

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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A VERY WET AND STORMY MONTH.

Dull in the North and East: Bright round the Irish Sea and English Channel.

The weather in January was exceptional principally over England, but in February exceptional conditions prevailed over the whole Kingdom, at first with strong Southerly winds and a high temperature, and subsequently with more variable cyclonic winds and a moderate temperature; late in the month there was a brief dry, quiet, and cold spell.

Depressions moved in a northerly direction outside our western and north-western seaboard during the early days of the month. Gales from the Southward were experienced in various localities on the 2nd, very generally in the west and north on the 3rd, on the extreme western and north-western coasts on the 4th, and on several parts of the western and northern coasts on the 5th. The violence of the gales was not, as a rule, very great, but on the 2nd a gust velocity of 34 m/s occurred at Pendennis Castle, on the 3rd gusts of 34 m/s and 33 m/s respectively were recorded at Edinburgh and Paisley, and on the night of the 5th force 10 (Beaufort scale) was experienced at Lerwick. A depression, track A on map 2, moving quickly eastward across the south of England, prolonged the gale from the South-Eastward on our northern and north-eastern coasts, while the wind continued strong to a gale from the Southward, veering to the Westward, on the English Channel. On the 7th a depression off the north-west of Ireland, track B, caused a gale over a wider area, and on the 8th gales were still experienced on isolated parts of the coast. Throughout this stormy period rain fell daily over the greater part of Ireland and the western districts of Britain, and on some days it was much more general. On the 1st 33 mm. fell at Eskdalemuir, 41 mm. at Fort William, 69 mm. at Ardnadam, 51 mm. at Pen-y-Gwryd, and 26 mm. at Princetown; on the 2nd 50 mm. at Pen-y-Gwryd, and 56 mm. at Delphi (Co. Mayo); on the 5th 29 mm. at Wilton (Salisbury), and 36 mm. at Princetown; and on the 7th 28 mm. at Sheepstor and 40 mm. at Pen-y-Gwryd, while at Crathes snow, when melted, yielded 49 mm. of water in the gauge. Thunder and lightning occurred in a few localities in Ireland and the west and south of England. At Grayshott and Tavistock on the 8th thunder was heard during a fall of snow and hail.

The next depression, track C, followed a very erratic course. Simultaneously with the movement of this depression from Ireland to central France, another system, track D, was travelling north-westward from Germany across the North Sea and Scotland. Neither disturbance caused any serious increase in the force of the wind, and the accompanying rain was not very heavy, but as soon as they had disappeared another, and deeper, depression, track E, approached these Islands from the westward with unusual rapidity, and at once caused a South-Easterly gale on our south-west coasts. On the 13th, when the barometer had sunk to its lowest level for the month over the southern half of the Kingdom, a gale from between South-West and South-East was experienced on our south-western and southern coasts, and an Easterly gale further north. At Brighton the gust velocity was 30 m/s and at Pendennis Castle and Scilly 35 m/s. More than 25 mm. of rain fell in many places; 33 mm. at Dungeness, 32 mm. at Tavistock, 38 mm. at Ashburton, 45 mm. at Princetown, and 62 mm. at Holne. As the disturbance travelled away north-eastward it became less deep, and the North-Westerly and Northerly winds in its rear reached gale force at Spurn Head only. By the morning of the 16th the advance of another depression towards Ireland, track F, had drawn the wind into the Southward again in the western districts, and by the evening a South-Easterly to Southerly current of increasing strength had extended to all parts of the Kingdom. Gales were experienced over a large area, the highest gust velocity being 34 m/s at Pendennis Castle on the 17th. During the Southerly gales in front of this disturbance the Zeppelins L 3 and L 4 were lost near Blaavand's Huk on the evening of February 17th. With the Southerly wind on the 16th and 17th, rain was general. On the 16th 43 mm. fell at Falmouth, 44 mm. at Paignton, 45 mm. at Colmonell, 50 mm. at Jersey, 52 mm. at Redruth, 75 mm. at Ashburton, 83 mm. at Sheepstor, 87 mm. at Holne, 89 mm. at Treherbert, and 96 mm. at Princetown; and on the 17th 34 mm. at Dorchester and Pen-y-Gwryd. On this day thunderstorms occurred at several places in Ireland and the west of Great Britain.

After the dispersal of this depression on the 23rd-24th an anticyclone came up from the south-westward and was accompanied by a fall of temperature and generally dry, fine weather. In the south-west of England and South Wales on the 25th the weather was almost cloudless, and the sunshine records unusually high for the time of year. By the morning of the 26th, however, another depression, track G, had already extended over the western and north-western districts, bringing strong Southerly winds and gales, with further falls of rain; at Colmonell and Grubne the rain measurement was 37 mm., at Eskdalemuir 41 mm., Aspatria 46 mm., and at Pen-y-Gwryd 52 mm. On the 28th thunderstorms were experienced in several parts of Derbyshire and Lancashire, as well as at Southend-on-Sea.

Rainfall.—For the fourth consecutive month the precipitation was greatly in excess of the normal. Over the Kingdom generally the amount, expressed as a percentage of the average was 181, while in England and Wales it was as high as 196. The rain was especially heavy in Devon and Cornwall; a considerable portion of the Dartmoor region received more than 375 mm. Most of the heaviest downpours came with the Southerly

winds while the depressions were extending over these Islands, but there were also large quantities with the complete cyclonic wind circulation that accompanied the passage eastward of the deep disturbance of the 13th. It would appear from the relatively few stations giving two rainfall measurements in the 24 hours—one for the 9 hours ending at 6 p.m., and one for the 15 hours ending at 9 a.m.—that the percentage of fall was higher during the hours between sunset and sunrise than during the daytime, and this is borne out by a few places that report measurements both at 9 a.m. and at 9 p.m. At Weston-Super-Mare, where proportional 6 p.m. measurements would have yielded 27 mm., the actual yield was only 12 mm., or 44 per cent. of the amount. In a few localities in Scotland the aggregate rainfall was less than the normal. At Fort William and Glencarron the percentage of the average was 81 and 86 respectively, but at Braemar it was as high as 294, and at Cargen 313. In England many stations received more than 220 per cent. of the average, and in the south of Ireland one or two stations had about 200 per cent. At Ashburton the percentage was 250, at Southampton 257, and at Wilton (Salisbury) 306.

Snowstorms had little part in the total precipitation of the month, but snow occurred from time to time in all the more northern districts and occasionally in the south. At Hemel-Hempstead on the 13th snow lay to a depth of 8 cm., and after a fall on the 22nd or early on the 23rd 8 cm. or more covered a rather large area in Great Britain. At Ardrross Castle the depth was 27 cm., at Fort Augustus 18 cm., at Harrow and Mildenhall 15 cm., and at Pen-y-Gwryd 13 cm. At Mayfield melted snow yielded 14 mm. of water in the gauge on the 20th and again on the 28th.

Floods.—Before the advent of the brief, dry anticyclonic period at the end of the third week, large areas of low-lying country in southern England were flooded. The level of the underground water at Kew Observatory varied between 342 cm. above M.S.L. on the 8th and 406 cm. above M.S.L. on the 19th.

Temperature.—The mean temperature for the month differed little from the normal. The warmest period occurred with the strong current of Southerly winds during the first week, and the coldest weather accompanied the quiet, anticyclonic condition prevalent during the last week. The mean temperature over the Kingdom generally during the former period was 42.9, or 5.5 above that of the last week. Very warm days for the time of year were few, and the maximum readings for the month were experienced at nearly every station on the 3rd, 4th or 5th. Frosty nights were by no means frequent for February, and severe frost very rare. On the 1st there was a minimum temperature as low as 18° at Balmoral, and the same station recorded 14° on the 16th, but the most important and general frost did not occur until after the 23rd, when minima of 11°, 12°, or 13° were registered in some parts of Scotland on the 24th. Markree Castle on the same day had a reading of 20°, and on the 25th readings below 20° were recorded in some English and Welsh localities, the lowest being 15° at Marlborough. Only three stations—Llandudno, Holyhead, and Scilly—passed through the month without frost.

Maxima below 40° occurred from time to time in all parts of the Kingdom except the extreme south-west. At Darwen on the 12th the thermometer only rose to 34°, and during the cold, anticyclonic spell similar maxima were registered over a much larger area, but at none of the stations did the thermometer remain below 32° throughout 24 hours.

The mean temperature of the water of the River Derwent at Belper was 42.5, or 4.1 higher than the mean temperature of the air.

Coastal Fogs were not uncommon on some parts of the western coasts, but they were seldom dense, and did not, as a rule, extend over a large area. The visitation was more prevalent with the mild Southerly wind of the early days of the month than later, although several places reported the phenomenon on the 13th and 16th, and again during the quiet atmospheric conditions of the 25th.

Barometer.—The mean pressure, as will be seen from map 1, was below the average over the whole Kingdom, and the gradient steeper than usual, while the trend of the isobaric lines over Great Britain was much more Southerly. The lowest barometer reading for the month, 959 millibars, occurred in Ireland South on the 13th, and the highest, 1,033 millibars, in England South-East and South-West on the 26th. In Scotland the highest value was 1,028 and the lowest 973 millibars, and contrary to the general rule, the range of pressure was greater in the southern parts of the Kingdom than in the north.

Bright Sunshine exceeded the normal except in the north-east and east of Great Britain. At Strathpeffer the percentage of the average was only 75 and at Harrogate 79, while at Douglas I.M. it was 130, at Brighton 131, and at Oxford 139. The brightest spot of all, relative to its average, was Westminster, where the percentage was 171.

Aurora was observed at Fort Augustus on the 8th, and at Aberdeen and Gordon Castle on the 22nd.

A rather fine sun pillar, of a golden colour, was seen at Benson, near Wallingford, on the morning of the 15th.