

MONTHLY WEATHER REPORT OF THE METEOROLOGICAL OFFICE.

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

ISSUED BY THE AUTHORITY OF THE METEOROLOGICAL COMMITTEE.

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Sunshine plentiful, but Rainfall excessive.

During the first week of the month the British Isles, as a whole, experienced a continuance of the fine weather which had set in at the close of June, and on the opening day the thermometer rose slightly above 300a in several parts of England. These conditions afterwards broke up entirely, and for nearly three weeks there was an almost unbroken run of cool, changeable weather with frequent thunderstorms, the rain in many localities being extremely heavy. After about the 27th a marked improvement set in, and between the 29th and 31st temperatures varying between 297a and 300a were recorded in several English districts. In Scotland there were some fairly warm days during the first week, but the second week was distinctly cold. After July 10th the day temperatures fluctuated considerably, being high on the 17th, low about the 21st, and decidedly high from the 28th onwards, except for a sharp fall in eastern coastal districts on the last day or two of the month.

The following notes supplied by observers illustrate the general character of the month:—*Allans Green, Northumberland*.—A month of great good to this district, the early part being very dry, the hay, both seed and meadow, being saved in good order. Rain came on the 14th and did a deal of good to the root crops and the pasture land, the oat crop also making a great move. *Kenninghall, Norfolk*.—The month opened with an anticyclonic type of weather, but on the 7th the weather became very unsettled, with rain and frequent thunderstorms, and so continued until the 27th, after which the conditions became more settled and summer-like. *Weston Turville, Bucks*.—There was a great deal of cloud throughout the month. Most of the haymaking was finished before the rains of the second week. The month closed with warmth which greatly benefited the crops. *Ipswich, Suffolk*.—A very unsettled spell of weather set in on the 10th and lasted until the 28th, with much rain and many thunderstorms, the month closing with three brilliant days. The thunderstorm on the 17th provided one of the finest displays of lightning, lasting nearly half an hour, that I have ever witnessed here. *Tenbury, Worcester*.—Very fine, hot, and dry till the 10th, the much-needed rain then bringing to an end a drought of 18 days. Unsettled weather prevailed from the 10th to 26th, thunderstorms occurring on 11 days, the most severe being on the 26th, when 11 mm. of rain and hail fell in 20 minutes. Fine and hot weather then set in and continued to the end of the month. *Dublin (City)*.—As in June so in July the opening and closing days of the month were fine and warm and generally summer-like, whereas the intervening period was unsettled and showery. Of the 21 days, 7th to 27th, no fewer than 18 were rain-days. Thunder and hail were of frequent occurrence. *Carrigoran, Co. Clare*.—During the first seven days of the month the weather was fine, hot, and seasonable, the rest of the month being cold with many sunless days. *Hurdlestown, Co. Clare*.—Rain greatly above the average, but much hay was well saved, the month, as a whole, being favourable for farm work. *Fethard, Waterford*.—A fairly average July, neither very wet nor very fine. The first few days were very brilliant, with hot and powerful sunshine; the middle of the month was characterised by frequent heavy showers and many thunderstorms, and it was very fine again after the 26th. Fruit, especially apples, abundant, and unusually early in ripening.

Air Pressure.—Anticyclonic conditions were experienced over the British Isles until the 7th, when a depression from the neighbourhood of Iceland drifted southwards. Two well-defined anticyclonic systems then established themselves, one over the Greenland-Iceland-Spitzbergen region, the other on the Atlantic, from Spain westward. They were separated by an elongated belt of low pressure stretching across the British Isles and the North Sea. A number of shallow depressions within this trough resulted in the persistent precipitation which was so prominent a feature of the month's weather. From the 10th to 28th there was no material change in the state of affairs. The movements of the centres of lowest pressure can hardly be determined from the daily charts. No attempt has been made to trace their course on the map given on p. 75, only the coming and going of the system being indicated. The map of the mean pressures for the month is of a rare type, showing a trough extending across the middle of Scotland from the Atlantic to Denmark. Except in the Shetlands, the mean monthly air pressure was below the normal, the departures from the normal varying from + 1.2 mb. at Lerwick to - 2.9 mb. at Bath, Blacksod Point, and Donaghadee. The highest of the individual readings at telegraphic reporting stations was 1035 mb. at Birr Castle and Malin Head on the 3rd, and the lowest 993 mb. at Wick on the 12th. Gales were rare, the highest gusts recorded by the anemometers being 24 m/s. at Shoeburyness on the 11th, and 22 m/s. at Warlingham on the 11th, at South Farnborough on the 12th and 18th, and at Valencia Observatory on the 31st.

Temperature.—Temperature was in close agreement with the normal, five districts, indeed—Scotland North, and England South East, North West, and South West, and Ireland North—being identical

with it, the departures from normal in the other districts ranging from + 0.4a in the Midland Counties to - 0.2a in Scotland East. Of the individual readings the highest value recorded was 301a at Weymouth on the 1st, at Southend on the 16th, and at Clifton, St. Aubins (Jersey), Sparkhill, Wellington, and Woking on the 31st. The lowest value was 271a at West Linton on the 10th, and only once during the last sixty years has so low a reading been recorded in Scotland during the month of July, the previous lowest, also 271a, being at Lairg (Ross-shire) in 1884.

Precipitation.—Except in Ireland North, where there was a slight deficiency of 5 mm., the rainfall was above the normal in all districts, the excess ranging from 59 mm. in England South-East, where the aggregate for the month was 114 mm., or more than twice the normal, to 6 mm. in Scotland West. The largest monthly total was 118 mm. in Scotland North and the least 75 mm. in Ireland North. Many of the individual stations had more than twice their normal rainfall, and among the localities most seriously affected may be mentioned the southern and south-eastern portion of the London area. At Greenwich, for instance, the total for the month was 187 mm., being 130 mm. above the normal. Records, dating back to the year 1815, show that at this station no such fall has been recorded in any previous July, and that, excepting in October 1880, when the total amounted to 194 mm., no such quantity has been recorded in any calendar month. At Kew Observatory, Richmond, the total was 121 mm., a figure only once exceeded in July during the past 53 years. Wandsworth Common recorded 182 mm., Streatham Park 176 mm., Westminster 175 mm., Chelsea 169 mm. (37 mm. of which fell on the 11th), and Camden Square 123 mm. At Greenwich and Westminster the monthly totals were more than three times the normal, as also was the total at Wisley (146 mm.). The largest amounts of rain recorded during individual days were 64 mm. at Sheepstor and 50 mm. at Princetown on the 22nd, 45 mm. at Greenwich on the 11th, 44 mm. at Guernsey (Brooklyn) and Perth on the 17th and at Tavistock on the 22nd, 43 mm. at Guernsey (Villa Carey) on the 20th and at Balmoral and Halstead (Essex) on the 17th. During the last few days of May and the whole of June there were large areas of Scotland over which conditions of drought had not been effectively broken. By about the 6th or 7th of July, however, rain had become general, and during the succeeding three weeks there was in most Scottish districts some wet, or extremely wet, weather. The most noteworthy falls occurred in the East and North-East on the night of the 17th-18th and from the 20th to 24th. The last few days of the month were practically rainless. In the South, West, and North-West the monthly aggregates showed a moderate excess, and here and there a slight deficiency; whilst towards the North-East and North there was a notable area of excess, many places having at least twice the normal. In Orkney, and at Dunrobin Castle, Ardrross Castle, Braemar, and Aberdeen it was the wettest July for at least 60 years. The very wet area had sharply defined western and southern limits, Braemar, for instance, having more than twice the rainfall at Dumfries, and Dundee nearly twice that of Stirling. At Aberdeen about half the month's total rainfall was accounted for between the 20th and 24th, and at Edinburgh about two-thirds by falls on the 15th, 17th, and 20th. Over the British Isles generally the copious rainfall was accompanied by frequent and heavy thunderstorms, 15 thunder-days being recorded at Leyland, 13 at Stonyhurst and Worksop, 12 at Strelley, and 11 at several other stations, the observer at Southport reporting that the number of thunderstorms (10) was greater than in any calendar month since an exact record was commenced at this station in 1891, and more than twice as great as in any July during those 27 years. On the 20th at Worksop 13 mm. of rain fell in 10 minutes, and at Stonyhurst, on the 23rd, 25 mm. fell in less than half an hour. A thunderstorm, which crossed Surrey in the early morning of July 16th, did much damage in the neighbourhood of Coulsdon, where the hail was exceptionally heavy.

Sunshine.—Except in Ireland North, where there was a very small deficiency of 0.02 hr., the mean daily amount of sunshine was above the normal in all districts, the excess varying from 1.80 hr. in Ireland South to 0.05 hr. in England East. The sunniest district was the English Channel (9.28 hr. per day), and the least sunny Scotland North (4.45 hr. per day).

Optical Phenomena.—Solar halos were seen mainly about the 4th, 8th, 12th, and 28th. A solar corona was observed at Tenbury on the 28th, and one at Stonehenge on the 29th. Lunar halos were seen at a few stations between the 20th and 29th. A sun pillar was seen at Totland Bay on the 8th and at Abersoch (Carnarvonshire) on the 23th. A moon pillar was observed at Oxford on the 16th.

