

## 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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## MILD AND WINDY, VARIABLE RAINS.

**Pressure, Winds and Weather.**—Throughout the month the distribution of atmospheric pressure was of a very unsettled type. One of the striking features was the persistency with which anticyclonic systems kept almost wholly to the southward of the 50th parallel, occupying the middle belt of the Atlantic, and extending eastward along the Mediterranean and Southern Europe. The United States and Russian reports show that this region of high barometer readings frequently stretched across the Southern States to the Pacific coast, and across Asia as far as China. On various days the barometer rose above 30½ in. between the Azores and the western coasts of the European Continent, and attained its highest level, above 30.6 in., over the north-west of Spain and to some distance out on the ocean. There were only a few occasions when the anticyclones expanded northward sufficiently far to embrace any considerable portion of the British Isles. The barometer did not mount to 30 in. in Shetland and the Orkneys, the highest reading in the north of Scotland being 30.15 in. at Castlebay, in the Southern Hebrides, on the 26th. At our south-western coast stations there was a reading of 30.54 in. on the 19th, a level which was just exceeded on the 28th at Newquay, 30.55 in., Valencia, 30.56 in., and Scilly, 30.57 in., the highest home records during the month.

Northward of this vast high pressure area was an extensive basin of low pressure, in which there was an endless succession of secondary depressions, apparently circulating round the polar region, with their paths of progression generally between east and north. Most of those that exercised any influence on the weather conditions over the United Kingdom traversed the north-east quarter of the Atlantic, either across Iceland or the immediate vicinity, and passed on to the Arctic Sea. All of them were very deep, the barometer often below 29 in., as low as 28 in. on the 25th, 28.2 in. on the 1st, and below 28½ in. on the 14th, 17th, 23rd and 27th. These systems were so extensive that their southern sections swept across this country. The few depressions that visited our shores were not nearly so deep. A disturbance approaching the north-west of Ireland on the evening of the 5th was in the filling-up stage, and after moving across the country it dispersed on the upper part of the North Sea on the evening of the 7th. At this time a cyclonic system of considerable depth was located in mid-ocean, on about the 50th parallel, the barometer descending below 28½ in. on the 8th. Its eastward progress was very slow, its centre reaching the 15th meridian on the evening of the 10th. Then, suddenly changing its course to the northward, it was off the Hebrides by the morning of the 12th. Another sudden change of course and it moved eastward to the North Sea, where it died out next day. When it passed over Aberdeen the barometer dropped to 28.92 in. The lowest pressure at the home stations during the month occurred at Lerwick on the 14th, but the centre of the disturbance was then on Denmark Strait, between Greenland and Iceland. The only other disturbances crossing these islands were "V"-shaped secondaries thrown off from the large primary systems about Iceland, the principal ones being those of the 4th-6th, 21st and 22nd, and 23rd and 24th.

For the entire month the mean pressure results afford a good representation of the general distribution on most days. They indicate a depression centred off the south of Iceland, where the barometer was as low as 29.14 in., and an anticyclone centred from the Azores to Southern Portugal, with the barometer above 30.25 in. Over the British Isles the range of 0.57 in. from 29.45 in. at Lerwick to 30.02 in. at Jersey, the resultant gradient was unusually great, the normal range between these stations being 0.22 in. On the western half of the Channel, in the immediate neighbourhood of the persistent anticyclones, the mean values were rather above the normal, by 0.05 in. at Jersey, and 0.01 in. at Scilly, but elsewhere they were under the normal, the deficiency increasing northward to as much as 0.25 in. at Wick, and 0.30 in. at Lerwick. As will be seen from Map 1, p. cxv., the isobars show a decided South-Westerly type, and as an indication of the overwhelming prevalence of this type the wind all over the kingdom was nearly always from points between South and West.

Under the influence of the numerous and deep disturbances the month was a very windy one, there being only two days on which the force of a strong breeze was not exceeded, while a gale (force 8) was felt at one or more stations on as many as 27 days, and of these there were 18 days on which a strong gale (force 9) was reported. A depression whose centre passed the Farøe on the 3rd caused boisterous weather very generally during the first three days, a strong gale as far south as Pembroke and Portland Bill, a whole gale (force 10) at Holyhead. Anemometrical records showed gust velocities of 61 miles per hour at Pendennis, 63 miles at Hexham, 66 miles at Southport, and 75 miles at Holyhead. After the subsidence of this gale there was comparative quietness for a week. Then the appearance of a depression beyond the Kerry coast started another disturbed spell, which was maintained through the rest of the month, the force of a strong gale

being attained on as many as 15 out of 20 days. Holyhead experienced a whole gale on the 13th from North-West, and on the 15th from West, when the anemometer at Southport registered a gust velocity of 79 miles an hour during a strong gale. The most widespread gale of the month blew on the 19th and 20th, while the cyclonic centre was passing eastward between Southern Iceland and the Farøe, the gale being felt as far south as the English Channel. At Blacksod, Malin Head, Glasgow, Hexham and Lerwick it was a strong gale, and at Southport a whole gale, the highest gust velocities being 74 miles an hour at Southport, and 83 miles at Hexham. Another instance of a whole gale occurred at Malin Head on the 23rd, when the depression was centred over Denmark Strait.

The weather accompanying the frequent disturbances was of an exceedingly variable character. Excepting in some eastern localities the rainfall frequency was high, but as a general rule the intensity, as evidenced by falls of more than an inch in a day at low level stations, was less than usual. The prevalence of bright sunshine was more striking than the rainfall intensity. In the lowland districts of England there were a few instances of just over an inch of rain on the 11th, 12th and 21st, those of the first two of these days being when thunderstorms were prevalent over the southern and eastern counties, the rain being accompanied by hail in many places. On the other hand the hilly regions in the west and north-west were visited by several very heavy rainstorms. Round Snowdon the measurements for the 12th were from 2.9 in. to more than 3½ in., and for the 17th they ranged up to 2.1 in. For the 19th they were short of 2 in. in Snowdonia, while in Western Scotland they were up to 2 in. at Glencarron, and 2.2 in. at Arisaig. Wales had a number of great downpours on the 20th, with records from 2.4 in. to 3.6 in., and, further south, Princetown, Dartmoor, had 2.2 in. Ireland had falls up to 2 in. at Ennisceoe on the 23rd; and in Western Scotland, on the 28th, Glencarron registered 2.3 in., and Loch Stack 3.3 in. Throughout the month there were only a few casual references to snow.

The month was remarkable for its almost uniform mildness in all parts of the kingdom. Speaking generally, the afternoon temperatures were in the fifties, and the night minima in the forties. Now and again there was a day reading above 60° in isolated situations, 64° at Oundle on the 4th, 65° at Tavistock on the 12th, and at Ashburton on the 29th. The lowest of the maxima occurred on the 8th, when Strathpeffer and Thorntonhall did not exceed 39°. At very numerous stations there was no frost, and at the others the only frosts of note were between the 6th and the 9th and on the 23rd, the shade temperature sinking below 27°, to 22° at Balmoral and Braemar on the 6th, and Raunds on the 23rd, when Wokingham touched 21°. There were, however, many night minima above 50°, Teignmouth not passing below 55°, and Penzance 56° in the night of the 9th-10th. The mean temperature exceeded the normal by from 2° in the Channel Islands to 4° in Eastern England. Observers noted roses, wallflowers, primroses, dandelion in flower at Belper; strawberries in flower at Wallington; the only November in 36 years without frost in the screen at Meltham; the finest in 32 years records at Isleworth; and so on.

Several observers report magnificent glows at sunrise and sunset, especially from the 27th to the 30th.

Aurora was visible at Baltasound on the 2nd, and at Castlebay on the 8th.

Fog was uncommonly rare for the season over the inland districts, rather frequent on the western and eastern coasts, seldom on the south coast.

The temperature of the coastal sea water was decreasing everywhere, from 4° to 6° colder than during October in several neighbourhoods, but it was warmer than the air on shore, by as much as 3° to 5° in many places.

**Rainfall.**—There was a deficiency of precipitation over Eastern Scotland, and the Eastern and Midland districts of England, an excess over the rest of the kingdom. Durham had only 42 per cent. of the normal, Alnwick 49, Whitby 51, and Morpeth 52, against 172 at Fort Augustus, 174 at Llangammarch Wells, 175 at Fort William, and 203 per cent. at Glencarron. The smallest aggregates were 0.9 in. at Crathes, and an inch at Chatteris, but many hill stations exceeded 10 in., from 20 in. to 23½ in. on the slopes of Snowdon, and 37½ in. on Loch Quoich. Tottenham had rain on 11 days only, Clacton and Wisley on 12, and a few other stations on 13 or 14 days, but at many stations the frequency exceeded 25 days, several 29 days, Lerwick and Valencia Island 30 days.

**Bright Sunshine.**—A few stations, principally in the western districts, returned a loss of sunshine, but as a rule the records were very good. Valencia had only 56 per cent. of the average, Woolacombe 78, and Deerness 79, but Torquay had 143, Cirencester 144, Oxford and Cambridge 154, and Rothamsted 155 per cent.