

## MONTHLY WEATHER REPORT OF THE METEOROLOGICAL OFFICE.

(Supplement to the Weekly Weather Report.)

SUMMARY OF OBSERVATIONS COMPILED FROM RETURNS OF OFFICIAL STATIONS AND VOLUNTEER OBSERVERS IN THE UNITED KINGDOM, WITH  
A CHART OF RAINFALL CONTRIBUTED BY THE BRITISH RAINFALL ORGANISATION.  
ISSUED BY THE AUTHORITY OF THE METEOROLOGICAL COMMITTEE.

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## STORMY AND WET.

**Pressure, Winds and Weather.**—The very disturbed and windy weather conditions which marked the whole of the closing month of 1912 have been maintained throughout the opening month of 1913, but the type of pressure distribution during each month differed very considerably. In December nearly the whole of the cyclonic systems from the upper region of the Atlantic travelled along a general easterly path between Scotland and the Arctic Circle. During January, on the other hand, the Atlantic was never free from the presence of extensive and deep to very deep depressions, yet not one of the centres of these numerous systems reached the western coasts of the British Isles—they either dispersed or passed away towards the Arctic Sea round by the west of Iceland, one moving eastward across Iceland at the end of the month. The few instances of depressions moving across this country, and shown on Map 2, p. XV., were smaller secondary disturbances thrown off from the primary ones on the ocean. The northward translation of the Atlantic cyclones was associated with the prevalence of high pressure areas over Europe, several well-defined anticyclones extending from Northern Scandinavia or Northern Russia down to the Mediterranean. One anticyclone visited these islands, but only for a very brief interval. It made its appearance over the western districts on the evening of the 25th, and by the following evening it had already passed from our south-eastern coasts to the Continent, the barometer just touching 30·4 in. at Dover and Yarmouth, the highest level attained during the month at the home stations. Out on the Atlantic barometric values below 28·5 in. occurred on several days, the exceptionally low reading of 27·44 in. being registered on the White Star liner "Celtic" on the morning of the 10th, in latitude 50° N., longitude 29° W., not far from the position, 51° N., 24° W., where 27·33 in. was recorded on board the s.s. "Tarifa," on February 5th, 1870, the lowest Atlantic reading known. These very deep depressions being at no great distance from our western coasts, barometer readings below 29·5 in. were numerous on land, and on four days pressure was below 29 in. over a large part of the kingdom. On the approach of one of the secondary disturbances, on the 19th, the barometer dropped to 28·67 in. at Valencia, and in the Icelandic depression towards the end of the month the mercury went down to 28·53 in. at Lerwick.

With this all but continuous existence of depressions the mean pressure was below the normal all over this country, the deficiency being very large in the west, as much as 0·42 in. at Blacksod Point, and 0·39 in. at Valencia, and diminishing eastward, to 0·15 in. at Aberdeen, 0·14 in. at Wick, and 0·02 in. at Lerwick. From the great frequency of very low readings on the upper part of the Atlantic, the mean result would appear to be about 28½ in., while at the land stations the values ranged from 29·22 in. at Westmanna (off the south coast of Iceland) to 29·47 in. at Blacksod Point, 29·84 in. at Jersey and Dover, 30·08 in. at Horta (Azores), and 30·22 in. at Moscow. It will be gathered from these figures, and from Map 1, p. XV., that the distribution of mean pressure over the United Kingdom was of a strongly marked Southerly type, and the gradient about double the normal steepness, a situation favourable to the general prevalence of windy weather.

At one or more of the telegraphic reporting stations the wind, practically always from points in the southern half of the compass, attained the strength of a gale (force 8) on 23 days, and that of a strong gale (force 9) and upwards on 18 days. In a number of instances these gales were caused by the depressions centred well out on the ocean, others were due to the secondaries which crossed the country. Between the 2nd and 4th, when the centre of a deep depression was moving northward in about 25° W., a strong gale was felt in many places on our western and northern coasts, and heavy rain fell over a wide area. On the 2nd as much as 1·7 in. fell at Gruline (Mull), and on the 4th the rainstorm was general over a large part of England and Wales, the amounts ranging up to 1·5 in. at Ynis-y-fro, 1·6 in. at Newport (Mon.), 1·8 in. at Pant-yr-Eos, 2 in. at Princetown, and 2·1 in. at Tavistock. The gales of the 6th to the 8th were unimportant, except for the very heavy rains in some of the mountainous districts, 2·9 in. to 3·9 in. being registered about Snowdon. The most stormy period of the month set in on the 9th, when a strong South-Easterly gale sprung up locally in the far west and north, and by the following day it spread over the country generally, and became very violent, under the influence of the exceptionally deep cyclone on the ocean and an anticyclone covering the greater part of Europe. Between the centres of the opposing systems there was the steep pressure gradient of 3·4 in. in 2,000, and between the centre of the cyclone and the west coast of Ireland 2·2 in. in 750 miles. The situation became more complicated on the 11th and 12th owing to the passage across southern England of one of the secondary disturbances. From the 9th to the 12th a whole gale (force 10) was of daily occurrence on many sections of our coasts, Malin Head reporting a storm (force 11) on the

10th and 11th. In gusts the wind blew at the rate of 70 miles an hour at Roche's Point on the 10th. At first heavy rains accompanied the gale, the largest falls being in Ireland, on the 9th 1·5 in. at Cahir, and 1·8 in. at Templemore, and on the 10th 1·5 in. at Newcastle (Wicklow) and Dublin, and 1·7 in. at Kingstown. With the development of the secondary in the south the rain changed into snow on the 11th over the greater part of the Kingdom. The snowstorm was the heaviest and the most widespread experienced for many years, numbers of places reporting a depth of snow from 8 in. to 12 in., Rauceby had 14 in., Morpeth and Crieff 18 in., and Blairgowrie 22 in. The drifts were from 7 to 10 feet deep locally, and the railway and postal services were delayed. The precipitation (rain or melted snow) exceeded an inch at a considerable number of stations, 1·5 in. at Ushaw, Rauceby, Matlock, Abersychan, Pant-yr-Eos, and Old Road (Snowdon), and 1·6 in. in the Forest of Dean, at Ruardean and Worcester Lodge.

Strong gales were again felt on some coasts from the 14th to the 16th, a whole gale at Roche's Point, where, on the 14th, the gusts attained a velocity at the rate of 75 miles an hour. At Lerwick a whole gale from South-East was maintained daily from the 9th to the 16th. Though the secondary depression which crossed the southern districts between the 19th and 21st was very deep, there were few reports of gales, Portland Bill and Dover having a strong gale on the 20th, and the anemometer at Pendennis registering gusts of 66 miles an hour on the 19th. Heavy rain also affected only limited areas, very few falls of an inch. From the 21st to the 27th, there was much less wind, but there were considerable falls of rain, and on occasions snow. In Snowdonia there were rainfalls from 2·5 in. to 3·9 in. on the 22nd, and at Seathwaite 2·1 in. on the 24th. The 25th and 26th were the only quiet days of the month, the conditions becoming unsettled again immediately in the rear of the anticyclone of these dates, and from the 28th to the 31st gales were experienced in many districts, a strong gale at several stations, a whole gale at Dungeness on the 30th, and a gust of 71 miles per hour at Scilly on the 31st. Heavy rain fell on the 30th over Britain, up to 2·2 in. at Ardnadam, 2·5 in. at Gruline, and from 2·1 in. to 2·8 in. round Snowdon.

As a rule the month was of a mild open character, the temperature frequently mounting to 50° and upwards, touching 56° at Gordon Castle on the 7th, Fowey on the 10th, and Phoenix Park on the 24th; and 57° at Glasnevin and Trinity College, Dublin, on the 7th. There were also many high night minima, 50° at Dublin, De la Salle (Waterford), Birr Castle, Scilly and Penzance on the 7th or 8th, and 51° at Glasnevin on the 7th. There were, however, some sharp frosts, the severest on the 13th and 14th, when there were many records below 20°, as low as 10° at Newton Rigg, and 8° at Raunds. In another, between the 22nd and 26th, West Linton touched 17°, and Balmoral 13°. The frost of the 13th held throughout the day at many stations, the lowest of the maxima being 28° at Garforth, and 26° at West Witton.

For the midwinter month thunderstorms were fairly numerous, noted in many places on the 15th, 19th, 20th and 31st, frequently with hail or snow.

An aurora was witnessed at Deerness on the 17th.

Inland fogs were a little more frequent than in several previous Januarys. On the east coast of Britain fog was reported nearly every day, on the western coasts it was much less frequent, and along the English Channel rarely mentioned.

The coastal sea water was about 1° colder than during December, but in most localities it was from 3° to 4° warmer than the air on shore.

**Rainfall.**—There was a considerable deficiency of precipitation over northern Scotland, all other districts returning an excess. The percentages of the normal ranged from as low as 18 at Dunrobin, 32 at Strathpeffer, 38 at Nairn, and 44 at Glencarron to 200 and upwards in several neighbourhoods, 234 at Woolacombe, 238 at Glasnevin, 246 at Spurn Head, 252 at Dublin (City), and 261 at Shields. Less than ½ in. fell at Dunrobin and Fortrose 0·7 in., at Nairn, and an inch at Strathpeffer, whereas many stations totalled more than 10 in., Treherbert 15·3 in., Seathwaite 15·7 in., and half a dozen gauges about Snowdon from 20 in. to 23·5 in. Generally the frequency of precipitation was above the normal, 28 to 31 days at a number of places, but a few had less than 15 days, Temple Bruer 10, Fortrose 8, and Dunrobin 5.

**Bright Sunshine.**—Only a few isolated situations had an excess of insolation, Westminster returning a percentage of the average as high as 159, Greenwich 128, and Llandudno 117. Over the country as a whole there was a considerable deficiency, 36 per cent. of the normal at Newton Rigg and Stonyhurst, 35 at Durham, and 28 at Glasgow and York. At Bradford, Glasgow, Manchester (City) and Hull the duration was less than ¼ hour per day.