

## 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.**—The distribution of atmospheric pressure over the United Kingdom and the surrounding regions during the period now under review was, in the main, of a most unseasonable type, over the more southern portions of England almost uninterruptedly so, but other districts were favoured with one fairly long spell of better weather. At first the Atlantic anticyclone occupied its normal position, with its central space in the neighbourhood of the Azores, while on its northern side pressure was generally low from the Canadian Lakes eastward across Newfoundland and the upper portion of the Atlantic to the British Isles and thence on to Russia. Along this elongated trough depressions of no great intensity moved towards the east, and only on the 1st and 2nd did the barometer descend slightly below 29·5 ins. at a few of our more northern stations. On the morning of the 6th the high pressure system on the lower part of the ocean began to expand northward and north-eastward, and by evening it was already spreading over these islands. With this the situation underwent a decided improvement, the whole country being mostly under the influence of the anticyclone until the 14th, and the western and northern districts until the 19th. The high pressure area broke up into two separate systems on the 10th, one passing back to the normal position near the Azores, the other passing northward to Scotland and Scandinavia, and finally disappearing beyond the Arctic Circle. During the presence of the system over us the barometer rose on various dates to 30·2 ins. and upwards at nearly every station, but the only instance of a reading as high as 30·3 ins. was registered at Stornoway on the 13th. With the subdivision of the anticyclone shallow depressions began to move on a south-easterly course from the northern part of the ocean towards the Bay of Biscay and the Spanish Peninsula, and passing into France exercised considerable influence on the weather over southern England. Coincidentally with the movement of the northern anticyclone towards the Arctic regions the conditions over the whole of the British Isles assumed an unusually disturbed type, and from the 20th to the close of the month there was a constant succession of cyclonic depressions crossing from Newfoundland to these islands and Northern Europe. As a rule these disturbances were comparatively shallow, but about the 22nd, 25th and 28th there were barometric readings below 29·5 ins. in numerous localities. At Malin Head there was a reading of 29·26 ins. on the 22nd, and at Leith on the 25th of 29·27 ins., both depressions having followed a nearly straight course across the Atlantic.

One of the most notable features of the month was the entire absence of centres of minimum pressure about Iceland and thence across to northern Scandinavia, the normal position of the mean lowest pressure at this season being off the south or south-west of Iceland. Map 2, p. LXXV., shows that the depressions followed two unusually well-marked paths—from our north-western coasts due eastward to the Baltic, and from the Bay of Biscay north-eastward to the Baltic. There was consequently a very striking change in the situation of the mean lowest pressure for the month—from Iceland to the Baltic. The average values for the period disclose the highest values over the Bay of Biscay and Iceland, in both regions above 29·95 ins., the lowest values being to the eastward of the North Sea, below 29·75 ins. in southern Sweden. At the home stations there was a marked uniformity in the results, from 29·94 ins. at Jersey to 29·84 ins. at Spurn Head and Leith. Out at the Azores the value was 30·27 ins., the barometer having stood above 30 ins. throughout the month. There was a merely nominal excess, less than 0·01 in., at Stornoway and Sumburgh Head, all other stations being below the normal, the deficiency being only 0·01 in. at Wick, and increasing southward to as much as 0·12 in. at Yarmouth, London and Dungeness. The cyclones and anticyclones being of no great intensity the range of pressure during the month was relatively small. It was just a little more than  $\frac{1}{2}$  in. at Jersey, and only at Stornoway did it amount to an inch. With a wedge of comparatively low pressure across the country the gradient was slight and irregular, so that the winds recorded were distributed through all the quarters of the compass, least frequent in the South-East quarter. For a summer month, however, there was at times a great deal of wind, the instances of more than a strong breeze at the telegraphic reporting stations being rather numerous between the 1st and the 9th, and from the 17th to the 28th. Many of the observers reported a high wind, but Wick had gale force on the 8th, Portland Bill on the 21st, 24th, 25th and 26th, and Scilly on the 25th, while Malin Head experienced a strong Northerly gale on the 23rd, and a whole gale from the same point on the 26th. No very high velocities were registered by anemometers either in hourly periods or in gusts of short duration.

Under the circumstances described above the weather varied considerably. At the commencement a very unsettled Northerly type of conditions prevailed, associated with the southward advance of a shallow low pressure from the vicinity of the Farøe down the east coast of Britain, then passing across the North Sea. On each of the first four days thunderstorms occurred, and in particular on the 2nd and 3rd they affected a great

part of the kingdom. Rain was general, and in numerous localities there were falls of hail. Very few stations, however, reported as much as an inch of rain on any of these days, Bethesda 1 in., Coventry 1·1 in., and Darwen and Worthing 1·2 in. The reports of the 5th showed the existence of a large disturbance on the ocean, to the south-westward of Iceland, and in the evening it threw off a small secondary depression which travelled quickly on a south-easterly course from a position off the north of Ireland to Norfolk and western Germany. The wind veered from South-West to North-West and North, the weather was very wet, and large falls of rain were reported over a wide area, an inch and upwards in many parts of Britain, 1·3 in. at Bethesda and Aspatia, 1·4 in. at Darwen, 1·5 in. at Eskdalemuir, and 1·7 in. at Aberdovey. With the exception of thunder at Belvoir Castle, and a thunderstorm at Bidston Observatory, Liverpool, no electrical disturbances were reported.

As this depression passed away the country was brought under the influence of the extension of the Atlantic anticyclone already referred to, and a period of fine dry weather set in. From the 6th or 7th to the 18th or 19th no rain fell at numerous stations in Ireland, Scotland, Wales and the northern half of England. At Deerness, Orkney, there were only two slight falls of rain (on the 3rd and 7th) in the first nineteen days of the month. In the south of England the fine spell was of shorter duration owing to the appearance of low pressure systems about the Bay of Biscay and France as early as the 15th. In London 0·26 in. of rain fell in 10 minutes on the 18th.

After the 19th unsettled conditions again became common to all districts. The centres of the main disturbances of this period all kept on an easterly course across our northern districts, a few shallow secondaries appearing between the Bay of Biscay and the Low Countries. Rain was now of daily occurrence pretty generally, and frequently heavy. In the west and north-west many places had over an inch on the 20th, up to 1·5 in. at Carnforth, Graythwaite and Lancaster, 1·6 in. at Kirkby Lonsdale, 1·7 in. at Mount Callan (Clare), and 2 ins. at Bethesda. On other days the greatest falls were of a more local character, 1·4 in. at Balruddery on the 25th, and 1·6 in. at Killibegs on the 28th. On the latter day floods were caused in western Ireland by the heavy rain, most of the 1·5 in. of rain at Mount Callan falling in about an hour. Although there were thunderstorms every day, they were distributed rather sporadically about the kingdom.

As a rule temperature was low, the afternoon readings at times being far below the normal, in London, on the 9th, as much as 16° too low. At various times during the month there were several maxima below 55°, even so far south as St. Asaph and Whitby. On the 1st, Glencarron did not pass 51°. During the fine spell of the middle period, however, there were many maxima above 75° in the west and north, 80° or 81° at several stations on the 12th, 13th and 14th. At Balmoral a night minimum of 31° was registered on the 11th and 24th, but there were not many records below 40° elsewhere.

Fog was unusually frequent on all coasts, often dense and interfering with shipping movements.

The temperature of the sea water round our coasts was nearly everywhere warmer than in June, by as much as 3° or 4° in some localities. On the east coast, from the Forth to Scarborough, on the western half of the English Channel, and up the western Channels to the Clyde, the water was colder than the air on shore, by 4° off Burnmouth and County Down. Elsewhere it either equalled the air or was a little warmer.

A slight earthquake shock was felt at Oban on the 27th.

**Rainfall.**—There was an average quantity of precipitation in the Channel Islands and the English Midlands, a deficiency in the north of Scotland and the south of Ireland, and an excess in all other districts, but generally the variation from the average was not large. The aggregate totals ranged from 0·8 in. at Sumburgh Head, and 1·4 in. at Deerness, Aberdeen and Newcastle, Wicklow, to more than 6 ins. at some of the wettest stations, 9·2 ins. at Seathwaite, and 12·3 ins. on Plynlimmon. At Colwyn Bay rain fell on seven days, at Hoylelake on eight days, many places on nine or ten days, against twenty-one at Foynes, Hillington and Norwich, and twenty-two at Cromer.

**Bright Sunshine.**—There was much sunny weather in Ireland, western Scotland and north-western England, where the bright sunshine records were 30 or more hours above the average, 61 at Armagh, 63 at Phoenix Park, and 86 at Markree Castle. Other districts were remarkable for the exceptional dulness of the month, the loss of sunshine amounting to 102 hours at Margate, 112 hours at Geldeston, and 123 at Greenwich. The largest aggregate totals were near the Irish Sea, 254 hours (55 per cent. of the possible) at Douglas, 250 hours (50 per cent.) at Llaneluad, 239 hours (48 per cent.) at Colwyn Bay; the smallest, 94 hours (17 per cent.) at Deerness, and (19 per cent.) at Bunhill Row, London, 89 hours (18 per cent.) at Plumstead, 83 hours (16 per cent.) at Newcastle-on-Tyne, and only 80 hours (16 per cent.) at Cromer.