SYMONS'S

MONTHLY

METEOROLOGICAL MAGAZINE.

CLXIV.] SEPTEMBER, 1879. [PRICE FOURPENCE, *or 5s. per ann. post free.*

THE BRITISH ASSOCIATION AT SHEFFIELD.

THE days when the British Association drew its 3,000 and upward Members and Associates seem to have passed, or else we find it hard to understand the limited attendance at Sheffield, a centre of manufactures (which are really applied science), a town extremely accessible by rail, and where the local authorities, if they did not obtain success, deserved it.

During the twenty-five years, 1854 to 1878 inclusive, the average attendance was 2188; in 1879 it was only 1404, being the smallest during the whole period, with the exception of the meetings at Cheltenham, Cambridge, and Plymouth. We hope that in 1881 things will turn round, for it would be unreasonable to expect a large attendance at Swansea, where the meeting is to be held in 1880.

The following list of Meteorologists present at the meeting supports the general statistics quoted above; numerically, it is the shortest list we ever printed:—

Chadburn, A.	Sheffield.	Lowenthal-Lonsdale, Prof.	Bristol.
Clark, F. J.	Street.	Mackeson, H. B.	Hythe.
Dines, G.	Walton on Thames	Mello, Rev. J. M.	Chesterfield.
Dymond, E. E.	Apsley Guise.	Muirhead, Dr.	Cambuslang.
Elliot, R., F.R.S.E.	Wolfelee.	Osler, A. Follett, F.R.S.	Birmingham.
Evans, J., V.P.R.S.	Hemelhempstead	Palmer, H.	Sheffield.
Everett, Prof. J. D., F.R.S.	Belfast.	Pengelly, W., F.R.S.	Torquay.
Field, Rogers, C.E.	London.	Rawson, Sir R. W., K.C.M.G.	West Drayton.
Fordham, H. G.	Royston.	Rosse, Rt. Hon. Earl of, F.R.S.	Birr Castle.
Glaisher, J., F.R.S.	Blackheath.	Smith, B. Woodd	Hampstead.
Harrison, J. P.	Norwood.	Talmage, C. G.	Leyton.
Healey, G.	Windermere.	Taylor, T.	Aston Rowant.
Hopkinson, J.	Watford.	Verney, Capt., R.N.	Bangor.
Hughes, G. P.	Wooler.	Watson, W. H.	Braystones.
Jackson, M.	Ramsgate.		
Latham, Baldwin, C.E.	London.		

The number of meteorological papers was correspondingly small, the following being all that come within the scope of this magazine:—

Baldwin Latham—On the Temperature of Town Water Supplies.
Joseph Lucas—On the Quantitative Elements in Hydrogeology.
Professor Everett—Report of Committee on Underground Temperature.
Dr. M. Grabham—Report of Committee on Atmospheric Electricity.

James Glaisher, F.R.S.—Report of the Committee on Luminous Meteors.
Professor G. Forbes—On an Instrument for Determining the sensible warmth of the Air.
H. Courtenay Fox—On the Synchronism of Mean Temperature and Rainfall in the Climate of London.
Baldwin Latham—Experiments on the influence of the angle of the lip of Rain-gauges on the quantity of Water collected.
A. E. Fletcher—To exhibit an improved form of Anemometer.
J. Lowenthal-Lonsdale—On an improved Rain-gauge.
Professor J. D. Everett, F.R.S.—On some broad features of Underground Temperature.
E. J. Lowe, F.R.S.—Effects of the frosts of 1860-61 and 1878-79 on Vegetation.

REPORT OF THE COMMITTEE ON ATMOSPHERIC ELECTRICITY IN MADEIRA.

By Dr. M. Grabham.

Daily observations in Madeira are extremely monotonous, showing very little variation, though suggesting the importance of a station so uniform in weather for the careful observance of diurnal and seasonal changes. The writer, giving himself to the observation of the regular winds and breezes, traces the steady rise of electricity in the early morning to a maximum at 11.30 a.m., which declines, after much steadiness for two hours, at first suddenly and then very gradually towards night.

Remarkable fluctuations are noticed during the formation of the maximum, which the writer ascribes to masses of cloud on moist air. A description follows of the daily formation of a thin stratum of cloud during fine calm weather which varies slightly in altitude in accordance with temperature and barometric pressure. The electricity below this cloud is always positive and moderately strong. In the cloud itself it is more feeble but of the same sign. Above the cloud at the station where the observation was taken it was very feeble and irregular but always positive. In warmer weather the vapour does not condense into cloud but appears as a blue transparent haze from above, and presents the same electrical indications.

The writer states that all observations in his own garden were vitiated or mitigated by the presence of lofty trees.

The highest potential was observed upon a rock ninety feet high, a few metres from the shore in the Bay of Funchal.

The thinness of the currents of air constituting sea breezes was demonstrated by flying a kite vertically beyond into the true wind blowing in a contrary direction. Abortive attempts were made to bring down the upper electricity through the lower currents. The electricity of the general north-east wind, which is identical with the trade wind, was found on the heights at the east end to be uniformly moderate and positive.

At the approach of rain-clouds at the termination of a period of fine weather the atmosphere invariably gives increased readings and no negative observations were recorded.

A short description follows of the L'este, a kind of sirocco to which Madeira is occasionally subject, and which blows with great force on certain limited mountain districts bringing sand, birds, and other evidence of a distant origin. This wind is extremely dry, in a temperature of 85° the dew points being depressed below freezing. Electrically this wind in its integrity gives no indication of any change whatever except by faint fluctuations about the earth reading.

The writer also notices a very highly electrical condition during the prevalence of L'este wind, of certain clouds which lie quietly among the mountains, though tossed and tumbled on their upper surfaces; he hopes to be able to connect their forms and immobility with their electrical change.

ON AN IMPROVED RAIN GAUGE.

By J. Lowenthal Lonsdale.

A self-recording rain gauge was exhibited by Professor Lowenthal-Lonsdale, which differs in many respects from any of the forms of instrument described

in *British Rainfall*, 1878. The record is obtained by means of a float and rod as in Bevan's gauge, but there is also an intermittent syphon for emptying the gauge when one inch of rain has fallen; as far as we know this is the only recording gauge in which these two principles are combined. The instrument has several advantages over existing forms, and many of the details are well arranged, but of these a full description, and also a sketch of the instrument, will be given in *British Rainfall*, 1879, so we reserve till then all further remarks on its merits.

REPORT OF THE COMMITTEE ON LUMINOUS METEORS.

By James Glaisher.

After recording the regret the Committee felt at the loss of two of the most active workers—Mr. Greg by his retirement, and Mr. Brooke by death—the report stated that the very unfavourable weather had generally caused only very meagre views of the annual star showers of October, December, January, and April to be obtained. The major showers of August had also been hidden from view, owing to the unfavourable weather. The report then dealt in detail with the accounts of conspicuous detonating fire-balls that had occurred in the United States on August 11 and December 18, 1878, and on January 27, 1879; in Bohemia and Saxony on January 12, 1879, and in England on February 22 and 24, 1879, the real paths of all of which had, to a greater or less degree of certainty and closeness, been approximately ascertained. The rest of the report was devoted to a description of the past year's aërolites. The expected return of Biela's comet to its perihelion in the present year, leading a shower of shooting stars to be looked for with much confidence among astronomers on November 27 next, is to be taken advantage of to report next year on meteor showers. As in former years the Committee were under great obligations to Prof. A. S. Herschel for the labour he had bestowed on the report.

EXPERIMENTS ON THE INFLUENCE OF THE ANGLE OF THE LIP OF RAIN GAUGES ON THE QUANTITY OF WATER COLLECTED.

By Baldwin Latham, M. Inst. C.E., F.G.S., F.M.S.

The author having observed that, in the ordinary pattern of the Glaisher gauge, in high winds the rain was often driven up the sloping lip and into the gauge, thought that if the rim of the gauge were made very acute, having a sharp knife edge and equal angles both inside and outside the gauge, any rain which might strike upon the outer angle on one side of the gauge might be thrown into the gauge. Rain striking upon the inner and opposite side of the gauge would be thrown out, and so an equilibrium rim would be constructed, as the gain on one side would be balanced by the loss on the other side.

With this view, the author had an 8-inch gauge made and tested alongside of an 8-inch Glaisher gauge. The sloping lip of the Glaisher gauge had an angle of 45° from the perpendicular, and the rim of the equilibrium gauge was ·80 in. deep, ·18 in. in thickness, sloping off on both sides at an angle of 3° from the perpendicular. Both gauges were fixed at Croydon, 4 feet above the ground, and 259 feet above Ordnance datum. These gauges had been working side by side for 551 days, from January 5, 1878, to July 5, 1879, during which period rain or snow has fallen upon 306 occasions. Upon 43 occasions it was found that the rain collected in the Glaisher gauge exceeded, by a small amount, the rain in the equilibrium rim-gauge, and on two occasions the quantity in the new gauge exceeded that in the Glaisher gauge. Upon 261 occasions the rain in both gauges was absolutely equal. On all occasions, it should be observed, the rain from both gauges was invariably measured in the same graduated measuring glass. On the 45 occasions when the Glaisher gauge collected most rain, the wind without exception was high. On the two occasions when the equilibrium rim-gauge collected more rain than the Glaisher gauge, it was probably due to dew, the equilibrium gauge presenting a larger surface for condensation than the other gauge. As the Glaisher gauge was not calculated to contain snow, all falls of snow are recorded in the equilibrium rim-gauge, which is constructed to hold about one foot in depth of snow.

The total quantity of rain collected in the Glaisher gauge during the period

of observation, plus the snow as caught in the equilibrium rim-gauge, was 46·68 in., and the quantity collected in the equilibrium rim-gauge was 46·45 in., showing a difference of but half per cent. In all probability, however, the small excess measured by the Glaisher gauge would tend to compensate for the losses by evaporation in periods of small rainfall and at other times, and therefore, as a measuring gauge, the Glaisher pattern of gauge, when tested by a gauge of the description mentioned, gives results in practice which may be taken as correct.

Summary of Results.

Date.	Total number of days' experiments.	Number of days when rain fell.	Amount of rain collected by Glaisher gauge.	Amount of rain collected by equilibrium rim-gauge.	Times when Glaisher gauge in excess of equilibrium rim-gauge.	Times when equilibrium rim-gauge in excess of Glaisher gauge.
1878.			inches.	inches.		
January	31	17	1·145	1·115	6	...
February	28	15	1·440	1·430	2	...
March	31	10	1·300	1·295	1	...
April	30	17	3·940	3·940	0	...
May	31	22	3·480	3·460	4	...
June	30	13	3·205	3·190	1	...
July	31	11	·595	·600	0	1
August	31	20	5·725	5·690	7	1
September	30	11	1·015	1·010	1	...
October	31	18	2·140	2·135	1	..
November	30	22	3·775	3·735	8	...
December	31	20	1·460	1·455	1	...
1879.						
January	31	13	2·610	2·610	0	...
February	28	22	3·380	3·360	4	...
March	31	13	·540	·540	0	...
April	30	19	2·535	2·515	4	...
May	31	18	3·600	3·595	1	...
June	30	20	3·690	3·680	2	...
July	5	5	1·105	1·095	2	..
Totals	551	306	46·680	46·450	45	2

ON SYNCHRONISM OF MEAN TEMPERATURE AND RAINFALL IN THE CLIMATE OF LONDON.

By H. Courtenay Fox, M.R.C.S.

The object of the paper is by the examination of a long series of facts to ascertain whether there be any law which regulates the *occurrence at the same time* of extremes of temperature and rainfall, so far as we can ascertain it in the English climate.

The facts used are the rainfall and mean temperature as for the Royal Observatory in each month and season for 66-67 years. The mean temperature from 1813 to 1840 is that computed by Mr. James Glaisher, F.R.S. (*vide Philosophical Transactions*, 1850, part 7); and from 1841 to the present time, it is from direct observation. The rainfall from 1830 to 1840 is derived from sundry observations about London collated by Mr. George Dines, and from 1841 to the present time it also is from direct observation at the Greenwich Observatory.

The author has constructed tables *for each month*, in which the sixty-seven (or sixty-six) years are arranged in the order of the mean temperature of that month, beginning with the coldest and ending with the warmest, and also arranged in like manner in the order of their amount of rain. The sixty-seven years are then divided, as nearly as can be, into five equal sections, of which the middle section is termed average years; the division on each side of the average are termed cold and warm, dry and rainy, respectively; while the extreme sections are qualified by the word *very*, being called very cold, very warm, very dry, and very rainy, respectively. We have thus a pretty fair division of the series of years in both these characters. What has been done for each month has been also done on exactly similar principles for each season and for the whole year. The results found were :—

1. In the winter months, cold tends to be synchronous with dryness, warmth with large rainfall.
2. In the summer months, cold tends to be accompanied by much rain, warmth by dryness.
3. Rainy years tend to be either very cold or very warm, whilst years of drought tend to assume an average temperature.

WHIRLWIND IN EAST YORKSHIRE.

"REMARKABLE PHENOMENON.—A few days ago a destructive whirlwind visited the neighbourhood of North Cave, resulting in considerable damage to property, and causing much alarm amongst the inhabitants of the locality. A farmer named John Johnson gives the following version of the affair :—About half-past seven in the evening he was in his house, when he heard a noise like that of prolonged thunder, or the rushing by of three or four railway trains. On going outside he saw a clearly-defined whirlwind, of, as he says, the "thickness of three or four stacks," moving in a north-easterly direction. It disappeared rapidly, but was found to have left fearful marks of its progress. On Mr. Johnson's farm six trees have been torn up and broken, one being an oak of from 50 to 60 years' growth, and about three to four feet in circumference. In some places the hedge was broken for a considerable distance, whilst in others the tops of the corn had been cut off as clean as if it had been done with a knife. In other places which the whirlwind passed over trees were stripped of their branches, and one old oak, four feet in diameter, was twisted so completely from the middle to the top that the upper part presented the appearance of being broken into shreds. The whirlwind spent itself near Sancton, but its track could be distinctly traced by the destruction it had caused."—*York Herald*, Aug. 30th.

THUNDER AND HAILSTORM OF AUGUST 2nd & 3rd.

(Continued from page 113.*)*

IN the first place, we have to express our regret at an accident. The following paragraph, which was in type, was in some mysterious way omitted in the narrative as printed off; it should follow the report from Kew Observatory on page 107 :—

KEW GARDENS.—All the houses were more or less damaged, most of them, especially the temperate house, so seriously that they were

closed to the public in order to avoid accidents from falling glass. The total cost of the repairs is expected to be £2,000.—*Ed.*

We have to thank many friends for a large supply of facts bearing upon the storms both of August 2nd and of August 16th; but we think that the best plan will be, merely to print a few typical reports respecting the former storm in continuation of the previous article, and to reserve all the rest of the data for incorporation with the reports of the whole body of rainfall observers in the volume of *British Rainfall* for 1879.

MERTON VILLA, CAMBRIDGE.—I send you a few notes on the violent TS of August 2nd (night). R fell between 10.15 and 10.45 p.m. (2nd), and from 1.30 a.m. to 4 a.m. (3rd), total 3·80 in. A little H at 3 a.m. L and T incessant from 1.30 to 3.30 a.m. At 3 a.m. there were 120 flashes of L per minute within a radius of 3 miles. At 3 a.m. a flash was instantaneously followed by a very explosive crash of T. The casualties from L were fires at many farms in the neighbourhood, and some few head of cattle were killed. Much damage was caused by the bursting of drains and overflowing of the river and brooks.—*Geo. Warren.*

OBSERVATORY, CAMBRIDGE.—Terrible TSS passed over Cambridge during the night of August 2nd and morning of the 3rd, the severity of which has not been equalled in Cambridge since the memorable hail storm of August 9th, 1843. The weather during the morning of the 2nd was pleasant, slight haze was noticed round the horizon, with a moderate breeze from E.; by 5 o'clock cumuli began to collect from the S.E., and the atmosphere became rather oppressive, and slight fears were entertained that a TS might occur, but towards 8 p.m. these clouds began to move and break up, and it was not till 9.45 p.m. that T was first heard, the wind then having become very strong; by 10 p.m. the violence of the storm was over us, the sky was illuminated for one hour with incessant flashes of sheet and forked L, whilst there was a continuous roar with the T, R, and wind; at 11 p.m. the moon began to break through the clouds, and hopes again were entertained that the worst was over; but at 1.45 a.m. another storm arose far more severe, lasting till 5 a.m., the R the whole time was alarming and the sky was blazing with incessant sheet and occasional forked L. The bar. and the wet and dry bulb thers. were nearly stationary throughout the interval, so that no warning could be obtained from their readings of the magnitude of the storm that was approaching. It was considered that the first storm came up from the S.W., being the upper strata, whilst a lower was moving from the E. The damage done in the flooding of houses and washing away of walls exceeds any remembered by the oldest inhabitant. The amount of R registered here was 3·18 in. by the 8 in., and 3·19 by the 5 in. gauge, being more than half an inch greater than in the storm of 1843. The college walks and the roads generally were washed into large holes or torn up. I enclose a set of readings before and after the storm.—*H. Todd.*

1879.	Time.	Barometer Readings corr. and reduced.	Dry Bulb.	Wet Bulb.	Max. & Min.	Direction of Wind.	Force.	Cloud.	
		in.	°	°	°				
Aug. 2	8 a.m.	30·172	58·5	55·0	75·0	N.	1	2	
,,	0.45 p.m.	30·144	70·0	60·0	50·0	E.	1	10	hazy cum.
,,	6 ,,	29·997	61·0	56·0		E.	1	10	do.
,,	9 ,,	29·997	60·0	57·0	...	E.	1	10	Cumulo stratus.
Aug. 3	8 a.m.	29·887	61·9	61·0	70·1	E.N.E.	1	10	Storm.
,,	10 ,,	29·878	65·0	63·0	52·0	E.	1	10	Stratus.
,,	11 ,,	29·846	66·0	64·0		E.S.E.	2	10	,,
,,	0 noon	29·866	67·0	65·0		S.E.	1	10	,,
,,	0.45 p.m.	29·866	67·2	65·0	...	S.E.	0·5	10	sultry.
,,	2 ,,	29·845	68·9	66·1	...	S.E.	0·5	10	nearly calm
,,	3 ,,	29·845	69·1	67.0	...	S.	calm	10	smoke from S.
,,	4 ,,	29·861	70·2	68·0	...	S.	,,	10	,, ,,
,,	6 ,,	29·858	71·0	69·5	...	S.W.	,,	10	,, ,,
,,	7.12 ,,	29·865	69·0	68·0	...	S.W.	0·5	10	very light breeze.
,,	9 ,,	29·874	68·0	67·0	...	S.W.	0·5	10	,, ,,
Aug. 4	8 a.m.	29·908	62·0	60·5	71·5	S.W.	1	7	fresh breeze.
					55·0				

WETHERDEN RECTORY, HAUGHLEY, SUFFOLK.—We had a most fearful storm of T, L, and R from about 2.30 a.m. till about 4.15 a.m. The whole atmosphere was kept alight by the L, the darkness being but momentary. The T followed several times immediately on a vivid flash, and came in fearful crashes and thuds. It seemed to go round from the S.E. to the N.W. One person says that it was not R that fell but a cloud bursting. The measure in the gauge was 1·77 in. A farmer, who has lived in the village for the last 40 years, remembers nothing like it. A brook, which runs through the village, rose to a level with the tables in the cottages, standing on the edge of it.—*C. J. Goodhart.*

GELDESTON, BECCLES.—Tremendous TS; between 3.30 a.m. and 5.30 a.m. 1·90 in. fell.—*E. T. Dowson.*

KIRKHAM, BABBACOMBE, TORQUAY.—The morning of the 2nd was threatening, with a falling bar., E.N.E. wind, and clouds coming from S.S.W. Distant T was first heard about 1 p.m., it increased at 1.33 p.m., when R began and continued till 3.27 p.m., when ·22 in. had fallen; vivid L and loud T occurred 3 miles to S.S.W. at 1.58, and T continued till 2.27 p.m. At 5 p.m. another storm came on, passing over us from 5.20 to 6 p.m., and going off to N.E., where T was heard till 6.30 p.m. Most of the flashes seemed to strike the earth, and were very vivid from 5.12 to 5.50 p.m., accompanied by loud T; the nearest flash was only a quarter of a mile off at 5.45 p.m., many of the flashes were forked. Slight R fell from 5.1 to 5.7 and 5.27 to 5.38, when it became heavier and continued till 6.15; it was excessively heavy from 5.50 to 5.55; in 3 min., from 5.51, ·18 in. fell, and in 1 min. (5.53–5.54) ·08 in. fell, being at the rate of 4·80 in. per hour. H ·03 in. in diameter, accompanied the R from 5.45 to 5.57 p.m. R from 5.38 to 6.15 p.m., ·41 in. Distant

T was heard occasionally from 7.3 to 7.48 p.m. At 9.12, L appeared in the S.W., accompanied by distant T till 9.20 p.m. The L then increased in frequency, and lasted till about 3 a.m. on the 3rd; it was very frequent, vivid, and accompanied by T after 10.20 p.m., especially from 11.25 p.m. to 0.17 a.m., when it reached its climax with a terrific flash, followed almost instantaneously by T like the discharge of a cannon close at hand. At 11.18 the flashes were 33 per minute, and continued at this rate for about an hour; they were of various colours, chiefly white, violet, and rose, and lighted up the landscape with the brightness of day. Showers fell after 9.40 p.m. (heavily from 0.5 to 0.16 a.m. on the 3rd) amounting to ·33 in. The total rainfall measured at 9 a.m. on the 3rd was 0·96 in. (in Torquay, at Lamorna, 1·06 in., and at Rocombe, 0·80 in.). The wind was generally E.N.E., strong from 5.45 to 10 p.m. on the 2nd; the storm clouds came from S.S.W., and the bar. oscillated considerably, but fell from 30·06 in. at 2 p.m., 2nd, to 29·84 in., at 0.35 a.m., 3rd. The temp. was about 58° during the storms. About half-past 5 p.m., a flash of L struck a chimney stack on a house at Tor, hurling part of it to the ground in a northerly direction, and going down the chimney the electric fluid forced the grate of a sitting room about 1 in. outwards and entered the room, but without injuring two ladies who were in it. I visited the house yesterday, saw the damage done, and was informed by one of the ladies that a small mass of fire remained "fizzing" on the fender for some seconds after the L entered the room. Not far from this an "aerolite" was reported to have struck a flagstaff and bounded on to the road, where it remained burning for some time; a similar occurrence took place on the lawn of Woodhill, St. Mary Church-road. A scaffolding pole attached to a house which was being built in the Babbacombe-road was struck, and a mason, working near, was stunned and had his trowel knocked out of his hand; at Paignton, the telegraph instruments at the post-office and railway-station were struck, and some farm buildings a few miles distant were set on fire by the L.—*Edwin E. Glyde.*

UPFIELD, STROUD.—A heavy TS passed over here at about half-past 7 p.m., passing off to the eastward; heavy T; R commenced at 4 p.m., but that appeared to follow the vale of the Severn. T and L occurred all the evening and at about midnight it appeared heaviest in the W. From about 1.30 a.m. till daylight it passed over us again, but from where it came or in what direction it was going it was impossible to tell. There were very few forked pieces, the lightning principally passing from cloud to cloud in ribbon form. Amount of rainfall from 4 p.m. Saturday till 9 a.m. Sunday, ·79 in.—*Rose E. Stanton.*

ASHBY MAGNA, LUTTERWORTH, LEICESTERSHIRE.—A very heavy TS passed over this place about 1 a.m.; T and L, with a deluge of R. I registered this morning 1.25 in., almost the whole of which fell in about two hours.—*E. Willes.*

THE WEATHER IN JULY AND AUGUST.

JULY.

During the first week of the month the same unsettled weather, which had prevailed for so long previously, was experienced. On the afternoon of the 30th June a brisk fall of the barometer began in the W., a large depression advanced over Ireland, and rainy weather with S.W. to S. gales, extended all over the Kingdom. On the 2nd July this depression was passing N., and strong W. winds or gales prevailed generally, with showers of rain and intervals of fine weather; but on the 3rd a small subsidiary disturbance advanced over the South of England, and continuous rain fell during the morning of that day. This subsidiary advanced eastward to Denmark during the night of the 3rd, becoming much deeper during its passage across the North Sea, while the main disturbance in the N. remained near the North of Scotland, and began to fill up. During the 4th and 5th the barometer rose everywhere, and the weather, though showery, was moderately fair on the whole.

There was little change in the general conditions of the weather during the succeeding week. Pressure was highest over the South-west of France, and depressions of varying magnitude passed from W. to E. across these islands. The winds varied according to the shifting positions of the different disturbances both in direction and force. Gales were experienced on the 7th, 8th, and 9th, and fresh to moderate breezes on the other days. The weather was generally dull and rainy.

There was no improvement in the weather during the third week. Depressions and their accompanying circulation of winds passed from W. to E. right across these islands, and though the breezes were generally light, rain was frequent and the sky was almost always overcast.

The last week of the month opened with very unsettled weather, a large depression passing from W. to E. across these islands, and causing strong cyclonic winds on the 20th, and gales on the 21st. As this disturbance passed off slowly to North Germany, the barometer rose, and fresh N. breezes, with cool cloudy weather, prevailed until the 23rd, when the barometer began to fall a little in the W., a S. breeze sprang up at Valentia, and the highest pressures were established over the Bay of Biscay. From this day to the close of the week the changes in the barometer were comparatively slight; an area of high readings lay over France and our south coast, with very slight barometrical oscillations, occasioning general variations in the amount of cloud, though the rainfall was comparatively small.

Of the remaining five days of July, the first four were for the most part fine, but the 31st was dull, close, and wet over England and Ireland, but fair in Scotland.

Temperature during the first three weeks was low for the season, but considerable improvement was shewn during the last few days of the month. Rainfall during the first week of the month was much above the average, and heavy falls were reported on the 14th, 20th, 21st and 24th.

AUGUST.

The first two days of the month were exceedingly fine and warm, but these happy conditions were soon cut short, and on the evening of the 2nd a decrease of pressure began in the West of France, and gradually extended northwards over these islands. The weather quickly became unsettled, squally, and showery, and continued so, with little change for the better, during the whole of the following week. During the first few days a depression passed very slowly across the Kingdom from the S.W., causing a very decided oscillation of pressure, and bringing with it rather strong breezes with a great quantity of rain, and cold weather for the season. On the 9th, the centre of the disturbance had reached Norway and was filling up, while a small anticyclone began to appear in the S.W., with fine weather and light winds.

The week succeeding was changeable, with great rainfall on some days, and low temperature generally. The first part of the week was fine and bright

over England, but dull in Ireland. A very gradual change took place, and by the 15th the weather had become unsettled in all parts of these islands. On the 16th, torrents of rain fell in many parts of the Kingdom, notably in the N.W., and the weather was most unpleasant. The wind was chiefly S.E. or S., but subsequently became very variable from W.

The weather during the next week was exceedingly unsettled, owing to the continued advance of depressions from the Atlantic. During the greater part of the time two areas of high pressure existed—one over Scandinavia and the other over the South of France—so that the disturbances moved in a N. or N.N.E. direction along our west coast, but on the 23rd the N. high pressure gave way, and the small depression, which then appeared in the Channel, passed across these islands almost due E. The winds were chiefly S.W., and though generally moderate in the N. and N.E,, frequently blew very hard in the S.W., and in the west part of the Channel. Temperature was rather low for time of year. Rain fell nearly every day, and at some places in Central and Southern England, the amount measured during the week was greatly in excess of the mean for the whole month.

Then, as to the remainder of the month, the same doleful tale of unsettled weather and low temperature must be told. The sea was rough on our W. and S.W. coasts during the whole period, and warnings were flying, on four days of the seven. During the night of the 25th–26th, a deep depression advanced over Scotland from the Atlantic, and in the course of the night following the centre of another deep depression reached the N.W. coast of Ireland, and passed, like the former, in a N.E. direction to Norway. The recovery, which had begun after these depressions had passed over, disappeared entirely during the night of the 27th–28th, and another disturbance approached and passed over, taking nearly the same course as the two preceding depressions. After this had passed away, the weather cleared up, and a little fine weather was experienced, the wind remaining, however, S.W. or W.

HORACE E. MILLER.

STRATUS AND CIRRO-STRATUS.

To the Editor of the Meteorological Magazine.

SIR,—My reply, to the Rev. Clement Ley's objection to my remarks as to the varying habitat of cirro-stratus as dealt with in his lecture, is on p. 112 of "Modern Meteorology." The quotation marks are correctly printed in my first letter, and not in his. I quite dissent from Mr. Ley's view that cloud knowledge cannot be easily communicated. I have better hopes of the future of the science. I do not think that future will be brighter if the present attempt to redistribute Howard's names succeeds. Far better to leave the foundation wall of the older observers alone; if sound, build on it; if unsound, leave it to time, and begin afresh.

WM. DILLWORTH HOWARD.

Tottenham.

RAINFALL IN THE N.W. OF ENGLAND.

To the Editor of the Meteorological Magazine.

DEAR SIR,—I have been interested in reading your letter of July 1st, in the *Times* of to-day, and in comparing your figures with the rainfall in this place.

You go back to the first half of 1878, in which you say the fall in London was enormous. I find ours was *less* by 0·34 in. than the average of the preceding six years, while the *total* rainfall for 1878

was only 44·92 in.—a very small one for us, being no less than 12·26 in. below the average of the preceding six years. The fall in November and December was, in fact, less than half the average.

Again, you say the rainfall in London for the first six months of the present year has been more than 50 per cent. above the average. I find ours to have been less than last year and 3·96 below the average of the preceding six years. The rainfall of each of the first five months was below the average, and had it not been for an exceptionally wet June, our fall for the first half of this year would have been remarkably small.

Now we are, of course, suffering, in common with the rest of the country, from excess of rain and absence of sunshine.

Rainfall for the first six months of 1879:—January, 2·08; February, 3·83; March, 3·56; April, 1·85; May, 1·94; June, 6·23; total, 19·49.—Yours truly,

G. F. BRAITHWAITE, JUN.

Hawesmead, Kendal, July 7th, 1879.

[We could not find room for this letter earlier; it should be read in connection with that by Mr. Reginald Bushell, on p. 120.—ED.]

NORTH WALES RAINFALL.

To the Editor of the Meteorological Magazine.

SIR,—The rainfall in August, 1879, was 9·93 in. Upwards of an inch fell on three days:—5th, 1·17; 16th, 3·75, 17th, 2·61. 6·36 fell almost without a break between noon on the 16th and midnight on the 17th. Between 5 p.m. on 16th and 5 p.m. on 17th, the estimated fall was 5·75. From the record of neighbouring gauges, and the effects of the flood, the centre of extreme downfall seems to lie between here and Caerwys.

In the last twelve years the extremes of monthly rainfall until the present return have been:—June, 1868, 0·00; October, 1872, 7·05. The annual rainfall here is nearly the least in Wales, the lowest of all being along the coast line of Flint and Denbigh.

I have been able to find no evidence of a greater flood having occurred during the present century in the vales of the Clwyd and Wheeler, whereas some of the effects of the present flood seem to point to the impossibility of a greater having occurred within the above period.

P. P. PENNANT.

Nantlys, St. Asaph, 5th Sept., 1879.

WATER REFLECTION RAINBOW.

To the Editor of the Meteorological Magazine.

SIR,—Can you find room in your September number for the following, which may interest your readers, from some of whom I hope to gain an explanation of what I saw?

On August 29th, at about 6.30 p.m., I was caught in a very heavy shower of rain on a hillside above Llanfairfechan; as it passed, a very brilliant rainbow developed itself, with the secondary bow fully

developed and bright, both (owing to the deep valley close on our left, and the height at which we stood) showing more than two-thirds of a circle. As we watched, a third bow gradually formed, not concentric with the other two. The prismatic colours were in their regular order, the lower limbs were both within those of the bow proper, the upper part of the curve was three or four degrees, at least, above that of the refracted bow. I am not sure of the shape of the curve; at the moment, we both thought it slightly elliptical, with the major axis perpendicular to the horizon, but I am not sure that our eyes were not misled by the intersecting segments of the brighter circles. Whatever it was, nearly the whole curve was developed, not more than one-sixth or one-seventh being lost against the ground.

Though much fainter than either of the other bows, it was quite distinct, and remained visible for two minutes or more. It was the first to fade.

Could this possibly be due to the reflection of the sun's rays, which we had noticed before to be very bright, from the sea, which lay 700 or 750 feet below us? If not, will you or some of your readers be kind enough to explain the phenomenon to

AN IGNORAMUS.

[Ignoramus is probably right in his explanation; a full account of the phenomenon, with several engravings, will be found in the *Meteorological Magazine*, for December, 1875, vol. x., p. 165.—ED.]

WIND FORCE.

To the Editor of the Meteorological Magazine.

SIR,—At p. 75 of the *Meteorological Magazine* for June you draw attention to the definitions of wind force, taken by M. Mascart, from the movement of branches of trees.

Might not this be put in a more definite form relatively to the power of movement, which varies much in trees of different species.

During the present year, testing my observations by the returns from Kew (which is under a mile-and-a-half distant as the crow flies), I find any real movement of the upper extremities of the leafed boughs of elm trees, stands as "1," Beaufort notation; movement of all the lesser boughs, so as slightly to stir the primary boughs near their junction with the tree, at "3;" and such movement of the boughs as slightly moved the trunks of the large trees (which I only saw once) stood at "7" or thereabouts.

The birch moves its leaves and long sprays, at "0."

The lime comes between the birch and elm in power of movement, at all small readings; and old trees of Scotch fir, from the peculiar tops of the boughs, in high wind would give a very easily noted amount of definition.

Trusting you will excuse me, if I only intrude on your time, believe me, yours very truly,

ELEANOR A. ORMEROD.

Dunster Lodge, Spring Grove, Isleworth, June 19th, 1879.

SUPPLEMENTARY TABLE OF RAINFALL IN AUG., 1879.

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

Div.	STATION.	Total Rain.	Div.	STATION.	Total Rain.
		in.			in.
II.	Margate, Acol	4·77	XI.	Port Madoc	6·81
,,	Littlehampton	5·41	,,	Douglas.....	6·28
,,	Dorking, Abinger	5·32	XII.	Carsphairn	7·41
,,	Hastings, Manor House	3·65	,,	Melrose, Abbey Gate...	3·63
,,	Hailsham	4·61	XIV.	Douglas Cas., Newmains	4·09
,,	I. of W., St. Lawrence.	5·59	XV.	Islay, Gruinart School..	...
,,	Strathfield Turgiss	7·07	XVI.	St. Andrew's, Cambo...	...
III.	Great Missenden.....	7·44	,,	Aberfeldy H.R.S.	5·27
,,	Winslow, Addington ...	4·54	XVII.	Tomintoul.....	4·33
,,	Oxford, Magdalen Col...	5·05	,,	Keith H.R.S.	5·11
,,	Northampton	3·58	,,	Forres H.R.S.	4·30
,,	Cambridge, Merton Vil.	6·60	XVIII.	Strome Ferry H.R.S....	5·14
IV.	Harlow, Sheering	3·05	,,	Lochbroom	4·71
,,	Diss	4·69	,,	Auchnasheen H.R.S. ...	3·67
,,	Swaffham	5·81	,,	Tain, Springfield.....	3·83
,,	Hindringham	2·68	,,	Loch Shiel, Glenfinnan.	6·40
V.	Salisbury, Alderbury...	5·32	,,	Dalwhinnie H.R.S.....	...
,,	Calne, Compton Bassett	6·81	XIX.	Lairg H.R.S.	3·67
,,	Beaminster Vicarage ...	5·75	,,	Altnabreac H.R.S.	4·35
,,	Dartmoor Prison.....	...	,,	Watten H.R.S.	4·28
,,	Langtree Wick	7·22	XX.	Fermoy, Glenville	3·93
,,	Lynmouth, Glenthorne.	5·65	,,	Tralee, Godfrey Place...	...
,,	St. Austell, Cosgarne...	6·40	,,	Cahir, Tubrid	4·44
,,	Taunton	4·63	,,	Tipperary, Henry St....	5·22
VI.	Bristol, Ashleydown ...	7·46	,,	Newcastle West	5·97
,,	Wem, Sansaw Hall.....	6·20	,,	Kilrush	4·38
,,	Cheadle, The Heath Ho.	7·26	,,	Corofin	4·53
,,	Bickenhill Vicarage ...	5·59	XXI.	Kilkenny, Butler House	4·00
VII.	Melton Mowbray	3·67	,,	Carlow, Browne's Hill..	3·81
,,	Horncastle, Bucknall ...	3·18	,,	Kilsallaghan.....	3·12
VIII.	Walton-on-the-Hill.....	6·54	,,	Navan, Balrath	3·03
,,	Broughton-in-Furness ..	7·29	,,	Athlone, Twyford	5·15
IX.	Wakefield, Stanley Vic.	2·91	,,	Mullingar, Belvedere ...	3·55
,,	Ripon, Mickley	3·71	XXII.	Ballinasloe	4·36
X.	Gainford	3·02	,,	Clifden, Kylemore	7·70
,,	Haltwhistle, Unthank..	4·54	,,	Crossmolina, Enniscoe..	6·81
,,	Shap, Copy Hill	5·66	,,	Carrick-on-Shannon ...	3·47
XI.	Llanfrechfa Grange	8·33	,,	Dowra	4·07
,,	Llandovery	7·18	XXIII.	Rockcorry.....	3·36
,,	Solva	5·81	,,	Warrenpoint	4·05
,,	Castle Malgwyn	6·78	,,	Newtownards	4·22
,,	Rhayader, Nantgwillt..	8·16	,,	Larne, Carnlough	4·18
,,	Carno, Tybritle	8·14	,,	Bushmills	2·60
,,	Corwen, Rhug	6·00	,,	Buncrana, Rockfort ...	2·88

AUGUST, 1879.

Div.		STATIONS. [The Roman numerals denote the division of the Annual Tables to which each station belongs.]	RAINFALL. Total Fall.	Difference from average 1860–5	Greatest Fall in 24 hours. Dpth	Greatest Fall in 24 hours. Date.	Days on which ·01 or more fell.	TEMPERATURE. Max. Deg.	Max. Date.	Min. Deg.	Min. Date.	No. of Nights below 32°. In shade.	No. of Nights below 32°. On grass.
			inches	inches.	in.								
I.	ENGLAND.	Camden Square	5·11	+ 2·47	·82	19	16	78·3	15	44·8	31	0	0
II.	ENGLAND.	Maidstone (Hunton Court)	3·43	+ 1·23	·75	19	17	...	...	...	...	...	...
,,	ENGLAND.	Selborne (The Wakes)	6·45	+ 3·27	1·39	19	22	79·0	12	43·0	10	0	0
III.	ENGLAND.	Hitchen	4·61	+ 2·26	1·94	2	18	71·0	11*	37·0	31	0	...
,,	ENGLAND.	Banbury	4·31	+ 2·18	·97	17	19	76·0	12	42·0	30	0	...
IV.	ENGLAND.	Bury St. Edmunds (Culford)	4·12	+ 1·68	1·53	2	18	75·0	15†	34·0	31	0	1
,,	ENGLAND.	Norwich (Cossey)	5·08	+ 3·18	2·15	2	19	73·5	13	44·0	10	0	0
V.	ENGLAND.	Bridport	5·63	+ 3·04	1·58	19	18	...	...	...	...	...	...
,,	ENGLAND.	Barnstaple	5·52	+ 1·33	·86	19	21	79·0	16	45·0	24	0	0
,,	ENGLAND.	Bodmin	5·88	+ 2·02	·99	19	25	75·0	14	51·0	30	0	0
VI.	ENGLAND.	Cirencester	7·23	+ 4·39	1·20	16	17	...	...	...	...	...	...
,,	ENGLAND.	Shifnal (Haughton Hall)	6·16	+ 3·29	1·36	17	18	74·0	11‡	39·5	19	0	...
,,	ENGLAND.	Tenbury (Orleton)	6·21	+ 3·33	1·88	16	21	77·7	12	43·3	2	0	0
VII.	ENGLAND.	Leicester (Town Museum)	4·01	...	1·18	2	19	75·2	12	43·5	8	0	0
,,	ENGLAND.	Boston	2·88	+ ·59	·86	2	17	80·0	11	44·4	10	0	0
,,	ENGLAND.	Grimsby (Killingholme)	2·83	...	·66	2	19	70·0	21‖	46·0	9	0	0
,,	ENGLAND.	Mansfield	3·39	...	·80	2	21	73·7	12	43·2	10	0	0
VIII.	ENGLAND.	Manchester (Ardwick)	5·62	+ 2·11	·92	6	22	77·0	12	48·0	31	0	0
IX.	ENGLAND.	York	2·15	— ·56	...	...	20	75·0	12¶	42·0	10††	0	0
,,	ENGLAND.	Skipton (Arncliffe)	9·12	+ 3·18	1·08	28	22	75·0	13	38·0	31	0	..
X.	ENGLAND.	North Shields	3·42	+ ·57	·84	16	21	66·0	11	45·0	9	0	0
,,	ENGLAND.	Borrowdale (Seathwaite)	12·99	— 2·09	2·13	6	23	...	...	...	...	..	...
XI.	WALES.	Cardiff	8·12	...	1·34	27	22	72·4	15	46·2	30	0	...
,,	WALES.	Haverfordwest	7·59	+ 2·71	1·83	4	22	74·0	12§	37·0	31	0	0
,,	WALES.	Lampeter (St. David's Coll.)	...	...	...	...	...	...	...	...	...	...	...
,,	WALES.	Llandudno	6·85	+ 3·03	1·91	16	15	75·2	12	47·3	10	0	0
XII.	SCOTLAND.	Cargen	4·20	+ 0·01	·86	5	20	76·2	12	40·8	10	0	0
,,	SCOTLAND.	Hawick (Silverbut Hall)	3·58	...	·61	5	20	...	...	...	...	...	...
XIV.	SCOTLAND.	Annanhill	4·62	...	1·57	5	21	70·9	13	38·9	10	0	0
XVI.	SCOTLAND.	Kilmory	5·28	...	·92	24	24	...	...	34·0	10	...	...
,,	SCOTLAND.	Mull (Quinish)	5·16	...	·78	28	22	...	...	...	...	...	..
,,	SCOTLAND.	Loch Leven	4·80	+ 1·12	·70	25	17	...	...	...	...	...	...
,,	SCOTLAND.	Loch Long (Arddaroch)	...	...	...	...	...	...	...	...	...	...	...
XVII.	SCOTLAND.	Arbroath	4·15	+ ·92	·85	5	20	69·0	2	42·0	10	0	0
,,	SCOTLAND.	Braemar	4·15	+ ·31	·58	25	21	73·8	12	35·3	3	0	1
XVIII	SCOTLAND.	Aberdeen	4·33	...	1·13	16	25	72·3	14	43·4	30	0	0
,,	SCOTLAND.	Portree	...	...	...	...	...	...	...	...	...	...	...
,,	SCOTLAND.	Inverness (Culloden)	3·39	+ ·14	·65	7	13	74·0	12	40·5	3	0	0
XIX.	SCOTLAND.	Dunrobin	3·47	+ 1·01	·78	16	19	70·8	12	40·0	30	0	0
,,	SCOTLAND.	Sandwick	3·39	— ·32	·65	5	22	65·8	12	41·9	1	0	0
XX.	IRELAND.	Cork	2·11	...	·70	27	15	...	...	...	...	...	...
,,	IRELAND.	Caherciveen Darrynane Abbey	4·87	...	1·42	26	24	...	...	...	...	...	...
,,	IRELAND.	Waterford	4·60	+ ·65	·94	27	18	71·0	12	41·0	30	0	0
,,	IRELAND.	Killaloe	4·76	— ·17	·69	15	19	81·0	23	40·0	31	0	...
XXI.	IRELAND.	Portarlington	2·85	— 1·65	·58	25	25	72·0	10	41·0	29	0	0
,,	IRELAND.	Monkstown, Dublin	3·23	+ ·02	1·17	5	18	...	...	...	...	...	...
XXII.	IRELAND.	Galway	6·47	...	1·14	25	22	71·0	11‡	42·0	2	0	0
XXIII	IRELAND.	Waringstown	3·59	...	·57	26	21	78·0	11	39·0	31	0	...
,,	IRELAND.	Edenfel (Omagh)	2·68	...	·64	26	25	77·0	11	35·0	31	0	...
,,	IRELAND.	Ballinful	...	...	...	...	...	...	...	...	...	...	...

* And 15. † And 17. ‡ And 12. ‖ And 22. ¶ And 13, 15. § And 13. †† And 11.
+ Shows that the fall was above the average; — that it was below it.

METEOROLOGICAL NOTES ON AUGUST.

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

ENGLAND.

SELBORNE.—Prevailing winds S.W. to W. T on six days.

HITCHEN.—A wet cold month; temp. 2° below average of 30 years, during which period there have only been three Augusts with a lower mean temp.

BANBURY.—The storm of the 2nd, which was very severe, commenced a little after 8 p.m. with L of a purple colour, and very frequently accompanied by rattling T. After 10 p.m. the L was distant but still almost continuous, and about 3 a.m. (3rd) it again came on in full force with H, but the latter was not remarkable. Some trees and a building or two in this neighbourhood were struck, and some calves huddled together under a tree were killed. No sign of commencement of harvest. Wheat looks tolerably well, but will not bear close examination. Barley and oats very short in the straw. Potatoes much diseased.

CULFORD.—A month of very unsettled weather, exceedingly unfavourable for harvest operations, which are more than a month late. The T and hailstorm of the 2nd and 3rd was most terrific; the T was one continuous roar, and the hailstones were a tremendous size, some of them measuring 5 inches in circumference; upwards of a thousand panes of glass were broken here, and in many instances two or more ice bullets have passed through a single pane without smashing it. Mean temp. 59°·6, considerably below the average.

COSSEY.—The nights were cold and the crops matured slowly. Harvest commenced here on the 29th, eight days later than in 1860. During the height of the storm on the morning of the 3rd the sheet L came in regular waves, with forked L every few seconds followed by loud peals of T. No such storm has been known here since 1843.

BODMIN.—Mean temp. of the month 62°·4, which is very nearly the average; but there is no record of another August with so little sunshine.

CIRENCESTER.—Another month of excessive rainfall, making a total of nearly 16 inches for the months of June, July, and August.

SHIFNAL.—The wettest August for at least 35 years, the nearest to it being 1852, when 5·94 in. fell. 2·50 in. of the fall of the 16th and 17th fell in 24 hours, from 6 p.m. on 16th to 5 p.m. on 17th. TS with violent wind on night of 2nd, and another with R and H on 21st. Gooseberry bushes stripped by caterpillars. Tomatoes on wall do not even blossom. A humming bird sphinx seen on 5th. Painted lady butterflies appeared on 14th.

LEICESTER.—TSS 8.30 to 10 p.m. and 1 to 2 a.m. on night of 2nd–3rd, and 11 a.m. to 0.30 p.m. on 13th.

KILLINGHOLME.—A cold month; no harvest work begun beyond cutting some worthless crops of peas. Apples, pears, and plums a failure; currants, gooseberries, and raspberries abundant. T, L and R, 2 to 5 a.m. on 3rd; T and L on 17th and 26th.

ARNCLIFFE.—Much hay still unhoused at the end of the month. TS at 4 p.m. on 17th.

NORTH SHIELDS.—TSS on 22nd and 26th; T on 3rd, 5th, and 6th.

SEATHWAITE.—Incessant R on the 4th, 5th, and 6th; total 4·20 in.; five days on which the fall exceeded 1 in.

WALES.

HAVERFORDWEST.—The temp. of the month was higher than that of the two preceding, but harvest prospects are bad; wheat and barley will not be half a crop, but oats will be fairly good, if the weather is favourable. On the whole this county has fared better than many districts, comparatively little hay being lost. No TSS except a very severe one on the 2nd, but severe gales and squalls with heavy R, especially during the last week. The rainfall (7·59 in.) has only twice been exceeded during 31 years.

LLANDUDNO.—The weather during the month was variable and showery, with occasional very fine days. Mean temp. more than 2°·5 below the average,

and rainfall nearly double. An unprecedented fall of R occurred between 2 p.m. of the 16th, and 7 p.m. of the 17th (a period of 29 hours), amounting to 3·67 in. Health of the community excellent.

SCOTLAND.

CARGEN.—Mean temp. of month 58°·5, nearly half a degree below the average. T on 3rd, 13th and 18th; L on 13th and 21st.

HAWICK.—A very wet and sunless month. Oats and barley are only just beginning to colour, and the hay is not yet all secured. Apples and pears will not ripen this season, and there are no plums. Potato disease very bad, and spreading rapidly. Severe TS on 6th, when ·50 in. of R fell in fifteen minutes. Swifts were never before seen in such great numbers, but most of them disappeared on the 15th.

BRAEMAR.—A month of changeable, damp, cold weather.

CULLODEN.—Temperature generally below the average. Bar. low, only twice rising above 30 in. All grain crops late; fairly good, but much in want of sunshine. Potato blight prevailing, and spreading in northern districts. All garden produce indifferent.

SANDWICK.—The weather was changeable, with frequent showers; not very warm, but not unfavourable to vegetation. Four peals of T on the 22nd, with some R, but the T was more frequent, and the R very heavy a few miles farther east.

IRELAND.

DARRYNANE.—A cold, ungenial month. Potato disease spreading much. Harvest very backward. The fall of 1·42 in. of R on the 26th occurred in 11½ hours.

KILLALOE.—No grain reaped at end of month, nor will reaping be general before the 20th of September. Hay being carried with difficulty, and much in bad condition. Potatoes much diseased.

WARINGSTOWN.—Temperature low; potato crop damaged; grain crops wonderfully little injured as yet. Commenced reaping oats Sept. 1st. T and L on 3rd. Tremendous TS at night on 11th. Heavy gale on 27th, 28th and 29th.

EDENFEL.—The weather of the month was reasonably favourable, but not sufficiently so to make up for that of the preceding months. Total rainfall moderate, though it fell on 25 days. One hot day (the 11th), and several warm ones; but sharp, though partial, frosts on the nights of the 9th and 31st. In this neighbourhood a large crop of hay has been fairly saved. Cereals are a heavy crop, but still green. Green crops, though still bad, are much improved, especially potatoes.

A STRANGE STORY.

"EXTRAORDINARY PHENOMENON IN FIFESHIRE.—A discovery, startling and unusual, was made on Sunday on the Lomond Hills, near Falkland, which has since given rise to considerable speculation. The hills were found in several places to be covered with seaweed, or some substance as nearly resembling it as possible, and it was also seen hanging from the trees and shrubberies in the district. In some places the weed lay in a pretty thick coating, so that quantities of it could be collected from the grass. A heavy hailstorm, accompanied by T and L, passed over the district on Saturday evening (Aug. 30th), and it is thought that at a late hour a waterspout had burst over the hills. Many people have collected pieces of the weed for preservation."—*Glasgow Herald.* [We should be glad of full details of this strange story.]—ED.