

MONTHLY WEATHER REPORT OF THE METEOROLOGICAL OFFICE.

(Supplement to Weekly Weather Report.)

SUMMARY OF OBSERVATIONS COMPILED FROM RETURNS OF OFFICIAL STATIONS AND VOLUNTEER OBSERVERS IN THE UNITED KINGDOM, AND AT GIBRALTAR AND MALTA, WITH A CHART OF RAINFALL CONTRIBUTED BY THE BRITISH RAINFALL ORGANISATION.

ISSUED BY THE AUTHORITY OF THE METEOROLOGICAL COMMITTEE.

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FORTIETH YEAR.

Vol. XXXII. (New Series)

{ No. I.

JANUARY, 1915.

[Price 6d.]

MANY GALES AND HEAVY RAIN IN ENGLAND:

Dull in the East: Bright in the North and West: Unusually Large Range of Pressure.

The rough and rainy conditions which had been renewed after a short Christmas interval continued until the greater part of January had passed. Temperature rarely fell much below the normal, and most of the month passed with little or no frost. Snow was seldom experienced, and the heaviest fall occurred in the south-east of England on the 22nd.

On the 1st day of the month the whole of the Kingdom was under the direct influence of a large and deep cyclonic system, marked A on map 2. The centre of the depression remained outside our coasts travelling northward and north-westward, but the barometer reached an exceptionally low figure in Ireland. In the south of that country it fell to 952 millibars, and in the north to 948 millibars on the 1st, and was below 980 millibars throughout these Islands and over most of the North Sea. The resulting Southerly gale was violent and very general, and continued in the north of Ireland and the far north of Scotland on the 2nd. Squalls or gusts of force 10 (Beaufort scale) were experienced at Scilly, Portland Bill, Yarmouth, and Aberdeen. At Pendennis Castle the velocity in a gust reached 37 m/s, and at Plymouth 32 m/s. The rain connected with the depression was not heavy except at a few places in Ireland and in Snowdonia. A secondary depression, track B, developed in the south-west as the main system passed away, and travelled east north-eastward to Germany. It was followed by another passing over a similar course after the evening of the 6th, and by a third, track D, which moved south-eastward and eastward. These prolonged the rainy type of weather, but caused no general gale. A Westerly gale, however, sprang up on various parts of the western and southern seaboard on the 7th or 8th. At Dover and Shoeburyness on the 7th the velocity in a gust reached 23 m/s, and at Scilly on the 8th it touched 30 m/s. Rain fell daily in almost all parts of the Kingdom. With the secondary depression of the 3rd, 58 mm. fell at Mildenhall, 50 mm. at Marlborough, 35 mm. at Cirencester, 34 mm. at Malmesbury, 26 mm. at Malvern, and 25 mm. at Meltham, and on the 6th or 7th falls exceeding 25 mm. occurred in isolated places over a wide area in the west. At Princetown, Pen-y-Gwryd, and Bungalow the fall exceeded 40 mm. On the 9th a depression covered the North Sea, and the North-Westerly wind prevailing along our western seaboard was strong to a gale on some exposed points. The next depression, track E, moved in a general easterly direction across the north of these Islands and the North Sea to the Baltic. It was not of great intensity, but on the 10th or 11th the wind reached gale force over a considerable part of the Kingdom. The highest velocities in gusts were 28 m/s from North-West at Eskdalemuir and Southport and 29 m/s at Scilly on the 11th. In Snowdonia and its immediate neighbourhood, and in the Peak district, large amounts of rain fell on the 10th. At Bungalow there was 90 mm., at Pen-y-Gwryd 71 mm., Old Road 50 mm., Bettws-y-Coed 32 mm., and at Buxton 39 mm. On the 11th 28 mm. fell at Macclesfield. The wind soon backed to the South-Westward again as depressions passed northward and north-eastward outside our western and northern coasts, tracks F and G, and the force of a gale was attained on some exposed parts of the Scottish and Irish coasts. By the morning of the 16th a well marked depression had developed over the North Sea, while pressure had become relatively high in the west and north of the United Kingdom, and the gradient for Northerly and North-Westerly winds was steep. A gale, beginning from the Westward on the 15th, and subsequently veering to North-West and North, was experienced generally. From the Westward its greatest gust velocity was 30 m/s at Southport and 35 m/s at Quilty. On the 16th, when the direction had veered several points, high velocities in gusts were recorded in the South-East of England, 27 m/s at Warlingham, 28 m/s at Dover and Kew, 30 m/s at Shoeburyness, and 31 m/s at Benson. On the 17th the velocity in a gust ranged between 20 m/s and 26 m/s at many stations in the east and north-east. With the veering wind the temperature fell briskly, but nearly all the precipitation came on the 15th in the form of rain, while the wind current was still Westerley. Heavy falls were experienced in the western and northern districts—27 mm. at Llangammarch Wells, 35 mm. at Bettws-y-Coed, 34 mm. at Burnley, 56 mm. at Seathwaite, 54 mm. at Arncliffe, 29 mm. at Bradford, 37 mm. at Huddersfield, 54 mm. at Meltham, and 29 mm. at Buxton. The return of the wind from North to West coincided in time with the passage of Zeppelin air ships across the North Sea and over the Eastern Counties on the 19th. On the 20th, with a South-West wind, further heavy rains fell in Snowdonia—56 mm. at Pen-y-Gwryd, 50 mm. at Old Road, and 85 mm. at Bungalow. On the 21st a depression, at first V-shaped, passed over these Islands, and a gale was felt on the western and south-western coasts. Several of the gusts were of great force; at Quilty a velocity of 33 m/s was registered, at Holyhead 32 m/s, and at Scilly 31 m/s; all on the 21st. On the following day, when the depression had become much modified in form and its centre lay over the south-east of England, heavy precipitation accompanied the Northerly wind prevalent over this country; it amounted to more than 25 mm. over an extensive area; in various places falling as snow. At Emsworth the snow gave 26 mm., at Aldershot 28 mm., and at Isleworth 32 mm. In the metropolis the fall of rain and snow together yielded from 24 mm. to 29 mm. of water. In some localities the snow was deep for a short time—19 cm. at New Malden, 23 cm.

at Grayshott, 25 cm. at Midhurst, and 30 cm. at Warlingham. At Camden Square, London, the snow continued to fall uninterruptedly from 6.30 a.m. till 6.45 p.m., and measured 24 mm. of water when melted, but the depth on the ground was no more than 5 cm.

After a secondary depression, which caused remarkably sudden and heavy squalls at Scilly during the early morning of the 23rd had passed away over France, conditions became less disturbed. The rain also ceased over a large portion of the country, and several fair, dry days were experienced. On the 31st a depression travelled eastward across the north of Scotland and caused gusts of 26 m/s at Holyhead.

Temperature. as a whole, was mild for the time of year during the prevalence of the rough Southerly to Westerly winds of the first fortnight, and except locally at high altitudes in Scotland, there was very little frost. Maximum readings above 50° were common on several days over an extensive area. On the 13th the thermometer reached 58° at Seskin, Carrick-on-Suir, while on the same day 55° or above was recorded at several stations in England, the highest value being 60° at Torquay. During the latter half of the month the wind was occasionally from the North or North-West or light and variable, and temperature was much lower. For the week ended on the 30th the mean temperature over the British Isles was 7° F. lower than that for the week ended on the 16th. In England South-West the difference was 9°. In a few parts of Scotland the mean temperature for the fourth week was below 32°, the lowest value being 30°·2 at West Linton. There was, however, little continuous frost. Even in the coldest parts of the Kingdom the thermometer rarely failed to rise above 32° during the daytime, and in the milder districts often touched or exceeded 40°. The sharpest frost of the month occurred early on the 23rd in the south-east of England, and was very local. At Matfield the thermometer fell to 13°, at some stations in Essex, to 14°, and at Chelmsford and Copdock to 15°. On the same occasion a reading of 18° was recorded at Tunbridge Wells and Wallington, 21° at Hampstead, and 22° at Greenwich and Wisley. The distribution of pressure at the time was cyclonic, the centre of a depression, track J on the chart, having arrived in that neighbourhood and begun to fill up. Occasional low minima were also registered in Scotland. On the 18th, and again on the 30th, there was a reading of 19° at Fort Augustus, 20° at Kilmarnock on the 24th, and at West Linton and Eskdalemuir on the 27th, 21° at Balmoral on the 26th, and 18° at Lednathie on the 28th. On the 30th, there was a reading of 20° at Llangammarch Wells and of 22° at Cahir and Markree Castle. The mean temperature of the water of the river Derwent, at Belper, was 42°·5, or 4° higher than the mean temperature of the air.

Coastal Fogs.—At no time did fog extend over a long stretch of coast, but patches were reported from time to time on the western seaboard and occasionally along the east and north-east coasts.

Rainfall.—Over a considerable area in Scotland and at a few places in Ireland the total fall was less than the average, but over England and the Kingdom generally there was an excess. At Crieff the percentage of the average was only 59, at Glasgow 62, Leith 64, and Stronvar 68, while at Waterford it was as low as 50, and at Roche's Point 44. At various places in England, chiefly in the north and east, the percentage of the average exceeded 200, and reached 237 at Hawarden Bridge and 242 at Spurn Head. Over England and Wales as a whole the percentage was 148. A feature of the rainfall both of December and January is the very large percentage in regions usually relatively dry.

Floods.—The floods in the Thames Valley reached their maximum level at the beginning of the second week, and were the highest since November 1894. At Shrewton the chalk springs were higher than they had been for 140 years. At Kew Observatory the underground water reached its maximum height at 2 a.m. on the 16th when it was 397 cm. above M.S.L.

Barometer.—Pressure was much lower than usual over the entire Kingdom. The trend of the isobars, chart 1, was also rather different from the average; in Scotland they ran more South-Westerly, while in England they were more in favour of North-Westerly winds than usual. In the north of England and the south of Scotland the gradient was much less steep than elsewhere. The extreme range of pressure, 93 millibars, was very large. No such low reading as the 948 millibars which occurred in Ireland North on the 1st had been recorded in these Islands since November, 1912, when the barometer fell to 946 millibars in Scotland North. The highest reading of 1048 millibars registered in Ireland on the 18th, had not been equalled since January 1914, when it was slightly exceeded in Scotland.

Aurora was observed at Gordon Castle on the 13th.

Bright Sunshine was less than the normal over the eastern half of the Kingdom generally, but above it in the west. At Scarborough the percentage of the average was 52, and at the Gledston 54, while at Southport it was 108, at Cullompton 114, at Torquay 124, at Plymouth 127, at Birr Castle 131, and at Douglas 141.