

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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DRY: USUALLY MILD.

Pressure, Winds and Weather.—During the earlier half of the month one distinct type of pressure distribution predominated, the only interruption being between the 4th and 7th, when a ridge of relatively high pressure stretched over these Islands in a north-westerly direction from the Continent. With this exception the barometer was highest either over the Bay and Peninsula or France, and very occasionally over South Germany, the readings often exceeding 30·3 in., and sometimes exceeding 30·4 in. while a vast band of low pressure extended from the northern regions of Europe across Iceland, and on towards the northern regions of Canada. Within this area cyclonic centres, several of them of great depth, travelled in a general easterly direction, and at the same time extended more or less over the United Kingdom, where the gradient was sometimes accentuated or reduced by the passage of a secondary disturbance. The main wind current over the British Isles was consequently South-Westerly to Westerly, although there was an occasional veering towards North-West. The mean velocity was rather high, and gales were frequent on exposed parts of the northern and north-western coasts. On several occasions the force of a gale was experienced over a larger area, but the only really general gale occurred on the 3rd. On that date the centre of a deep depression moved from west to east beyond the north of Scotland, and a secondary directly over that country, and as the latter became still deeper during its passage, the wind rose to a gale in almost all parts of the Kingdom. The force of a strong to whole gale was reported on many coasts, and some of the gusts were of great violence. At Holyhead there was a gust of 71 miles an hour, at Falmouth 74 miles, at Bellingham 75 miles, and at Southport 82 miles. In the rear of the centre on the 4th a squally gale from between West and North-West occurred on numerous parts of the coast. At Holyhead a gust attained the velocity of 77 miles an hour, and gale force was maintained for 12 hours, while at Southport there was a gust of 68 miles. This depression gave the lowest barometer reading of the month, the level of 28·71 in. being recorded in the east of Scotland. From this date until the pressure distribution underwent a change the only parts of the United Kingdom affected by gales were the extreme north-west, north and north-east coasts, and the velocity was seldom as high as 50 miles an hour. The change in the pressure distribution on the 16th was brought about by a depression moving south-eastward down the North Sea, pressure becoming at the same time highest off our south-west coasts. A very decided increase in the gradient, for North-Westerly winds, was followed by a gale over the northern half of the Kingdom, the gusts reaching 57 miles an hour at Holyhead, and 61 miles at Aberdeen. By the time the depression was situated over Germany, on the 17th, the centre of the anticyclone was over Ireland, and the wind was Northerly to North-Westerly over the British area. The high pressure system now increased in intensity, and by the 21st the highest readings of the month were recorded. Over a considerable portion of Ireland the figure was 30·7 in., reaching 30·71 in. in the southern section. This was the highest value of the month—just 2 in. above the minimum of the 3rd. Having attained its maximum the high pressure system moved away over France to northern Italy and lost much of its intensity, while another depression travelled between Iceland and Norway, and a shallow disturbance, causing much rain in the south-west of England, made a temporary appearance over the Bay of Biscay. By the 24th the gradient over this country was for North-Westerly and Northerly winds, but a new depression, in Iceland, with high pressure stretching from the Azores to France, brought about a reversion to South-Westerly and Westerly types during the 25th and 26th. This was followed by a return to North-Westerly and Northerly types until the 30th, when an elongated anticyclone, which had developed to the westward of these Islands, came directly over the Kingdom. With the disturbance of the 26th strong wind and gales from South-West, veering towards North-West, were experienced throughout the British Isles. At Holyhead the gusts reached the rate of 62 miles an hour, at Southport 70 miles, and at Scilly and Brighton 53 miles, while on the succeeding day gusts from the North-Westward of 57 miles were registered at Holyhead, 60 at Hexham, 63 at Southport, and 52 at Brighton. During the whole month gales or squalls of gale force were recorded in some part of the British Islands on as many as 23 days.

As will be gathered from the map 2, on page cxxv the only depressions that moved in a path directly over these Islands were some "V" shaped secondaries during the first week, nearly all the systems—which were very numerous—travelling eastward along a track to the northward or north-eastward

between Iceland and Greenland. The West North-Westerly trend of the isobars over these Islands and their immediate neighbourhood, shown on map 1, page cxxv existed far to the northward and southward also, as is proved by the lowest mean pressure reading, 29·47 in., being at Bodö, and the highest, 30·24 in., at Lisbon. Over these Islands the mean range of pressure between Lerwick and Jersey was ·478 in. against an average of ·313 in.

Owing to the great distance of most of the low centres and to the scarcity of secondaries over this country, the month as a whole was very dry. Many consecutive days after the first week were quite rainless over a wide area in England. At Tottenham no rain fell between the 7th and 22nd—a period of 16 days; and at Durham there were 20 days without rain—from the 5th to the 24th. Nearly all the precipitation came in the form of rain; but snow was experienced in several localities early in the month. Late in the month, after the change to Northerly conditions, it was general. At Ampleforth on the 4th 7 inches of snow fell in 2 hours, and measured 0·63 in. of water when melted; at Strathpeffer the depth of snow on the 29th was 8½ in., and at Rounton on the 30th 9½ in. Rain measurements of an inch within 24 hours were rare at ordinary levels, but occurred in the east of Scotland on the 3rd, in the Channel Isles and extreme south-west of England on the 5th or 6th, and again on the 22nd or 23rd. In the mountainous regions of the west and north heavy falls were less uncommon. At Seathwaite 1·8 in. fell on the 2nd, and at Fort William and Glencarron the figure was about 1·5 in. On the 3rd or 4th a very large area in Scotland, Wales, the north-west of England, and some Irish localities received more than an inch; Carnoustie 1·9 in., Seathwaite 2 in., Copper Mill 2·1 in., and Pen-y-Gwryd 2·7 in. Further heavy falls occurred on the 14th or 15th, and also with the stormy conditions towards the end of the month. At Seathwaite there was a downpour of 3 in. on the 25th, at Pen-y-Gwryd 2·5 in. on the 26th, and at Intake (Snowdonia) 2·8 in. on the 28th.

Thunderstorms were rather numerous for the time of year both early and late in the month. During the first week they were experienced at several places in Ireland and Scotland, as well as in Wales and the west of England, and with the colder conditions of the 28th and 29th they occurred in all districts, sometimes accompanied by snow.

Except during the first week and on several days late in the month the general level of temperature was much above the average. Maximum readings above 50° were very common, and the minima of the nights were also relatively high. On some occasions, especially on the 8th and 9th, the thermometer rose to 55° or above over a wide area, reaching 59° at Gordon Castle, Colwyn Bay, and Dublin (Glasnevin). The highest reading of all, however, occurred at Sandown, Isle of Wight, on the 1st, the figure being 60°. The cold snap of the 6th and 7th gave some very low minima locally in the north. At Kingussie on the 6th there was a reading of 9°, and at Balmoral on the 7th one of 5°. Late in the month the cold was more general, and the coldest night was the 31st, when a reading of 4° was recorded at Braemar, and over a large portion of Scotland, England, and Wales the figure was between 9° and 13°. At Worksop the grass thermometer went down to -4°. The general mildness of the month is proved by one or two notes by the observers. At Rochford, Worcestershire, "Ripe wild strawberry picked from roadside on the 14th; abnormally large," and at Totland Bay "Blackberries in full bloom on the 17th and 28th."

The mean temperature of the sea surface water was very generally above the average, and also above the temperature on land.

Fog was reported on a few occasions on the south-west and east coasts, but as a whole the atmosphere was clear for December, especially inland.

Rainfall.—A few places in the north and north-west had an excess. At Strathpeffer there was 129 per cent., at Poltalloch 126 per cent., and at Malin Head 137 per cent., Crieff had only 46 per cent., Deerness, Spurn Head, and Westminster 43 per cent., Holyhead 41 per cent., Nottingham 36 per cent., Roche's Point 30 per cent., Rauceby 28 per cent., and Little Massingham 22 per cent.

Bright Sunshine varied greatly in the different localities. At Deerness the percentage of the average was only 26; at Worksop and Newton Rigg it was 61 or 62 per cent., and at Fort Augustus and York 72 or 73 per cent. At Oxford it was 124, Aberdeen 130, Westminster 140, Southport 148, Cullompton 156, and at Glasgow as much as 188 per cent.