

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.—Throughout July the distribution of pressure over the British Isles, the northern half of Europe, and the Icelandic region was of an unsettled type, and although the atmospheric conditions differed materially from those of June, the weather of the two months presented many features in common—both being dull, wet and cold. The anticyclone which during the greater part of June had maintained a position on the Atlantic, took up a more southerly position towards the close of the month, and from the beginning to the end of July the area of maximum pressure was found beyond our own south-western coasts, over the Bay of Biscay and the Spanish Peninsula, or over the more western portion of the Continent. Northward of this anticyclone the whole region within the limits of observation was open to the advance of cyclonic systems from the northern portion of the Atlantic. These disturbances were very numerous. Some pressure minima passed eastward across or immediately to the south of Iceland, but the majority visited some part of the United Kingdom, not one, however, being found as far south as the English Channel. For the whole of the month, therefore, the distribution of mean pressure was of a very regular character. There was a belt of low barometer readings, below 29·7 ins., extending from off the south coast of Iceland eastward across the Faerøe and beyond the north of Scotland to Scandinavia. Southward across the British Isles there was a gradual increase in the values, to 30·05 ins., on the western half of the English Channel, above 30·1 ins. on the Bay of Biscay, and as high as 30·38 ins. at the Azores. Over Iceland the values increased northward, to above 29·75 ins. along the north coast.

At the home stations the mean readings were slightly above the average in the south, from Valencia to Jersey, but over the rest of the Kingdom they were below it, the deficiency increasing northward to more than 0·1 in. over Scotland, and amounting to 0·16 in. at Sumburgh Head. Over North Britain the barometer stood highest, slightly above 30·25 ins., on the 1st and 2nd; but elsewhere it attained its maximum level on the 19th or 20th, on the former day mounting to 30·44 ins. at Valencia. Although a very unsettled month, the disturbances as a rule were not of much depth, the barometer rarely descending as low as 29·5 ins. On the 23rd, however, it fell below 29·1 ins. at Sornoway, and two days later, in another depression, it dropped to 29·08 ins. at Shields. These two stations consequently returned the greatest range of pressure for the month, 1·2 in., but at most places it was less than an inch, less than 0·8 in. from Jersey and Portland Bill to Clacton-on-Sea.

While the relative distribution over these islands was slightly more northerly than the usual westerly type, the pressure gradient showed a considerable increase, the difference between Jersey and Sumburgh Head being as much as 0·37 in., against an average of 0·17 in. This steeper gradient for the month under review was marked in all parts of the country by winds of more than ordinary strength for the time of year. Fresh to strong breezes were in fact experienced very commonly, and during the second half of the period the force of a high wind was felt nearly every day in various localities. On the 8th Spurn Head, and on the 10th Roche's Point and Markree Castle, reported a Northerly gale, on the 20th Markree Castle, and on the 24th Spurn Head had a South-West gale. The self-recording instruments registered neither gales nor severe squalls.

During the first half of the month the centres of all but one of the disturbances were in the extreme north of the field of observation, the exception being one which appeared to the southward of Iceland on the 5th. Moving on a general south-easterly course this crossed Scotland on the 6th, and then travelled away to the Baltic and North Russia. It was one of the salient features of this portion of the month that the northern disturbances produced very frequent but not heavy rains over these islands, and it was this frequency rather than the quantity of the rain which led to the common impression that the month was generally wet. In many localities the amount of rain collected was below the average to an appreciable extent. For about a week round the 17th several places in the south and east had either no rain at all, or only some trifling showers. The passage of small secondary disturbances marked the outburst of local thunderstorms in many districts on various days, the storms being heavy and accompanied by hail in a few neighbourhoods, but the rainfalls of an inch or more on any one day were unusually few in number—on the 9th 1·1 in. at Bethesda and Towyn, and 1·2 in. at Mount Callan (Clare); on the 15th 1 in. at Stonyhurst, and 1·4 in. at Ford (Argyll); and on the 16th 1·2 in. at Caraghlake (Kerry).

With the appearance of a depression to the north-westward of the Hebrides on the morning of the 20th there came a change in the character of the rainfall, which for the remainder of the month was not only frequent but also very heavy. The disturbance of the 20th moved due east

between the Faerøe and Shetland, dispersing on reaching Norway on the 22nd, when another was found to be approaching the Hebrides from the westward. This proved to be one of the two deepest systems of the month. On the morning of the 24th wireless reports from Atlantic liners showed the formation of a new depression about 300 miles west from the Fastnet. By the morning of the 25th its centre was nearing Pembroke, and on the morning of the 26th it was off Aberdeen. On that date wireless reports again disclosed the existence of an Atlantic disturbance. By the evening of the 27th this was entering the Bristol Channel, and maintaining an easterly to north-easterly course it traversed southern England. Smaller disturbances arrived on our north-western coasts from the Atlantic on the 29th and 30th, and they served to maintain the very unsettled weather to the close of the month.

This constant succession of low pressure systems explains the unusually windy character of the period from the 20th. Heavy rain fell generally, and on almost all days there were instances of 1 inch or more in 24 hours. The 27th was one of the most remarkable of the wet days, more than an inch of rain being registered at a large number of places in the southern half of England, the records showing 1·5 in. at Salisbury, Shaftesbury and Tavistock, 1·6 in. at Watergate (Sussex), and 1·8 in. at Plymouth. Thunderstorms occurred in Lancashire on the 23rd and 24th; over northern England on the 25th; in the Thames Valley and southward on the 26th; and in the north-east of England on the 30th.

These very inclement conditions were associated with abnormally low day temperatures. In many districts the thermometer never rose to 70°, and on numerous occasions the maximum failed to reach 60°. At Douglas, for instance, there were as many as 13 days below 60°. On the 11th the maximum was 54° at Ampleforth, Belvoir, Bridlington and Lincoln, and the same value was recorded at Morpeth (Cockle Park) on the 25th, on which date Mountmellick only touched 53°. At Seaham, on the 1st, the maximum was as low as 52°. Temperatures above 75° were rarely registered, Cambridge and Raunds touching 77° on the 17th, Greenwich, Camden Square 78° on the 18th, and Maidenhead on the 20th and 21st. The nights generally were not so cold, but there were a few minimum shade temperatures below 40°, as low as 35° at Balmoral and Llangammarch Wells on the 1st, and at Alnwick on the 2nd; and 33° at West Linton on the 1st.

Earthquake shocks were felt at Laudale on the 28th and 29th.

Fog was reported rather frequently on the Irish coast, in most neighbourhoods from the 12th to the 18th, and the 27th to the 31st. On the western coast it was more often observed than for a long time past. Stations on the Welsh coast and across the Bristol Channel had fog on numerous occasions. Along the English Channel it was less frequent, affecting the western half as a rule. Between Shetland and the Moray Firth there were ten days with fog, but it was almost entirely absent along the rest of the east of Britain.

The mean temperature of the sea water round our coasts was higher than in June, the difference amounting as a rule to between 2° and 4°. Generally speaking, the water was also warmer than the air on shore, but on our extreme western and northern coasts the difference was scarcely perceptible.

Rainfall.—The rainfall map for last month shows that the areas of maximum fall occupied their accustomed places over the north-west of Ireland and the western portions of Great Britain. In other parts of the Kingdom the distribution was of a less normal character, the most striking feature being perhaps the deficiency existing over the north-eastern portion of England, almost the only district in which the fall was below the average. A total of more than 7 ins. was recorded in several parts of the wetter regions, and as much as 10·6 ins. at Killibegs, 8·9 ins. at Cruachan, and 8·8 ins. at Ford (both on Loch Awe). Among the smallest aggregates may be mentioned 1·4 in. at Ballinacurra, and 1·6 in. at Hawarden Bridge, Newquay, Scilly and Portland Bill. The number of days with rain was almost everywhere in excess of the average; at Stonyhurst and Blacksod Point there were 27 such occasions, at Arlington 28, and at Glencarron as many as 30.

Bright Sunshine.—The total amount recorded was in nearly all places below the average, but in the southern parts of England the deficiency was not so large as in June. At many scattered places in the western and northern parts of the United Kingdom, the duration was less than 120 hours, the smallest aggregates being 91 hours at Fort Augustus, 112 hours at York, and 114 hours at Lancaster and Manchester (Whitworth Park). More than 200 hours were recorded at many stations situated both in the east and south-west of England, and as many as 228 hours at Weymouth, 230 hours at Guernsey (Villa Carey), and 233 hours at Torquay.