

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 OF RAINFALL CONTRIBUTED BY THE BRITISH RAINFALL ORGANISATION.

ISSUED BY THE AUTHORITY OF THE METEOROLOGICAL COMMITTEE,

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SUMMARY OF OBSERVATIONS.

Pressure, Winds and Weather.—Under the influence of numerous and very deep cyclonic systems, moving across or in the immediate vicinity of the British Isles, the mean barometric pressure for November was everywhere considerably below the usual level. The smallest deficiency was in the south-west, as much as 0.16 in. at Jersey, and 0.19 in. at Scilly, while at Birr Castle it was 0.25 in., and at Malin Head 0.26 in. There was thus no decided variation in the large deficiency, indicating that the general distribution of mean pressure was in close agreement with the normal, relatively high in the south, and low in the north, favourable to a preponderance of winds from between South and West. From 29.88 in. at Paris, and 29.80 in. at Jersey the barometric values diminished northward to 29.55 in. at Wick, and 29.54 in. at Lerwick. A trough of low pressure stretched from the Upper Atlantic east north-eastward between Scotland and Iceland towards the north of Norway, the lowest mean value being 29.50 in. on the south-west coast of Iceland, at Reykjavik. Thence the values increased northward, to above 29.6 in. beyond the north coast of the island. The anticyclonic systems of the month were almost entirely confined to Continental countries and the Iceland-Greenland region, so that the barometer seldom passed above 30 in. in these islands, but on the 14th it mounted to 30.38 in. at Dover and Jersey, on the 26th to 30.45 in. at Lerwick, and on the 29th to the same height at Yarmouth and Jersey. Notwithstanding this absence of very high readings the range of pressure for the month was large. At every station in the kingdom the barometer dropped below 29 in. on at least one day, at nearly all on two days, and in many cases on three, four or five days. The deepest depressions were those of the 4th and 5th, when the readings were below 28.5 in. over the northern half of Scotland, and as low as 28.09 in. at Lerwick. On the evening of the 18th the mercury went down to 28.5 in. on the coast of Kent. In the west of Ireland the extreme range was $1\frac{1}{2}$ in., but over a great part of the kingdom it exceeded $1\frac{3}{4}$ in., and at the most northern stations in Scotland it was more than 2 in., amounting to 2.4 in. at Lerwick.

After about four months of remarkably fine and drougthy weather, the conditions underwent a complete reversal in October, wind and rain storms becoming general from the 19th of that month. This abnormally disturbed type was maintained, without any appreciable interruption, until about November 18th or 19th. Wireless reports from steamships showed that throughout this period the conditions on the upper portion of the Atlantic were of a stormy character, under the influence of a series of deep cyclonic areas passing from the western to the eastern side of the ocean. Some of these followed a north-easterly course between Scotland and Iceland, the deepest of the series crossing the Farøe on the morning of the 4th, with the barometer below 28 in., its immediate successor being nearly as deep as it crossed Shetland next morning. Two moved from our north-western coasts, south-eastward to London, then north-eastward to the North Sea; one appeared off the south of Ireland and struck off northward across Scotland to the north of Scandinavia; one died out on reaching the west of Scotland, others followed more variable paths. After the deep depression of the 18th, mentioned above, a change in the pressure distribution set in, the Iceland-Greenland anticyclone moving eastward and south-eastward and becoming established over Northern Europe and to some extent over the British Isles. The immediate result was to check the advance of the Atlantic disturbances, and to divert them to more southerly paths, to the Bay of Biscay and southward, but still near enough to affect our weather, though to a modified degree.

Under these circumstances the month was of an exceedingly windy character, a strong or high wind (forces 6 and 7) being felt on every day in several localities, while on as many as twenty-four days, the first twenty-one in succession, at least a gale (force 8) was registered at one or more of the telegraphic reporting stations. Through the first seventeen days the strong winds and gales were in nearly all cases from points between South and West; from the 18th to the 20th, North-Westerly to Northerly; from the 21st to the 26th, North-Easterly; and from the 27th to the 30th, between East and South. The most tempestuous period of the month was associated with the passage of the two deep depressions of the 4th and 5th which followed each other at an interval of 24 hours. Out on the ocean ships experienced very severe weather, a South-Westerly to a North-Westerly whole gale to a hurricane (forces 10 to 12) being recorded. The approach of the first depression was marked by a decided increase of the South-Westerly wind on our coasts on the 3rd, a strong gale at Castlebay and Malin Head, and a whole gale at Wick. Next day the area affected was greatly enlarged, a whole gale at Blacksod Point, Castlebay, and Spurn Head, hurricane force at Malin Head. On the 5th

the gale was general, and in many localities very violent, about half the stations a strong or whole gale, Donaghadee a storm (force 11), and Malin Head reporting a hurricane. By the 6th the centre of disturbance had passed to Scandinavia, the gale over this country was moderating and veering more Westerly, but a whole gale was felt at Newquay, and again a hurricane on the Donegal coast. Anemometrical registers show that from the 3rd to the 7th gusts at the rate of 60 miles and upwards per hour occurred in various localities, on the 5th 70 miles at Dwyran (Anglesey), 73 at Alnwick Castle and at Pendennis Castle, 74 at Quilty, 75 at Holyhead, and 78 at Shields; and on the 7th 72 miles at Pendennis Castle. Afterwards the only instance of a higher force than that of a strong gale was at Newquay, on the 18th, where a whole gale from North-West blew.

While the wind was in the Western half of the compass, the weather maintained the excessively wet features of the second half of October. Day after day there were heavy falls of rain, occasionally varied by hail, sleet or snow. In all parts of the kingdom falls of an inch or more in a day were exceptionally numerous, the largest quantities reported being 3.3 in. at Seathwaite on the 3rd, 2.1 in. on the 5th, and 2 in. on the 8th at Cruachan, and 2.5 in. at Caragh Lake on the 14th. At Cruachan the aggregate for the first seventeen days was 12.5 in., of which an inch or more fell on as many as six days. The generally wettest day of the month was the 11th, involving the whole of the southern half of England, within which area at least 30 observers registered an inch and upwards, up to 1.8 in. at Kearsney, Kent. During the wet period which set in about October 19th, rain was of daily occurrence in many places, and the total rainfall was unusually large. For instance, at Gruline (Mull) and Cruachan there were 30 consecutive rain days, yielding 14.7 in. at the former station, 17.9 in. at the latter; Caragh Lake had 32 days, yielding 18.7 in.; Abersychan, 33 days, with 10.6 in.; and Newquay, 35 days, with 5.8 in. Various observers, however, add a note to the effect that "most of the rain registered has fallen during the night, and the days as a whole have been fine, with a good deal of sun." After November 19th the conditions were influenced by the Scandinavian anticyclone, and hardly any heavy falls of rain were experienced, the returns from many districts, especially in the west, showing nine or ten consecutive rainless days.

The temperature of the month was fairly uniform, about or rather below the normal. There were a few afternoon maxima of 60° in the first five days, and there were occasional night frosts, mostly about the 11th, 22nd and 26th, with the shade minimum 25° or lower in many places, 20° at Wokingham on the 22nd, and at Nairn on the 26th.

Thunderstorms were, for the time of year, fairly common in the first ten days, particularly in Scotland. At Crieff, on the 2nd, the lightning was described as "fire flashes"; and on the 5th, during a very severe storm at Fort Augustus, "ball lightning" was reported in many places.

Aurora was observed at Liverpool on the 8th, at Aberdeen and Crathes on the 13th, and at Gordon Castle on the 16th.

Both inland and on the coasts there was an unusual absence of fog until the last two or three days of the month, and then it was of a local character.

There was a general decrease in the temperature of the coastal sea water as compared with October, lower by 5° and upwards in many localities, by as much as 9° at the entrance to Milford Haven. The water was, however, warmer than the air on shore, by 6° on the east coast of Ireland, 8° off Wick.

Rainfall.—Nearly all stations returned an excess of precipitation. Hawarden Bridge received 1.7 in., and Hoylake, Rhyl and Kingston-on-Soar, 1.9 in., but there were few totals less than $2\frac{1}{2}$ in., while the largest amounts were 8.8 in. at Cuckfield (Sussex), 13.5 in. at Cruachan, 14.4 in. on Plynlimmon, 14.6 in. at Treherbert, 16.5 in. at Glenquoich, and 18.1 in. at Seathwaite. The percentage of the normal ranged from 71 at Hawarden Bridge and Hoylake, 82 at Dunrossness, and 83 at Alnwick Castle to more than 200 in several localities, 245 at Worthing, and 257 at Nairn. As was the case in October, Kent and Sussex were excessively wet. Rain was measured on 13 days at Yarmouth, and on 14 days at Tottenham and Dursley (Glos.), but as a rule on more than 20 days, 28 at Mareham le Fen, Clongowes Wood and Newcastle (Wicklow), and 29 at Baltasound and Balruddery.

Bright Sunshine.—There was an excess of insolation in most places, the records ranging from 28 hours in London (City), and 29 in Manchester (City) to 97 at Torquay and Fowey, and 103 at Falmouth. The percentage of the normal ranged from 87 at Aberdeen and Margate to 127 in London (City), 130 and upwards in various places, 160 at Stornoway, and 162 at York.