93	1.57	1.47	1.62	1.40	31.28
"	Denbigh	Rosset (Trevalyn Hall)	1.61	2.27	1.31	2.75	1.82	5.13	3.21	5.69	2.39	1.07	.89	1.19	29.33
"	Merioneth	Dolgelly	2.59	6.86	3.78	1.67	2.65	8.08	8.01	10.91	6.64	3.63	1.18	4.28	60.28
"	"	Bala	1.45	3.73	2.63	1.61	1.64	4.73	6.92	6.68	4.75	1.96	.91	6.08	43.09
"	Carmarvon	Port Madoc	1.91	5.68	2.50	1.55	3.54	4.87	6.00	6.81	3.47	3.00	1.24	2.43	43.00
"	Anglesey	Menairon	1.06	4.36	1.68	1.23	2.98	3.85	4.76	7.96	3.97	1.79	1.21	2.23	37.08
"	Isle of Man	Douglas	3.32	4.27	2.45	2.18	2.13	4.41	6.17	6.23	4.87	1.40	1.29	2.39	41.16
"	Jersey	Millbrook	4.92	5.26	1.39	2.33	2.35	3.64	1.62	3.99	3.48	1.26	.79	.84	31.87
"	Guernsey	Grange Road	6.86	5.12	1.29	2.88	3.08	5.21	2.92	5.19	5.12	1.87	1.48	1.22	42.24

SCOTLAND.

XII.	Kirkcudbright	Colvend	2.23	1.25	2.15	.98	2.05	4.45	5.08	5.42	4.16	1.55	1.14	2.65	33.11
"	"	Dalbeattie	2.55	2.57	3.53	2.01	1.68	5.75	4.80	4.93	5.20	1.98	1.21	3.68	39.89
"	"	Carsphairn	1.99	3.45	5.14	2.48	2.18	6.29	5.88	7.41	7.25	2.41	1.36	4.40	50.24
"	Dumfries	Annan (Warmanbie)	1.89	2.96	2.21	1.25	2.55	6.52	4.94	4.45	5.24	1.50	1.25	2.44	37.20
"	"	Moffat (Ericstane)	1.60	3.00	3.50	1.40	2.80	6.30	4.90	6.60	6.20	2.40	1.50	4.50	44.70
"	Roxburgh	New Castleton (The Flatt)	1.20	5.00	3.10	.70	2.80	5.40	4.70	4.80	6.80	2.10	2.20	3.40	42.20
"	"	Jedburgh	.81	2.29	1.65	1.31	2.11	4.01	4.87	3.43	1.44	1.03	2.05	1.36	26.36
"	"	Galashiels	1.34	3.39	2.08	2.71	1.89	4.82	3.61	3.75	1.62	1.10	2.14	1.77	30.22
XIII.	Selkirk	Borthwickbrae	1.40	3.50	3.00	1.80	1.90	2.90	4.80	5.70	3.10	1.90	1.90	3.90	35.20
"	Peebles	Glenrath	1.60	2.16	2.67	1.36	1.69	5.62	4.21	4.16	2.55	1.95	.96	2.42	31.85
"	"	Penicuik	1.25	3.10	3.95	2.45	2.25	4.75	8.75	3.55	3.60	1.70	3.95	2.25	41.55

SCOTLAND—(continued.)

Div.	County.	Station.	Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Total.
XIII.	Berwick.....	Marchmont House	2.08	2.66	2.47	2.72	2.24	5.32	6.40	3.24	1.59	1.19	2.84	1.17	33.92
	Edinburgh.....	Charlotte Square	1.29	1.78	2.30	2.22	1.74	5.16	5.79	2.44	1.65	.92	1.85	1.39	28.53
	Linlithgow	Abercorn	1.22	1.78	2.35	2.06	1.55	3.86	4.03	4.08	1.90	1.05	.91	1.90	26.69
XIV.	Lanark	Douglas Castle	1.25	2.12	3.99	1.37	2.50	4.09	4.94	4.09	3.56	1.86	1.20	2.65	33.62
	"	Cambuslang	1.39	1.50	4.05	1.86	2.23	6.33	3.67	4.58	3.21	1.97	1.32	2.39	34.50
	"	Girvan	2.17	3.93	2.66	1.66	3.86	4.86	5.75	6.66	7.26	4.00	1.47	3.33	47.61
"	"	Ayr	1.32	1.85	3.25	1.08	2.24	3.62	3.86	4.72	4.32	1.96	1.32	2.21	31.75
"	"	Kilmarnock	1.66	1.52	2.86	.91	2.35	4.00	3.90	4.62	5.54	2.26	1.28	2.06	32.96
XV.	Renfrew	Stanely Reservoir.....	1.39	2.02	5.49	1.41	2.47	6.25	4.32	5.05	6.76	2.65	1.70	3.75	43.26
	Dumbarton	Arrochar	2.40	6.22	8.05	3.55	3.29	7.80	7.44	9.91	8.95	5.12	3.08	5.75	71.56
	Stirling	Falkirk	1.60	1.80	3.00	1.50	1.50	4.10	3.40	4.30	2.60	1.50	1.20	2.70	29.20
"	"	Killearn.....	1.44	2.05	5.16	1.52	2.42	5.58	5.22	4.99	5.71	2.52	1.85	5.08	43.54
"	Bute	Pladda	1.06	2.73	2.67	1.71	1.82	3.39	5.65	4.59	4.89	2.55	1.09	1.37	33.52
"	Argyll	Loch Gilphead	2.41	1.97	5.73	1.50	2.72	4.03	6.86	5.28	8.61	3.67	2.27	5.05	50.10
"	"	Dalmally	1.81	3.05	8.08	1.96	2.96	3.77	7.66	6.29	14.25	4.56	3.62	8.20	66.21
"	"	Airds	1.80	1.90	4.30	1.50	3.45	3.62	6.72	5.50	10.10	3.30	2.27	4.58	49.04
"	"	Laudale	1.71	3.78	7.51	2.25	3.24	4.48	8.67	4.30	12.92	4.20	3.46	6.74	63.26
"	"	Devaar	2.79	3.80	2.24	1.28	1.90	3.76	3.43	4.98	4.21	2.90	1.39	1.43	34.11
"	"	Islay (Eallabus)	3.37	3.51	3.26	1.29	2.15	3.86	5.21	4.69	6.80	2.97	2.26	3.43	42.80
"	"	Jura	1.18	1.69	3.86	1.03	1.14	1.28	2.53	2.63	6.45	2.00	1.48	2.48	27.75
XVI.	"	Tyre (Hynish)	1.79	1.60	2.02	1.27	1.23	2.76	5.76	4.99	5.88	1.91	.99	2.20	32.40
	Fife	Craigluscar	4.70	4.50	4.00	1.70	2.30	4.00	4.00	5.50	3.50	1.70	2.15	1.70	39.75
	"	Auchtermuchty	2.02	4.19	3.13	2.34	2.52	4.31	4.47	4.14	3.02	1.07	1.67	1.80	34.68
"	"	Stronvar	2.24	3.66	4.75	2.05	1.75	4.78	3.40	5.25	3.30	1.05	1.30	2.75	34.98
"	"	Aberfeldy	1.25	1.41	3.51	1.80	1.98	4.30	2.32	5.27	3.39	1.55	1.12	1.04	28.94
"	"	Dalnaspidal	1.84	4.12	7.58	2.82	3.07	6.13	5.47	5.90	5.23	3.21	2.99	5.07	53.43
"	Forfar.....	Dundee	1.69	2.36	2.57	2.67	2.16	4.04	4.18	4.19	2.09	.63	1.58	.93	29.09
XVII.	Kincardine	The Burn	2.10	4.40	3.20	3.90	2.50	3.80	4.20	4.80	2.60	.60	2.10	1.30	35.50
	Aberdeen	Coltstone (Manse)	1.92	2.07	2.58	3.44	2.74	2.90	3.17	3.61	1.17	.86	3.37	.31	28.12
	"	Ellon	3.47	2.60	3.22	2.70	3.05	2.49	3.61	3.92	2.22	1.11	2.77	1.77	32.93
"	"	New Pittsigo	3.18	1.64	1.99	3.96	3.14	1.93	4.74	4.79	2.87	1.51	3.27	.91	33.93
"	Banff	Gordon Castle	1.04	.91	2.62	2.20	3.92	2.58	3.10	5.55	1.17	1.31	3.12	.84	28.36
"	Moray	Elgin	1.44	.60	1.88	1.29	3.97	2.43	3.80	4.19	1.15	1.20	1.92	.81	24.68
"	"	Grantown	1.16	.91	2.17	1.11	3.69	3.89	3.78	3.74	1.03	1.52	3.66	1.09	27.75

SCOTLAND—(continued.)

Div.	County.	Station.	Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Total.
XVII.	Nairn	Nairn (Achareidh)	.62	.43	2.35	1.20	2.29	2.89	3.31	4.08	.98	1.89	2.04	1.00	23.08
XVIII.	Ross	Loch Alish (Inverinate)	2.55	3.30	6.10	.65	5.05	2.65	7.42	5.15	12.65	5.05	7.41	9.05	67.03
"	"	Strathconan	2.60	2.28	5.35	1.83	3.70	3.03	6.19	4.10	3.78	3.52	3.63	3.84	43.85
"	"	Braemore House	.74	3.34	9.33	1.06	3.01	2.80	6.40	5.23	5.23	3.85	2.47	7.10	50.56
"	"	Invergordon	.68	.84	3.31	1.37	2.47	2.20	3.98	3.15	1.61	1.44	2.02	1.35	24.42
"	Inverness	Skype (Sligachan)	1.75	4.00	4.25	1.25	3.25	4.75	6.00	7.50	9.00	3.25	2.75	7.50	55.25
"	"	Farraline	4.30	3.80	3.20	3.60	3.10	4.20	3.70	2.70	2.80	3.70	3.20	3.40	41.70
"	"	Glenstrathfarrar	1.67	3.37	7.11	1.24	3.17	4.07	6.10	11.38	5.02	3.86	4.66	4.33	55.98
XIX.	Sutherland	Invershin	1.05	1.44	.97	2.63	1.55	2.76	3.58	7.19	2.75	2.07	.89	1.23	28.11
"	"	Assynt (Achumore)	5.40	2.80	3.30	1.70	2.80	3.70	6.60	9.10	7.60	9.10	9.50	5.20	66.80
"	Caithness	Altnabreac	.87	1.17	.75	1.82	1.40	2.45	2.89	4.35	1.80	.60	3.35	1.33	22.78
"	"	Wick Station	.76	1.23	1.65	1.23	1.58	.83	3.13	2.88	1.80	2.23	1.49	1.32	20.13
"	Shetland	East Yell	3.04	1.49	2.13	1.83	2.55	1.48	1.90	4.34	4.04	3.61	3.72	5.64	35.78

IRELAND.

XX.	Cork	Cork (Black Rock)	9.09	5.20	1.34	4.03	2.01	9.02	4.58	3.10	3.53	.64	.71	1.92	45.17
"	"	Fermoy (Glenuille)	7.66	6.45	1.96	4.20	2.78	8.82	3.68	3.93	3.72	1.02	.74	2.55	47.51
"	Kerry	Darrynane	9.05	6.40	1.56	5.02	2.64	4.32	5.26	4.87	4.53	2.07	.75	1.96	48.43
"	"	Dromore Castle	7.64	5.11	3.56	4.92	3.43	5.37	5.87	8.80	6.47	2.15	.70	4.46	58.48
"	"	Cara, Lake Side	3.60	6.10	2.83	2.97	2.90	5.29	4.43	5.51	4.54	1.87	1.03	3.03	44.10
"	Waterford	Waterford Gas Works	5.19	4.86	2.30	2.49	1.76	6.54	4.43	4.88	4.78	.78	.42	1.75	38.49
"	Tipperary	Clonmel	4.75	4.86	1.93	2.57	1.98	6.86	3.28	5.64	3.32	1.28	.64	2.22	39.33
"	"	Tipperary, Henry Street	3.50	4.71	1.86	2.94	2.01	5.81	3.20	5.22	2.93	1.48	.58	2.35	36.59
"	"	Neagh (Castle Lough)	3.87	4.90	2.19	2.05	2.16	5.34	3.34	4.03	4.33	1.79	.60	3.16	37.76
"	"	Gurteen	2.16	3.36	1.82	2.31	2.84	5.20	3.16	4.67	4.67	1.75	.80	1.80	34.54
"	Limerick	Newcastle West	3.55	5.32	1.47	1.92	2.04	4.11	3.63	5.97	3.32	1.45	.66	3.36	36.80
"	Clare	Ennis	2.62	4.39	2.61	3.07	1.88	5.02	4.03	5.30	6.52	3.10	1.24	2.92	42.70
"	"	Miltown Malbay	2.90	3.80	2.20	2.26	2.26	4.43	4.30	5.24	5.99	2.95	.85	3.16	40.34
XXI.	Wexford	Ballyland	4.39	5.73	2.49	2.68	1.68	7.49	4.26	5.98	5.92	1.02	.94	1.75	44.83
"	"	Gorey (Courtown)	4.09	5.13	1.97	2.84	1.73	7.91	3.13	5.06	3.90	1.46	1.15	1.78	40.15
"	"	Tullagher	5.92	6.51	2.48	2.70	2.17	7.46	3.25	5.91	4.92	1.24	.63	1.81	45.00
"	Kilkenny	Kilkenny (Butler House)	3.11	4.18	1.67	1.55	1.76	5.44	3.47	4.00	3.86	.91	.40	1.87	32.22
"	Wicklow	Delgany (Innismore)	4.01	6.01	2.17	3.23	2.41	6.18	3.44	3.46	3.34	1.08	.98	2.07	38.38
"	Carlow	Brown's Hill	2.56	5.12	2.14	1.95	1.85	6.38	3.63	3.81	4.71	.84	.77	2.20	35.96
"	Queen's Co.	Abbey Leix, Blandsford	2.40	3.90	1.74	2.20	2.55	4.97	3.33	3.80	4.40	1.10	.85	1.89	33.13

IRELAND—(continued.)

Div.	County.	Station.	Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Total.
XXI.	King's Co.	Clonbrin	2.00	3.36	1.62	2.46	2.89	5.50	4.58	3.57	5.29	1.37	.84	1.30	34.78
"	"	Tullamore	1.43	2.86	1.41	1.22	2.41	3.27	3.63	4.28	4.44	1.49	.60	1.05	28.09
"	Dublin	Glassevin Botanic Gardens	1.75	3.23	1.77	1.82	2.13	3.73	4.14	3.54	4.37	1.18	1.34	1.00	28.00
"	"	Balbriggan	2.52	3.90	2.27	2.21	2.23	4.83	4.04	3.68	3.79	.88	1.04	1.38	32.77
"	Meath	Trim	2.17	3.53	1.65	1.61	2.73	5.45	3.99	3.06	4.73	1.34	.86	2.17	33.29
"	Westmeath	Athlone	2.56	3.17	1.97	1.98	2.87	6.25	4.72	5.15	5.50	1.90	.65	2.24	38.96
"	"	Mullingar (Belvedere)	2.74	3.01	1.42	1.55	3.05	6.98	4.14	3.55	4.40	1.41	.67	2.05	34.97
"	"	Stephenstown	2.36	2.43	1.73	2.22	3.58	6.26	5.84	2.77	4.92	1.80	1.02	1.76	36.69
XXII.	Galway	Cregg Park	3.15	5.52	2.26	2.50	2.10	5.48	2.84	5.28	5.79	1.75	.77	2.44	40.18
"	"	Ballasloe	3.44	3.09	2.63	1.90	1.76	4.74	3.71	4.36	4.50	1.47	.66	3.02	34.98
"	"	Clifden Kylemore	7.80	8.31	5.37	3.69	4.01	7.70	6.76	7.70	11.29	5.61	1.54	6.14	75.92
"	"	Tuam	3.97	3.18	2.75	1.74	1.81	4.25	2.86	4.57	3.63	1.45	.89	2.24	33.34
"	"	Holymount	4.50	3.50	4.00	1.00	2.00	4.80	2.50	4.70	4.20	1.60	.90	3.80	37.50
"	Mayo	West Point (Old Head)	2.65	6.05	2.50	1.35	2.10	4.30	5.32	4.30	8.30	3.25	1.55	4.20	45.87
"	"	Crosmolina (Enniscoe)	4.46	4.74	3.51	2.47	2.78	6.79	5.67	6.81	4.59	2.93	2.21	4.35	51.31
"	Sligo	Mount Shannon	1.60	2.65	2.10	.95	2.91	3.31	6.36	4.99	6.52	3.52	1.17	1.93	38.01
"	"	Ballinful	2.33	1.91	1.73	.61	2.32	2.63	4.71	2.57	4.83	2.86	.97	1.80	29.27
"	Leitrim	Carrick-on-Shannon	2.92	2.46	2.89	1.40	3.14	5.51	5.59	3.47	6.31	1.94	.91	2.87	39.41
XXIII.	Cavan	Killshandra (Drummany)	2.86	3.35	3.53	1.19	3.95	5.18	4.88	4.03	4.25	2.75	.88	2.46	39.31
"	Fermanagh	Enniskillen (Lisbellaw)	2.26	1.91	1.85	2.00	4.23	5.22	5.85	3.74	5.31	2.29	1.15	2.03	37.84
"	Monaghan	Rockcorry	2.18	1.83	2.27	1.19	2.87	5.78	5.32	3.36	5.01	2.11	1.11	2.28	35.31
"	Armagh	Armagh	2.13	1.69	1.97	2.39	3.47	4.00	5.43	3.05	3.72	1.45	1.40	1.57	32.27
"	Down	Newcastle (Fairleigh)	6.51	7.11	3.67	3.41	3.15	8.49	6.40	6.73	8.15	1.17	.89	3.53	58.21
"	"	Newtownards	2.12	2.64	2.25	1.97	3.80	6.32	5.89	4.22	3.86	1.10	1.09	1.20	36.46
"	"	New Barnsley	2.75	2.40	2.91	2.17	4.62	6.81	6.81	5.10	5.56	2.03	1.15	1.81	42.91
"	Athltrim	Ballymena	2.51	2.16	2.60	2.56	4.42	4.99	5.90	4.39	4.89	1.95	1.52	1.99	39.88
"	"	Bushmills	1.87	1.41	1.72	1.33	3.49	3.46	4.44	2.60	3.92	1.44	1.58	2.30	29.36
"	Londonderry	Newtown Limavady	1.73	1.01	2.39	1.54	3.53	4.83	5.20	3.30	3.41	2.21	1.83	1.86	32.84
"	Donegal	Inver Glebe	2.74	2.83	2.72	1.94	3.12	3.93	6.43	4.48	7.25	3.89	1.46	1.86	42.65
"	"	Ramelton	2.53	2.33	2.62	1.90	3.23	5.68	6.17	3.25	5.73	2.32	2.10	1.25	39.11
"	"	Carradonagh	3.17	2.30	3.43	1.60	2.77	4.60	5.05	4.09	6.89	2.63	2.21	2.40	41.14

NOTES ON THE MONTHLY FALL OF RAIN IN 1879.

JANUARY.

The fall during this month (of which much was due to the snow-storm on the 1st and 2nd) was rather *above* the average in the South of England, and below it in Yorkshire, throughout Scotland and all, except the S.W. of, Ireland. The deficiency was most marked in the English Lake district and in Skye. At Seathwaite, Cumberland, the fall was only 3·34 in., instead of 16·36 in., which is the average for January. The fall during the month was less than an inch at many stations in the Eastern counties of England, at some in Westmoreland, and also in East Ross and in Caithness.

FEBRUARY.

Rainfall above the average at all English stations South of Leeds, and at all Irish stations except perhaps those in the extreme North. In London, and also at Cirencester and some other English stations, the fall was three times the average. It was below the average at Skipton (Yorks) and Seathwaite (Cumberland), also at all stations in the North, and especially in the North-West, of Scotland. The fall was less than 1 in. at stations in the vicinity of the Moray Firth.

MARCH.

A dry month, the fall below the average everywhere except in the North-East of Scotland from Dundee to Inverness. The total fall was less than an inch at nearly all stations in the middle and South-East of England, also in Wilts, Dorset, Somerset, Worcester, Leicester, Lincoln, Nottingham, York and Northumberland.

APRIL.

South of York the rainfall in April was generally in excess, the amounts varying from the average to twice the average. In Wales, Scotland, and Ireland the fall was rather below the average, but not

remarkably. The total fall during the month was only below an inch at a few stations in the South-West of Scotland, in West Ross-shire, and in county Sligo (Ireland).

MAY.

The fall in this month was near the average everywhere, except at Boston (Lincoln), Culloden (Inverness), and Dunrobin (Sutherland), at each of which it was double the average; and at Seathwaite, Dumfries and Portree (I. of Skye), at each of which it was only half the average. Few monthly totals of less than an inch; there were, however, instances of such being recorded in the East of Westmoreland and in the East of Fifeshire.

JUNE.

A wet month. No station with less than an inch of rain except one in the extreme North-East of Scotland. The fall above the average at all stations except Seathwaite (Cumberland), Braemar (Aberdeen), Portree (Skye), and Sandwick (Orkney). At Selborne (Hampshire), Bodmin (Cornwall), Haverfordwest (Pembroke), and some other stations, the fall was double the average. On Dartmoor during this (summer?) month the fall was between 10 and 15 in.

JULY.

Another wet month. The fall above the average over the whole of the British Isles, and in many parts more than double the average. This was the case at Bury St. Edmund's (Suffolk), Norwich (Norfolk), Skipton (Yorks), N. Shields (Northumberland), Arbroath (Forfar), and Dunrobin (Sutherland). No station had less than 1 in. of rain during the month, and only three very widely separated ones seem to have had less than 2 in. : viz., Dunster (Somerset), Jersey (Channel Islands), and East Yell (Shetland). the last two being respectively our most Southern and most Northern stations.

AUGUST.

The third consecutive wet month; the fall above the average everywhere except at Seathwaite (Cumberland), in the Orkney Isles, and in the centre of Ireland. At many stations in the Midland Counties of England and in North Wales the fall was more than double the average. Few stations had less than 3 in. of R, and not one of those quoted in the following tables had less than 2 in.

SEPTEMBER.

The fourth and last consecutive wet month. The fall was twice the average at Culford (Bury St. Edmunds), and at Boston (Lincoln). It was above the average in all parts of England, except Devon, York, Durham and Northumberland. It was above the average in the West of Scotland and the West of Ireland, and below it in the East of both countries. There were a few stations with less than an inch of R, but they were almost entirely limited to Northumberland and East Rossshire.

OCTOBER.

A dry month; the fall below the average in every part of the British Isles, with possibly the exception of the North-West extremity of Scotland. Taken generally the fall was about half the average, but in the South-East of England it was only one-seventh of the average. Although this is usually a wet month, there were in 1879 several hundred stations at which less than an inch of rain fell; most of these stations were in the Midland counties of England.

NOVEMBER.

Another dry month; the rainfall below the average except in Northumberland, Inverness, and Sutherland; in London the fall was only one-third of the average, and at Bridport (Dorset) only one-fifteenth. This month was as dry as, or drier than, October in many parts. Throughout most of the South, and especially the South-West, of England, South Wales, and the southern and western parts of Ireland, the fall of rain was generally less than one inch.

DECEMBER.

The third consecutive dry month; the rainfall below the average in all parts of the British Isles. The fall at many stations was again less than an inch. On reference to the tables of monthly fall it will be seen that at several stations the total fall in *each* of the last three months of the year was under an inch. The following are instances:—

Total fall, October–December, 1879.

	in.		in.
Middlesex.. London	2·38	Cambridge..Ely.....	1·95
Kent	2·62	Essex	1·70
Sussex	2·58	Wilts	1·99
Herts	1·95	Dorset	1·81
"	1·90	Gloucester..Stroud	2·45
Bucks	1·48	Hereford	2·50
"	2·58	Durham.....	2·50
Beds.	1·98		

COMPARISON OF THE RAINFALL IN 1879 WITH THE AVERAGE
OF PREVIOUS YEARS.

ENGLAND AND WALES.

Div.	STATION.	COUNTY.	Average			Depth in 1879.	Difference from Average, 1860-5	
			1850-9.	1860-9.	1860-5.		Per Amount. cent	
			in.	in.	in.	in.	in.	
I.	Camden Square	Middlesex ...	(24·30)	25·68	25·01	33·82	8·81	+ 35
II.	Greenwich Observatory...	Kent	24·95	25·18	23·90	31·36	7·46	+ 31
„	Chichester (Chilgrove) ...	Sussex	32·23	33·22	32·77	36·98	4·21	+ 13
III.	Berkhempstead	Herts	28·05	29·28	28·02	34·90	6·88	+ 25
„	Hitchin	„	24·72	23·92	23·25	29·13	5·88	+ 25
„	High Wycombe	Bucks	23·20	25·71	24·29	32·16	7·87	+ 32
„	Althorp	Northants ..	20·34	23·35	21·77	26·24	4·47	+ 21
„	Cardington (8 in. gauge)..	Bedford	21·60	22·49	21·87	29·10	7·23	+ 33
IV.	Norwich (Honingham) ...	Norfolk	25·99	23·98	23·28	29·52	6·24	+ 27
„	Holkham	„	26·13	23·88	23·10	24·97	1·87	+ 8
V.	Exeter Institution	Devon	26·91	31·76	30·17	34·32	4·15	+ 14
„	Bodmin	Cornwall	43·48	47·71	46·12	49·06	2·94	+ 6
VI.	Shiffnal (Haughton Hall)	Shropshire ...	24·02	24·87	23·74	30·71	6·97	+ 29
„	Orleton	Worcester ...	28·82	30·90	30·06	34·46	4·40	+ 15
VII.	Spalding, (Pode Hole) ...	Lincoln	23·38	25·34	25·11	24·35	·76	— 3
VIII.	Bolton (The Folds)	Lancashire ...	44·01	48·98	48·33	42·82	5·51	— 11
„	„ (Belmont)	„	51·19	56·61	55·70	55·00	·70	— 1
„	Ormskirk (Rufford)	„	33·24	35·00	34·81	32·82	1·99	— 6
„	Stonyhurst	„	43·40	48·56	49·08	42·40	6·68	— 14
„	Holker	„	39·17	45·63	44·98	37·43	7·55	— 17
IX.	Redmires	York, W.R... ..	37·86	39·68	37·89	42·08	4·19	+ 11
„	Standedge	„	49·58	53·70	52·17	49·89	2·28	— 4
„	Leeds (Holbeck, M. & Co.)	„	20·91	22·85	21·98	23·83	1·85	+ 8
X.	Whittle Dean	Northumbld ..	22·96	25·42	25·08	25·26	·18	+ 1
„	Seathwaite	Cumberland..	126·98	154·05	153·47	110·70	42·77	— 28
„	Keswick (Post Office) ...	„	55·01	62·40	60·56	48·02	12·54	— 21
„	Kendal (Kent Terrace) ...	Westmorel'nd	44·91	53·32	52·88	43·18	9·70	— 18
XI.	Guernsey	Channel Isds.	34·46	37·18	37·09	41·57	4·48	+ 12

COMPARISON OF THE RAINFALL IN 1879 WITH THE AVERAGE OF PREVIOUS YEARS.

SCOTLAND.

Div.	STATION.	COUNTY.	Average			Depth in 1879.	Difference from Average, 1860-5	
			1850-9.	1860-9.	1860-5.		Per Amount.	Per cent.
			in.	in.	in.	in.	in.	
XII.	Mull of Galloway ... L.H.	Wigtown.....	22·52	27·66	28·31	32·68	4·37	+ 15
„	Little Ross L.H.	Kirk'udbright	25·27	26·98	27·35	25·84	1·51	— 6
XIII.	Glencorse L.H.	Edinburgh ...	36·96	37·45	36·77	44·95	8·18	+ 22
„	Inveresk L.H.	„	24·72	29·02	30·05	31·32	1·27	+ 4
XIV.	Bothwell Castle L.H.	Lanark.....	27·76	28·89	28·33	28·65	·32	+ 1
„	Waulk Glen L.H.	Renfrew	43·94	49·85	48·96	40·95	8·01	— 16
XV.	Pladda L.H.	Bute	35·23	40·14	38·12	33·52	4·60	— 12
„	Mull of Cantyre L.H.	Argyll	41·19	44·17	44·61	44·10	·51	— 1
„	Rhinn of Islay L.H.	„	30·58	33·43	32·66	30·41	2·25	— 7
„	Tyree (Hynish) L.H.	„	73·90	79·99	84·77	32·40	52·37	— 62
„	Lismore L.H.	„	38·44	46·22	46·95	42·21	4·74	— 10
„	Ardnamurchan L.H.	„	38·50	45·59	47·94	40·66	7·28	— 15
XVI.	Dundee (Hill Head) L.H.	Forfar	31·06	35·19	35·59	42·12	6·53	+ 18
„	„ (Craigton) L.H.	„	31·87	34·88	35·64	40·88	5·24	+ 15
„	Arbroath L.H.	„	25·08	29·05	29·71	32·08	2·37	+ 8
XVIII.	Cromarty L.H.	Cromarty ...	23·67	25·94	27·80	27·89	·09	+ 0
„	Barrahead L.H.	Inverness W.	32·67	31·73	32·62	27·79	4·83	— 15
„	Island Glass L.H.	„	31·92	31·13	23·86	35·97	12·11	+ 51
„	Culloden L.H.	Inverness, E.	22·70	27·08	26·86	25·48	1·38	— 5
XIX.	Cape Wrath L.H.	Sutherland ...	36·94	39·37	39·59	37·03	2·56	— 6
„	Noss Head L.H.	Caithness ...	25·57	24·70	23·57	22·48	1·09	— 5
„	Dunnethead L.H.	„	22·09	25·40	25·93	25·15	·78	— 3
„	Pentland Skerries ... L.H.	„	24·12	28·76	28·92	20·94	7·98	— 28
„	Sandwick L.H.	Orkney	36·14	38·85	36·79	32·48	4·31	— 12
„	Start Point L.H.	„	23·77	31·37	24·32	25·93	1·61	+ 7

IRELAND.

XX.	Cork	Cork	34·23	34·77	34·41	38·40	3·99	+ 12
XXI.	Woodstock L.H.	Kilkenny.....	36·35	39·38	38·83	42·20	3·37	+ 9
„	Portarlington L.H.	King's County	26·94	36·86	41·38	32·44	8·94	— 22
„	Tullamore L.H.	„	24·37	27·94	28·09	28·09	·00	0
XXIII.	Armagh L.H.	Armagh	(28·20)	32·01	32·40	32·27	·13	— 0

ABSTRACT.

England	35·78	39·31	38·45	38·43	·02	— 0
Scotland	32·26	35·71	35·44	32·96	2·48	— 7
Ireland	30·02	34·19	35·02	34·68	·34	— 1
Mean of the whole	32·69	36·40	36·30	35·36	·94	— 3

THE RAINFALL OF THE YEAR 1879.

It has been found necessary again to use the average for 1860-65 as the standard of comparison in the preceding table, but before the publication of *British Rainfall*, 1880, the means for the decade, 1870-79, will be worked out, and in that work the table will be entirely reconstructed and the number of stations contained in it greatly increased, inasmuch as the decade, 1850-59 will no longer be required.

The rainfall of the year 1879 was greatly above the average over the whole of the southern part of England, except in part of Devon and Cornwall, where, as a whole, the excess was not so great, and there were a few stations with rather less than the average fall. Over the remainder of the country the fall was below the average, but only slightly so, except at some stations with a large rainfall, where the deficiency was considerable, amounting to nearly 43 in. at Seathwaite. In Wales the fall was very irregular, the distribution being complicated by the excessive fall in Denbighshire, and adjoining counties on August 16th and 17th, the fall at some stations being considerably above the average, and at others as much below, but perhaps, if anything, there was a deficiency along the coast, and there probably would have been one in the north but for the above-mentioned heavy fall.

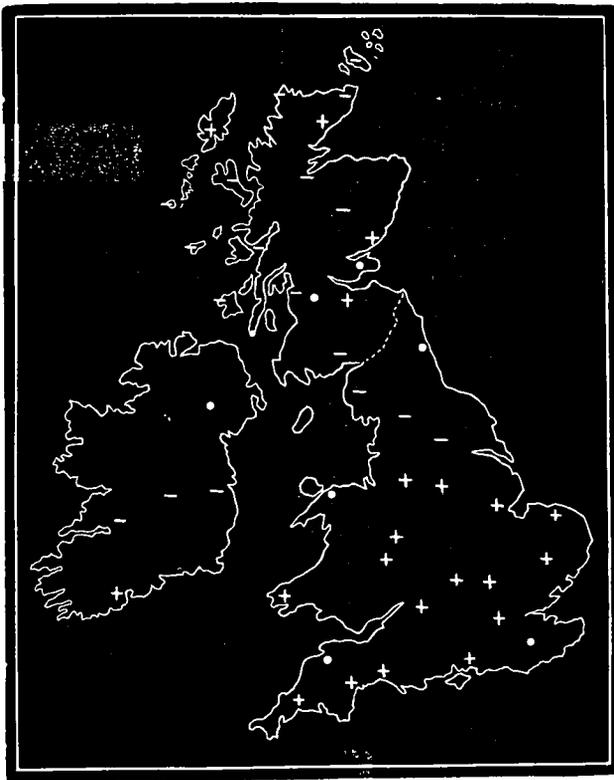
The large proportion of Scotch returns which are from lighthouses renders it more difficult to speak with certainty as to the conditions prevailing in that country, the positions of those gauges of course being not so fairly representative as those at stations inland, but the fall was above the average in Edinburghshire and the surrounding counties, all along the eastern coast, and at some stations in the extreme south-west, and apparently below the average all over the remainder of the country, the fall at some of the inland stations in the Highlands being from 10 to 15 inches deficient.

Over Ireland, as a whole, the fall was about the average, or a trifle above it, the excess in some parts being well marked, but wherever

deficiencies occurred they were slight, unless on the west coast, where information is exceedingly scanty.

The most marked features of the rainfall of the year were the wetness of the summer months and the extreme dryness of the last three months. The last three months were, indeed, so exceptionally dry that the total fall of the year was considerably affected by them, or there would have been a large excess over the whole kingdom. The almost total failure of the harvest at places where the rainfall of the *year* would not apparently account for it, was undoubtedly due to the excessive wet of the summer months, and consequent obstruction of sunshine.

The areas in which the total fall in the civil year 1879 was in excess (+), was the average, or was in defect (—), are shown on the following map, upon precisely the same system as in the monthly ones:—



NOTE UPON THE TABLE OF EXTREMES OF RAINFALL
IN 1879.

I HAVE before mentioned, but in case this volume falls into the hands of some who have not read previous works of the series, it may be well to state briefly, the rule in accordance with which the following table is formed :—

As every reader knows, the higher the mouth of a rain gauge is above the ground the less will it collect. The decrease thus obtained is, of course, no indication of climatic change, and the only fair comparison is between stations where the fall is observed under nearly identical conditions: consequently the following table contains no records obtained at considerable heights above the ground, and none from lighthouse stations.

EXTREMES OF RAINFALL IN 1879.

Largest Rainfall, at the Stye, Cumberland 148·55 in.
 Least Rainfall, at Middlesborough, Yorkshire 18·57 ,,

ENGLAND.

GREATEST.		LEAST.	
Div.	in.	Div.	in.
X.	The Stye	IX.	Middlesborough
„	Taylor's Ghyl	„	Goole
„	Seathwaite.....	VII.	Crowle (Keadby) ..
„	Styehead Tarn ..	„	Gainsborough
„	Sprinkling Tarn ..	IX.	Doncaster
VIII.	Bridge End (Little Langdale) 96·62	„	Saltburn (Port Mulgrave) ...

WALES AND THE ISLANDS.

GREATEST.		LEAST.	
Div.	in.	Div.	in.
XI.	Beddgelert (Bryn Gwynant)..	XI.	Rhyl
„	Pen-y-gwryd	„	Churchstoke (Mellington Hall)
„	Neath (Glyn Corrwg)	„	Rosset (Trevalyn Hall)
„	Aberdare (Tydraw)	„	Llandudno (Warwick House)...
„	Dolgelly (Brithdir)	„	Prestatyn (Nant).....
„	Tredegear (Ebbw Vale).....	„	Abergele (Bryn Euryn)

SCOTLAND.

GREATEST.		LEAST.	
Div.	in.	Div.	in.
XVIII.	Glenquoich	XVIII.	Dingwall H.R.S.
XVI.	Glen Gyle	XIX.	Wick H.R.S.....
XVIII.	Loch Shiel (Glenfinnan)	XVII.	Burghead H.R.S.....
XV.	Loch Lomond (Firkin)	XIX.	Wick
„	Mull (Calgary)	„	Altnabreac R.H.S.
„	Arrochar.....	XVII.	Nairn (Acharéidh)

IRELAND.

GREATEST.		LEAST.	
Div.	in.	Div.	in.
XXII.	Clifden (Kylemore) ..	XXI.	Glasnevin (Botanic Gardens).
„	Drumkeeran(SpencerHar.Col.	„	Tullamore
XX.	Kenmare (Derreen)	„	Monkstown
„	Dromore Castle.....	„	Kingstown
XXIII.	Newcastle (Fairleigh)	„	Dublin (Fitzwilliam Square).
XX.	Roches Point.....	„	Navan (Balrath)

RULES FOR OBSERVERS.

WE wish it to be distinctly understood that we are always happy to furnish gratuitously any copies which may be required of "*Arrangements for the systematic observation and record of the Rainfall of the British Isles*. The special object of that paper is to ensure the nearest possible approach to uniform and perfect work on the part of our staff, and the more they will study those eight pages, and especially the three devoted to the rules for observers, the better for everybody.

GENERAL TABLES
OF
TOTAL RAINFALL IN 1879,
AT ABOUT
2000 STATIONS
IN THE
BRITISH ISLES.

EXPLANATION OF THE ARRANGEMENTS OF THE
FOLLOWING GENERAL TABLES.

The divisions are the same as those adopted by the Registrars General of England and Scotland. The boundaries of these divisions are shown on the map facing p. 170 of *British Rainfall*, 1876.

The counties follow the same order as in the reports of the before-mentioned officers; but an alphabetical list of the counties is given, whereby the page or pages on which all returns from each county will be found can be at once ascertained.

The stations in each county are arranged nearly in the order of their latitude from South to North.

In order to facilitate finding the fall in any part of the country, the first name is almost always that of a place given in *Bradshaw*, the *British Postal Guide*, or the *Clergy List*; the second name is generally added to fix accurately the site of Observation; but in a very few instances, this second name is in [] instead of (); it then shows that the nearest town is in an adjoining county. For instance, "Lowestoft (Gisleham)" means Gisleham, near Lowestoft, both being in one county, but "Geldeston [Beccles]" means Geldeston, Norfolk, near Beccles, in another county—Suffolk.

The contents of the columns are sufficiently explained by the headings, except that in the column headed "diameter," figures will occasionally be noticed of a different type from the rest of the tables; these figures indicate the length of the sides of rectangular mouthed gauges. These measurements are all in inches.

The letter D denotes that a copy of the daily record has been received, that it is perfect throughout the year, and that the printed amount is the correct total of these daily entries.

An asterisk * denotes that the gauge was tested before erection, and a † that it has been visited and examined since. A note of interrogation (?) implies doubt, not necessarily error. ... indicates the absence of information.

In the column of altitudes several symbols are used, their meaning is as follows:— ∇ , that a series of levels has been taken from the gauge to an Ordnance bench mark; T, that the height is estimated or ascertained approximately from the same source; L, that levels have been taken from the gauge to the sea, or to some datum other than Ordnance mean sea level; B, that the altitude has been taken by the barometer; and ?, that the height is uncertain.

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DIVISION I.—MIDDLESEX.—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1879.	Days on which "01 or more fell.
		Diameter	Height Above Ground	Height Above Sea Level		
			ft. in.	feet.	inches.	
MIDDLESEX—(con.)						
Hampstead (The Priors)	Rogers Field, Esq. C.E.	5	1 0	327 ∇	33·19	184
*Kentish Town Reservoir Bank ...	G.J.Symons, Esq. F.R.S.	5	0 10	200 \uparrow	31·89	...
\dagger Highgate Nurseries	J. Cutbush, Esq.	5	1 0	394 \uparrow	34·14	178
Child's Hill (Helenslea)	A. J. Woodhouse, Esq.	5	1 1	245 \uparrow	33·95	190
*Clapton Common	J. Parnell, Esq.	5	1 1	98 ∇	30·65	177
\dagger Uxbridge (Harefield Park)	W. F. Vernon, Esq. ...	8	0 8	296 ∇	33·75	160
\dagger Hornsey	J. Muir, Esq., C.E. ...	9	3 3	111 \uparrow	31·57	161
\dagger " (Wood Green)	H. A. Ivory, Esq. ....	...	...	...	33·10	...
\dagger Muswell Hill	J. W. Scott, Esq.	5	0 9	310 \uparrow	34·60	204
" "	" "	8	0 10	310 \uparrow	34·36	204
\dagger Pinner Hill	W. A. Tooke, Esq. ...	5	3 6	410 \uparrow	34·35	192
\dagger Colney Hatch	J. Thrustans, Esq.	5	1 0	150 \uparrow	34·29	178
\dagger Mill Hill School	E. R. Tanner, Esq. ...	8	0 7	400	36·27	...
\dagger Enfield (Nag's Head Lane)	J. Muir, Esq., C.E. ...	12	3 0	108 \uparrow	31·96	201
" Chase	T. Paulin, Esq.	5	1 0	...	32·77	175
\dagger " "	" "	8	1 0	...	32·76	175
" "	" "	5	5 0	...	31·32	175

DIVISION II.—SOUTH-EASTERN COUNTIES.

SURREY.

\dagger Haslemere	J. W. Penfold, Esq. ...	8	4 0	481 ∇	40·89	176
Godalming (Dunsfold)	Mr. W. Underwood ...	5	2 6	166	32·70	...
Haslemere (Weycombe)	G.B.Buckton, Esq. F.R.S.	5	4 0	583 ∇	38·73	...
Godalming (Witley)	Mrs. Foster	5	1 0	350 \uparrow	36·12	170
Dorking (Holmbury)	Mr. Bayman	5	0 6	553 \uparrow	43·22	223
\dagger " (Abinger Hall)	T. H. Farrer, Esq. ...	8	2 0	400	34·36	148
\dagger " (Holmwood)	A. Sconce, Esq.	5	1 6	320 \uparrow	38·71	...
Guildford (Guildown)	Miss J. P. Hadden	5	0 11	220 \uparrow	32·15	159
\dagger Farnham (The Bourne Vicarage)	Rev. T. W. Sidebotham	5	1 0	308 ∇	31·58	175
\dagger Dorking (Fir Tor)	F. Taylor, Esq.	5	0 10	340	37·73	...
\dagger " (Horsham Road)	Miss Wilkinson	5	0 11	234 ∇	39·78	190
" (The Denbies) (Top) ..	G. Dines, Esq.	5	1 0	610 \uparrow	37·34	...
\dagger Redhill (Oxford Road)	W. H. Tyndall, Esq.	8	1 0	300 ∇	38·02	189
\dagger " (Thornielee)	N. Southall, Esq.	8	1 0	275 \uparrow	35·56	163
\dagger Reigate (Wray Park)	A. Rosling, Esq.	5	1 0	330 \uparrow	40·30	193
\dagger " (Nutwood)	H. E. Gurney, Esq. ...	5	1 0	330 \uparrow	35·79	166
\dagger Nutfield Priory	J. Fielden, Esq.	8	1 2	468 ∇	36·60	196
\dagger Godstone (Tyler's Green)	Baldwin Latham Esq. CE	5	1 0	366 ∇	36·18	...
\dagger Reigate Hill	" " "	5	1 0	687 ∇	37·34	178
\dagger Titsey [Westerham]	" " "	5	1 0	448 ∇	35·99	200
\dagger " (Botley Hill) [Westerham]	" " "	5	1 0	870 ∇	46·28	166
\dagger Chipstead (Parson's Green)	" " "	5	1 0	506 ∇	38·89	187
Upper Caterham	Dr. Elliott	5	1 0	609 ∇	36·85	170
\dagger Godstone (Birchwood House) ...	Messrs. C. & F. Rutley	5	1 0	471 ∇	36·43	...
\dagger Chelsham (Henley)	W. Foster, Esq.	5	1 0	607 ∇	38·48	188

DIVISION II.—SOUTH-EASTERN COUNTIES—(continued.)

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which ·01 or more fell.
		Diameter	Height Above Ground	Height Above Sea Level	1879	
			ft. in.	feet.	inches.	
SURREY—(con.)						
D Kenley	Baldwin Latham Esq CE	5	1 0	501 $\bar{\pi}$	37·99	220
D Banstead Downs (Woodcote Farm)	J. Arnott, Esq.	5	1 0	339 $\bar{\pi}$	31·02	163
Cobham (Faircrofts)	J. Webb, Esq.	5	1 2	72 $\bar{\pi}$	29·05	...
† Weybridge Heath	Mrs. Harrison	8	0 6	150 $\bar{\pi}$	31·04	...
D Weybridge (Oakfield)	H. Yool, Esq.	5	1 0	107 $\bar{\pi}$	30·00	194
Walton-on-Thames (Hersham)..	G. Dines, Esq.	8	3 0	55 $\bar{\pi}$	30·00	...
D Addington	Baldwin Latham Esq CE	5	1 0	268 $\bar{\pi}$	32·06	155
Sutton (Mulgrave Road)	W. Goode, Esq.	5	7 3	230 $\bar{\pi}$	30·28	...
D Croydon (Beechholme Bramley Hill)	W. T. Reynolds, Esq... ..	5	1 0	179 $\bar{\pi}$	31·25	180
D† „ (Wandle Road)	G. Corden, Esq.	5	1 0	155 $\bar{\pi}$	30·95	194
D „ (Tanfield Lodge)	J. Weston, Esq.	5	0 10	155 $\bar{\pi}$	29·77	153
D „ (Waddon House)	P. Crowley, Esq.	8	3 0	...	28·39	179
D „ (Church Street)	Mr. C. A. Blogg	5	20 8	169 $\bar{\pi}$	30·96	...
D† „ (Nantwich House)	B. Latham, Esq., C.E..	8	4 6	259 $\bar{\pi}$	30·29	177
D „ (Brinstone Barn, Sew. Wks)	„ „ „	5	1 0	130 $\bar{\pi}$	29·32	155
D*† „ (Addiscombe)	E. Mawley, Esq.	8	0 9	202 $\bar{\pi}$	31·06	197
*† „ („) <i>monthly</i>	„ „ „	8	0 9	202 $\bar{\pi}$	31·56	...
D „ (Thornton Heath)	F. Wilkin, Esq.	5	1 0	155 $\bar{\pi}$	29·63	173
Chertsey (Burley Orchard)	W. Herring, Esq.	5	1 0	47 $\bar{\pi}$	31·26	...
Surbiton (Seething Wells)	G. Lott, Esq.	10	0 6	25	29·63	197
D „ (Grove Road)	C. Mostyn, Esq.	5	1 0	21	28·66	137
D Mitcham	Baldwin Latham Esq CE	5	1 0	50 $\bar{\pi}$	28·83	168
Norwood (Beulah Hill)	S. R. Scott, Esq.	5	1 0	350 \bar{p}	31·50	177
D Wimbledon	T. Devas, Esq.	12	3 0	170 $\bar{\pi}$	30·26	191
D† Lower Norwood	W. Marriott, Esq.	8	1 0	185 $\bar{\pi}$	29·51	182
Staines (Cooper's Hill)	The Meteor. Council ...	8	1 1	280	32·71	179
D Richmond (Halford House)	J. T. Billett, Jun., Esq.	5	0 9	50 $\bar{\pi}$	32·05	190
D Kew Observatory	The Kew Committee ...	11	1 9	19 $\bar{\pi}$	33·08	195
Brixton (Acre Lane)	The Meteor. Council ...	8	1 2	77 $\bar{\pi}$	31·98	192
D Peckham (Asylum Road)	Sir J. W. Bazalgette, CE.	5	5 6	20 $\bar{\pi}$	30·42	...
KENT.						
D Hawkhurst (Sandhurst Rectory)	Rev. G. Ridout	5	1 3	208 $\bar{\pi}$	32·50	167
D Dymchurch	H. D. Goode, Esq., C.E.	8	1 0	12 $\bar{\pi}$	27·78	133
Tenterden (Summerhill)	Rev. A. Wilkin	12	1 0	139 $\bar{\pi}$	26·28	153
Benenden (East End)	J. Ellis Mace, Jun. Esq.	8	1 6	193 $\bar{\pi}$	30·05	...
„ ( „ ) .....	„ „ „ .....	...	1 0	193	29·00	...
D Tenterden	„ „ „	8	1 5	190 $\bar{\pi}$	30·15	193
„ <i>Snowdon</i>	„ „ „	8	1 5	190 $\bar{\pi}$	29·42	185
„ (Ashbourne)	A. Pinyon, Esq.	5	2 8	45 $\bar{\pi}$	29·06	...
D† Hythe	H. B. Mackeson, Esq... ..	8	0 6	12 $\bar{\pi}$	38·16	201
Folkestone (Trinity Vicarage) ...	A. H. Taylor, Esq. ...	12	1 3	160 $\bar{\pi}$	28·30	182
† Cranbrook (Swattenden)	R. Appach, Esq.	8	1 4	350 $\bar{\pi}$	29·51	173
„ (Hartley)	G. Pile, Jun., Esq. ...	5	4 0	405 $\bar{\pi}$	31·98	224
Hythe (Paddlesworth)	Mr. R. Dixon	8	1 0	608 $\bar{\pi}$	43·67	...
Gowdhurst Vicarage	Rev. J. S. Clarke	5	1 0	412	26·41	185
Dover Station	The Meteor. Council ...	8	23 0	46	26·32	194
D† „ (Russell Street)	H. J. Poulter, Esq. ...	5	2 0	30 \bar{p}	30·69	160

DIVISION II.—SOUTH-EASTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which .01 or more fell.
		Diameter	Height Above Ground	Height Above SeaLevel	1879	
			ft. in.	feet.	inches.	
KENT—(con.)						
D Ashford (Bethersden)	W. H. Mold, Esq.	5	1 6	111 T	28·84	168
D " (Beaver Green)	T. Nickalls, Esq.	5	1 0	155 T	34·78	224
D Acrise	G. C. Woollett, Esq. ...	8	0 6	484 T	39·98	199
D Staplehurst Park	Mr. T. Hards	5	1 2	73 T	31·37	155
Ashford (East Hill)	J. S. Burra, Esq.	8	1 0	126 T	32·99	158
" (Kennington)	"	8	...	...	32·39	...
D Tunbridge Wells (Pembury) ...	W. Brentnall, Esq. C.E. ...	8	1 8	181 T	30·53	174
Edenbridge (Falconhurst).....	J. G. Talbot, Esq. M.P. ...	5	1 0	400 L	33·10	181
D Tunbridge (St. Mary's).....	W. C. Punnett, Esq....	5	1 6	96 T	29·22	159
D† Maidstone (Hunton Court)	Mr. P. Goddard	8	0 6	80 T	25·65	162
D " (Tovill House).....	J. Barcham Green, Esq. ...	5	1 0	60	26·94	...
Deal (Northbourne)	H. J. Hannam, Esq. ...	5	1 2	60	34·59	170
Sevenoaks (Ide Hill).....	J. Frost, Esq.	5	1 0	700 T	36·63	189
D Canterbury (Chilham)	J. Marten, Esq.	5	1 0	330 T	31·60	185
Charing (Otterden)	Rev. W. A. Paxton ...	5	1 0	507 T	31·45	...
† Sandwich (Walton House, Eastry)	Colonel Rae	5	2 10	55 T	25·97	...
† Sheldwich	Rev. B. S. Malden.....	5	1 0	259 T	28·20	...
D† Selling (Harefield).....	E. Neame, Esq.	5	1 0	217 T	31·90	201
D " (Gosmere)	W. Butcher, Esq.	5	1 0	255 ?	29·47	180
D Canterbury (Bridge Street)	Mr. J. Reid.....	5	1 6	52 T	31·84	189
" (Harbledown)	Miss Metcalfe.....	5	1 6	262	33·61	159
" (Old Tree Hoath) ...	G. Rammell, Esq. ....	...	...	...	24·46	106
† Seven Oaks (River Hill)	J. T. Rogers, Esq.	8	4 0	535 T	31·06	120
D† " (Riverhead Vic.) ...	Rev. J. B. Murdoch ...	5	0 6	300 T	32·92	...
D Westerham (Betsom's Hill)	Baldwin Latham Esq CE	5	1 0	811 T	37·84	191
Ospringe (Lorenden).....	W. C. Stunt, Esq.	5	1 0	...	27·85	133
D Stourmouth.....	Rev. R. Drake	5	1 0	12 T	24·47	101
D Farnborough (Leaves Green) ..	Baldwin Latham Esq CE	5	1 0	534 T	34·83	154
Sittingbourne.....	G. Payne, Junr., Esq... ..	5	1 1	38	22·43	...
† Ramsgate (St. Augustine's).....	The Meteorological Soc. ...	5	0 6	105 T	27·85	175
† " (The Vale)	M. Jackson, Esq.	5	1 0	90 T	25·99	166
Birchington (Thor)	Major Bell	5	1 0	70	25·25	194
D North Foreland Lodge	Capt. Isaacke.....	5	1 9	...	27·01	...
D† Margate (Acol)	E. S. Lendon, Esq. ...	5	0 6	60 T	25·81	140
D " (Renfrew Villa)	T. Twyman, Esq.	5	1 0	50 T	26·35	190
Chatham (School Mil. Engineers)	The Meteor. Council ...	8	1 0	136	22·47	174
D† Bromley Common, S.E.	Rev. A. Rawson... ..	8	1 0	250 T	33·04	187
Bickley (Highfield)	J. Batten, Esq. ....	...	1 0	280	27·60	...
D† Beckenham (Foxgrove).....	Percy Bicknell, Esq. ...	5	0 5	141 T	28·52	171
D† " " "	" " "	5	4 0	145 T	27·47	166
† Foot's Cray (Sidcup).....	Miss Berens	5	0 8	231 T	30·08	...
† Dartford (The Downs)	Mrs. Jarvis	5	2 4	162 T	25·36	...
D† Eltham Green	E. J. C. Smith, Esq. ...	5	1 0	80 T	29·81	183
D Lee (Blessington Road).....	J. Grant, Esq., C.E. ...	10	4 9	49 T	33·55	...
Blackheath	J. Glaisher, Esq., F.R.S. ...	8	0 5	160 T	31·38	179
Greenwich (Royal Observatory)..	Sir G. B. Airy, F.R.S. ...	8	0 5	155 T	31·36	185
D Deptford (Pumping Station).....	Mr. W. Jeffree	10	0 4	18 T	34·68	176
D Erith (Crossness)	Sir J. W. Bazalgette, C.E. ...	14	1 0	16 T	29·59	187

DIVISION II.—SOUTH-EASTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which ".01 or more fall.
		Diameter	Height Above Ground	Height Above Sea Level	1879	
			ft. in.	feet.	inches.	
HAMPSHIRE—(con.)						
D Romsey (Michelmersh Rectory)..	Rev. Dr. Merriman ...	5	1 6	273 π	33.48	163
Petersfield (Liss Place)	G. E. Coryton, Esq. ...	7	0 7	250 π	39.09	...
D Alresford (Cheriton Rectory) ...	Rev. A. Orr	5	2 0	240	37.46	...
D " (Ovington).....	Rev. W. H. B. Stocker	5	5 1	225 Γ	38.95	204
†Alton (East Tisted Rectory).....	Rev. F. Howlett.....	5	1 1	420 π	42.55	186
†Alresford (Arle Bury)	Capt. G. F. Marx	5	1 6	238 π	31.00	147
" (Swarraton Rectory)....	Rev. W. L. W. Eyre....	5	1 0	310 π	36.32	...
Alton (Medstead)	Rev. E. Silver	5	1 1	690 Γ	35.70	...
" (East Worldham)	Rev. G. H. Fell, D.D..	5	1 6	499 π	31.63	178
† " (Ashdell)	F. Crowley, Esq.	8	3 6	396 π	38.57	...
Micheldever	J. A. Caird, Esq.	5	1 1	270	32.66	...
Andover (Red Rice)	Mr. C. W. Learman ...	5	0 7	277 Γ	33.70	150
D Odiham Priory	Rt. Hon. G. S. Booth, M.P	5	4 4	...	32.40	...
Dogmersfield Park	Sir H. B. Mildmay, Bt.	5	1 6	...	29.47	...
D Basingstoke (Chapel Hill).....	G. Stephens, Esq.	5	1 0	328 Γ	34.00	203
Rotherwick (Tylney Hall)	C. E. Harris, Esq.	5	0 8	330 Γ	30.78	...
D†Basingstoke (Sherborne St. John).	Rev. D. W. Chute	5	1 3	276 Γ	37.99	199
Hartley Grange	W. Walkinshaw, Esq..	5	1 0	220 π	30.62	...
" Wespall	Rev. J. C. Keate.....	8	0 9	233 Γ	30.85	...
D Blackwater (Hurstleigh)	Miss Gibson	5	1 0	220 Γ	32.49	220
†Strathfield Turgiss.....	Rev. C. H. Griffith.....	5	1 0	200 π	34.49	173
D† " "	" " " "	5	3 0	200 π	33.45	173
†Strathfieldsaye	Mr. J. Bell	8	1 0	160 Γ	33.82	151
†Heckfield (Park Corner)	J. Martineau, Esq.....	5	1 3	258 Γ	31.00	...
BERKS.						
D Reading (Beech Hill)	Rev. C. S. Turner	5	1 0	226 π	32.47	184
Newbury (Greenham)	Capt. J. Ward, R.N....	5	1 0	260 Γ	35.38	203
"	W. J. Cowper, Esq. ...	5	4 6	...	37.73	189
Hungerford (Denford Park).....	G. C. Cherry, Esq.....	5	1 2	...	36.02	193
Reading (Englefield).....	R. Benyon, Esq.	5	1 1	...	38.39	166
D† " (Russell Street)	Dr. Workman	5	1 6	154 π	34.17	185
" (The Acacias)	A. Palmer, Esq.	5	3 0	157 π	33.38	138
D Newbury (Welford Park).....	Mr. C. Ross	5	1 0	335 π	36.52	215
" " " "	" " " "	5	1 0	341	36.37	215
Reading (Purley)	Hon. R. Boyle	5	1 0	194	35.55	174
Maidenhead (Kimber Cottage).....	Mr. J. Silver	8	1 2	93 π	31.51	...
D Streatley Vicarage.....	Rev. J. Slatton	10	1 0	150 π	31.17	176
East Ilsley	R. Osmond, Esq.	5	3 6	...	36.26	169
D Maidenhead (Cookham Vic.) ...	Rev. R. W. Rogers ...	5	1 3	90 Γ	34.83	191
Shrivenham (Ashbury Vic.)	Rev. H. Miller	5	1 0	479 π	31.84	194
Wallingford (Blewberton Ho.)....	H. P. Slade, Esq.	6	0 10	243 π	37.82	...
D Wantage (Letcombe Regis)	S. W. Silver, Esq.....	5	1 0	...	31.64	173
*† " "	E. C. Davey, Esq.	5	12 8	320 π	32.29	161
Wallingford (The Castle).....	J. Kirby Hedges, Esq..	5	0 9	175 π	28.96	117
D†Long Wittenham	Rev. J. C. Clutterbuck.	12	1 6	170 π	32.22	164
Faringdon (The Elms)	W. Dundas, Esq.	5	1 0	340 Γ	32.46	189

DIVISION III.—SOUTH MIDLAND COUNTIES.

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1879	Days on which ·01 or more fell.
		Diameter	Height Above Ground	Height Above Sea Level		
			ft in.	feet.	inches.	
HERTS.						
D Southgate (The Lawns).....	H. P. Church, Esq. ...	6	0 8	240 T	33·52	235
Totteridge (Poynter's Grove) ...	Dr. W. B. Kesteven ...	9	1 0	401	32·05	171
Watford (Bushey Heath).....	Forrester Scott, Esq....	5	1 3	480 T	35·45	196
" (" Station).....	R. Savill, Esq.	5	0 7	...	34·62	...
D " (Wansford House).....	J. Hopkinson, Esq. ...	5	1 0	225 N	35·98	193
D " (Oaklands).....	E. Harrison, Esq.	5	5 6	273 T	35·82	183
St. Albans (Gorhambury).....	Mr. J. Thompson	6	2 6	...	31·83	164
D Gt. Berkhamstead (High Street)	W. Squire, Esq.....	8	1 5	370 B	34·90	177
Hertford (Bayfordbury)	W. C. Baker, Esq.....	8	0 4	250	29·94	169
D Hemel Hempstead (Gt. Gaddesden)	Rev. W. Tyrwhitt Drake	8	1 0	426 N	32·92	...
Tring (Cowroast)	H. Thomas, Esq.	10	4 2	345 L	30·78	...
Harpenden (Rothamstead)	Messrs. Lawes & Gilbert	5	0 9	420 T	34·17	207
Hatfield (Brockett Hall)	Mr. W. Gurney	8	1 0	...	28·91	170
D Ware	J. Muir, Esq., C.E. ...	12	3 0	114 T	26·35	166
D Welwyn Rectory	Rev. C. L. Wingfield...	5	0 4	...	30·40	208
D Kensworth [Dunstable]	Miss Jones	5	1 0	...	31·61	178
D Ware (Much Hadham).....	Rev. H. S. Mott.....	5	1 0	222 B	29·91	193
D Welwyn (Datchworth Rectory)..	Rev. J. Wardale	6	1 0	357 T	28·04	153
Stevenage (Knebworth Rectory).	Rev. F. G. Jenyns.....	5	1 0	407 T	31·38	171
"	Rev. J. O. Seager	8	2 0	319 L	30·60	184
D Hitchin	W. Lucas, Esq.	8	1 0	238 N	29·13	202
" (High Down)	J. Pollard, Esq.	5	1 1	422 T	28·65	...
Royston (Therfield Rectory).....	Rev. J. G. Hale	5	4 3	400 P	31·24	150
D "	H. Wortham, Esq.....	3	0 6	269 N	30·06	...
BUCKINGHAMSHIRE.						
Datchet (Riding Court).....	C. S. Cantrell, Esq. ...	5	1 0	61 T	33·80	...
D Slough (Langley)	R. H. Major, Esq.....	8	0 10	85 T	33·27	191
" (Upton)	G. Bentley, Esq. ....	...	...	...	35·26	...
Greenlands [Henley-on-Thames]	Rt. Hon W. H. Smith, MP	8	1 2	100 P	34·44	...
High Wycombe	H. S. Wheeler, Esq. ...	8	0 9	225 N	32·16	...
Great Missenden	Mr. J. Begbie.....	6	1 0	600 T	38·08	...
Aylesbury (Serena Terrace)	J. Copcutt, Esq.....	12	1 0	280 T	39·25	181
" (Mentmore)	Mr. J. Smith	5	1 6	...	27·96	...
D Winslow (Addington Manor) ...	E. Hubbard, Esq.	8	1 0	309 N	30·83	189
D Buckingham (Adstock).....	J. E. S. Weston, Esq...	5	0 9	350 T	28·48	185
" (School Lane)	Mr. W. Walker.....	8	1 3	269 N	29·84	174
Stony Stratford (Thornton)	Mr. W. Sturdy	5	1 0	...	29·60	...
D Newport Pagnell	R. Littleboy, Esq.	5	2 0	...	28·07	...
Olney (Filgrave Rectory).....	Rev. J. Tarver	8	0 8	...	27·12	...
OXFORD.						
Henley-on-Thames (Greys)	Rev. N. Pinder	5	1 8	370 T	37·29	...
D Watlington (Swyncombe House)	Mrs. Ruck Keene .....	...	...	...	35·35	...
Burcote [Abingdon]	H. J. Hannam, Esq. ...	5	1 3	168	29·56	130
Thame (Aston Rowant).....	T. Taylor, Esq.	8	1 0	395 B	31·92	...
Baldon [Abingdon]	G. Thomson, Esq.	8	1 11	...	28·16	185
D Oxford (Mag. Coll. Laboratory).	E. Chapman, Esq.	5	1 0	186 N	31·23	209

DIVISION III.—SOUTH MIDLAND COUNTIES—(continued.)

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which "01 or more fell.
		Diameter	Height Above Ground	Height Above Sea Level	1879	
			ft. in.	feet.	inches.	
BEDFORD.						
†Aspley Guise (Oaklands)	E. E. Dymond, Esq. ...	5	1 1	433 T	28·00	178
‡Stotfold [Baldock].....	Dr. Swaine	5	0 9	220	27·03	180
Amphill.....	Mr. J. Brown	5	1 0	...	29·86	174
„ (Lidlington)	Rev. F. Veasey	5	1 0	...	28·18	...
‡Woburn (Hulcote Rectory)	Rev. B. Chernocke Smith	5	1 0	310 T	27·41	167
Biggleswade (Old Warden)	Mr. G. R. Allis	8	1 3	...	30·50	150
„	C. T. Newbery, Esq. ...	5	28 0	...	27·31	...
‡Potton (Wrestlingworth)	H. J. King, Esq.	5	1 0	...	27·83	173
Cardington	Mr. J. McLaren	8	0 0	106	29·10	...
„ „	„ „	12	3 6	109	27·49	166
„ „	„ „	8	36 0	142	24·21	...
‡Sandy Rectory	Rev. J. Richardson	5	0 7	...	28·45	140
„ (The Lodge)	A. W. Peel, Esq., M.P.	5	1 0	...	26·78	...
Bedford	D. Robie, Esq.	5	0 4	115 T	27·91	165
„ (Clapham Park)	J. Howard, Esq., M.P.	8	1 0	200 T	25·81	...
Tempsford Hall	Col. W. Stuart	5	0 9	140 B	26·98	...
Bedford (Milton Ernest)	F. Newbery, Esq.	5	5 0	...	25·12	...
CAMBRIDGE.						
†Odsey Grange [Royston]	H. G. Fordham, Esq. ...	5	1 0	264 T	28·24	187
†Guilden Morden [„]	J. G. Johnson, Esq. ...	5	1 2	106 T	26·92	174
†Abington Pigotts [„]	Miss Foster	8	0 6	130 B	27·42	186
‡Pampisford Hall	Mr. Morley	5	1 0	113 T	29·97	200
‡Granchester Mill	J. Nutter, Esq.	5	5 0	31 T	32·73	203
‡Cambridge (Fulbourn Asylum) ..	Dr. Bacon	5	1 0	68 T	31·63	178
„ (W. W. Cherryhinton) ..	H. Tomlison, Esq., C.E.	5	1 0	35 T	29·54	202
„ (Beech House)	J. Nutter, Esq.	8	4 0	40 T	30·29	191
„ (Merton Villa)	G. Warren, Esq.	5	1 0	30 T	30·96	201
„ (Sidney Street)	Mr. W. E. Pain	8	60 0	92 T	28·68	199
„ (Trinity College)	J. W. Glaisher, Esq. FRS	8	0 4	40	30·81	212
Hardwicke	Rev. J. S. Brown	5	0 7	...	26·45	103
†Cambridge Observatory.....	Professor Adams, F.R.S.	5	1 0	85 T	31·50	203
„ „	„ „ „	8	1 0	84	31·30	203
‡Caxton (Papworth Everard).....	B. Ding, Esq.	5	1 0	127 T	32·83	...
‡Ely (Stretham)	Mr. Edwin Stanley	9	4 6	...	27·83	135
„ (Littleport).....	Rev. Canon Hopkins ...	5	1 0	...	26·61	187
‡Chatteris (Aylesby House)	A. S. Ruston, Esq. ...	8	0 6	...	29·66	196
„ (Horseway Lock)	R. Lunn, Esq.	8	1 0	...	21·56	228
‡March	R. Dawbarn, Jun., Esq.	5	1 0	...	27·56	133
„	R. Lunn, Esq. ....	...	...	...	25·59	109
„	A. Grounds, Esq. ....	...	2 0	...	27·38	...
Stanground Sluice	R. Lunn, Esq.	8	1 0	...	22·76	129
* March (Stags Holt)	W. C. Little, Esq.	5	1 0	15 ?	27·19	...
Upwell (Marmont Priory Lock) ..	R. Lunn, Esq.	8	1 0	...	25·92	187
„ (Euximoor House).....	H. West, Esq.	5	0 8	15 ?	27·84	186
Wisbech (Coldham Hall, Elm) ..	H. J. Little, Esq.	5	1 0	12	28·34	162
„ (Bank House)	A. Peckover, Esq.	8	0 8	6 T	29·11	163
† „ (Observatory).....	Mr. W. J. D. Ward ...	8	0 6	10 T	28·86	155

DIVISION IV.—EASTERN COUNTIES.

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1879	Days on which ·01 or more fell.
		Diameter	Height Above Ground	Height Above Sea Level		
			ft. in.	feet.	inches.	
ESSEX.						
Canning Town [London]	Lewis Angell, Esq., C.E.	24	31 6	40 T	25·46	148
D Shoeburyness	Capt. O'Callaghan, R.A.	5	4 7	18	23·02	...
D† Barking (Loxford Hall)	Mr. J. Douglas	5	1 0	...	30·59	165
D Leyton Observatory	C. G. Talmage, Esq. ...	8	1 3	97	30·55	...
Chigwell Row.....	The Meteor. Council ...	8	1 8	188	30·25	175
D Brentwood (Sawyer's Hall Farm)	Rogers Field, Esq., C.E.	5	1 0	270 T	35·79	...
Maldon (Norton Hall)	C. Clarke, Esq.	5	2 6	130 T	29·48	129
D Waltham Abbey (Gunpdr. Factory)	The Superintendent ...	8	4 0	82 L	28·83	121
Little Waltham	W. L. Soper, Esq.	8	1 6	130 T	28·72	158
Epping (The Hemnalls)	J. Nicholl, Esq.	8	0 8	345	37·70	146
Bradwell-on-Sea (Down Hall)...	R. Page, Esq.	5	1 2	20	26·66	...
Chelmsford	F. Chancellor, Esq. ...	8	1 0	86 T	30·80	160
D Harlow (Moor Hall)	Mr. Huntley	8	1 6	273 T	30·00	184
D " (Sheering).....	Rev. E. Hill	5	1 0	214 T	31·18	194
Witham (Rivenhall)	J. Taber, Esq.	5	1 0	50 T	28·76	169
D Dunmow (High Roding)	Rev. E. Maxwell	5	1 0	252 T	29·66	205
D "	The late H. Cockayne Esq	12	0 6	212 T	30·00	179
Stanstead [Bishops Stortford] ...	Harford Green, Esq. ...	5	1 0	240 T	26·45	...
Braintree (Bocking)	S. Tabor, Esq.	12	2 6	200 T	31·86	176
" (" Place).....	S. Courtauld, Esq.	5	2 0	212 T	31·79	184
Earls Colne (Chalkney House)...	H. F. Hills, Esq.	5	1 0	180 T	27·70	161
Manningtree (Lawford)	O. Bendall, Junr., Esq.	5	1 0	...	29·62	191
D Dedham (Lower Park)	W. H. Penrose, Esq. ...	8	0 10	49 T	28·67	186
D Saffron Walden (Newport)	Rev. G. F. Tamplin ...	5	4 0	80 T	28·40	...
" " (Audley End)...	The Meteor. Soc. ....	...	...	...	28·49	204
D " "	J. G. Bellingham, Esq.	5	1 0	180 T	29·65	207
SUFFOLK.						
D Nayland (Tendring Hall)	Mr. G. L. Rushmore ...	8	0 8	135 T	29·68	111
D Stutton (Alton Hall).....	J. South, Esq.	4	...	...	26·62	102
D Hadleigh (Boxford)	Rev. J. Byng	8	0 7	...	28·38	179
" (")..... <i>monthly</i>	" "	8	0 7	...	29·26	...
Ipswich (Bishop's Hill).....	G. A. Biddell, Esq., C.E.	5	1 0	104 T	29·01	...
D Hadleigh (Aldham)	Rev. C. W. Lloyd	8	2 0	...	30·67	191
D Woodbridge (Grundisburgh) ...	P. Harris, Esq.	5	3 9	...	30·67	180
" (Rendlesham Hall).....	Rt Hon Lrd. Rendlesham	...	...	...	27·26	...
Ash Bocking Vicarage	Rev. M. B. Cowell	5	7 3	231 T	26·97	109
D Bury St. Edmunds (Drinkstone Pk)	Mr. G. Palmer	8	1 2	...	31·08	150
D Stowmarket (Wetherden Rec.)...	Rev. C. J. Goodhart ...	8	0 6	185 T	28·84	197
Saxmundham (Carlton Hall) ...	Miss Spalding.....	8	5 0	50 T	29·14	187
D Bury St. Edmunds (Abbeygate St.)	T. C. Hinnell, Esq. ...	5	45 0	...	28·02	165
† " " (Westley).....	R. Burrell, Esq.	5	1 0	...	30·29	...
D† " " (Barton Hall)...	Mr. W. Allan.....	5	1 0	...	30·76	223
D† " " (Culford)	Mr. P. Grieve.....	5	1 6	...	31·26	187
D Ixworth (Walsham-le-Willows).	Miss M. C. Martineau..	5	1 0	...	32·47	186
Botesdale (Rickinghall Rectory).	Rev. T. F. Lloyd	5	1 3	...	29·08	168
† Ixworth (Barningham)	W. Lingwood, Esq. ...	8	0 10	25 T	26·91	...
D Halesworth.....	R. W. Burleigh, Esq. ...	5	1 0	60 L	30·51	148

DIVISION IV.—EASTERN COUNTIES—(continued.)

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1879	Days on which ".01 or more fell.
		Diameter	Height Above Ground	Height Above Sea Level		
			ft. in.	feet.	inches.	
SUFFOLK—(con.)						
†Lowestoft (Gisleham)	Rev. H. Jodrell	5	1 4	36 †	28·61	...
† „ (Carlton Colville)	G. Edwards, Esq., C.E.	8	0 9	6 †	30·18	...
D „ (Belle Vue Park)	S. H. Miller, Esq.	5	1 0	86	27·30	198
† „ (Somerleyton Hall) ...	Mr. Rix	8	1 0	60 †	29·00	183
NORFOLK.						
D Diss	T. E. Amyot, Esq.	5	1 0	96	30·95	202
D Harleston (Rushall Vicarage) ...	Rev. C. Gape	5	1 1	123 †	31·10	200
D†Geldeston [Beccles]	E. T. Dowson, Esq.	5	1 0	41 †	30·41	194
D „ Rectory [Beccles]	Rev. D. Gillett	5	1 0	61 †	30·89	198
Long Stratton	Rev. J. M. Du Port .....	...	...	...	34·27	...
†West Tofts [Brandon]	Mr. R. Martin	5	1 6	91 †	33·18	...
Wymondham (Mulbarton)	Rev. J. M. Du Port .....	...	...	...	30·41	...
D†Downham Market (W. Dereham) ..	Mr. C. Blanchfield	5	0 11	20	29·24	196
†Stoke Ferry (Wereham)	Rev. J. M. Du Port	5	6 0	66 †	28·64	...
Swaffham (Pickenham Hall) ...	E. A. Applewhaite, Esq.	5	1 0	160 †	28·96	196
Outwell Sluice	R. Lunn, Esq.	9	...	...	25·96	158
Yarmouth (Sailors' Home)	The Meteor. Council ...	8	4 0	12	30·83	213
„ (Halvergate Hall) ...	Rev. J. M. Du Port ...	5	3 3	48 †	30·91	...
Norwich (Eaton)	J. Pymar, Esq.	6	1 0	...	32·30	...
„ (Postwick)	Rev. W. Vincent	5	1 0	20 ?	32·60	...
†Downham Market (Fincham) ...	Rev. J. M. Du Port ...	3	4 0	50 †	30·06	...
†Norwich (Thorpe St. Andrews)..	W. Birkbeck, Esq.	5	1 0	137 †	34·16	...
„ (St. Catherine's Close)..	Mrs. Evans	5	2 3	120	31·22	168
D „ (Essex Street)	F. Dix, Esq.	9	2 6	85 †	32·06	164
„ (Literary Institution)..	The Secretary	12	30 0	53 †	24·72	154
D*Swaffham (Grammar School) ...	C. J. Drury, Esq.	5	1 10	239 †	33·13	192
†Acle (Rectory)	Rev. R. W. Kennion... ..	8	0 9	40 †	30·72	148
†Mattishall	Rev. J. M. Du Port ...	8	1 2	165 †	29·84	206
D†Norwich (Honingham Hall)	Lady Bayning	5	0 6	110 †	29·52	203
D „ (Cossey)	H. Culley, Esq.	5	1 0	...	30·95	204
D Sprowston (Oak Lodge)	T. C. Hardy, Esq.	5	1 0	...	29·40	198
D†Filby	Mr. Crisp	5	2 4	11	30·06	...
East Dereham	G. H. Cooper, Esq.	8	3 0	161	29·89	179
Drayton	Miss Howell	5	1 2	...	31·45	...
Swaffham (Dunham)	Rev. J. M. Du Port .....	...	...	...	32·17	...
St. Germans (Outlet Syphons) ...	R. Lunn, Esq.	8	...	...	28·69	157
D Terrington	J. T. Seccombe, Esq, M.D.	5	1 0	17 †	28·21	...
Felthorpe	Major Bouchier	5	1 0	75	27·38	187
D Reepham (Hackford)	W. D. Bircham, Esq. ...	5	1 0	...	28·83	...
Cawston	Rev. T. H. Marsh	5	1 0	110 †	30·69	...
North Walsham (Worstead)	Mrs. Cooke	5	0 9	...	29·55	145
„ „ (Dilham)	Rev. J. M. Du Port ...	...	...	...	29·05	...
D†Lynn (Hillington Rectory)	Rev. H. Ffolkes	8	1 0	90 †	30·11	...
D† „ „ (School)	„ „	5	3 6	94 †	29·89	203
„ „ „ (Hall)	Mr. Platt	5	1 0	74 †	32·10	...
Fakenham (Colkirk)	Rev. J. M. Du Port ...	5	1 2	200 ?	27·41	...
North Walsham (Knapton) .....	„ „ „ .....	...	...	...	30·81	...

DIVISION IV.—EASTERN COUNTIES—(continued.)

STATIONS.	AUTHORITIES.	Rain Gauge			Depth of Rain. 1879	Days on which ·01 or more fell.
		Diameter	Height Above Ground	Height Above Sea Level		
NORFOLK—(con.)						
D Hindringham	Mr. S. Cushing	5	1 0	...	27·25	190
Holt (Letheringsett Hall)	W. H. C. Hardy, Esq..	8	1 0	...	25·41	...
Cromer (Colne Lodge)	J. Cooper, Esq., M.D...	5	1 0	90	27·27	154
Holkham	J. Davidson, Esq.	8	0 0	39	24·97	146
D "	" "	12	4 0	43 L	23·14	...
D Hunstanton Hall	Mr. Nisbet	11	3 8	60 T	26·26	...
D Wells-next-the-Sea	H. R. Rump, Esq.....	5	1 0	16 T	24·78	190

DIVISION V.—SOUTH-WESTERN COUNTIES.

WILTS.

D Landford	J. R. Wigram, Esq.	5	1 10	165 T	33·99	205
D† Salisbury (Alderbury)	Rev. R. S. Hutchings...	5	0 8	263	31·77	176
D† " (West Dean)	Rev. W. L. W. Eyre...	5	1 0	137 B	34·63	192
"	W. Hussey, Esq.	5	1 6	160 T	33·28	189
D " (Wilton House)	Mr. Challis	8	0 5	180 T	35·22	189
D Codford (Bapton)	J. Dean Willis, Esq....	5	1 0	301 T	34·97	185
D Salisbury Plain (Chitterne House)	R. Hayward, Jun., Esq.	11	4 0	380 P	31·27	190
Warminster (Downside)	W. J. Stent, Esq.	8	3 0	439	36·47	199
D Ludgershall [Andover]	Rev. W. H. Awdry ...	8	0 8	422 T	37·09	194
D Trowbridge (Steeple Ashton Vic.)	Rev. A. O. Hartley ...	5	1 0	240 T	31·04	207
D " (Rodney House)	W. J. Mann, Esq.	5	1 1	140 T	33·40	183
D Pewsey	Mr. J. P. Robins	5	1 0	...	34·42	188
D Trowbridge (Holt)	Major F. B. Gritton ...	5	1 2	120 T	33·72	205
Deves (Southgate House)	B. H. Cunnington, Esq.	8	0 10	440 T	34·04	207
D " (Bishop's Cannings)	Rev. C. W. Hony	5	1 0	446 T	35·67	192
Chippenham (Lacock)	Rev. T. A. Preston	5	0 11	250 P	36·23	204
D† Marlborough (The Green)	" " "	5	1 2	472 T	39·01	204
" " (Mildenhall)	" " "	5	1 2	472 T	38·03	...
D " (Mildenhall)	Rev. C. Soames	5	1 0	456 T	33·91	186
Corsham	Rev. T. A. Preston ...	5	1 0	350 P	41·70	210
Calne (High Street)	Mr. H. Wilkins, Junr.	5	3 6	...	39·12	188
D " (Compton Bassett)	Mr. J. Allen	8	1 0	400 T	36·71	199
Swindon (Pen Hill)	H. Arkell, Esq.	5	0 10	400	34·67	177
D Malmesbury (Charlton Park)	Rt. Hon. Earl of Suffolk	5	0 11	...	35·73	150
D Thames' Head [Cirencester]	J. H. Taunton, Esq., C.E.	8	4 0	350 T	36·58	183

DORSET:

D Portland (Verne Citadel)	Col. Cox, R.E.	12	20 0	473 T	34·11	177
D Weymouth (Langton Herring)...	Rev. C. H. Gosset	8	1 0	200 P	35·44	187
D† " (Osmington Lodge)	Col. Hall	5	1 0	225 B	39·07	196
† Abbotsbury	Mr. A. Dight	5	3 6	150	35·17	...
D Bridport	G. M. Evans, Esq.....	8	1 3	...	36·60	158
Wimborne (West Borough)	W. Wyke Smith, Esq..	5	2 0	66 T	40·84	155
D Beaminster Vicarage	Rev. A. Codd	5	0 10	...	44·56	205
D Blandford (Whatcombe)	J. Mansel-Pleydell, Esq.	5	0 4	320 B	43·68	132
D " (Bingham's Melcombe)	Rev. C. W. Bingham...	5	1 3	300 P	42·66	209

DIVISION V.—SOUTH-WESTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1879	Days on which ·01 or more fell.
		Diameter	Height Above Ground	Height Above Sea Level		
			ft. in.	feet.	inches.	
DORSET—(con.)						
Cerne Abbas (Minterne Rectory)	Rev. H. Pix	5	2 0	566 T	46·79	156
D " " (Melbury).....	Mr. T. C. Elliott	12	2 9	...	40·17	177
D*Wimborne Minster (Chalbury)...	Rev. G. H. Billington..	5	2 0	338 T	31·75	183
Sherborne (Folke Rectory)	Rev. T. H. Philpott ...	5	0 11	...	34·75	184
D " School	W. L. Hetherington, Esq	5	1 0	200 T	32·82	198
Cranborne (Pentridge)	Rev. S. G. Gillum	5	1 1	300 T	37·18	189
D Shaftesbury	T. Ackland, Esq.	5	1 3	722 T	39·82	189
Gillingham	I. Stephens, Esq. ....	...	...	...	32·93	...
DEVON.						
†Kingsbridge (Bolt Tail)	(58) G. Balkwill, Jun., Esq.	5	2 0	297 L	44·23	...
D† " (Fore St. Hill)..(56)	G. Fox, Esq.	5	1 0	63 B	50·78	191
D Dartmouth (Strete)	Dr. Madden	8	1 0	200 B	43·90	178
D Plymouth (Navigation School) ...	J. Merrifield, Esq. LL.D.	8	9 2	75 T	42·02	205
D Devonport (Rowdens Res.)	H. Frances, Esq.	5	1 0	202 T	43·09	194
†Plympton (Ridgeway)	(50) Miss B. T. Phillippis ...	5	0 6	116 T	55·98	182
D†Ivybridge.....(49)	Dr. Liddell	10	3 0	175 B	62·02	193
Plympton (Hemerdon)	(69) Rev. G. Woolcombe ...	5	1 0	360	69·81	...
Paignton (Hollacombe)	J. Greenfield, Esq.	5	7 0	70 ?	39·13	217
†Dartmoor (Lee Moor)	(44) W. L. Martin, Esq. ...	5	0 9	860 T	74·25	...
Bere Ferrers	Rev. F. T. W. Wintle.	5	1 0	100	54·95	207
D†Torquay (Lamorna)	(43) W. Pengelly, Esq. F.R.S	5	1 0	200 T	41·54	205
D " (Rocombe House)	H. Hearder, Esq.	5	1 0	400 T	36·30	191
" (Castle College)	C. J. Harland, Esq. ...	...	1 0	167 T	40·34	194
D† " (Babbacombe) <i>Snowdon</i>	E. E. Glyde, Esq.	5	1 0	294 T	41·02	212
D Ashburton (Holne Vicarage) (33)	Rev. J. Gill.....	5	1 0	650 B	74·81	223
Abbots Kerswell (Court Grange)	Mrs. Hare	5	1 0	130 B	43·65	189
D†Ashburton (Druid House) ... (32)	Fabyan Amery, Esq....	5	1 0	570 T	58·39	196
Horrabridge (Grimstone)	Cecil Bere, Esq.....	5	1 0	500 B	68·84	201
D Kingsteignton (Teignbridge Ho.)	F. H. Plumptre, Esq... 5 1 0 27 T	5	1 0	27 T	41·03	183
†Teignmouth (Landscore) ... (29)	The late Mrs. Clark ...	5	0 6	200 T	45·51	...
" (Bitton).....	W. C. Lake, Esq. M.D.	5	1 0	45	37·92	215
† " (Lower Reservoir)...	" " " "	5	1 0	140 L	43·73	220
" (Woodway)	G. W. Ormerod, Esq....	5	1 0	235	39·81	213
D†Tavistock (Public Library)... (38)	Mr. W. Reynolds	8	20 0	283 T	52·09	205
*† " (Mount Tavy)..... (37)	H. Clark, Esq.	5	1 0	316 T	57·27	...
D† " (Kilworthy Lane) (67)	Mr. W. Merrifield	5	1 0	362 T	56·22	207
D†Ilminster (Middlecott House) (23)	Alfred Lyon, Esq.	9	3 6	649 T	57·08	193
D Ashburton (Cator Court)	F. H. Firth, Esq.	5	1 0	1060 T	66·56	226
Dawlish	Capt. Strangways, R.N.	5	1 0	120 B	41·92	208
†Milton Abbot (Endsleigh) ... (26)	Mr. Cornelius	5	1 0	180 ?	51·92	...
D†Bovey Tracey	(22) J. Divett, Esq.	5	0 6	94 T	47·47	231
D†Exmouth (Budleigh Salterton)...	Dr. R. Walker	5	4 0	33	38·20	173
" (East Budleigh)	R. H. Lipscomb, Esq... 5 1 0 70 T	5	1 0	70 T	38·89	186
Coryton (Lew Down)	(21) Mr. T. Symons	5	4 0	445	50·28	211
D Polapit Tamar [Launceston] (76)	E. Coode, Esq.	12	3 0	...	36·45	245

NOTE.—The numbers in parentheses in this and the three following pages refer to a Map inserted between pages 148 and 149 of *British Rainfall, 1872.*

DIVISION V.—SOUTH-WESTERN COUNTIES—(continued.)

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1879	Days on which "01 or more fell.	
		Diameter.	Height Above Ground.				Height Above Sea Level
			ft.	in.	feet.	inches.	
DEVON—(con.)							
†Sidmouth (Sidmount)	Dr. Radford	5	1	0	149 $\bar{\pi}$	37·65	194
†Topsham (Clyst St. George)	Rev. H. T. Ellacombe..	5	1	3	76 T	39·15	...
†Seaton (White Cliff Glen).....	T. F. A. Byles, Esq. ...	5	3	6	126 B	42·40	...
†Clevelands [Lyme Regis]	E. L. Ames, Esq.	5	1	11	465 $\bar{\pi}$	42·48	182
†Exeter (Devon & Exet. Inst.) (17)	Mr. E. Parfitt.....	6	13	7	155 $\bar{\pi}$	34·32	150
„ (Manston Terrace) ... (18)	Miss Dymond	5	1	0	166 $\bar{\pi}$	34·52	205
† „ (The Quarries)	E. N. Snow, Esq.	5	1	0	250	41·43	171
„ Uplyme [Lyme Regis]	H. Tucker, Esq.....	5	1	0	120 B	41·96	190
„ Colyton	W. R. Fox, Esq., R.N.	6	1	0	...	46·78	...
†Okehampton (Oaklands)..... (19)	W. H. Holley, Esq. ...	5	1	0	521 T	44·96	202
„ Exeter (Brockhill, Broad Clyst).	W. T. Bayne, Esq. ...	5	1	2	93	32·99	...
† „ (Brampford Speke) ... (13)	W. H. Gamlen, Esq. ...	5	1	0	140 T	36·13	220
„ { „ „ } ... (13)	„ „ „	8	0	3	140 T	35·02	...
„ { „ „ } ... (13)	„ „ „	5	1	0	140 B	33·53	...
„ { „ „ } ... (13)	„ „ „	5	1	1	400	39·51	204
„ Holsworthy (Clawton)	W. W. Melhuish, Esq..	5	1	0	...	45·69	185
„ Honiton (Gittisham)	C. Hardy, Esq.	5	1	0	...	38·24	144
„ Zeal Monachorum	Rev. H. J. A. Fothergill	5	0	9	600 B	35·54	...
„ Hele (Strath Culm)	C. R. Collins, Esq.....	8	0	6	159 $\bar{\pi}$	34·46	167
„ Clyst Hydon	Mrs. Huyshe .....	...	1	0	200 $\bar{\pi}$	38·52	222
„ Bradninch Vicarage	Rev. W. A. Strong ...	5	1	0	316 B	39·70	217
„ Tiverton (Rose Bank)	H. B. Sharland, Esq. ...	5	1	0	280	43·76	...
†Torrington (Langtree Wick) (72)	E. T. Bazely, Esq.	5	1	0	451 T	41·43	210
† „ Vicarage	Rev. S. Buckland	5	1	0	323 T	42·60	222
„ (Little Silver).....	R. H. Lipscomb, Esq. ...	5	1	0	400 T	43·18	...
„ Tiverton (Cove)..... (9)	W. N. Row, Esq.	11	0	4	450 ?	42·84	211
„ Bampton (Huntsham)	C. A. W. Troyte, Esq..	8	0	6	600 B	39·78	194
„ South Molton (Rose Ash) ... (60)	Lieut. Col. Davy	8	1	0	650 T	37·97	195
„ Bideford (Heale House Littleham)	R. Sanders, Esq.	8	1	0	280 B	41·02	181
„ South Molton (East Street) (59)	N. C. Hatherly, Esq. M. D	5	1	0	430 B	45·39	169
„ (Castle Hill) ... (4)	Mr. D. Wilson	12	3	1	300	33·68	202
*†Bideford (Horwood)	Rev. J. Dene	5	1	0	288 T	33·62	208
*† „ (Northam)	Rev. M. D. Churchward	5	1	0	173 $\bar{\pi}$	39·35	...
†Barnstaple	Mr. Knill	8	1	0	31 $\bar{\pi}$	47·99	199
„ (Arlington Court).....	Sir Bruce Chichester, Bt.	8	1	1	613 B	31·87	209
†Ilfracombe Hotel	Mr. W. Tattam	12	9	0	34	38·50	...
„ †Lynton (Lee Abbey)	C. F. Bailey, Esq.	5	0	6	320	44·07	167
„ †Lynmouth (Glenthorne)	Mrs. Halliday.....	5	0	9	93		
CORNWALL.							
„ †Penzance (South Parade)	W. H. Richards, Esq. ...	12	3	0	94 T	50·07	...
„ „ (St. Clare)	Rev. Preben. Hedgeland	5	0	9	211 T	49·53	257
„ „ (Poltair)	Col. Trelawny.....	5	0	6	243 B	75·57	235
„ Marazion.....	T. W. Field, Esq. ....	...	...	...	...	42·81	...
„ Falmouth (Carclew)	Mr. J. Simmons	5	0	9	...	50·02	187
„ Camborne	J. T. Rodda, Esq.	11	1	4	330 L	47·09	160
„ (Crowan)	„ „ „	5	0	6	619 $\bar{\pi}$	47·14	167
„ †Truro (Royal Institution).....	Mr. Newcombe	5	40	0	56 $\bar{\pi}$	41·64	211
„ Probos (Lamellyn).....	H. Tresawna, Esq.	5	0	6	...	45·83	180

DIVISION V.—SOUTH-WESTERN COUNTIES—(continued.)

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1879.	Days on which ·01 or more fell.
		Diameter	Height Above Ground				Height Above Sea Level
			ft.	in.	feet.	inches.
CORNWALL—(con.)						
St. Agnes	Mr. Opie	5	1	3	278 B	37·68 181
D Rame Rectory [Plymouth]	Rev. W. C. Evans	5	1	0	300 T	42·71 206
St Austell (St. Mewan).....	Rev. G. L. Woolcombe.	5	1	0	275 T	50·79 202
* „ (Cosgarne)	C. Truscott, Jun., Esq.	5	1	0	194 T	49·68 234
„ (Polcarne).....	J. Coode, Esq.	5	1	0	206 T	55·55 176
D†* „ (Trevarna)	W. Coode, Esq.	5	0	6	300 T	52·62 245
Par Station (Penellick)	W. E. Geach, Esq. ...	5	0	9	240 B	37·69 ...
Maker Vicarage [Devonport] ...	Rev. P. H. Newnham...	5	1	0	290 T	44·06 218
Empacombe [Devonport]	S. Harvey, Esq.	5	1	0	20	47·28 204
D St. Johns [Devonport]	Rev. J. H. Kirwan.....	5	1	0	20	44·88 206
D†Newquay	Mr. W. H. Tregidgo...	6	1	9	90 B	34·97 171
D†Liskeard (Dean Terrace) ... (47)	S. W. Jenkin, Esq., C.E.	5	1	1	375 T	54·45 235
D†Saltash (Pentillie Castle) ... (46)	Mr. C. Edwards	5	1	3	150 B	58·51 196
†Bodmin (Castle Street) ... weekly	Capt. Liddell, R.N. ...	5	0	1	338 T	52·15 ...
D† „ { „ „ }	„ „ „	5	1	0	338 T	50·78 232
† „ { „ „ }	„ „ „	8	2	4	338 T	49·06 232
D† „ (Fore Street)	Mr. A. Hambly	8	2	6	336 T	51·39 234
Liskeard (St. Cleer)	S. W. Jenkin, Esq., C.E.	5	1	1	620 T	50·53 ...
D†Callington (Hingston Down) (39)	Capt. Richards	5	3	0	850 T	54·09 240
D†Wadebridge (Treglines S Minver)	Mr. T. Liddell, Jun. ...	5	1	8	140 T	33·45 190
†Launceston (Altarnum)	Rev. J. Power	5	1	0	570 B	59·81 213
† „ (Hexworthy) ... (27)	H. M. Harvey, Esq. ...	5	2	7	410 T	44·69 186
D „ (South Petherwin)...	Rev. C. G. May	5	0	4	470 B	56·08 224
D Stratton (Week St. Mary)	Rev. G. H. Hopkins ...	8	1	3	510 T	41·01 207
SOMERSET.						
D Crewkerne (Seaborough)	J. T. Stevens, Esq. ...	5	1	6	250 ?	38·72 169
Chard (Cricket St. Thomas)	RtHn. Viscount Bridport	5	1	0	400 B	41·23 197
D Crewkerne (Bincombe House) ...	F. J. Sparks, Esq.	5	1	2	250 T	38·17 170
D Yeovil (West Coker)	Mr. A. Spurr	5	1	0	236 T	35·19 196
„	J. Curtis, Esq.	5	1	0	...	33·19 187
D Ilminster (White Lackington) ...	Rev. G. T. Gowring ...	5	1	0	136 T	36·53 196
D South Petherton	W. Blake, Esq.	8	0	8	150 ?	29·76 201
Wellington (Sunnyside)	W. Elworthy, Esq. ...	5	1	0	...	32·31 162
Ilebrewers (Walrond Park)	J. Ostler, Esq.	5	0	8	116 T	29·18 158
D*Taunton (Fullands School)	W. Reed, Esq.	5	1	4	...	27·77 155
D „ (Hovelands Terrace) ...	G. Gillett, Esq. ....	...	1	6	120	32·06 194
D Milverton	J. H. Bere, Esq.	5	1	0	335 ?	36·72 208
D „ (Halse Rectory)	Rev. W. S. Thomas ...	5	1	0	245	34·49 189
D Wiveliscombe	Mrs. Boucher	5	1	2	...	36·42 171
„ (Withycombe Ho.)	R. P. Mogridge, Esq. ...	5	1	0	800 B	40·71 ...
D Taunton (Bishops Lydeard)	C. Smith, Esq.	5	1	0	...	36·91 209
Cothelston House	C. Esdaile, Esq.	5	2	6	500	41·31 184
D Glastonbury (Street)	W. S. Clark, Esq.	8	1	0	70	34·27 ...
D Exford Rectory	Rev. J. G. Howes ...	5	1	0	905 B	55·02 244
D Dunster (The Priory)	Rev. J. Utten Todd ...	5	1	0	150 B	30·76 ...
Frome (Mells Rectory)	Rev. G. Horner	5	1	0	342 T	42·98 220
D Burnham	Capt. Estlin	5	1	0	18 T	33·73 219

DIVISION VI.—WEST MIDLAND COUNTIES—(continued.)

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which -01 or more fell.
		Diameter	Height Above Ground	Height Above Sea Level		
			ft. in.	feet.	1879.	inches.
SOMERSET—(con.)						
Radstock (Downside).....	The Meteor. Society ...	...	...	...	50·41	210
E. Harptree (Sherborne Reservoir)	Bristol Water Works...	5	1 0	338 T	44·83	201
Axbridge (Winscombe).....	Rev. R. F. Follett	8	1 0	150	39·41	162
Chew Magna	Bristol Water Works...	5	1 0	160 T	43·04	177
D† Bath (Royal Literary Institute).	C. P. Russell, Esq.....	6	8 0	75 A	35·62	189
D ,, (Queen's Parade)	H. Stokes, Esq.	5	1 0	100	36·84	213
D ,, (Weston) .....	.....	5	10 0	205 A	39·01	192
D Bathaston Reservoir.....	A. Mitchell, Esq.	6	2 0	226 T	42·46	155
Barrow Gurney Reservoir.....	Bristol Water Works...	5	1 0	320 T	44·41	180
Bristol Docks	T. Howard, Esq., C.E..	8	15 3	36 A	36·08	195

DIVISION VI.—WEST MIDLAND COUNTIES.

GLOUCESTER.

Bristol (Small Street)	A. J. Alexander, Esq. .	...	33 10	49	35·11	175
† Clifton (South Parade)	Dr. G. F. Burder	8	0 6	192 A	38·66	189
Bristol (Ashleydown).....	W. F. Denning, Esq. .	5	0 8	200 ?	39·06	...
D Fairford (Kempsford)	R. A. Iles, Esq.	5	0 8	...	30·57	176
D Berkeley (Salter Street)	J. H. Cooke, Esq.	5	8 0	60	30·42	156
D Nailsworth (Spring Hill)	E. P. Westley, Esq. ...	8	2 0	160 ?	39·96	192
D Minchinhampton (The Coigne)...	Hon. R. Henley Eden..	8	1 6	640	40·37	...
D Berkeley (Sharpness New Docks)	W. B. Clegram, Esq., C.E.	5	3 6	50	38·18	203
D Cirencester (The Firs)	F. Bravender, Esq. ...	5	0 8	352 A	37·54	175
D Stroud (Brimscombe Port)	J. H. Taunton, Esq., C.E.	8	10 0	200 A	31·15	153
D ,, (Cain's Cross)	Mr. W. B. Baker	5	1 0	120 T	33·85	138
D ,, (Upfield)	Miss Stanton	5	1 0	226 A	34·13	...
D Fairford (Hatherop Rectory) ...	Rev. R. P. Davies	8	1 3	412 A	34·65	161
D Frampton-on-Severn (Saul Lodge)	W. B. Clegram, Esq., C.E.	5	3 6	42 A	33·68	218
Newnham-on-Severn.....	D. J. Wintle, Esq. ....	...	...	...	38·01	169
Westbury-on-Severn (Vicarage).	Rev. C. J. Jones.....	5	0 8	...	34·74	176
Great Barrington [Burford].....	J. P. Wakefield, Esq...	8	1 0	416 A	33·70	149
Northleach (Yanworth).....	T. Arkell, Esq.	5	1 0	...	33·09	...
D ,, (Sherborne Park) ...	Hon. R. Henley Eden..	5	1 0	405	35·65	128
D Gloucester (Quedgeley House)...	Capt. T. C. Hayward...	5	0 4	50 ?	30·76	...
D ,, (Witcombe Res.).....	R. Read, Esq.	8	3 0	297	32·13	145
D ,, (Barnwood)	Dr. A. J. Wood	8	1 3	60 ?	30·09	...
D Mitcheldean (Edge Hill House)..	W. H. M. Phillips, Esq.	5	1 6	750 T	39·09	194
D Cheltenham (Battledown).....	Sir Brook Kay, Bt. ...	5	0 9	392 A	32·55	191
D ,, (Northfield)	W. McLandsboro', Esq.	...	...	...	31·87	157
D ,, (Hewletts Res.) ...	R. ,, ,,	8	0 6	232 L	33·50	158
D ,, (Southam Villa) ...	R. Tyrer, Esq.	5	1 0	184 A	32·63	212
D Moreton-in-Marsh (Frogmore)...	W. Arkell, Jun., Esq..	5	0 9	...	34·00	194

HEREFORD.

D Ross (Rocklands)	J. M. Herbert, Esq. ...	8	1 11	108 A	32·20	176
D† ,, (The Graig)	H. Southall, Esq.	5	1 0	213 A	32·13	190
Longtown Vic. [Abergavenny]...	Rev. C. L. Eagles	5	0 8	...	45·62	172

DIVISION VI.—WEST MIDLAND COUNTIES—(continued.)

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1879	Days on which ·01 or more fell.
		Diameter	Height above Ground.	Height above Sea Level		
		ft.	in.	feet.	inches.	
HEREFORD—(con.)						
Bryngwyn	J. Rankin, Esq., M.P..	5	0 10	420 B	33·76	186
D Much Marcle (Caerswall)	T. Charles, Esq.....	5	2 0	423 B	32·17	177
D Fownhope Vicarage	Rev. T. West.....	5	1 0	192 B	26·64	...
D Ledbury (West Bank)	T. E. Wheatley, Esq... 5	1 0	350	31·43	156	
D† Hereford (Richmond Place)	F. Anderson, Esq. 8	4 9	188 A	30·69	198	
„ (Castle Street)	J. E. Norris, Esq. 8	1 0	184	29·70	156	
„ (Hagley Park)	A. Hutchinson, Esq. ... 5	0 6	300 B	30·08	...	
Ledbury (Colwall).....	Mrs. Devas.....	5	1 0	600 ?	33·86	167
D „ (Canon Frome Vic.) ...	Rev. M. Hopton.....	8	1 3	...	29·02	175
Hereford (Credenhill Court).....	F. W. Herbert, Esq. ... 5	1 6	250	27·22	131	
D „ (Burghill)	T. A. Chapman, Esq. M.D 5	1 4	275	28·91	...	
D „ (Thinghill, Withington)	H. Higgins, Esq. 5	1 0	...	30·40	190	
D Staunton-on-Wye	Rev. H. W. Phillott ... 5	1 1	255 B	33·08	203	
Bodenham (Hampton Court).....	J. H. Arkwright, Esq.. 8	1 3	212 B	27·95	134	
D Kington (Lynhales) ...	S. Robinson, Esq. 8	1 0	...	35·74	...	
D Leominster (Farm)	J. Southall, Esq. 5	1 0	240	30·20	213	
D Stoke Bliss	Rev. G. E. Alexander.. 5	1 0	400 B	34·42	199	
SHROPSHIRE.						
D Clebury Mortimer	J. Bourn, Esq. 5	1 0	414 A	31·44	185	
Craven Arms (Stokesay)	Rev. J. D. La Touche.. 5	1 0	371 A	30·86	198	
Bishop's Castle (Castle Street)...	E. Griffiths, Esq. 5	4 6	750 T	32·47	202	
D „ „ (More Rectory)...	Rev. A. S. Male..... 5	1 0	646 A	34·09	235	
D Much Wenlock (Larden Hall) ...	Miss F. Rouse Boughton 8	1 3	658 A	31·06	201	
Church Stretton (Stretton House)	W. Hyslop, Esq. 5	1 0	613 A	36·55	193	
„ „ (Cardington) ...	Rev. W. Elliot	5	1 0	700 A	32·60	198
„ „ (Preen Manor)...	A. Sparrow, Esq. 5	0 9	700 T	31·46	210	
D „ „ (Church Preen)...	Rev. F. H. Paley	5	0 10	750 T	31·51	215
D „ „ (Woolstaston)...	Rev. E. D. Carr. 5	1 0	807 A	34·73	229	
D Shiffnal (Haughton Hall).....	Rev. J. Brooke	5	3 6	353 A	30·71	186
Wellington (Old Hall School) ...	Dr. J. E. Cranage	5	1 6	...	28·36	135
Shrewsbury..... <i>old gauge</i>	Marshall & Co. 10	5 6	240	24·45	129	
„ „	„ „	5	25·22	168
„ (Fitz Manor)	R. Middleton, Esq. ... 5	2 6	287 B	28·52	...	
D „ „ (Leaton Vicarage) ...	Rev. E. V. Pigott	5	1 0	267 T	31·32	205
D Wem (Sansaw Hall)	F. G. Tippinge, Esq.... 5	1 0	310 T	32·25	175	
Oswestry (Hengoed)	Rev. A. R. Lloyd	5	6 0	470 A	39·17	...
Market Drayton (Buntingsdale).	Mrs. Tayleur	5	1 0	276 A	31·68	174
D „ „ (Adderley).....	Rev. Athelstan Corbet.. 5	0 9	245 B	32·34	199	
Whitchurch	A. B. George, Esq., M.D. 5	3 0	...	34·25	152	
STAFFORD.						
Kinver [Stourbridge]	E. B. Marten, Esq., C.E. 8	0 6	180 L	30·93	200	
Dennis [„]	Mr. C. Webb	4	6 6	270 B	31·46	193
Sedgley	E. B. Marten, Esq., C.E. 8	3 0	740 A	27·72	198	
Walsall	„ „ „	8	4 0	463 A	32·19	205
D Patshull Gardens	Mr. T. W. Dell	8	1 5	400	27·81	188
Wolverhampton (Thorganby Vil.)	G. C. Broom, Esq., C.E. 8	3 4	459 A	30·44	218	

DIVISION VI.—WEST MIDLAND COUNTIES—(continued.)

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which ·01 or more fell.
		Diameter	Height above Ground.	Height above Sea Level	1879	
			ft. in.	feet.	inches.	
STAFFORD—(con.)						
D Wolverhampton (Wrottesley) ...	Mr. E. Simpson	8	1 0	500	31·26	178
D Tamworth (Lichfield Street).....	W. Arnold, Esq.	5	1 0	160 ?	30·11	178
Lichfield (St. Michael's)	Rev. J. J. Serjeantson..	5	0 6	325 ∇	33·98	...
D Weston-under-Lyziard [Shiffnal]	Hon. Rev. J. Bridgeman	3	0 10	...	32·82	223
D Penkridge (Rodbaston)	H. Ward, Esq.	5	1 0	260 ?	31·57	193
D Church Eaton (Shushions Manor)	T. James, Esq.	5	1 0	325 L	32·31	223
D Burton-on-Trent (Grammar Schl)	C. U. Tripp, Esq.	5	1 0	160 T	28·96	208
D " " (Shobnall)	R. W. Abbotts, Esq.	5	6 0	156 T	25·83	168
D " " (Horninglow)...	" " " "	5	4 0	150	27·12	219
D Stoke (Barlaston)	W. Scott, Esq.	5	1 0	520 T	34·28	176
D† Cheadle (The Heath House)	J. C. Phillips, Esq. ...	5	1 0	647 ∇	36·83	182
D† " (Teon Vicarage)	Rev. G. T. Ryves	5	1 0	470 T	37·84	192
D " (Farley)	C. L. Wragge, Esq. ...	8	1 1	638 ∇	38·22	...
Stoke (Stanley Reservoir).....	W. H. Stubbs, Esq. ...	5	3 1	550 T	31·77	140
Knypersley [Congleton]	" " " "	5	14 0	500 T	31·79	162
Alstonfield Vicarage).....	Rev. W. H. Purchas ...	5	1 0	910 T	44·07	165
D Leek	S. Eyre, Esq.	3	8 0	538 T	34·13	168
" (Rudyard)	W. H. Stubbs, Esq. ...	5	12 7	500 T	39·69	140
* WORCESTER.						
Blockley	R. B. Belcher, Esq. ...	5	1 0	500 ?	35·30	...
Northwick Park.....	Rt Hon Lord Northwick	8	1 3	292 ∇	35·71	...
D Evesham (Lansdowne)	R. Burlingham, Esq.	6	5 6	124 B	28·98	139
West Malvern	A. H. Hartland, Esq. ...	8	1 6	850 B	34·40	197
D Great Malvern (Hornvold Ter.)..	W. Sandoe, Esq.	5	0 7	550 L	34·22	179
" " (Madresfield)	J. E. Palmer, Esq.	5	1 0	357 ∇	34·51	...
D Worcester (St. John's)	Rev. G. S. Munn	5	1 4	...	30·71	...
D Tenbury (Orleton)	G. B. Wetherall, Esq. ..	5	1 0	...	28·62	186
D Bromsgrove (Stoke Reformatory)	T. H. Davis, Esq.	5	0 9	200 ?	34·46	209
D " (Tardebigge Res.)...	Mr. J. Salter	5	1 3	225 L	27·71	137
D " (Upper Bittal Res.)..	W. B. Clegam, Esq. C. E.	5	3 0	433 T	33·89	210
D Kidderminster (Comberton Road)	" " " "	5	3 0	518 T	36·37	179
D Stourbridge (Pedmore)	T. D. Baker, Esq.	5	1 0	220 ∇	31·60	180
" (Longlands)	E. B. Marten, Esq., C. E.	8	0 11	350 ∇	33·47	212
Dudley (Himley Road)	" " " "	8	1 0	260 ∇	32·48	184
" " " "	" " " "	8	5 0	605 ∇	31·23	192
WARWICK.						
D Shipston (Compton Wynyates)...	J. Sargent, Esq.	5	2 6	...	29·02	182
Radway (Ivy Lodge).....	Rev. G. Miller	5	1 1	530 T	33·43	204
Kineton (Fenny Compton)	E. Knott, Esq.	5	4 0	430	29·68	166
Stratford-on-Avon (Avonside) ...	C. Lucy, Esq.	8	0 8	123 T	30·28	...
D Southam (Stockton)	Rev. W. Tuckwell.....	5	1 0	289 B	28·23	165
Leamington (Upper Parade).....	J. Barnitt, Esq.	5	0 8	195 ∇	31·23	196
Henley-in-Arden (Barrells Park)	T. H. G. Newton, Esq.	5	1 0	300 ∇	36·08	202
Leamington (Blackdown Hill) ...	A. S. Field, Esq.	5	0 9	270 T	31·81	197
Rugby School.....	Rev. T. N. Hutchinson	5	1 3	383 T	29·11	188
D Coventry (Priory Row)	J. Gulson, Esq.	8	1 2	279 ∇	31·65	199

DIVISION VI.—WEST MIDLAND COUNTIES—(continued.)

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which ·01 or more fell.
		Diameter	Height Above Ground	Height Above Sea Level		
			ft. in.	feet.	1879	inches.
WARWICK—(con.)						
D Coventry (Middlesboro' Terrace).	Miss Merry	5	1 0	345 ∇	31·84	214
„ (Stoke)	J. Gulson, Esq.	8	...	280	31·18	198
„ (Walsgrave-on-Sowe)..	J. S. Whittem, Esq. ...	8	...	296	32·11	177
D „ (Coundon)	Colonel Caldicott	5	1 0	350 \uparrow	32·51	192
Bickenhill Vicarage)	Rev. W. R. Capel	5	1 2	371 ∇	32·81	...
D Willey Rectory [Lutterworth]..	B. P. M. Payler, Esq... ..	8	1 0	350 \uparrow	31·86	206
D Birmingham (Botanic Gardens)..	Mr. Latham	5	5 2	...	31·98	180
† „ (Bloomsbury Street)	D. Smith, Esq.	8	0 8	340 \uparrow	39·12	175
†Oscott (St. Mary's College)	Rev. S. Whitty	5	0 6	461 \uparrow	30·65	194

DIVISION VII.—NORTH MIDLAND COUNTIES.

LEICESTER.

†Market Harboro' (Fairfield Rd.)	S. Watson Cox, Esq. ...	5	2 6	...	28·29	169
„ „ (Foxton Locks)	J. F. Bentley, Esq. ...	12	17 2	...	24·07	151
Bruntingthorpe	Rev. F. H. Bridges ...	5	1 0	400	32·20	...
Ashby Magna	Rev. E. Willes	5	1 6	438 B	28·63	193
†Arnesby Vicarage	Rev. W. P. Orton	8	1 2	400 \uparrow	28·04	151
†Fleckney	J. B. Putt, Esq.....	5	0 10	411 \uparrow	28·90	...
D†Kibworth Beauchamp	T. Macaulay, Esq.....	5	2 6	355 \uparrow	30·08	...
D†Leicester (Town Museum)	W. J. Harrison, Esq. ..	5	1 0	238 \uparrow	27·65	210
„ (Belmont Villas)	H. Billson, Esq.....	8	1 3	240	27·84	...
D†Thornton Reservoir	F. Griffith, Esq.....	10	2 8	420 \uparrow	26·35	135
Barkby	Rev. E. N. Pochin	5	0 1	212	26·46	186
D Thurcaston (Cropston)	F. Griffith, Esq.....	8	1 0	...	28·69	188
D Syston (Grove House)	J. Hames, Junr., Esq... ..	5	5 0	...	24·99	187
D Melton Mowbray (Dalby Hall)...	Mr. G. Jones	8	2 6	480 B	28·17	189
D „ „ (Thorpe Arnold)	Rev. J. S. Swift.....	8	2 3	320 \uparrow	27·26	195
D Loughborough (Cedar Cottage)...	J. Giles, Esq.	5	0 9	400 \uparrow	27·70	...
D „ „ (Victoria Street)..	W. Berridge, Esq.....	5	0 10	169 B	26·15	184
D Melton Mowbray (Coston Rect.)	Rev. A. M. Rendell ...	5	1 0	300 \uparrow	29·37	207
D Waltham-le-Wolds	Mr. E. Ball.....	5	1 6	500 \uparrow	31·01	181
D Harston [Grantham].....	F. Beasley, Esq.....	...	1 3	...	29·35	149
D†Belvoir Castle	W. Ingram, Esq.	8	1 0	237 \uparrow	26·90	198

RUTLAND.

D Uppingham (West Deyne)	Rev. G. H. Mullins ...	8	1 6	485	26·37	195
D Ketton Hall [Stamford]	F. Coventry, Esq.	5	1 0	130 B	25·92	170
D Tolethorpe Hall [Stamford].....	C. O. Eaton, Esq.	8	1 0	100 \uparrow	26·05	181
Burley-on-the-Hill	Mr. W. Temple	8	1 0	...	28·46	160
Ryhall.....	Rev. C. Potchett	5	1 2	...	25·20	127
D Oakham (Greetham)	Rev. C. A. Holmes ...	5	0 8	...	26·96	158
D Market Overton	Miss H. E. G. Wingfield	8	0 11	...	29·04	222

LINCOLN.

Stamford (Barn Hill Ho.).....	Dr. Newman	5	1 0	116 \uparrow	23·26	...
*Bourne (Wytham-on-the-Hill) ..	A. C. Johnson, Esq. ...	5	1 0	167 \uparrow	23·54	134

DIVISION VII.—NORTH MIDLAND COUNTIES —(continued.)

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1879	Days on which " or more fell
		Diameter	Height Above Ground	Height Above Sea Level		
			ft. in.	feet.	inches.	
LINCOLN—(con.)						
Long Sutton (Tydd Gote).....	Mr. J. Tilson	5	4 0	...	25·21	189
Spalding (Pode Hole)	Mr. A. Harrison.....	12	0 3	20 ∇	24·35	...
† Grantham	J. W. Jeans, Esq.	8	0 6	179 ∇	26·39	...
„ (Heydour Vicarage).....	Rev. G. F. Deedes.....	5	1 6	...	26·49	104
D Boston (High Street).....	W.H. Wheeler, Esq. C.E.	5	6 6	24 ∇	25·72	...
D „ (Grand Sluice)	J. E. Williams, Esq....	8	6 0	22	25·90	194
D „ (Churchyard).....	Mr. E. C. Hackford ...	5	3 0	22	25·19	176
D Stubton [Newark].....	G. Nevile, Esq.	5	4 6	...	27·51	157
Sleaford (Bloxholm)	Mr. D. Lumsden	5	1 0	20	31·64	161
D Navenby	Rev. J. Hays ...	8	0 6	...	29·59	210
Spilsby	Dr. West Walker	5	1 0	...	31·39	191
Horncastle (Miningsby)	W.H. Wheeler, Esq. C.E.	5	0 6	135 ∇	28·86	139
D Lincoln (Longhills)	A.S. Leslie Melville, Esq.	5	0 6	110 ?	27·99	180
D „ (Branston Hall)	Mr. W. Wright	5	1 0	130 ∇	28·21	142
D Horncastle (Bucknall)	W. Carter, Esq.	5	1 2	150	28·51	162
„ (Queen Street)	H. George, Esq., M.D..	5	1 0	100	31·01	...
D† Lincoln (Boultham)	H. Teague, Esq.....	5	1 0	18 ∇	25·06	...
† „ (St. Botolphs)	„ „	5	1 3	25 ∇	24·46	...
D „ (Doddington)	Rev. R. E. Cole	5	1 2	...	24·57	173
„	M. S. & L. R. Co.† ..	9	3 6	26	24·98	143
„ (The Quarry)	R. Swan, Esq.	8	0 8	210	28·43	...
† „ (Carholme Villa)	J. Norton, Esq.	8	1 0	25	26·61	...
„ (Skellingthorpe Hall)	R. C. B. Coupland, Esq.	5	1 1	...	25·72	123
Gate Burton	M. S. & L. R. Co.	9	3 6	96	24·16	164
† Louth	T. W. Wallis, Esq. ...	5	6 0	111 ∇	28·92	183
† „ (Westgate)	Dr. F. Fawcett	5	0 9	110 ∇	30·10	204
D „ (Calcehorpe)	B. Briggs, Esq.	5	0 10	380 ∇	30·86	198
D† „ (Kelstern Grange)	D. G. Briggs, Esq.....	8	0 11	390 ∇	30·48	201
† „ („ „)monthly	„ „ „	5	0 11	390 ∇	30·12	...
Gainsborough.....	M. S. & L. R. Co.	9	...	76	20·64	146
Stockwith	„ „ „	9	3 6	21	22·91	...
D Caistor	Rev. R. Thomas.....	5	1 4	...	28·54	196
Brigg	M. S. & L. R. Co.	9	3 6	16	24·60	130
D „	A. Atkinson, Esq.	8	1 2	10	28·90	...
D Grimsby (Aylesby)	S. McAnlay, Junr. Esq.	5	2 0	...	27·22	199
„	M. S. & L. R. Co.	9	15 0	42	22·93	159
Barnetby.....	„ „ „	9	3 6	51	26·59	157
Crowle (Keadby)	„ „ „	9	...	10	20·32	154
Appleby	Rev. J. E. Cross.....	5	0 9	60 ∇	26·32	199
D Ulceby (Killingholme)	Rev. J. Byron.....	5	1 4	60 ∇	26·61	199
Ferriby Sluice	Rev. J. E. Cross.....	5	0 9	10	24·39	...
New Holland	M. S. & L. R. Co.	9	3 6	18	23·48	170
NOTTS.						
D Nottingham (Highfield House)...	E. J. Lowe, Esq., F.R.S.	8	1 0	162 ∇	31·68	189
D „ (The Park)	M. O. Tarbotton, Esq. C.E.	8	1 6	183 ∇	27·31	174

† Kept for the Canals Department of the Manchester, Sheffield, and Lincolnshire Railway Company.
Returns supplied by R. D. Heathcott, Esq.

DIVISION VII.—NORTH-MIDLAND COUNTIES—(continued.)

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which .01 or more fell.	
		Diameter	Height above Ground.		Height above Sea Level.		1879
			ft.	in.	feet.	inches.	
DERBY—(con.)							
†Castleton	Miss Hall	5	1	0	700	41·71	...
D Hathersage (Bamford)	T. Moore, Esq.	5	1	0	530 T	40·06	...
†Glossop (Spire Hollin)	F. Hawke, Esq.	10	0	10	612 T	39·11	...
†Woodhead	M. S. & L. R. Co.	9	3	6	878 T	46·69	197

DIVISION VIII.—NORTH-WESTERN COUNTIES.

CHESHIRE.

D Nantwich (Cholmondely Castle)	Mr. J. Malcolm	8	1	6	42	35·43	200
Chester (Pulford Hall)	R. Massie, Esq.	5	3	0	60 N	29·16	198
D Congleton (Buglawton Vic.)	Rev. W. Besant	8	5	0	347 T	34·41	184
Macclesfield (Winckle)	W.H.Stubbs, Esq., C.E.	5	3	0	500	38·66	150
Bosley Reservoir	M. S. & L. R. Co.	9	3	6	590 T	35·54	179
„ Minns	„ „ „	9	3	6	1210 T	37·52	189
Chester (Curzon Park)	F. F. Brown, Esq.	5	1	0	74 N	27·14	...
D† „ (Lead Works)	A. O. Walker, Esq. ...	5	1	0	64 T	30·04	182
D† „ („ „ Shot Tower)	„ „ „	5	160	0	227 T	17·60	139
D† „ (Newton Nurseries)	J. Dickson & Sons	8	0	8	62 N	31·81	180
Middlewich (Bostock Hall)	Col. France Hayhurst..	5	2	9	157 N	32·46	144
Siddington (Thornycroft Hall)	Mr. Manderson	5	3	0	337	34·01	173
Macclesfield	M. S. & L. R. Co.	9	3	6	539 T	24·75	162
D „ (Park Green)	Mr. J. Dale	8	2	1	449 N	34·42	194
Chelford (Astle Hall)	G. Dixon, Esq.	5	1	0	250 T	33·42	186
D Northwich (Highfield)	L. B. Wells, Esq., C.E.	8	3	4	118 N	32·28	202
„ (Winnington)	H. Neumann, Esq.	8	1	6	120 T	32·18	173
D Neston (Hinderton)	Reginald Bushell, Esq.	5	1	0	215 N	33·53	204
„ „ „ „	„ „ „ „	8	1	0	215 N	33·56	...
D Frodsham (Foxhill)	J. Reynolds, Esq.	5	0	10	230 T	31·91	178
Bollington (Spond's Hill)	M. S. & L. R. Co.	9	3	6	1279 T	35·40	..
†Whaley	„ „ „	9	3	6	602 T	40·99	220
Lyme Park	J.F.Bateman, Esq.FRS.	...	...	...	680	50·35	...
D Runcorn (Weston Point)	L. B. Wells, Esq., C.E.	4	2	4	18	27·01	125
D Thelwall (Highfields)	T. G. Rylands, Esq. ...	5	1	0	118 N	29·69	182
„ „ „ „	„ „ „ „	5	1	0	118 N	29·91	...
D Lymm (Statham Lodge)	P. Stubs, Esq.	5	1	0	42 N	30·17	193
Altrincham (Barrington House)	J. Newton, Esq., C.E..	8	3	0	105	35·10	...
†Birkenhead (Bidstone Obs.)	J. Hartnup, Jun., Esq.	8	0	6	182 T	29·79	186
Marple Top Lock	M. S. & L. R. Co.	9	3	6	543 T	33·07	180
„ Aqueduct	„ „ „	9	3	6	321 T	31·83	167
Godley Reservoir	J.F.Bateman, Esq.FRS.	...	...	...	500	31·18	...
Newton	M. S. & L. R. Co.	9	3	6	396 T	30·31	195
Mottram (Hill End)	„ „ „	9	3	6	680 T	35·81	154
„ (Matley's Field)	„ „ „	9	3	6	399 T	34·97	171
Arnfield	J. Baxendell, Esq.	5	2	0	540	42·22	239
„ Reservoir	J.F.Bateman, Esq.FRS.	...	...	...	575	39·57	...
†Rhodes Wood Reservoir	„ „ „	12	1	0	520	41·91	...
†Torrside Reservoir	„ „ „	12	1	6	600	43·14	...

DIVISION VIII.—NORTH-WESTERN COUNTIES—(continued.)

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1879	Days on which "01 or more fell.	
		Diameter.	Height Above Ground.				Height Above Sea Level
			ft.	in.	feet.	inches.	
CHESHIRE—(cont.)							
D Staleybridge (Swineshaw).....	Mr. C. Beever.....	8	3	0	884 $\bar{\pi}$	40·96	202
† Woodhead Reservoir.....	J. F. Bateman, Esq. FRS.	12	0	10	680	46·62	...
„	J. Baxendell, Esq.....	5	1	0	780	50·63	212
LANCASHIRE.							
Liverpool (Grassendale Garston).	J. Abraham, Esq.	5	1	0	50 B	32·41	195
D „ (St. Michael's Hamlet)	G. W. Jevons, Esq. ...	5	1	0	74 T	32·19	178
D „ (Greenhill, Allerton) ..	A. M. Sing, Esq.	5	1	2	125 T	33·51	191
D Warrington (Arpley)	T. Longdin, Esq.	10	10	3	33 $\bar{\pi}$	30·68	202
D „ (Bewsey Street) ..	L. W. Reynolds, Esq..	5	1	0	49 $\bar{\pi}$	30·76	194
„ (Cemetery)	T. Longdin, Esq.	10	1	0	32 $\bar{\pi}$	31·37	...
Liverpool (Grove Park).....	J. R. Darsie, Esq.	3	6	0	160	31·10	172
D „ (Walton-on-the-Hill).	A. R. Andersson, Esq..	5	1	11	119 $\bar{\pi}$	31·82	184
„ („ „ „)	J. „ „ „ „ „ „ „ „	8	1	2	119 B	31·83	184
D Manchester (Withington).....	J. King, Jun., Esq. ...	5	1	0	110 T	31·15	183
D „ („ „ „).....	J. „ „ „ „ „ „ „ „	5	1	0	110 T	30·93	182
„ (Urmston)	T. Armstrong, Esq. ...	5	1	0	80 T	33·51	206
Denton Reservoir	J. F. Bateman, Esq. FRS.	...	...	...	324 T	31·55	...
Gorton.....	„ „ „ „ „ „ „ „	...	...	...	263 T	30·66	...
D Manchester (Plymouth Grove)...	J. F. Roberts, Esq. ...	5	3	9	150 $\bar{\pi}$	33·35	186
D „ (Ardwick)	J. Casartelli, Esq.	9	3	0	140 $\bar{\pi}$	32·89	201
† „ (Piccadilly)	M. S. & L. R. Co.	9	40	0	194 T	34·22	180
„ (Fairfield)	„ „ „ „ „ „ „ „	9	6	0	312 T	31·23	189
D „ (Alexandra Park) ...	Rev. L. C. Casartelli...	8	1	11	95 B	36·48	209
D Blundellsands (Park Corner) ...	T. M. Reade, Esq. C.E.	5	1	0	35 $\bar{\pi}$	31·22	212
D Manchester (Newton Heath) ...	J. Warren, Esq.....	5	1	0	288 T	35·93	183
Ashton (Waterhouses)	M. S. & L. R. Co.	9	3	6	345 T	36·81	185
Manchester (Prestwich)	The Meteor. Council ...	8	1	0	295	35·27	175
„ („ „ Res.)	J. F. Bateman, Esq. FRS.	...	...	...	347 T	34·32	...
D Wigan (Beech Hill)	S. A. Oliver, Esq.	5	0	6	190 ?	32·45	186
D „ (Waterworks)	W. Bolton, Esq.	8	1	6	225	35·36	192
Bolton-le-Moors (The Folds) ...	H. H. Watson, Esq. ...	10	3	6	286 T	42·82	...
D „ (The Freehold). ..	W. Musgrave, Esq.....	9	6	6	352 $\bar{\pi}$	44·66	183
„ (Heaton)	R. H. Swindlehurst, Esq.	6	1	3	500	39·20	143
D „ („ „)	J. S. Holdsworth, Esq.	10	3	6	497 $\bar{\pi}$	41·80	194
„ (Hurst Bank) ...	J. Watkins, Esq.	5	3	1	442 $\bar{\pi}$	40·78	200
„ (Moss Bank) ...	R. H. Ainsworth, Esq..	8	1	2	570 T	47·35	177
„ (Smithill's Hall) ..	„ „ „ „ „ „ „ „	8	1	5	515 T	44·64	209
„ (Belmont Road) ..	Rev. T. Mackereth ...	5	1	10	481 $\bar{\pi}$	56·77	211
D Rochdale (Drake Street)	T. H. Hayle, Esq.	5	3	7	473 $\bar{\pi}$	35·77	200
D Ormskirk (Rufford)	J. Porter, Esq.	5	0	8	38 T	32·82	192
Bolton (Belmont)	R. H. Swindlehurst, Esq.	6	0	9	800	55·00	157
Rochdale (Nayden Dane)	J. Diggle, Esq.	5	1	6	900 T	40·89	...
Southport	J. Baxendell, Esq.....	5	2	8	23 $\bar{\pi}$	32·33	185
Entwistle	R. H. Swindlehurst, Esq.	7	1	0	700	51·60	147
Rochdale (Littleborough)	C. R. Dykes, Esq.....	10	1	6	500	35·40	...
Blackstone Edge	„ „ „ „ „ „ „ „	10	2	3	1200	37·70	...
„ „ (Summit)	„ „ „ „ „ „ „ „	10	1	11	700	36·40	...

DIVISION VIII.—NORTH-WESTERN COUNTIES—(continued.)

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which '01 or more fell.
		Diameter	Height Above Ground	Height Above SeaLevel	1879.	
			ft. in.	feet.	inches.	
LANCASHIRE—(con.)						
Lancaster (Hest Bank)	T. Ransome, Esq.	5	2 2	58 T	32·63	190
D " (Wray)	Rev. C. L. Reynolds ...	5	1 1	165	38·57	...
Melling (Hornby Castle)	W. P. Blacow, Esq. ...	8	2 3	100 T	35·61	198
Barrow-in-Furness	W. Fergusson, Esq. ...	11	1 6	30 T	33·75	136
D " (Cavendish Park).....	N. S. Whitworth, Esq..	8	2 0	60 A	33·78	183
Arkholme (Storr's Hall)	F. F. Pearson, Esq. ...	5	1 0	220 T	38·47	...
Cartmel (Flookburgh)	T. R. Croasdale, Esq...	5	2 4	70 B	36·32	126
† " (Holker)	Mr. W. Fox	8	4 8	155 A	37·43	188
Grange (Nutwood).....	Rev. E. Massie	5	2 6	100	35·67	195
D Ulverston (Powka Beck)	Mr. W. Fergusson.....	11	1 6	500 T	47·35	156
D Cartmel (Pit Farm)	Mr. W. R. Nash	5	1 0	122 T	39·48	180
" (Broughton Hall)	Col. Ainsworth, M.P....	5	2 8	230 T	41·38	175
D Ulverston (Colton).....	Rev. A. Christopherson	5	1 0	226 A	50·37	168
D Broughton-in-Furness	Rev. F. A. Malleeson ...	5	1 3	40 T	48·91	112
D " (Woodland Rectory)	Rev. E. C. Shawfield ..	5	3 9	100 T	62·71	167
Coniston (Torver Rectory)	Rev. T. Ellwood	5	0 6	400 T	68·94	...
† Monk Coniston Park	V. Marshall, Esq.	10	4 11	150 A	63·90	...
D " " " "	" " " "	5	1 0	305	76·90	...
Hawkshead.....	W. Lane, Esq.	5	1 2	280 T	62·05	166
D Bridge End [Little Langdale]...	E. B. W. Balme, Esq..	8	0 9	385	96·62	168

DIVISION IX.—YORKSHIRE.

WEST RIDING.

Sheffield (Brincliffe Rise)	A. Chadburn, Esq.....	5	1 0	500 T	33·84	195
" (Edge).....	M. S. & L. R. Co.	9	3 6	336 T	31·50	181
† " (Redmires)	J. Gunson, Esq.	10	5 0	1100 T	42·08	206
" " " "	" " " "	8	4 0	1100 T	42·49	...
D " (Ranmoor)	J. Dixon, Esq.	10	3 6	600	35·46	180
D " (Broomhall Park)	D. Doncaster, Jun. Esq	10	2 0	330 A	31·25	218
" (Rivelin).....	J. Gunson, Esq.	10	4 0	564 A	36·14	197
" " " "	" " " "	8	4 0	564 A	36·18	...
" (Crookes).....	" " " "	10	2 0	629 A	30·24	189
" " " "	" " " "	8	2 0	629 A	30·31	...
† Rotherham (Ulley Reservoir) ...	Mr. L. Berry	5	1 0	184 A	23·03	...
Sheffield (New Shoreham Street).	The Meteor. Council ...	10	0	269	28·52	198
† " Station.....	M. S. & L. R. Co.	9	3 6	188 T	23·99	173
" (Tinsley Locks)	" " " "	9	...	143 T	27·99	190
Tickhill (Sandbeck Park) ...	Earl of Scarborough ...	5	1 0	150 T	28·61	209
† Rotherham (Moorgate Grove) ...	R. Chrimes, Esq.	5	1 0	262 A	26·90	201
D Tickhill	G. G. Phillips, Esq. ...	8	1 0	61 A	27·39	...
Rotherham (Thrybergh)	J. F. Tyler, Esq.	8	0 8	184 A	27·47	148
Elsecar	M. S. & L. R. Co.	9	...	175 T	28·51	166
D Wath-upon-Dearne (Chapel St).	W. M. Burman, Esq...	8	1 0	185 A	30·25	209
" (West Melton).....	Rev. J. Boyd	6	0 10	172 T	26·84	165
D " " " "	J. N. Baxter, Esq.....	5	1 0	100 A	29·68	205

DIVISION IX.—YORKSHIRE—(continued.)

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1879.	Days on which "0" or more fell.
		Diameter	Height Above Ground	Height Above Sea Level		
			ft. in.	feet.	inches.	
WEST RIDING—(con.)						
Worsborough	M. S. & L. R. Co.	9	...	225 T	27.45	182
Stainborough (Wentworth Castle)	Mr. W. Fisher	8	2 6	520 T	31.86	177
Doncaster	M. S. & L. R. Co.	9	...	35 T	21.04	150
D " (Magdalens)	Mr. J. Howorth	5	4 6	46 T	25.95	151
† Dunford Bridge Station	M. S. & L. R. Co.	9	3 6	954 T	46.61	193
D† " " " "	The Station Master ...	8	1 8	954 T	46.47	...
D† " " (Reservoir)	Mr. G. Whitfield	12	2 0	1100 T	49.57	243
D† " " " "	" " " "	8	2 1	1100 T	52.48	243
† Penistone (Carlcotes)	M. S. & L. R. Co.	9	3 6	1075 T	39.70	166
† " " " "	" " " "	9	3 6	717 T	31.25	155
" (Hazlehead)	" " " "	9	...	868 T	38.99	168
" (Ingbirchworth Res.)	W. Greenwood, Esq. ...	8	1 4	853 T	37.83	230
Barnsley	" " " "	8	15 4	352 T	26.70	190
D " (Church Street)	Dr. Sadler	5	5 2	350 T	28.25	206
" " " "	M. S. & L. R. Co.	9	...	175 T	25.08	147
† Meltham (Harden Moss)	J. B. Abbey, Esq.	8	1 2	1200 T	47.11	...
† Marsden (Standedge)	E. B. Smith, Esq.	9	1 6	1100 T	49.89	...
† Meltham Grange	J. B. Abbey, Esq.	8	1 2	925 T	40.32	...
D Slaithwaite (Blackmoorfoot)	J. Stanway, Esq.	8	1 0	800 T	37.24	226
D† Huddersfield (Dalton) <i>new gauge</i>	J. W. Robson, Esq. ...	8	1 0	350 T	28.93	...
Longwood (Bilberry Edge)	J. B. Abbey, Esq.	8	1 2	1100 T	35.69	...
D Ackworth School	W. B. Fletcher, Esq. ...	5	1 6	...	25.77	190
D Mirfield (Cote Wall)	E. B. W. Balme, Esq. ...	8	0 9	200	28.58	185
D† Wakefield Prison	Dr. H. Clarke	8	1 0	96 T	25.04	180
" (Alverthorpe Hall)	H. Clarkson, Esq.	5	1 0	150	25.54	196
D Rastrick	A. Clay, Esq.	5	1 3	410 T	33.22	212
D Goole	Mr. R. G. Boyd	11	3 4	21 T	19.80	156
D Wakefield (Stanley Vicarage)	Rev. R. Burrell	5	1 0	100 T	23.40	209
D Todmorden (Stansfield Hall)	T. Fielden, Esq.	8	1 9	582	47.22	220
D Halifax (Bermerside Observatory)	J. Gledhill, Esq.	8	0 6	500	35.48	180
" (Thorpe)	F. G. S. Rawson, Esq. ..	8	0 8	360	42.10	196
† " (Victoria Albert)	J. E. Lambert, Esq. ...	5	1 0	795 T	35.45	...
† " (Gibbett)	" " " "	5	5 0	568 T	33.34	...
† " (Ramsden Wood)	" " " "	8	1 2	816 T	40.11	...
Methley Park	J. Richardson, Esq., C.E.	5	0 9	98 T	24.66	222
Leeds (Leventhorpe Hall)	J. T. Leather, Esq., C.E.	10	4 0	94 T	21.31	...
Halifax (Castle Carr)	J. E. Lambert, Esq. ...	...	...	1100	38.41	...
† " (Midgley Moor)	" " " "	7	0 6	1350 T	46.19	...
† " (Warley Moor)	" " " "	7	0 6	1425 T	48.46	...
† " (Ogden)	" " " "	8	1 3	990 T	41.41	...
" (Ovenden)	" " " " .....	...	...	1375	45.08	...
" (Widdop)	" " " " .....	...	...	1050	43.43	...
† " (Walshaw Dean)	" " " "	8	0 3	1380 T	44.15	...
D South Milford Rectory	Rev. F. J. Young	5	1 4	60 T	28.05	205
Bradford (Queensbury)	W. Foster, Esq.	8	2 2	1050 T	32.59	166
" (Brayshaw Reservoir)	A. R. Binnie, Esq., C.E.	5	1 0	982 T	33.47	193

The figures in this type 26 refer to the Map facing page 50 of *British Rainfall*, 1876.

DIVISION IX.—YORKSHIRE—(continued.)

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which .01 or more fell.	
		Diameter	Height Above Ground.				Height Above Sea Level
			ft.	in.	feet.	1879	inches.
WEST RIDING—(con.)							
Skipton (Coniston Cold Vicarage)	Rev. J. Stansfeld	6	2	3	460 T	33·88	...
„ (Barden Res.) <i>old g.</i>	20 A. R. Binnie, Esq., C.E.	8	1	2	746 T	36·56	212
„ („ „)	20 „ „ „	5	1	0	746 T	35·62	214
Otterburn-in-Craven	W. Gomersall, Esq. ...	5	1	0	510 T	38·00	143
Skipton (Upper Res., Barden)	21 A. R. Binnie, Esq., C.E.	5	1	0	1250 T	35·16	197
„ (Thorpe Fell „)	22 „ „ „	5	1	0	1661 T	35·36	...
„ (Sandbed Beck, Burnsall)	23 „ „ „	5	1	0	676 T	37·39	...
Pateley Bdg (Grimwith Res) <i>old g.</i>	24 A. R. Binnie, Esq., C.E.	8	1	0	890 T	40·61	222
„ „ („ „)	24 „ „ „	5	1	0	893 T	40·69	222
„ „ („ „ Trunla)	25 „ „ „	5	1	0	1201 T	36·87	...
„ „ (Castle Stead)	39 Mr. A. C. Young	5	1	0	410 T	37·64	208
Boroughbridge (Aldborough) ...	Rev. R. W. Marriott...	5	3	7	70 T	23·67	...
Malham Tarn	Mr. Coulthard	5	1	0	1296 T	51·12	...
Arnccliffe	Rev. W. Boyd	8	2	6	750 T	51·37	220
Ripon (North Lodge)	F. D. Wise, Esq.	5	1	0	120	25·00	...
„ (High Bank, Mickley) ...	Miss Harrison	5	1	0	225 T	29·33	171
Wharfedale (Oughtershaw Hall).	C. H. L. Woodd, Esq..	8	1	4	1350 T	60·75	...
Langstrothdale (Cam Fell)	„ „ „	4	1	0	2000	57·71	...
Dent (Stone House)	Mrs. Nixon	5	2	0	800 T	57·42	205
Sedbergh (Brig Flatts)	J. Handley, Esq.	5	1	0	300 T	45·83	194
„ (Long Lane)	J. Dockeray, Esq.	5	4	4	420	49·62	214
„ (Thorne Hall)	Miss Elam	5	1	6	400 T	46·33	197
EAST RIDING.							
Patrington	W. B. Pugh, Esq.	5	0	3	10 T	25·82	205
Hull	The Meteor. Council ...	8	1	0	15	25·20	210
„ (Beverley Road)	H. Smith, Esq.	8	4	8	12 T	25·92	189
„ (Derringham)	W. Lawton, Esq.	5	2	2	10 T	25·14	193
„ (People's Park)	Mr. E. Peak	5	0	4	6	29·67	...
Brough (Brantinghamthorpe) ...	Mr. R. C. Kingston ...	5	2	0	200 T	31·54	...
Cottingham	J. N. Hill, Esq.	8	1	3	26 T	22·69	186
Beverley (Alexandra Terrace) ...	T. Dyson, Esq.	12	8	0	62 T	26·97	173
Market Weighton (Holm-on-the-Wolds)	Mrs. Harland	5	4	0	154 T	25·79	112
Hornsea (East Gate House)	J. A. Wade, Esq.	5	3	0	40 P	22·22	...
Middleton-in-the-Wolds	Rev. H. D. Blanchard..	5	1	0	150 T	27·48	165
Pocklington (Warter)	J. Coxon, Esq.	5	1	10	230 T	31·46	217
„ (Gt. Givendale) ...	Miss Singleton	5	4	3	473 T	34·15	...
Thixendale	Rev. W. H. Fox	10	0	9	425 T	35·08	223
Lowthorpe (The Elms)	H. Onslow Piercy, Esq.	5	1	0	63 T	26·54	186
Hunmanby (Foxholes Rectory)..	Rev. R. H. Foord	5	1	0	234 T	32·77	231
„ (Wold Newton Vic.)	Rev. T. S. Ackland ...	5	1	9	195 T	42·45	204
Ganton Hall [Scarborough]	Mr. Greasley	5	1	0	250 B	27·76	210
NORTH RIDING.							
Flaxton Grange	H. Richardson, Esq. ...	5	1	0	90	22·19	...
Malton	H. Hurtle, Esq.	10	1	0	75 T	23·28	...
Bishopdale (Kidstones)	Rev. F. W. Stow ...	3	1	0	990 T	48·22	...

DIVISION IX.—YORKSHIRE—(continued.)

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1879	Days on which 101 or more fell.
		Diameter	Height above Ground.	Height above Sea Level		
			ft. in.	feet.	inches.	
NORTH RIDING—(con.)						
D Bishopsdale (The Rookery)	Mr. J. Loving	5	1 0	605	48·41	...
Aysgarth (Nell Bank, Walden)..	Rev. F. W. Stow	3	1 0	1100 T	42·62	...
D Bedale (Thorpe Perrow)	Mr. W. Culverwell	5	1 6	170	24·29	164
Scarborough (Osgodby).....	E. Filliter, Esq., C.E....	8	0 9	159 T	26·39	149
Thirsk	A. C. Bamlett, Esq.	5	1 0	118	28·35	...
„ (Maunby Hall)	Mr. Jackson	5	1 2	100	21·46	...
Helmsley (Nawton)	E. Filliter, Esq., C.E....	5	0 9	262 T	28·31	103
D Aysgarth Vicarage.....	Rev. F. W. Stow	5	1 0	655 T	31·43	193
Leyburn (Wensley)	G. W. Wray, Esq.....	7	1 0	660 T	29·87	...
Scarborough	F. Shaw, Esq.	8	1 0	130	28·20	203
D† Hawes (Hardrow Vicarage)	Rev. R. Pink	5	1 0	790 T	43·74	216
D „ (Lunds Church) .....[1]	„ „	5	1 0	1100 T	56·59	228
D Swaledale (Summer Lodge).....[2]	Mr. Broderick.....	5	1 0	1041 T	44·18	215
*Northallerton	Dr. Hodgson	5	1 3	133 T	23·03	...
Catterick (Tunstall)	H. C. Marshall, Esq....	5	1 0	350	24·51	...
Fylingdales Moor (Harw'dale Mill)	E. Filliter, Esq., C.E....	8	0 9	275 T	33·12	153
„ „ (Chapel Farm)..	„ „ „	8	0 9	395 T	35·34	217
„ „ (Flask Inn).....	„ „ „	8	0 9	563 T	32·98	187
„ „ (Evan Howe) ...	„ „ „	8	0 9	585 T	34·52	168
Richmond (The Grove)	G. Roper, Esq.	5	1 3	...	29·84	131
Northallerton (Rounton)	I. L. Bell, Esq., F.R.S.	8	0 7	200	21·99	...
Reeth (Eskeleth House) .....[3]	W. Whitwell, Esq. ...	8	1 0	947 T	38·05	140
† Richmond (Barningham Park)...	Sussex Millbank, Esq..	5	1 2	650	25·97	...
D East Layton [Darlington]	Mrs. Maynard	5	1 0	575 T	27·35	113
D Richmond (Forcett Park).....	Mr. E. Shinner	5	1 0	360 T	25·41	204
D Whitby (Guisborough Road) ...	M. Simpson, Esq.	5	2 0	184 T	21·96	191
Saltburn (Port Mulgrave)	J. Hodgson, Esq.	5	4 6	350 T	21·04	...
Guisborough (Hutton Hall)	J. W. Pease, Esq., M.P.	5	1 6	400 T	27·22	169
D „ (Lockwood Beck Res.) ...	W. P'Anson, Esq., C.E.	8	1 0	632 T	28·45	225
† Mile Rigg [Brough] .....[12]	G. J. Symons, Esq. F.R.S	8	1 0	1400 T	37·75	...
† Lune Head [Brough].....[13]	„ „ „	8	1 0	1779 T	44·90	...
D Middlesboro' (Southfield Villas) .	W. Fallows, Esq.	6	1 6	21 T	18·57	138
† Mickleton [Middleton] .....[14]	G. J. Symons, Esq. F.R.S	8	1 0	775 T	32·30	...
„ (Lime Kiln Pasture)..	„ „ „	8	1 0	...	37·00	...

DIVISION X—NORTHERN COUNTIES.

DURHAM.

D Darlington (Dinsdale Rectory)...	Rev. J. W. Smith	5	2 0	54 T	24·10	...
D† Eaglescliffe [Yarm]	Rev. J. Hull	5	1 0	80 T	23·18	196
D Darlington (South End)	Mr. N. Black	8	0 10	140	22·18	...
D „ (Flora Gardens).....	Mr. W. Wrather	8	2 0	147 T	21·97	162
D „ (Cleveland Parade)..	S. Hare, Esq.....	5	1 0	160 T	22·72	201
D „ (Brinkburn)	Mr. H. Ward.....	8	1 6	165 T	24·47	158
Barnard Castle (Whorlton)	Miss Dodgson	5	0 11	424 T	24·56	142
D† Gainford	The late A. Atkinson Esq	5	1 0	250 T	22·90	...
† Staindrop (Raby Castle)	Mr. R. Westcott	8	1 0	460 T	26·10	...

Numbers printed thus [x] refer to the Map facing page 52 of *British Rainfall, 1876.*

DIVISION X.—NORTHERN COUNTIES—(continued.)

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which .01 or more fell.	
		Diameter	Height Above Ground	Height Above Sea Level			
			ft. in.	feet.	1879		
					inches.		
DURHAM—(con.)							
D Darlington (Heighington).....	Rev. C. C. Chevallier ..	5	4 0	460 T	25.68	168	
D Hartlepool (Heugh Lighthouse)..	W. Belk, Esq., C.E. ...	5	0 6	34 T	31.39	261	
D " (Hurworth Burn) ...	T. Fenwick, Esq., C.E.	5	0 7	360	25.20	128	
D " (Hart Reservoir).....	" " " "	8	0 9	164	21.71	101	
D† Wolsingham .....[23]	Mr. A. Mitchell	5	1 0	464 T	30.12	207	
D Durham Observatory.....	G. A. Goldney, Esq. ...	12	4 8	340 T	26.26	...	
D " "	" " " "	8	4 3	340 T	23.62	...	
" (Ushaw College)	Rev. J. Corbishley	5	0 10	600	27.60	199	
Seaham (Vicarage)	Rev. A. Bethune	5	0 4	80 T	24.95	131	
D " (Hall)	Mr. R. Draper	5	1 0	100 T	23.61	...	
D Chester-le-Street (Birtley)	R. C. Clephan, Esq. ...	5	0 9	205 T	24.26	218	
Sunderland (W. Hendon House)	T. W. Backhouse, Esq. ...	5	1 0	132 T	26.58	...	
" (The Limes)	J. W. Mounsey, Esq. ...	5	0 6	120	26.65	...	
D Gateshead (Eighton Cottage) ...	T. M. Favell, Esq., C.E.	5	0 10	515 T	25.41	...	
NORTHUMBERLAND.							
†Allenheads .....[22]	Mr. J. Charlton	8	0 4	1353 T	37.09	226	
D Shotley Hall	Mr. J. Coulson	5	0 5	315 T	27.13	158	
Haltwhistle (Shaft Hill)	Unknown	5	0 8	626	32.97	...	
Bywell.....	Mr. W. J. Tone	8	0 6	87 T	28.84	223	
D Haltwhistle (Unthank Hall) ...	Rev. Dixon Brown.....	5	0 9	380 T	30.76	167	
D Corbridge-on-Tyne(LauderGnge)	T. Hurst, Esq., jun. ...	5	0 8	275	23.78	163	
Newcastle (Philos. Society)	W. Lyall, Esq.	8	1 7	105 T	24.23	...	
D " (Rye Hill)	Robert Foster, Esq. ...	8	1 2	220 T	24.40	197	
" (Gladstone Terrace)..	W. Smurthwaite, Esq..	2	6 0	150 T	23.93	...	
D " (Town Moor)	Mr. W. Neill	5	0 6	201 T	28.29	210	
North Shields (Wallsend).....	J. W. Dees, Esq.	10	0 6	100 T	25.17	...	
" (Post Office)	The Meteor. Council ...	8	1 4	100	25.28	208	
D† " (Rosella Place) ...	R. Spence, Esq.	8	1 6	124 T	27.09	204	
" (Low Lights).....	J. R. Procter, Esq. ...	8	3 4	22 T	26.30	180	
D " (Tynemouth)	P. J. Messent, Esq., C.E.	5	2 8	65 T	24.80	207	
" (Clementhorpe) ...	J. R. Procter, Esq. ...	5	1 0	150 T	25.93	187	
" (Billy Mill Res.)..	T. M. Favell, Esq., C.E.	5	0 6	197 T	23.89	...	
D " (Whitley Convaless. Ho.).	C. Roope, Esq.	5	0 6	38	26.39	111	
Humshaugh	Rev. H. Taylor	8	1 6	286 T	25.53	...	
Stamfordham	Rev. J. F. Bigge	5	1 0	400 T	27.04	...	
Bingfield House	J. Coppin, Esq.	5	1 0	445 T	24.19	...	
Whittle Dean	D. D. Main, Esq.	10	...	...	25.26	...
Newcastle and Gateshead W. Works	(Swinburn (Woodford).....	10	0 6	500 T	29.53	...	
	North Tyne (Green Crag) ...	" " " "	10	0 6	800 T	32.42	...
	" " (Valley)	" " " "	10	0 6	300	27.87	...
	Hallington	" " " "	10	0 6	469 T	31.54	...
	" (Fawcett)	" " " "	10	0 6	563 T	28.52	...
Gunnerton Burn (Camphill)..	" " " "	10	0 6	676 T	29.00	...	
Bellingham (Hesleyside)	W. H. Charlton, Esq. ...	5	0 8	373 T	31.05	196	
Hartburn (Wallington).....	Mr. C. M. Fox	5	1 0	399	30.23	...	
D Morpeth (Meldon Park)	Mr. J. Finlay	5	1 0	...	29.65	198	
" (Sheepwash)	Hon. & Rev. W. C. Ellis	5	0 10	24 T	27.57	198	

DIVISION X.—NORTHERN COUNTIES—(continued.)

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which ·01 or more fell.
		Diameter	Height Above Ground	Height Above Sea Level	1879	
			ft. in.	feet.	inches.	
NORTHUMBERLAND—(con.)						
Morpeth (Cresswell)	Rev. J. E. Leefe.....	...	...	...	23·55	...
Deadwater	Mr. Scott.....	3	1 6	1000 T	53·00	...
Rothbury (Brenkburn Priory) ..	C. H. Cadogan, Esq. ...	8	1 0	300 T	33·40	172
D " (Whitton Tower)	Rev. Dr. Ainger.....	5	1 0	410 T	34·15	207
" (Cragside)	Mr. W. Bertram	8	1 0	400 A	31·00	151
Alwinton (Harbottle)	T. Thompson, Esq. ...	5	1 0	500 T	30·34	114
Alnwick Castle	The Meteor. Council ...	...	...	...	33·36	233
D Howick Hall	Rt. Hon. Earl Grey, K.G.	8	0 10	121 A	29·82	204
Ilderton (Lilburn Tower)	E. J. Collingwood, Esq.	10	6 0	300 T	28·74	...
Cheviot (Broadstruther)	G. P. Hughes, Esq. ...	8	4 0	1692 A	77·63	...
D Pawston [Coldstream]	B. P. Selby, Esq.	8	1 0	328 T	28·65	217
*Wooler (Milfield)	G. A. Grey, Esq.	5	0 8	200 A	25·73	...
Belford (Middleton Hall)	J. T. Leather, Esq., C.E.	10	3 0	240 A	28·16	...
CUMBERLAND.						
Ravenglass (The Grove)	J. Ross, Esq.	5	2 6	80 A	36·19	112
Bravstones	J. D. Watson, Esq. ...	10	3 8	36 T	31·58	...
Sprinkling Tarn	J. Maitland, Esq.	4	0 6	1985 T	102·53	...
Wastdale Head	" " "	4	0 6	247 T	79·50	...
Styehead Tarn	" " "	4	0 6	1472 T	106·73	...
†The Stye	" " "	4	0 6	1077 T	148·55	...
Taylor's Gill	" " "	4	0 6	1077 T	132·07	...
St. Bees (Abbot's Court)	A. Hodgetts, Esq.	5	1 1	20 L	33·85	168
†Seathwaite	Mr. Dixon	4	0 6	422 T	112·26	...
D† "	" " "	5	1 0	422 T	110·70	213
* "	H. C. Marshall, Esq. ...	5	1 0	420 P	99·70	...
†Wythburn Vicarage. <i>monthly</i> (20)	Rev. Basil Lawson.....	8	1 0	574 T	74·83	...
" " "	" " "	5	1 0	574 T	80·09	...
Helvellyn (Birkside)	G. J. Symons, Esq. FRS	8	1 0	...	71·25	...
†Watendlath	" " "	8	1 0	867 T	59·25	...
†Whitehaven (Irish Street)	T. F. P'Anson, Esq. ...	5	1 1	21 A	36·02	148
D† Keswick (Barrow House) ... (46)	S. Z. Langton, Esq. ...	8	0 6	282 A	57·86	199
D Loweswater (Waterend)	Mrs. Jackson	5	1 0	432 T	45·76	190
†Ullswater (Hallsteads)	A. Marshall, Esq.	10	4 0	490 T	47·30	...
D† Keswick (Deer Close)	H. C. Marshall, Esq. ...	7	1 9	300 T	48·38	195
D† " (Derwent Island) ... (14)	" " "	5	0 7	280 T	42·86	211
D† " (Post Office)	Mr. Crosthwaite.....	8	6 4	270 T	48·02	...
†* " (")	" " "	5	1 0	265 T	47·48	...
D " (Shu-le-crow)	Miss Mitchell	12	3 0	287 T	44·43	184
Whitehaven (Gilarron Hall) ...	Mr. D. Galloway	5	4 9	470 T	40·25	136
D Cockermouth (Whinfell Hall) ...	W. Robinson, Esq. ...	5	2 0	265 A	44·20	214
D " (Brandlingill)	Capt. F. R. Sewell.....	5	1 0	320 T	43·06	189
†Bassenthwaite (Mirehouse)	Mrs. Spedding	5	0 6	310 T	40·35	169
D Cockermouth (Derwent House) ...	Dr. Dodgson	5	0 6	144 A	36·80	187
D† " (Higham)	T. A. Hoskins, Esq. ...	8	0 6	478 A	37·44	183
D " (Broughton Grange)	G. S. Wilson, Esq. ...	5	1 6	209 A	36·28	188

NOTE.—The numbers marked thus (11) on this and the next page refer to the Map facing p. [144] of *British Rainfall, 1877.*

DIVISION X.—NORTHERN COUNTIES—(continued.)

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1879	Days on which -01 or more fell.
		Diameter	Height Above Ground	Height Above Sea Level		
WESTMORELAND—(con.)						
Ullswater (Sharrow Bay) <i>mtly</i> (38)	A. Parkin, Esq.	5	0 7	500 T	37-30	...
" " " " (38)	" " " "	8	1 6	500 T	34-00	...
†Lowther Castle [Penrith] ... (43)	Mr. W. Shand	8	3 6	750 T	32-90	145
D Brougham Hall [Penrith]	Mr. A. Lodge	5	5 5	470	25-20	...
D Milburn	Mrs. Robinson	5	1 0	644 T	26-69	160
†Hurth Syke [Alston]	[20] Mr. T. Todd	8	1 0	2000 T	48-90	...

DIVISION XI.—MONMOUTH, WALES, AND THE ISLANDS.

MONMOUTH.

D Newport (Springfield)	H. Getling, Esq.	5	1 0	180 T	48-20	172
D " (Gold Tops)	T. Dyne Steel, Esq., C.E.	8	0 10	90 T	46-26	181
D Llanfrechfa Grange	F. J. Mitchell, Esq. ...	5	4 0	326 T	53-12	172
Caerleon (Lansoar)	Rev. J. James	5	3 2	82 T	44-93	161
Chepstow	H. A. Smith, Esq.	5	1 1	150	43-65	179
D " (Piercefield Park)	H. Clay, Esq.	5	1 6	300 P	47-94	177
Pontypool (Llanthewy Vach Rec.)	Rev. J. E. J. Machen ...	5	2 3	200 T	52-59	182
D Newport (Llangibby Castle)	D. Lawrence, Esq.	8	3 0	...	44-18	...
D " (Cwm Tyllery)	T. Jones, Esq.	5	1 0	954 T	55-67	213
D Tredegar (Bedwellty House) ...	J. Colquhoun, Esq. ...	8	1 0	972 T	56-99	216
D " (Ebbw Vale)	R. S. Jordan, Esq.	5	1 0	918 T	63-70	218
D Abergavenny (Larchfield)	Dr. McCullough	5	1 0	220 B	38-83	185
Monmouth (Dingestow Court) ...	S. R. Bosanquet, Esq. ..	5	1 0	250 P	31-82	...

GLAMORGAN.

* Cowbridge (Ham)	G. W. Nicholl, Esq. ...	8	1 4	96 T	39-09	150
Porthkerry (Buttrill)	D. Davis Joseph, Esq. ...	5	1 0	250 T	38-21	121
D Cardiff (East Moors)	T. Waring, Esq., C.E. ..	5	1 0	15	43-09	160
D " (Cemetery)	Mr. C. Hatch	5	1 0	95 T	46-34	210
D " (Castle)	Mr. A. Pettigrew	5	1 3	38 T	44-40	196
D Cowbridge (Ash Hall)	D. Owen, Esq. ...	8	1 0	315 T	52-68	207
D Cardiff (Pentyrch)	F. G. Evans, Esq.	5	1 1	100 T	52-54	202
D Neath	H. S. Ludlow, Esq. ...	5	1 0	240 T	53-21	210
D " (Glyncorwg)	D. Brown, Esq.	5	4 6	730	81-44	224
Aberdare (Ty Draw Treherbert)	D. Davis Joseph, Esq. ...	5	1 0	735 T	76-82	162
" (Mardy)	W. T. Lewis, Esq., C.E.	5	1 0	431 T	56-02	157
Merthyr Tydfil (Thomas Town) ...	T. J. Dyke, Esq.	6	1 0	550 T	57-89	174
D Ystalyfera	Dr. D. Thomas	8	1 2	250	59-83	178

CARMARTHEN.

†Carmarthen (Gaol)	Mr. Rees	8	0 6	92 T	50-12	225
D† " (Joint Co. Asylum) ..	Dr. Hearder	8	1 0	189 T	49-78	211
Tegfynydd [Narberth]	H. S. Morgan, Esq. ...	5	1 0	158 T	53-38	191
Llandilo (Golden Grove)	Rt. Hon. Viscount Emlyn	6	0 6	...	50-75	209
" (Dynevor Castle)	Rt. Hon. Lord Dynevor	8	1 0	236 T	47-03	203
Llandovery	J. Watkins, Esq.	5	1 0	217 T	47-95	208

DIVISION XI.—MONMOUTH, WALES, AND THE ISLANDS—(continued.)

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which .01 or more fell.
		Diameter	Height Above Ground				1879.
			ft.	in.	feet.			inches.
DENBIGH—(con.)						
D Wrexham (Pack Saddle Res.) ...	F. W. Storr, Esq.	5	0 9	370 ∇	34·05	208
D " (Cae Llwyd Res.) ...	" "	5	0 9	918 ∇	45·96	...
" (Plas Power)	Mr. J. Clark	5	1 0	472 ∇	36·00	184
" (Brymbo)	C. E. Darby, Esq.	6	6 3	632 ∇	36·00	...
D Rosset (Trevalyn Hall)	Capt. Griffith Boscawen.	5	1 0	58 ∇	29·33	192
D Denbigh (Vale Street)	J. Lloyd Roberts, Esq..	5	1 0	230 ∇	33·23	179
" (Glan-y-Wern)	Lt.-Col. Humberston...	5	1 0	150 B	27·66	125
" (Dyffryn Aled).....(82)	P. W. Yorke, Esq.....	5	1 2	650 T	38·04	152
D Abergele (Garthewin)	B. W. Wynne, Esq. ...	5	1 0	363 T	36·85	146
" (Kimmel Park).....(80)	Lady F. Hughes	5	0 8	250	35·32	...
D Colwyn (Nant-y-Glyn)	A. O. Walker, Esq. ...	5	2 2	180 ∇	30·20	170
Abergele (Bryn Euryn).....(76)	Mr. T. Hutchings	5	1 0	125 T	29·54	168
MERIONETH.						
D Towyn (Peniarth)	Mr. G. Murray	5	2 0	12	45·06	190
Mynfford Junction	(87) E. Mathews, Esq.	5	1 3	...	50·90	...
†*Dolgelly (National School)...	(21) Mr. Williams	5	1 6	43 T	60·28	188
† " (Brithdir)	(28) J. Hill, Esq.	5	1 6	465 T	64·31	...
† " (")	(28) " "	5	5 3	477 T	51·35	...
" (Nannau Park)	Mr. G. Cooke	12	3 0	690	61·67	193
Trawsfynydd	(4) Major Mathew	5	0 7	700	58·12	194
Bala (Henblas)	(20) " "	5	1 0	544	43·09	145
D Llanderfel (Palé Gardens)...	(88) Mr. T. Ruddy.....	8	1 0	606 ∇	41·59	...
D Corwen (Rhug Gardens)	Mr. J. Bennett	5	1 0	500	32·58	157
CARNARVON.						
Pwllheli (Bodfaen)	(17) Major Mathew	5	4 9	80	46·78	165
*Llanystumdwy (Talarvor)...	(16) " "	5	3 0	50	35·19	173
†*Port Madoc	(1) " "	5	3 0	10	43·00	183
*Llangybi (Cefn)	(6) " "	5	1 1	200	52·99	162
Beddgelert (Bryn Gwynant) (66)	J. Wyatt, Esq.	9	3 0	264 B	107·26	194
Pen-y-gwryd	(85) Mr. H. Owen	8	...	860	103·35	181
Carnarvon (Cocksidia)	(39) Major Mathew	5	1 1	120	38·87	199
†Llanfairfechan	(26) R. Luck, Esq.	5	0 8	150 B	32·19	129
D†Llandudno (Warwick House)(29)	Dr. Nicol	8	0 8	99 ∇	29·36	165
ANGLESEA.						
D Menaifron.....(23)	Rev. W. W. Williams.	5	1 0	12 ∇	37·08	207
D Llangadwaladr (Bodorgan)	Mr. J. Ellam	8	4 0	...	37·18	...
D Rhianva [Bangor].....	Capt. E. H. Verney, R.N.	8	1 5	24 L	37·14	172
Holyhead	The Meteor. Council ...	8	1 2	44	33·87	205
Llandyfydog.....	T. Pritchard, Esq.	5	1 6	112 L	37·06	168
ISLE OF MAN.						
Calf of Man	Bd. of Northern Lights	...	...	...	26·26	...
D Douglas (Derby Square)	P. Killely, Esq.	5	1 1	78	40·70	183
D " (Victoria Road)	H. Story, Esq.	8	1 0	120 L	41·09	193
Point of Ayre.....	Bd. of Northern Lights	...	...	...	27·76	...

DIVISION XI.—MONMOUTH, WALES, AND THE ISLANDS—(continued.)

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which "01 or more fell.
		Diameter	Height Above Ground	Height Above SeaLevel	1879	
			ft. in.	feet.	inches.	
ISLES OF SCILLY.						
St. Mary's	The Meteor. Council ...	8	1 6	77 L	39·88	240
JERSEY.						
St. Helier (Noirmont)	The Meteor. Council ...	8	1 0	270	30·76	197
D St. Aubins	J. E. Vibert, Esq.	8	1 0	140 B	30·78	185
"	"	8	18 4	155	24·56	...
D Millbrook	P. Langlois, Esq.	5	1 0	50 L	31·87	182
GUERNSEY.						
D Guernsey (Grange Road)	Mrs. Mansell	5	1 0	174 B	42·24	218
" (York Place)	Dr. Hoskins, F.R.S. ...	12	12 0	204 B	41·57	202

SCOTLAND.

DIVISION XII.—SOUTHERN COUNTIES.

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which 101 or more fell.
		Diameter	Height Above Ground.	Height Above Sea level	1879	
			ft. in.	feet.	inches.	
WIGTON.						
Mull of Galloway	Bd. of Northern Lights	...	...	...	32·68	...
Corsewall	" " "	...	3 4	22 ?	39·42	...
KIRKCUDBRIGHT.						
Little Ross	Bd. of Northern Lights	...	3 3	130 ?	25·84	...
Kirkcudbright (Auchencairn) ...	A. Buchan, Esq. ....	...	...	20	43·28	...
Dalbeattie (Colvend Manse).....	Rev. J. Fraser	5	1 6	120 T	33·11	...
Twynholm (Cally).....	A. Buchan, Esq.....	5	1 0	87	40·99	...
Kirkbean (Woodside Cottage) ..	Mr. J. Foulds.....	5	3 0	33 T	37·59	160
*Dalbeattie	R. W. Macnab, Esq....	5	0 8	30 ?	39·89	159
New Abbey (St. Mary's)	Rev. W. Downie	3	0 4	54 T	42·34	...
D Cargen [Dumfries]	P. Dudgeon, Esq.	3	0 4	80 T	36·72	160
Ashbank [Dumfries]..	T. Corrie, Esq.	3	0 6	...	33·00	...
D New Galloway	A. Buchan, Esq.	8	20 0	220 T	39·05	...
Irongray (Drum Park)	D. J. Kay, Esq.....	3	0 6	230	47·65	...
D*Carsphairn	J. Hannah, Esq.....	5	3 10	574 T	50·24	149
DUMFRIES.						
D Annan (Warmanbie).....	Mr. Elliot	8	3 0	100 T	37·20	...
Ecclefechan (Kirkconnel Hall)...	C. Arnott, Esq.	7	4 0	236	33·52	...
D Dumfries (Crichton Inst.).....	Mr. A. Bruce.....	8	0 6	159 T	33·31	164
Canobie (Byreburnfoot)	W. Doughty, Esq.....	3	0 6	160	35·25	145
Langholm (Caulfield)	J. C. Little, Esq.	3	0 3	650 T	47·90	...
" (Westwater)	Mr. W. Elliot	5	2 0	550 T	49·92	...
" (Ewes School)	J. C. Little, Esq.	3	0 3	450 T	50·20	...
Thornhill (Capenock)	T. S. Gladstone, Esq...	5	1 0	300	41·79	...
Kirkpatrick Juxta (Broomlands)	A. Buchan, Esq.	3	0 3	346	45·25	...
Durrisddeer (Drumlanrig Castle)	" " "	3	0 6	191	40·20	...
Moffat (Ericstane)	Mr. Welsh .....	...	...	550	44·70	...
D Sanquhar (Wanlockhead).....	Mr. G. Dawson	3	0 5	1330 T	49·39	138
ROXBURGH.						
New Castleton (The Flatt)	J. Elliot, Esq.	3	0 9	350 T	42·20	...
" " (Kirndeane)	Miss Elliot	3	0 9	400 T	39·80	...
D Teviothead Manse	Rev. R. Young	3	0 9	550 T	45·70	173
Hawick (Wolfelee)	Sir W. Elliot, Bt., F.R.S.	5	0 3	601 T	38·58	...

DIVISION XII.—SOUTHERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which '01 or more fell
		Diameter	Height Above Ground.	Height Above Sea level	1879	
			ft. in.	feet.	inches.	
ROXBURGH—(con.)						
Hawick (Braxholme)	W. E. Lockhart, Esq...	5	0 2	451	29·03	...
„ (Goldielands)	Prof. Elliot.....	3	0 8	534 π	30·46	...
„ (Kirkton)	Mr. J. Welsh	3	0 6	759 π	35·20	...
^{n*} „ (Silverbut Hall)	Mr. D. Elder	5	4 0	512 π	28·54	...
*Jedburgh (Sunnyside)	G. Hilson, Jun., Esq...	5	6 0	350 π	26·36	144
St. Boswell's (Elliston).....	The Hon. G. Dalrymple	5	1 0	350 B	27·81	186
Kelso (Springwood Park)	Mr. G. Wemyss.....	10	1 0	130 L	24·92	219
Melrose (Dingleton Mains)	Mrs. J. Davidson	5	5 0	500 P	34·03	...
ⁿ „ (Abbey Gate)	Mr. A. Dodds.....	5	0 6	280 T	32·31	233
ⁿ Woolplaw [Galashiels]	J. Murray, Esq.....	5	1 0	880 π	30·22	199
„ [„]	„ „	3	1 0	880 π	28·10	199

DIVISION XIII.—SOUTH-EASTERN COUNTIES.

SELKIRK.

Borthwickbrae [Hawick]	W. E. Lockhart, Esq...	8	0 2	800 T	35·20	...
Bowhill	Mr. Mathison	9	11 0	697 T	29·73	171
Galashiels (Abbotsford Rd.).....	Dr. Somerville	5	0 4	412 T	32·21	214

PEEBLES.

Glenrath (Manor)	Mr. S. Linton.....	5	1 2	764 π	31·35	132
Stobo Castle	Mr. J. Borthwick	3	0 9	590	30·85	...
Cairnmuir	A. Buchan, Esq... ..	12	0 5	1150	49·01	...
Eddlestone (Portmore)	W. H. Cameron, Esq... ..	...	...	1000	37·76	177
ⁿ N. Esk Reservoir [Penicuik] ...	Mr. J. Garnock	11	0 6	1150 π	41·55	173

BERWICK.

Coldstream (Milne Graden)	A. Buchan, Esq.....	8	0 8	103	25·00	...
Lauder (Thirlestane Castle).....	Mr. J. Whitton	3	0 3	558 T	30·00	...
ⁿ Marchmont House	Mr. P. Loney	5	1 0	500 T	33·92	227
Berwick (Paxton Ho.)	A. Buchan, Esq.	5	0 6	90	28·28	...
St. Abb's Head	Bd. of Northern Lights	...	0 4	211 P	23·31	...

HADDINGTON.

Yester.....	A. Buchan, Esq.....	12	1 0	425	36·03	...
Haddington Asylum	„ „	5	1 0	235	29·52	...
ⁿ East Linton	Mr. J. Storie	3	0 3	90 T	27·98	154
Prestonkirk (Smeaton)	A. Buchan, Esq.....	...	...	...	27·45	...
Drem (Craigielaw).....	„ „	5	...	...	29·24	...
North Berwick (Seacliffe).....	„ „	8	5 0	80	26·60	...

EDINBURGH.

ⁿ Moorfoot Hills (Gladhouse)	W. H. Cameron, Esq... ..	...	...	900	38·50	186
Penicuik (Edgelaw) .....	„ „ „ .....	...	...	...	37·22	179

DIVISION XIII.—SOUTH-EASTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which 01 or more fell.
		Diameter	Height Above Ground	Height Above Sea Level	1879	
			ft. in.	feet.	inches.	
EDINBURGH—(con.)						
Rosewell Asylum	A. Buchan, Esq.....	5	0 6	695	33·94	..
^D Glencorse	W. H. Cameron, Esq....	...	0 6	787	44·95	...
Harlaw .....	" .....	...	0 1	800	38·45	...
Lasswade (Broomieknowe)	A. McDowall, Esq.....	5	1 0	...	30·20	...
Swanston	W. H. Cameron, Esq....	...	0 6	555	36·60	...
[†] Dalkeith	A. Buchan, Esq.....	4	0 4	183	26·83	...
Colinton (Fernielaw).....	J. Leslie, Esq., C.E. ...	11	0 6	500	39·10	...
" (Bonally).....	W. H. Cameron, Esq....	...	...	...	40·75	...
Liberton (Alnwick Hill) .....	" .....	...	...	400	35·79	189
^D Inveresk	Mr. McAuslane	9	2 0	30 T	31·32	160
^D Costorphine (Meadowfield)	Miss Paterson	8	9 4	155 T	25·75	...
Edinburgh (Charlotte Square)...	J. Leslie, Esq., C.E. ...	11	0 6	230	28·53	...
" (")	"	12	63 0	300	21·74	...
" (Cumin Place)	A. Buchan, Esq.....	5	1 0	274	32·63	...
" (Streatham Ho.) .....	" .....	...	...	...	29·40	...
Leith	"	5	0 5	80	27·84	...
"	The Meteor. Council ...	8	1 8	22	24·89	187
LINLITHGOW.						
Linlithgow (Rockville)	A. Buchan, Esq.....	5	0 5	260	28·78	...
Abercorn.....	Rev. D. Playfair	5	0 10	130	26·69	...

DIVISION XIV.—SOUTH-WESTERN COUNTIES.

LANARK.

Biggar (Wiston)	Mr. W. Core	3	0 0	860 T	42·60	...
^D Douglas (Newmains).....	Mr. J. Russell.....	3	0 4	783 T	33·62	205
^D Biggar (Cambus Wallace)	Captain Paul	6	0 6	748 T	27·47	208
^D Lanark (Ridge Park)	C. Lindsay, Esq.....	5	0 4	634 T	29·85	176
Hamilton (Bothwell Castle)	Mr. A. Turnbull	10	18 0	164 T	28·65	147
[†] Cambuslang (Bushy Hill) <i>new g.</i>	Dr. Muirhead.....	5	1 0	146 T	34·50	204
^D Airdrie (Hillend House)	Mr. W. Ritchie	6	4 6	620 T	35·60	111
Glasgow (Observatory)	Prof. Grant, F.R.S. ...	5	0 1	180 T	37·07	204
AYR.						
Ballantrae (Glendrishraig).....	P. Murdoch, Esq.	5	1 0	450	38·19	...
Girvan (Almont)	A. Buchan, Esq.....	...	...	...	46·41	...
^D " (Pinmore)	Hugh Hamilton, Esq...	5	1 0	187 T	47·61	211
" (Turnberry)	Bd. of Northern Lights	...	...	...	41·82	...
Ayr (Auchinlee)	J. Drennan, Esq.	6	4 0	36 T	31·75	...
Kilmarnock (North Craig)	J. M. Gale, Esq., C.E..	12	0 6	310	35·23	...
[†] " (Annanhill)	W. H. Dunlop, Esq. ...	10	0 10	165 T	32·96	...
Ardrossan	The Meteor. Council ...	8	1 0	10	37·59	217
^D Dalry (Carsehead).....	A. B. Aitken, Esq. ...	6	1 2	160 ?	46·81	190

DIVISION XIV.—SOUTH-WESTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which .01 or more fell.	
		Diameter	Height Above Ground	Height Above Sea Level			
RENFREW.							
Mearns (Newton)	P. R. Murdoch, Esq.	5	1 0	350	37·30	...	
Gorbals's Dist.	Ryat Lynn	J. M. Gale, Esq., C.E..	8	0 5	310	45·00	...
	Waulk Glen	„ „ „	12	0 5	280	40·95	...
	Middleton	„ „ „	12	0 5	550	54·90	...
	Nither Cairn	„ „ „	700	52·70	...
Paisley W. Works	Stanely Reservoir	R. Sharp, Esq.	12	1 0	190	43·26	...
	Back Thornlymuir	„ „	12	1 0	646	47·00	...
	Muirhead	„ „	12	1 0	482 ∇	49·76	...
	Springside	„ „	12	1 0	532	56·72	...
Paisley (Ferguslie House)	Mr. J. Thomson	3	0 3	85	34·37	135	
D Glasgow (Queen's Park)	Mr. D. McLellan	8	0 5	144 ∇	30·93	...	
Wemys Bay (Ferncliff)	A. Buchan, Esq.	5	1 0	...	45·69	...	
Shaws W. Wks (Compensation Res)	J. Wilson, Esq., C.E. ...	6	0 9	600	57·40	...	
„ „ (Loch Thom)	„ „ „	5	1 0	643	61·60	242	
„ „ (Shiel Hill)	„ „ „	6	0 9	962 ∇	58·90	...	
„ „ (Mansfield)	„ „ „	5	1 0	580	59·20	242	
„ „ (Spango Burn)	„ „ „	6	0 9	757 ∇	52·50	...	
Greenock	A. Buchan, Esq. ....	...	...	...	48·37	...
D „ (Hole Glen)	J. Wilson, Esq., C.E. ...	5	1 0	603 ∇	59·39	...	
„ (Glenbrae)	„ „ „	6	0 9	574 ∇	57·20	...	

DIVISION XV.—WEST MIDLAND COUNTIES.

DUMBARTON.

Helensburgh (Lyleston)	Forrest Frew, Esq. ....	...	...	...	41·75	...
Alexandria (Auchendennan) ...	A. Scott, Esq.	6	0 9	...	47·90	...
Helensburgh Water Works)	Mr. T. Murray	6	0 3	296 ∇	47·64	173
Alexandria (Cameron House) ...	A. Smollett, Esq.	12	1 0	40	38·80	...
„ (Balloch Castle)	A. J. D. Brown, Esq. ...	7	0 4	91 ∇	44·27	186
Loch Lomond (Firkin)	A. McDowall, Esq.	3	1 0	100	80·00	...
Arrochar	Rev. J. Dewar	5	0 9	10	71·56	...

STIRLING.

Strathblane (Mugdock Reservoir)	J. M. Gale, Esq., C.E..	8	0 6	320	47·70	...
Falkirk (Kerse)	A. Brown, Esq.	8	1 0	...	29·20	...
D Killearn (Old Ballikinrain) ...	Miss Anstruther	5	0 6	200	43·54	197
Stirling (Polmaise Gardens)	Mr. W. Ritchie	6	1 3	12	35·95	...

BUTE.

Arran (Pladda)	Bd. of Northern Lights	...	3 3	55 ∇	33·52	...
Holy Island (Lamlash Light Ho.)	„ „ „	...	...	...	31·10	...
Rothesay (Mount Stuart)	J. Kay, Esq.	3	3 0	100	47·60	...
D „ (Barone Cottage)	„ „	5	1 0	116 ∇	50·43	213

ARGYLL—(MAINLAND.)

Ardrishaig	A. Buchan, Esq.	8	0 6	14	57·68	...
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DIVISION XVI.—EAST MIDLAND COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which ·01 or more fell.
		Diameter	Height Above Ground	Height Above Sea Level	1879	
			ft. in.	feet.	inches.	
FIFE—(con).						
Isle of May	Bd. of Northern Lights	...	...	...	19·60	...
Elie	A. McDowall, Esq. ...	5	1 0	30	31·30	...
Falkland (Lothrie Reservoir) ...	A. Buchan, Esq.	5	0 1	700	43·78	...
Strathmiglo (Leden Urquhart) ..	J. Thom, Esq.	8	0 6	615 †	41·24	163
Auchtermuchty	Dr. Troup	5	1 0	179 †	34·68	184
Cupar (Birkhill)	A. Buchan, Esq.	5	0 5	130	29·90	...
St. Andrews	" "	5	0 6	57	32·12	...
Leuchars (Ballmullo)	" "	5	0 9	100	28·91	...
Kilmany (Mountquhanie House) ..	D. Gillespie, Esq.	3	1 3	240	25·20	...
PERTH.						
D Culross (West Grange)	J. J. Dalgleish, Esq. ...	5	0 2	116 †	39·51	...
Kincardine (Tulliallan)	A. Buchan, Esq. ....	...	...	...	30·76	...
Menteith (Cardross)	H. D. Erskine, Esq. ...	8	0 10	...	40·45	...
Aberfoyle	J. M. Gale, Esq., C.E..	8	0 6	60	49·90	...
Dunblane (Kippenross)	J. Stirling, Esq.	6	0 4	150	29·80	...
Loch Dhu	J. M. Gale, Esq., C.E..	8	0 6	325	67·50	...
Ledard .....	" " "	...	...	1500	59·30	...
Loch Drunkie	" " "	8	0 6	420	54·60	...
" Vennachar	" " "	8	0 6	275	50·50	...
Lanrick Castle	A. Glover, Esq.	3	0 9	...	42·35	155
Bridge of Turk	J. M. Gale, Esq., C.E..	8	0 6	270	57·50	...
Loch Katrine (Tunnel Hill Top) ..	" " "	8	0 6	830	66·60	...
Between Glen Finlas & Bed Ledi. ..	" " "	8	0 6	1800	48·20	...
Glen Gyle .....	" " "	...	...	380	87·00	...
Auchterarder (Glensherup)	W. Chisholm, Esq. ...	11	0 11	900 †	60·40	...
" House	Mr. Maclean	8	2 3	172 †	47·85	...
D " (Colquhalzie)	Mr. R. Morton	8	0 5	150 ?	34·98	124
D Balquhidder (Stronvar)	J. Dickson, Esq.	5	1 0	420	60·63	...
Lochearnhead	A. Buchan, Esq.	5	1 0	...	49·23	...
Crieff (Ochertyre)	" "	3	0 9	325	38·59	...
Perth Academy	Dr. Miller, F.R.S.E. ...	15	64 5	83 †	19·15	...
" (Inchbank)	" "	10	1 6	24 †	33·03	...
Errol (Fingask Castle)	A. Buchan, Esq.	5	0 9	80	30·38	...
D Dunkeld (Inver Braan)	Rev. J. M. B. Murdoch	...	...	...	36·55	...
" (H.R.S.)	The Station Agent	5	1 0	225	39·24	...
Meigle (Belmont Castle)	Mr. J. S. Robertson ...	8	37 0	237	28·90	...
" (Arthurstone House)	P. Carmichael, Esq. ...	5	2 3	187 †	29·37	...
" Garden)	" "	5	2 3	196 †	30·44	...
D Aberfeldy (H.B.S.)	The Station Agent	5	...	...	28·94	...
Pitlochrie (Bonskeid)	A. Buchan, Esq.	6	0 6	600	29·85	...
Blair-Athole	Mr. A. Cameron	5	1 0	420 †	29·78	180
D Dalnaspidal (H.R.S.)	The Station Agent	5	1 6	1450	53·43	234
FORFAR.						
D † Dundee (Westfield Cottage)	Charles Clark, Esq. ...	5	6 0	50 †	29·09	184
D † " (Eastern Necropolis)	Mr. W. R. McKelvie ...	3	0 5	167 †	32·30	148

DIVISION XVI.—EAST MIDLAND COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which (or more fell.
		Diameter	Height Above Ground	Height Above Sea Level	1879.	
			ft. in.	feet.	inches.	
FORFAR—(con.)						
D Broughty Ferry (Douglas Ho.)...	Mr. K. Graham	5	5 6	60 ∇	32·93	186
D† Craigton	(daily) J. Watson, Esq., C.E.	5	0 3	481	41·17	...
† "	(monthly) " " "	11	0 3	481	40·88	159
† Crombie Reservoir	" " "	11	0 3	522 ∇	42·26	...
† Hill Head	" " "	11	0 3	570 ∇	42·12	...
D Arbroath	A. Brown, Esq., LL.D.	8	2 0	60 ∇	32·08	152
Guthrie (Bolsham)	A. Buchan, Esq. ....	...	...	300	37·59	...
D Kirriemuir (Lintrathen)	J. Watson, Esq., C.E.	8	1 0	700	33·78	182
" (") monthly	" " "	11	1 0	700	34·65	...
" (") Creich Hill	" " "	8	1 0	1500	31·10	...
Montroseness	Bd. of Northern Lights	...	...	...	18·72	...
Montrose (Sunnyside Asylum)...	A. Buchan, Esq.	5	0 5	200	34·65	...

DIVISION XVII.—NORTH-EASTERN COUNTIES.

KINCARDINE.

The Burn [Brechin]	Col. McInroy	4	0 6	250	35·50	...
Lawrencekirk (Johnstone Lodge)	A. Buchan, Esq.	5	0 11	370	42·43	...
Fettercairn	A. C. Cameron, Esq. ...	5	0 3	230 ∇	32·40	190

ABERDEEN.

D† Braemar	Mr. J. Aitken	8	0 9	1114 ∇	27·68	...
D† Aboyne (Glentanar)	Mr. D. Thomas	5	1 0	576 ∇	35·15	156
Drumoak (Drum Castle) monthly	Mr. G. Gammie	5	1 6	275 ∇	36·19	...
D Cromar (Logie Coldstone Manse)	Rev. G. Davidson	5	1 0	694 ∇	28·12	206
" (") Loanhead	Mr. A. Farquharson ..	5	1 0	743 ∇	28·48	223
" (Tillypronie)	Mr. R. Littlejohn	5	1 0	1120 ∇	31·08	234
† Aberdeen (Bonaccord Street) ...	Rev. Dr. Beverley	5	1 0	82	31·26	240
† " (Rose Street) new g.	" " "	5	1 0	82	31·69	...
"	A. Cruickshank, Esq. ...	5	0 5	95 ∇	30·03	...
"	The Met. Council	8	1 9	103	31·57	208
D " (Gordon's Hospital) ...	J. Dale, Esq.	8	1 6	63 ∇	29·62	215
" (Skene Street) new g. ...	Rev. Dr. Beverley	5	2 0	95 ∇	29·65	...
* " (Grammar School) ...	" "	5	4 8	98 ∇	32·30	232
" (")	" "	5	6 1 0	161	28·62	...
D Midmar (Blackstock)	Mr. J. Barron	5	0 8	570 ∇	36·20	188
D " (Dunecht Observatory)..	Rt. Hon. Lord Lindsay	8	0 11	461 ∇	30·13	197
Skene (Kinnmudy)	Miss E. Johnston .....	...	...	500	26·64	...
Monymusk (Cluny Castle)	Mr. McDonald	5	0 1	280 ∇	33·34	199
Inverury (Manar Farm)	Mr. J. Walker	8	15 0	270 ?	31·02	...
Ellon (Tillydesk)	W. Hay, Esq.	11	0 4	349 ∇	32·93	...
D Old Deer	J. Walker, Esq.	5	2 0	135 ∇	28·40	212
D New Pitsligo	Mr. D. Sturrock	3	0 3	505	33·93	206

BANFF.

D Tomintoul	Rev. A. Guthrie	6	1 1	1103	27·69	...
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DIVISION XVII.—NORTH EASTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of	Days on which ·01 or more fell.
		Diameter	Height Above Ground	Height Above Sea Level	Rain.	
					1879	
			ft. in.	feet.	inches.	
BANFF—(con).						
D Keith (H.R.S.)	The Station Agent	5	1 0	364 T	32·10	167
ELGIN OR MORAY.						
Grantown	Mr. W. Duncan	5	1 1	712 A	27·75	163
„ (H.R.S.)	The Station Agent	5	...	...	25·07	...
D Dava (H.R.S.)	„ „ „	5	1 2	1000 L	30·65	185
Aberlour (Elchies)	Mr. J. Milne	8	1 6	560 P	30·91	163
Forres (H.R.S.)	The Station Agent	5	1 0	20	23·48	126
Gordon Castle	Mr. Webster	8	1 3	107	28·36	...
D Elgin (Highfield)	A. Cameron, Esq.	5	0 11	80 T	24·68	164
Burghhead (H.R.S.)	The Station Agent	5	1 1	18	21·74	...
Covesca Skerries	Bd. of Northern Lights	...	...	...	13·95	...
NAIRN.						
Nairn (Acharéidh)	A. Clarke, Esq.	8	1 0	60 T	23·08	...
„	The Meteor. Council	8	1 9	84	23·86	185

DIVISION XVIII.—NORTH-WESTERN COUNTIES.

WEST ROSS. ‡

D*Loch Alsh (Inverinate House)	Mr. Munro	5	3 0	150	67·03	145
D Stromé Ferry (H.R.S.)	The Station Agent	5	1 0	40	50·41	...
D Strathconan [Beaully]	Mr. D. McIver	5	1 0	450	43·85	...
Loch Vraon	J. D. Baldry, Esq., C.E.	8	0 7	750	50·21	...
Lochbroom (Loch Drome)	„ „ „	8	0 7	850	49·88	...
Braemore House	„ „ „	8	0 7	750	50·56	...
„ Lodge	„ „ „	8	0 7	100	39·82	...
Loch Broom	Mr. M. Macleay	5	0 6	48	40·64	233
Isle of Lewis (Stornoway)	Bd. of Northern Lights	...	3 4	31 P	26·37	...
„ („ Lewis Castle)	A. Buchan, Esq.	5	0 10	82	43·68	...
„ (Butt of Lewis)	Bd. of Northern Lights	...	3 6	...	35·60	...

EAST ROSS. ‡

Achonachie Lodge [Beaully]	W. C. Preston, Esq.	5	1 0	125 B	27·54	237
D Dingwall (H.R.S.)	The Station Agent	5	1 1	3	20·01	...
Cromarty	Bd. of Northern Lights	...	3 4	28 P	27·89	...
*Invergordon Castle	B. B. Æ. McLeod, Esq.	5	1 0	20 P	24·42	138
D Alness (Ardross Castle)	Mr. R. Massie	5	1 0	450 A	34·55	190
D*Tain (Fearn)	R. Gordon, Esq.	5	1 0	58 A	25·38	128
Tarbetness	Bd. of Northern Lights	...	3 4	61 P	18·19	...

WEST INVERNESS.

Loch Shiel (Kinlochmoidart)	W. R. Macdonald, Esq.	5	0 6	27	66·1†	216
D Fort William (Public School)	C. Livingstone, Esq.	5	0 3	36 A	68·10	...
D Loch Sheil (Glenfinnan)	Major Macdonald	5	1 0	35 P	86·62	...

‡ Including Cromarty.

DIVISION XVIII.—NORTH-WESTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1879	Days on which "01 or more fell.
		Diameter	Height Above Ground	Height Above Sea Level		
			ft. in.	feet.	inches.	
WEST INVERNESS—(con).						
Glenquoich	A. Buchan, Esq.	8	2 0	660	92·05	...
Isle of Skye (Oronsay)	Bd. of Northern Lights	...	0 6	15 ?	33·04	...
D ,, (Broadford)	Mr. Logan	5	1 0	45	56·87	141
,, (Kyle Akin)	Bd. of Northern Lights	...	0 2	3 ?	48·66	...
,, (Sligachan) <i>monthly</i>	Mr. Butters	8	1 6	74 †	55·25	...
D* ,, (Portree)	Mr. J. Grant	5	1 3	165 †	59·50	227
,, (,, House)	P. Speirs, Esq. ....	...	...	...	47·09	...
,, (Dunvegan)	Mr. R. Mackintosh.....	5	1 0	24	60·61	158
Rona	Bd. of Northern Lights	...	...	...	34·00	...
Barrahead	,, ,, ,,	...	3 0	640 ?	27·79	...
S. Uist (Ushenish).....	,, ,, ,,	...	0 4	157 ?	45·45	...
N. Uist (Monach) .....	,, ,, ,,	...	...	...	40·00	...
,, (Spanish, Loch Maddy) ..	C. Shaw, Esq.	5	1 0	30	64·03	...
Harris (Island Glass)	Bd. of Northern Lights	...	3 4	50 ?	35·97	...
EAST INVERNESS.						
D Roy Bridge (Kinchillie)	J. Hutton, Esq.	5	1 0	407 †	47·49	...
D ,, ,, (Brae Lochaber) ..	Sergt. A. Fraser.....	5	1 0	306 †	44·73	211
*Laggan	Mr. A. McIntosh	5	0 9	821 †	35·90	...
Strath Errick (Farraline House).	Capt. Fraser	3	0 6	700 †	41·70	...
Glen Strathfarrer .....(<i>monthly</i>)	Mr. D. Fraser.....	5	1 0	461 †	55·98	...
D Inverness (H.R.S.)	The Station Agent.....	5	...	...	27·61	...
D† ,, (Culloden House).....	D. Forbes, Esq.	6	4 0	104 †	25·48	...
D Cawdor [Nairn]	J. Joss, Esq.	5	1 0	260	28·37	190

DIVISION XIX.—NORTHERN COUNTIES.

SUTHERLAND.

D Golspie (H.R.S.)	The Station Agent.....	5	0 9	27	29·46	...
D ,, (Dunrobin Castle)	Mr. D. Melville	5	1 0	7 †	29·65	187
,, (,, ,,) <i>monthly</i>	,, ,, ,,	3	0 3	6 †	29·14	...
Laig	A. Buchan, Esq.	3	3 4	451	31·59	...
Assynt (Achumore)	J. Elliot, Esq.	3	0 9	200 ?	66·80	...
Scourie.....	J. Simpson, Esq.	3	0 5	26	31·10	...
Tongue Ho.....	A. Buchan, Esq.	3	0 5	45	27·11	...
Cape Wrath	Bd. of Northern Lights	...	3 6	355 ?	37·03	...

CAITHNESS.

D Altnabreac (H.R.S.)	The Station Agent.....	5	...	...	22·78	...
Wick	The Meteor. Council ...	8	1 9	77	22·30	209
D† ,, (H.R.S.)	The Station Agent.....	5	1 0	...	20·13	...
†Wick (Nosshad)	Bd. of Northern Lights	8	4 8	127 ?	22·48	...
D† Watten (H.R.S.)	The Station Agent.....	5	0 9	75	25·88	242
D Georgemas Junction (H.R.S.) ...	,, ,,	5	...	...	36·57	...
Thurso (Holburnhead)	Bd. of Northern Lights	3	0 8	60 ?	26·20	...
Dunnethad	,, ,, ,,	...	3 0	...	25·15	...
Pentland Skerries	,, ,, ,,	...	3 3	72 ?	20·94	...

DIVISION XIX.—NORTHERN COUNTIES—(continued.)

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1879	Days on which -01 or more fell.
		Diameter	Height Above Ground	Height Above Sea Level		
			ft. in.	feet.	inches.	
ORKNEY.						
D S. Ronaldshay (Roeberry)	J. Gray, Esq.	5	1 2	101 $\frac{1}{2}$	27·70	232
Hoy (Cantickhead)	Bd. of Northern Lights	...	0 6	...	24·60	...
„ (Graemsay Sound, East=High)	„ „ „	...	3 4	27 $\frac{1}{2}$	29·81	...
„ („ „ West=Low)	„ „ „	...	3 4	...	22·97	...
D† Pomona (Tankerness Hall)	S. Leitch, Esq.	5	0 9	12 $\frac{1}{2}$	27·22	224
„ (Deerness)	Rev. C. Clouston, LL.D.	5	...	...	29·96	...
Shapinsay (Balfour Castle)	Col. Balfour	4	0 6	50	24·60	...
D† Pomona (Sandwick)	Rev. C. Clouston, LL.D.	11	2 0	78	32·48	237
Stronsay (Auskerry)	Bd. of Northern Lights	...	...	...	25·75	...
Sanda (Start Point)	„ „ „	11	0 6	29 $\frac{1}{2}$	25·93	...
North Ronaldsay	„ „ „	...	3 4	21 $\frac{1}{2}$	27·66	...
SHETLAND.						
Sumburghead	Bd. of Northern Lights	...	...	...	22·97	...
„ (Dunroseness) ...	The Meteor. Council ...	8	1 0	84	27·58	240
Bressay Lighthouse	Bd. of Northern Lights	5	0 4	60	21·40	...
Stourhead .....	„ „ „	...	...	...	39·70	...
D East Yell	Mr. A. D. Mathewson..	5	1 0	180	35·78	306

1873

2069

I R E L A N D.

DIVISION XX.—MUNSTER.

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which ·01 or more fell.
		Diameter	Height Above Ground	Height Above Sea Level	1879.	
			ft. in.	feet.	inches.	
CORK.						
Roche's Point	The Meteor. Council ...	8	1 9	32	55·14	201
Queenstown (Altavilla)	D. Scott, Esq., M.D. ...	32	15 0	140	32·96	212
D Cork (Blackrock)	J. B. Binyon, Esq. ...	10	6 0	30 †	45·17	194
D „ (Royal Institution)	Dr. Caulfield	10	50 0	70	38·40	161
„ (Newsom's Quay)	W. Miller, Esq. ...	3	30 0	40	41·10	...
D Glenville	H. Hudson, Esq., M.D.	8	2 0	514 †	47·51	216
Fermoy (Gas Works)	Mr. J. Grant	5	1 1	...	37·88	...
KERRY.						
D Caherciveen (Darrynane Abbey)	D. O'Connell, Esq.	5	1 1	12 †	48·43	247
Dromore Castle	R. J. Mahony, Esq. ...	5	0 6	50 †	58·48	200
Kenmare (Derreen)	W. Holbrow, Esq.	6	1 0	74 †	59·39	184
Valentia (Telegraph Station) ...	The Meteor. Council ...	8	1 0	12	52·33	235
Cara (Lake side)	J. B. Kennedy, Esq. ...	5	0 4	125 †	44·10	...
„ (Lodge)	„ „ „	5	0 4	112 †	44·87	...
D Castlemaine (Keel House)	L. Rae, Esq., C.E.	5	...	...	44·44	230
D Tralee (Castlemorris)	W. H. Deane, Esq., C.E.	5	1 0	25	36·98	212
WATERFORD.						
Waterford (Cappoquin)	Sir J. W. Keane, Bt. ...	5	1 0	253	43·48	198
D „ (Brook Lodge)	C. Perceval Bolton, Esq.	5	3 8	100 †	38·80	181
„ (Summerville)	E. A. White, Esq.	5	1 0	140 †	36·76	185
D „ (Gas Works)	Mr. Danskin	5	...	...	38·49	...
D Portlaw (Mayfield Factory)	S. B. Pim, Esq.	24	20 0	50	35·71	...
„ (Curraghmore)	Mr. G. Fairbairn	5	4 0	...	48·30	...
TIPPERARY.						
D Cahir (Tubrid)	Rev. H. Palmer	5	1 0	280 †	34·18	217
D Clonmel (Glenam)	Miss Grubb	8	1 4	80 †	39·33	212
D Tipperary (Henry Street)	J. Dowling, Esq., M.D.	5	1 0	400 †	36·59	205
D Ballina [Killaloe]	J. Digan, Esq.	10	5 0	115	42·23	192
D Nenagh (Castle Lough)	A. Parker, Esq.	5	1 3	120 †	37·76	222
D „ (The Lodge)	Heber Koe, Esq.	5	0 10	100	34·30	212
D „ (Luska Lodge)	G. A. Waller, Esq. ...	5	1 0	116	30·02	161
D Gurteen [Shinrone]	Miss Smith	5	1 0	267 †	34·54	223
LIMERICK.						
D Newcastle West	Rev. J. T. Hayes	5	3 0	219 †	36·80	193
Jane Ville [Tipperary]	R. Harding, Esq.	5	1 0	504	42·34	...

DIVISION XXI.—LEINSTER—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which .01 or more fell.
		Diameter	Height Above Ground	Height Above Sea Level		
			ft. in.	feet.	1879	
					inches.	
DUBLIN.—(con.)						
D Monkstown (Easton Lodge)	Greenwood Pim, Esq....	8	0 8	90	28·19	...
Kingstown	The Meteor. Council ...	8	3 5	50	28·67	229
Dublin (Belvedere Place)	H. A. Cosgrave, Esq....	...	...	...	27·32	...
† „ (Fitz William Square) ...	Dr. J. W. Moore	5	3 4	54 T	28·86	208
Glasnevin (Botanic Gardens) ...	H. W. Moore, Esq. ...	8	0 11	56 A	28·00	184
D Killsallaghan (Corrstown House)	H. A. Cosgrave, Esq....	...	...	...	33·19	...
D Balbriggan	Rev. S. P. Warren ...	5	1 0	57 T	32·77	...
„	„ „ „	5	1 0	57 T	32·01	...
MEATH.						
D Clonoe (Williamstown)	W. Johnston, Esq.....	5	1 0	300	29·77	...
D Trim	P. Malone, Esq., C.E.	10	4 2	180 T	33·29	159
D Navan (Balrath)	R. W. Walsh, Esq., C.E.	5	1 0	160	28·97	...
WESTMEATH.						
D Athlone (Twyford)	J. Hodson, Esq.....	5	5 0	188 A	38·96	245
D Belvedere (The Gardens)	C. Brinslay Marlay, Esq.	5	1 0	367 T	34·97	149
LOUTH.						
Stephenstown	Col. Fortescue	5	0 11	75 A	36·69	222
D Dundalk (Farndreg)	J. Barton, Esq.	5	1 0	90 T	35·77	179
„ (Ravensdale Park)	Rt. Hon. Lord Clermont	8	1 0	360 T	51·60	179
D Greenore	T. Chambers, Esq.....	5	1 0	4 L	37·53	206
LONGFORD.						
Edgworthstown (Currygrave Ho)	J. Wilson, Esq.	8	1 1	260	35·91	...

DIVISION XXII.—CONNAUGHT.

GALWAY.						
Gort (Cregg Park)	R. J. Lattey, Esq.....	5	3 0	130 A	40·18	193
D Galway (Queen's College)	Prof. Curtis	16	9 0	30	42·10	215
D Ballinasloe (Kilconnell)	Rev. H. E. Muriel.....	5	2 6	320 T	36·60	205
D „	W. H. Kempster, Esq.	5	0 6	150 A	34·98	235
D Ahascragh (Clonbrock)	Rt. Hon. Lord Clonbrock	10	5 6	200 T	44·50	196
D Clifden (Kylemore)	Sir A. Guinness, M.P....	5	1 0	105 T	75·92	236
Tuam (Gardenfield)	H. Kirwan, Esq.	5	6 3	136 T	33·34	...
„ („)	„ „ „	5	6 0	160 T	38·37	...
MAYO.						
Ballinrobe (Creagh)	Mrs. Knox	5	1 0	80	47·24	...
Hollymount (Cloona Castle)	J. Simson, Esq.	3	2 0	120 ?	37·50	...
Westport (Oldhead House)	H. Wilbraham, Esq....	3	1 7	100 T	45·87	...
Crossmolina (Enniscoe) ..	J. Pratt, Esq.....	5	0 11	50 ?	51·31	238
SLIGO.						
Collooney (Markree Observatory)	Miss E. Salles.....	5	0 6	110 T	39·71	...
„ („ „)	„ „ „	31	16 7	148 T	30·85	229

DIVISION XXII.—CONNAUGHT—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which "01 or more fell.
		Diameter.	Height above Ground.	Height above SeaLevel	1879	
			ft. in.	feet.	inches.	
SLIGO.—(con.)						
D Sligo (Mount Shannon).....	F. M. Olpherts, Esq....	5	4 5	70 B	38·01	196
Ballinful (Ardtarmon Cottage)...	C. J. Henry, Esq.	5	3 3	100	29·27	138
LEITRIM.						
D Mohill	H. Ross, Esq.....	5	4 7	...	35·06	170
D Carrick-on-Shannon	R. Bradshaw, Esq., M.D.	5	1 0	150 P	39·41	214
D " "	Mr. J. Cox.....	5	1 0	160	36·57	193
D Drumkeeran (Spencer Harbour).	Lough Allen Clay Co...	5	1 0	166	48·94	179
D " (" " Coll.)	" " "	5	1 0	1100 P	65·46	180

DIVISION XXIII.—ULSTER.

CAVAN.						
D Killeshandra (Drummany)	H. M. Anketell Jones Esq	10	32 6	292 A	39·31	199
D* Belturbet (Redhills)	Rev. E. Whyte Venables	5	0 9	208 A	36·57	203
Lough Allen (Dowra)	H. Howe, Esq.	5	1 0	225	38·96	236
FERMANAGH.						
Enniskillen (Florence Court) ...	Earl of Enniskillen FRS	8	1 9	250 T	48·89	174
" (Lisbellaw)	R. Eadie, Esq.....	5	1 0	200 P	37·84	188
" (") monthly	" "	5	1 0	...	39·34	...
MONAGHAN.						
D Rockcorry	Mr. W. R. Loudon ...	5	1 0	290 A	35·31	187
ARMAGH.						
Flurrybridge	Rt. Hon. Lord Clermont	8	1 0	340 A	44·12	153
D Edward St. Station [Newry] ...	J. L. D. Meares, Esq...	5	1 0	22 A	36·63	167
D Armagh Observatory.....	Rev. Dr. Robinson F.R.S	10	1 7	208 A	32·27	202
" "	The Met. Council .....	...	...	...	32·87	...
DOWN.						
D Kilkeel	Rev. E. O'Brien Pratt	5	1 6	40	35·76	200
D Warrenpoint (Summer Hill).....	Mr. B. M. Kernan	5	1 0	30	44·44	165
D Hilltown	Mr. H. Hall	5	1 0	430	40·61	160
Newcastle (Fairleigh)	Rev. J. H. Seymour ...	5	1 5	12	58·21	174
Castlewellan (Lough Island) ...	J. Smyth, jun. Esq., C.E.	10	3 0	442 T	38·80	...
† " (Bann Res.)	" " "	8	1 0	440 T	39·80	...
D Rathfryland	B. B. Meek, Esq.	5	1 0	500	36·23	...
Banbridge (Katesbridge)	A. Mulligan, Esq.	5	1 0	230	33·25	172
D Seaforde	Col. Forde	8	0 5	180 A	42·47	201
D Banbridge (Corbet Reservoir) ...	J. Smyth, jun., Esq. C.E.	10	3 0	234 T	35·90	144
D† " (Milltown)	" " "	8	0 8	200 T	33·32	213
D† Waringstown.....	Major Waring	8	0 4	191 A	34·92	222
D Hillsborough (Anahilt).....	Mr. A. Clements	5	1 0	...	36·43	198
Kircubbin (Tubber-na-Carrig)...	W. Browne, Esq.	5	1 0	50	30·62	167

DIVISION XXIII.—ULSTER—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which ·01 or more fell.
		Diameter	Height Above Ground	Height Above Sea Level	1879.	
			ft. in.	feet.	inches.	
DOWN—(con.)						
D Newtownards	Mr. M. Harbison	5	1 7	10	36·46	176
D Sydenham (Alma House)	R. Reade, Esq.	5	1 0	60	39·57	220
Donaghadee	The Meteor. Council ...	8	1 6	30	34·56	209
ANTRIM.						
Lisburn (Prospect Hill School)...	W. J. Morton, Esq. ...	5	1 0	241 T	36·00	188
D Aghalee [Lurgan]	Lancelot Turtle, Esq... 5	5	1 0	105 T	35·60	182
D† Belfast (Queen's College)	Mr. W. Taylor	11	7 4	68 T	33·52	...
D „ (New Barnsley)	J. Firth, Esq.....	5	1 0	200 T	42·91	202
D† „ (Antrim Rd.)	G. Thompson, Esq. ...	7	7 0	144 T	35·26	204
White Abbey (Abbeyville)	Rev. R. W. Bland.....	8	1 9	63 T	35·64	196
Ballymena	A. Dawson, Esq.	5	1 0	150 T	39·88	245
D Larne (Carnlough)	J. Reside, Esq.	5	1 0	8	38·72	191
D Bushmills	Mr. D. Elliott	5	1 0	33 T	29·56	195
LONDONDERRY.						
D Londonderry (Knockan)	Rev. H. F. Stevenson..	5	1 0	300 T	37·32	...
D*Garvagh (Moneydig)	H. R. Morrison, Esq... 5	5	1 0	121 T	35·33	171
D Londonderry (Abercarn Road)...	Mr. J. Conroy	5	1 0	94 T	36·14	261
„	The Met. Council .....	...	...	...	35·82	260
„ (Creggan Res.)	W. J. Robinson, Esq... 8	8	1 0	320	36·60	251
D Limavady	C. D. H. Campbell, Esq. 5	5	4 6	81 T	30·77	228
„ (Drenagh).....	C. T. McCausland, Esq 5	5	1 0	80	32·84	230
Bellarena	Sir F. Heygate, Bt. ...	5	1 0	12 T	32·22	213
Coleraine.....	A. D. Williamson, Esq. 5	5	1 4	25 T	33·51	193
D „	C. D. H. Campbell, Esq. 5	5	14 0	176 T	23·40	228
TYRONE.						
D Caledon Glebe	Rev. W. B. Armstrong	5	1 0	125	30·39	...
D Aghnacloy Archdeaconry	Rev. T. G. Stokes	5	4 6	254 T	34·90	...
Moy (Derrygally)	W. M. Bond, Esq.....	5	5 6	60	30·99	155
„ („)	„ „ „	10	5 6	60	31·54	...
D Dungannon (Donaghmore)	J. Brown, Esq.	5	1 0	300 T	36·01	194
Beragh (Clogherny)	Rev. R. Dixon, D.D....	8	1 0	434 T	42·14	...
D Stewartstown (The Square)	A. Johnston, Esq.	5	1 4	350	38·17	197
D Dungannon (Allan Rock).....	Rev. St. A. Brennan ...	5	1 0	350 T	39·06	...
D „ (Rockdale).....	Lt.-Col. Lowry	5	1 0	300 T	39·66	...
D Stewartstown (Ardrea Rectory)	J. M. Churchill, Esq... 5	5	1 0	191 T	36·66	229
D Omagh (Edenfell)	Col. Buchanan	8	1 0	280	38·15	227
DONEGAL.						
Inver	Rev. F. Carre.....	5	1 0	100	42·65	...
Raphoe (Convoy Ho.)	Col. Montgomery	5	1 0	110 T	38·30	244
„ („)	„ „	5	4 0	109 T	37·01	244
D Ramelton	J. A. Mahony, Esq. ...	5	1 2	21	39·11	213
D „ (Ballyare)	G. M. W. Hill, Esq... 5	5	1 0	60 T	34·59	217
D „ (Killygarvan)	C. H. Cochrane, Esq... 5	5	0 10	11 L	38·08	218
D Buncrana (Rockfort).....	T. Colquhoun, Esq. ...	5	1 0	15	36·88	221
Moville	Mr. J. Lowry	8	2 0	78 L	38·85	244
D Carndonagh	Rev. A. Pinkerton.....	5	1 0	255 T	41·14	223

**SUPPLEMENTAL TABLE OF IMPERFECT RETURNS,
AND OF THOSE WHICH, FOR VARIOUS REASONS, ARE NOT INSERTED IN
THE GENERAL TABLES.**

DIV.	COUNTY.	STATION.	OBSERVER.	Rain Gauge.			Depth of Rain. 1879
				Diameter.	Height above Ground	Height Above Sea Level.	
II.	Sussex	Eastbourne	Russell Scott, Esq...	8	ft. 10 0	feet. 110	inches. 33·63
"	"	Hastings, Harmers Res.	W. Andrews, Esq....	8	1 0	77	31·20
"	Hampshire..	Selborne	T. Bell, Esq., F.R.S.	6	4 0	400	41·89
III.	Hertford ...	Hemel Hempstead.....	{ Messrs. J. Dickin- son and Co. }	12	3 9	237	34·23
"	"	Rothamstead	{ Messrs. Lawes & Gilbert	72x87	0 9	420	35·41
"	Huntingdon	Waresley	Rev. W. M. H. Elwyn.	8	1 0	193	28·48
"	Bedford.....	Silsoe.....	H. Trethewy, jr. Esq.	5	1 0	...	28·96
"	"	" Wrest Park.....	Mr. G. Ford	5	1 1	...	28·91
IV.	Suffolk ...	Ipswich, Woodbridge-rd	{ S. Alexander, Esq.	5	1 0	90	30·19
"	"	" Fonnereau-rd.	"	"	"	"	"
V.	Devon ...	Dartmoor, Med. Off. Lwn	{ Mr. Tooker	5	0 8	1389	87·86
"	"	" Princetown...	"	"	"	"	"
"	"	Widdecombe Vicarage..	Rev. J. Williams.. {	5	7 0	810	} 54·62
"	"	"	"	5	1 0	804	
"	"	Okehampton, Goldburn	E. P. Burd, Esq. ...	5	3 0	500	43·77
"	"	Tiverton, Exe Villa ...	H. S. Gill, Esq.	5	1 0	230	39·60
VI.	Shropshire...	Burford [Tenbury] ...	Rt. Hn. Ld. Northwick	5	1 2	193	22·99
"	"	Horsehay	G. Rouou, Esq.	5	3 0	...	23·49
"	"	Market Drayton, Nor- ton-in-Hales	{ Rev. F. Silver	8	1 0	335	28·50
VIII.	Cheshire {	Altrincham, Groby-rd.	R. Swindells, Esq.,	8	1 3	185	} 30·06
"	" {	Bowdon, Wilton Villa..	C.E.	8	1 3	218	
"	" {	" The Beeches..	J. Sidebotham, Esq.	8	0 5	165	} 31·75
"	" {	" Erlesdene.....	"	8	0 5	211	
"	Lancashire {	Brathay Hall [Amble- side]	{ G. Redmayne, Esq.	5	1 6	120	64·03
IX.	York	Sheffield, Sharrow	H. Palmer, Esq.... {	8	1 0	400	} 31·52
"	"	"	"	5	1 0	400	
XI.	Pembroke {	Precelly Mountains,	{ E. P. Phillips, Esq.	5	2 0	650	68·24
"	Cardigan {	Lampeter, St. David's College.....	{ Prof. A. W. Scott...}	8	5 0	420	42·04
XIII.	Edinburgh..	Clubbiedean	W. H. Cameron, Esq.	...	0 1	750	33·74
XV.	Dumbarton..	Arddarroch	Mr. McAllister	5	0 9	80	65·50
XVIII.	Ross	Tain, Springfield	Mr. McLardy	5	1 0	80	25·17
XXI.	Dublin	Dublin O.S.O.....	{ Lt.-Col. Martin, } R.E. }	5	3 0	170	} 28·45
"	"	"	"	8	1 2	165	

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