

MONTHLY WEATHER REPORT OF THE METEOROLOGICAL OFFICE.

(Supplement to the Weekly Weather Report.)

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

ISSUED BY THE AUTHORITY OF THE METEOROLOGICAL COMMITTEE,

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SUMMARY OF OBSERVATIONS.

General Summary.—Throughout nearly the whole of the closing month of the year the atmospheric conditions over the British Isles were of a very unsettled character, owing, mainly, to the presence of large and as a rule very slow-moving disturbances out on the Atlantic, their centres being frequently at a considerable distance from our coasts, apparently beyond the 20th meridian. Exceptionally few centres left the sea for the land. For more than three weeks, down till Christmas, the pressure minima occupied positions well to the northward, between the 50th parallel and Iceland, so that soft ocean breezes largely prevailed over these islands, the weather was humid, with frequent and sometimes heavy rain, and during the greater part of the time the temperature maintained rather a high level for the time of year, one of the most striking features of the month being the rare occasions on which the thermometer in the screen indicated frost—in London and at several other stations it did not once descend to the freezing point. After Christmas, to the close of the year, entirely different conditions became established. One of the Atlantic disturbances, which was first indicated off the south-west of Iceland, took a south-easterly course and was transferred at a slow rate down to the Bay of Biscay region. The wind consequently shifted to South-East, East and North-East, and being intensely dry, blowing with considerable strength, and drawn from Continental areas of severe frost, the weather assumed an unusually unpleasant character, the wind having the bitter, searching feeling associated with the East wind of Spring. The temperature records during this period were by no means remarkable, there being hardly any frost at night, but the day maxima were rather low, especially over the southern parts of the kingdom, where the daily range of temperature was very small.

Although snow was experienced in nearly every part of the kingdom at various times, and more especially towards the end of the month, the falls were in most places nothing more than light showers. There was a considerable fall locally in Cumberland on the 13th, and in the west of Ireland (County Clare) on the 27th there was a heavy fall to the depth of about six inches, "quite the heaviest fall since I have been here, 1892" (Lt. Col. Tottenham, the observer at Mount Callan). Both at Mount Callan and Lahinch the snow, when melted, yielded $\frac{3}{4}$ in. of water. Hail was of rather frequent occurrence in many localities, but the falls were of an unimportant character.

There was a further decided diminution in the records of thunderstorms, or thunder or lightning alone. Thunderstorms visited various parts of eastern Ireland and the north of England on the 4th, described as severe at Carrigoran and Kirkby Lonsdale, with very vivid lightning at the latter station; and the English Channel district—Scilly, Guernsey, and Jersey—on the 5th. The other thunderstorms were merely isolated instances—Llangammarch Wells on the 8th; Jersey on the 10th; Portland Bill on the 11th; and Markree Castle and Jersey on the 14th.

Fog was much less frequent than in the previous month, having all but disappeared from the coasts. During the 24th there was rather thick fog on the east coast of England, but on the other occasions of its appearance it only visited one or two localities and was of no great density.

For the month as a whole pressure was below its normal level; temperature was nearly everywhere in excess; the winds were from various points in the Southern half of the compass; and the rainfall and the duration of bright sunshine were very irregularly distributed.

Pressure.—Mean at 8 a.m. ranged from 29.81 ins. at Jersey, and above 29.75 ins. over the south-eastern portion of England, to below 29.55 ins. in the north-west of Ireland and of Scotland, 29.51 ins. in the Hebrides. The results were below the average at every station, by from 0.06 in. at Sumburgh Head, and 0.11 in. at Aberdeen to 0.26 in. at Blacksod Point, and 0.27 in. at Valencia. The mean gradient was much about the same as the normal, but the distribution of mean pressure was of a more Southerly type than usual, the lowest values being indicated, instead of to the north-westward of Scotland, at a considerable distance beyond the western coasts, probably to the south-westward of Iceland, the mean pressure at Reykjavik being 29.35 ins. Highest readings were observed on the 1st, 30.29 ins. at Aberdeen, Shields, Spurn Head, and Yarmouth; on the 17th, 30.39 ins. at Clacton-on-Sea, and 30.37 ins. at Dover; on the 24th, 30.39 ins. at Sumburgh Head, and 30.37 ins. at Aberdeen and Shields; and on the 30th, 30.27 ins. at Aberdeen and Sumburgh Head. Lowest values were registered on the 5th, 28.34 ins. at Castlebay, 28.35 ins. at Stornoway, 28.43 ins. at Sumburgh Head, and 28.46 ins. at Wick; on the 8th, 28.49 ins. at Castlebay, and 28.52 ins. at Malin Head; and on the 14th, 28.39 ins. at Spurn Head and 28.52 ins. at Yarmouth. Range slightly exceeded an inch over the western portion of the English Channel, and increased thence in all directions, so that it was more than 1.5 in. at the majority of the stations, and both in Shetland and on the coast of Yorkshire it was nearly 2 ins.

Depressions.—Most of the pressure minima of the month were situated out on the Atlantic, too far away from our coasts for their positions to be determined. On the 5th a very deep cyclonic system moved up outside our north-western coasts, and soon disappeared northward between Shetland and the Faerøe. Another of equal depth travelled in a north-easterly direction outside our western coasts on the 7th and 8th, and afterwards moved very slowly and in a somewhat erratic path to the neighbourhood of the Faerøe, where it appears to have been absorbed during the night of the 12th in a new fall of the barometer shown off the north-west of Scotland. The disturbance then developed considerably, and after moving quickly south-eastwards across Scotland and north-eastern England on the 13th continued on a somewhat more easterly course across central Europe to southern Russia. A small depression moved eastward along the south coast of England on the 12th, and another passed north-eastward from the Hebrides to Shetland and beyond on the 22nd and 23rd, but these two systems were marked by rainy and not windy weather. The low pressure area which was indicated off the south-western coasts and on the Bay of Biscay during the last week of the month produced a cold Easterly type of conditions, gales in several localities.

Anticyclones.—While very few centres of disturbances visited any part of the British Isles, there was only a single instance of a portion of the country being within the central space of a high pressure system, and that occurred on the 30th, when an anticyclone of very moderate intensity passed from the Iceland region across Scotland and the North Sea to the Continent. On the various occasions when the barometer rose to higher levels in these islands, the regions of maximum pressure were found over Germany, Austria or north-eastern Russia.

Winds.—With such a persistent prevalence of low pressure systems out on the Atlantic, the winds in all districts were largely from between South and West, but the transfer of the pressure minimum to the southward of the 50th parallel towards the close of the month brought about a change to a more Easterly type, and the results, therefore, show a considerable proportion of South-Easterly and Easterly winds over a great part of the kingdom. Strong to high winds were commonly experienced, and the force of a gale was reached in numerous places, but the gales were rarely of a severe character. During the first ten days a strong gale was felt only occasionally in isolated situations on the western coasts, the force of a whole gale at Malin Head on the 2nd. The passage of the deep disturbance of the 13th and 14th, however, was marked by a strong North-Westerly to Westerly gale at Roche's Point, Liverpool, Pembroke, Portland Bill, Dungeness, Dover, and Oxford, and a whole gale at Jersey. From the 25th to the 28th, a strong South-Easterly to Easterly gale was experienced at times in various parts of Ireland and Scotland, and at Portland Bill, a whole gale at Malin Head on the 27th, and at Donaghadee on the 28th. The records from the self-registering anemometers disclose few instances of a velocity of 50 miles or more in any one hour. Early on the 14th, Scilly had 54 miles in each of two hours, and Southport 53 miles, both from the North-Westward. On the evening of the 27th, 50 miles was reached at Pendennis Castle, and at 9 a.m. on the following day, 59 miles. The highest rates per hour attained in gusts were 73 miles at Pendennis Castle on the 8th, and at Dover and Southport on the 14th, and 71 miles at Pendennis Castle on the 28th. The number of days on which gale force was recorded at Malin Head was 10, at Jersey 9, and at Deerness, Castlebay, Roche's Point, Pembroke and Portland Bill, 7.

Temperature.—Mean at sea level ranged from 48.7 at Scilly, 47.4 at Guernsey, and above 45° in Cornwall and the Isle of Wight, to below 40° in some of the North-Midland counties of England, and in most parts of Scotland, about 37° at Crathes and Lairg. The general distribution of the sea level values was in fair accordance with the normal, but the actual station values were, with some few unimportant exceptions in Wales, Ireland and Scotland, above the average, the excess in many places being more than 2°, amounting to 3° or more at Kew, Portsmouth, Totland Bay, Portland Bill and Worthing, and over 4° at Eastbourne. Highest day records were obtained on very varied dates, but mainly on the

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