

MONTHLY WEATHER REPORT OF THE METEOROLOGICAL OFFICE.

(Supplement to 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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CLOUDY, BUT FAIRLY WARM; WET IN WEST AND SOUTH.

The weather of July was for the most part of a very changeable character. An unsettled thundery period in the opening days of the month was followed by a general and rather decided improvement, but after about the 11th there were few days upon which measureable quantities of rain failed to appear over a large portion of the country, the falls being often very heavy in the west and south. Temperature was, as a rule, above the average until the closing week, when a brisk North-Westerly wind swept over the kingdom and caused low midday readings in all districts.

From Map 2, given on the plate of Monthly Weather Charts (page 75), it will be seen that the centres of most of the barometric minima passed across the northern parts of our area of observation. The effect is shown very clearly in the chart of Mean Pressure, which presents quite an abnormal appearance for July. Over the southern half of the United Kingdom the actual distribution of pressure was, it is true, in fair agreement with the average, the gradient being in favour of winds from some Westerly quarter. Further north the Westerly gradient entirely disappeared, and in the west and north of Scotland the normal conditions were replaced by an isobar showing the existence of a trough of low pressure extending southwards from the neighbourhood of the Faerøe. The highest barometrical readings occurred very commonly on the 9th or 10th, when the mercury rose above 1,020 millibars over practically the whole country, and above 1,025 millibars on the north-east coasts of Scotland. The lowest pressures occurred in the western districts on the 20th, in the northern districts on the 24th or 25th, and in the eastern and south-eastern districts on the 27th. On each occasion the barometer in most parts of the regions indicated fell below 1,000 millibars; in Cornwall on the 20th it sank below 995 millibars, and in Caithness and Shetland on the 23rd or 24th it went below 990 millibars. The mean pressure for the month was below the average in all districts, but the deficiency was nowhere large.

During the first week the weather was influenced by cyclonic systems which advanced directly over the United Kingdom from the Atlantic and subsequently passed away in a northerly direction. The wind varied greatly in direction, and although usually of little strength it increased considerably from the Southward or South-eastward in Ireland and the south-west of England on the 4th and 5th; at Quilty the gusts reached a velocity of 21 m/s, and at Plymouth and Pendennis Castle (Falmouth) a velocity of 20 m/s. Severe thunderstorms were experienced in nearly all the English and Welsh districts on the 1st or 2nd, and were accompanied in many instances by extremely heavy rain. On the former date 1·8 in. fell at Harrogate and Pen-y-Gwryd, 1·9 at Claverley, 2·0 in. at Bradford, and 2·1 in. at Ribston; on the latter date 1·7 in. at Hovingham and Wolstaston, and 2·0 in. at Shrewsbury. At York 1·7 in. fell on the 1st, and 1·4 in. on the 2nd, making a total of 3·1 in. in two days. Several stations experienced further heavy falls on the 3rd or 4th. Between the 8th and 12th, when a large anticyclone moved slowly from south to north across Western Europe, light winds from West or South-West, shifting later to East and South-East, were experienced, with fair dry weather, but with a good deal of fog and mist on our eastern and western coasts.

After the 12th cyclonic areas again appeared over various parts of the country, and from this time onward to about the 20th the type of weather was extremely unsettled. Among the various disturbances which visited our neighbourhood two are deserving of special note. The first of these pursued an unusual path (see Track F, Map 2). The system was apparently developed over the Netherlands on the night of the 14th, and on the following day, when it travelled northwards, heavy rain occurred over our eastern counties, as much as 1·8 in. at Shobery, and 1·6 in. at Clacton-on-Sea. Later on the disturbance moved north-westward to Scotland, its progress being attended by a heavy downpour over practically the whole of northern England. On the 16th amounts ranging between 1·0 in. and 1·5 in. were recorded at a large number of places, and as much as 2·5 in. at Whitby, where the fall is said to have been the heaviest for half a century. The depression continued in the meantime to move very slowly in a north-westerly direction, and on the night of the 17th it apparently dispersed in the neighbourhood of the Hebrides. The second depression of note skirted our south-west coasts, moving south-eastward, on the 19th (Track G, Map 2). Early on the 20th, when the centre reached the mouth of the Channel, the depression suddenly increased in intensity and caused very strong East to North-east winds on the Cornish coasts, reaching in gusts a velocity of 20 m/s at Plymouth and 23 m/s at Pendennis Castle. Later in the day the energy of the system diminished as rapidly as it had arisen, and in the course of the 21st the disturbance passed across the south-west of France to the Western Mediterranean. Its progress along our south-west coasts was attended by extremely heavy rain in Wales and the south-west of England, the amount on the 19th being as large as 3·1 in. at Wellington, Somerset, 3·0 in. at Milverton, 2·8 in. at Ottery St. Mary, and 2·1 in. at Killerton, Ashburton, and Sidmouth.

Between the 20th and 28th the weather was influenced by a large

depression, originally of little intensity, which moved very slowly in an east-south-easterly direction from Iceland to Denmark and the Baltic. During the progress of this system (Track H, Map 2) the winds blew consistently from the North-Westward, and on the 24th and 25th, as the centre of the disturbance skirted the north of Scotland, a gale was experienced on the more exposed parts of our northern coasts. At Spurn Head the gusts reached a velocity of 21 m/s, at Aberdeen, Rosyth, and Paisley 22 m/s, at Eskdalemuir 23 m/s, at Quilty 24 m/s, and at Southport 25 m/s. Cool, showery weather prevailed at the time over the country generally, and thunderstorms occurred in various parts of England on the 21st or 22nd. In Kent the storms of the 22nd were of considerable severity, and were accompanied by heavy rain; at Broadstairs the fall amounted to 1·8 in., and at Margate to 2·03 in., of which no less than 1·76 in. occurred in the space of an hour. On the 29th and 30th, when the depression passed away across North Germany, a large anticyclone extended temporarily from the Atlantic over the whole of Western Europe. The North-westerly current was consequently replaced by light variable airs, and the weather improved very decidedly, but temperature remained below the normal. At the close of the month the anticyclone receded southward and the rapid extension of a depression from the Atlantic was accompanied by Southerly and South-easterly winds with heavy rain in the west, and smaller amounts in other parts of the country.

The cool spell which prevailed in the closing week failed to obliterate the effect of the previous warmth, and over the United Kingdom generally the mean temperature of the month was above the average. In England and Wales the hottest weather occurred on the 1st, when the thermometer rose to 85° and upwards at many of the inland stations, to 90° at Woking, New Malden, and Wisley, and 93° at Isleworth. Readings of 92° and 94° were registered in the Glaisher screens at Greenwich and Camden Square respectively. The succeeding night was unusually warm, the thermometer in many places remaining well above 60°; at Wallington, New Malden, and Hastings it did not fall below 65°, and at Hampstead and Isleworth it failed to get below 66°. Maximum readings above 80° were recorded in several parts of eastern and central England (and locally in central Scotland) on the 13th or 14th, and at a number of places situated in various parts of the United Kingdom on the 20th or 21st. Between the 25th and 27th the daily maxima at several of the northern and central stations were below 60°, and in some few localities below 55°; at Eskdalemuir on the 25th the thermometer did not exceed 52°. The lowest temperatures of the month occurred, as a rule, early on the 4th, when the thermometer fell below 40° in most districts. At Newton Rigg a reading of 36° was recorded in the screen, and 24° on the grass; at West Linton the corresponding values were 30° and 26°. Early on the 31st the screened thermometer fell to 35° at Balmoral and 32° at West Linton.

The temperature of the sea surface was higher than in June—by as much as 4° or 5° on the east and south-east coasts of England. Around Great Britain the water was a trifle cooler than the air on shore, but on the west and north coasts of Ireland it was rather warmer. During the second and third weeks fog was unusually prevalent on our eastern and western coasts, and was occasionally very dense. In the Channel the atmosphere was, as a rule, clear.

A slight earthquake shock was experienced at Teignmouth and Tavistock on the afternoon of the 1st.

Rainfall.—At a majority of stations in Scotland, the east of England, and the north of Ireland the total rainfall was less than the average. Many places reported an aggregate of less than 1½ in., the smallest amounts being 1·0 in. at Tottenham, 1·2 in. at Westminster, and 1·3 in. at Camden Square, Skegness, Eye, and Kelso. At Marchmont only 43 per cent. of the average quantity was recorded, at Fort Augustus 48 per cent., and at Camden Square 49 per cent. In other districts there was a general, and in some instances very large, excess; at York, Cheadle, Hawarden, and Rousdon more than double the normal amount was collected. Several stations in Wales and the west and south-west of England reported totals exceeding 5 in., Rousdon 6·1 in., Cardiff 6·2 in., Sheepstor 7·8 in., Pen-y-Gwryd 9·4 in., and Princetown 9·5 in. The number of days with a measurable quantity ranged from 7 at Ushaw and 8 at Balruddery, Lednathie, Lathallan, and Marchmont to 23 at several stations in the north and west of England and the south of Ireland, to 24 at Penzance and Seskin (near Waterford), and to 27 at Killarney.

Bright Sunshine varied considerably in amount in the different districts, but was as a rule below the normal. At some of the English stations the deficit was considerable, Stonyhurst reporting only 66 per cent. of the average duration, Strelley 69 per cent., Newquay 76 per cent., and Cirencester 77 per cent. The mean daily duration ranged from a little less than 4 hours in Shetland, Orkney, and the south-west of Ireland and at a few isolated places in the North of England and the south of Scotland, to about 7 hours on the east and south-east coasts of England.