

SUMMARY OF OBSERVATIONS.

JULY, 1904.

General Summary.—The drier and more settled atmospheric conditions which formed the characteristic features of the month of June were maintained with comparatively little variation throughout July. The contrast between them and the corresponding months of last year, which were abnormally wet, was very striking. Regions of high pressure were again the dominant factors, most of the depressions which had any influence on our weather remaining out on the Atlantic as they travelled northward, shallow disturbances visiting the southern parts of England late in the month. There was consequently a great prevalence of fine and bright weather, and the sun's rays were very powerful, the solar radiation thermometer frequently exceeding 140° , and on some days passing above 150° . Hot days were therefore numerous, with shade temperatures above 80° , and in some instances above 90° . As a rule the rainfall consisted of light showers, and this was particularly so over the northern portion of Britain. In many localities there were from ten to fifteen consecutive days without any rain, and what with the occasional slight falls at other times and the intense heat, the soil became very parched and the crops suffered a good deal. Thunderstorms, thunder or lightning occurred on at least twenty-two days, but only the storms towards the close brought any large quantities of rain to the English districts and improved the harvest prospects. A gale was experienced at some western stations near the middle of the month, otherwise there was not much wind. At about 3.20 p.m. on the 3rd, earthquake shocks were felt in the North Midland counties as far north as Sheffield, in Lincolnshire, Gloucestershire, Cheshire, and Carnarvon. Taking the month as a whole pressure was above the normal except at a few west coast stations; the winds were mainly from between South and West; temperature and bright sunshine were in excess in most localities; and rainfall was rather unequally distributed both as regards frequency and amount.

Pressure.—*Mean at 8 a.m.* ranged from 30.06 ins. at Jersey, and above 30 ins. over nearly the whole of England to below 29.9 ins. on the north-western coasts, 29.89 ins. at Stornoway. The values were a little below the average* on the west coast of Ireland and at Scilly, above it elsewhere, by as much as 0.11 in. at Spurn Head and Sumburgh Head, and 0.12 in. at Aberdeen. The general distribution of mean pressure differed appreciably from the normal, the isobars lying south-south-west to north-north-east instead of from west to east. *Highest* readings were recorded between the 8th and 10th in the western districts and on the 18th in the north and east, the values exceeding 30.3 ins. in both periods. *Lowest* readings occurred at the commencement, in the middle and towards the close, Malin Head on the 1st registering 29.40 ins. *Range* was small, from a little over 0.9 in. at Stornoway and Malin Head to 0.6 in. at Jersey.

Depressions.—As will be seen from Map 2, Plate VII., nearly all the disturbances of the month kept to the sea off the western and northern coasts, the only ones on land being those of the last week in the south and south-east. The latter were shallow depressions associated with thunderstorms.

Anticyclones.—Although high pressure systems prevailed during the month, their centres were usually over the Bay of Biscay or some part of the Continent. Between the 7th and 10th, and 17th and 19th, the cores of two well-defined anticyclones from the French side of the Channel moved northward to our islands, finally passing to the North Sea and beyond.

Winds.—In several localities there was a fair proportion of Easterly winds, but the wind-roses on Map 1, Plate VII., indicate a decided prevalence of Southerly to Westerly winds, in very good agreement with the pressure gradient. Gale force was experienced on 6 days at Blacksod Point, 3 days at Pembroke, and 2 days at Jersey and Malin Head.

Temperature.—*Mean at sea level* ranged from nearly 67° in London and between 66° and 65° at various other stations, mainly inland ones, in the south of England, and above 62° over the greater part of England to below 56° in the extreme north of Scotland and to 52° at Sumburgh Head. The general distribution was very similar to the normal. The mean values were above the average* all over England, in most parts of Ireland, and at about half the stations in Scotland, the excess being as much as 3° in several instances, and $3^{\circ}.5$ at Shoberness. *Highest* readings occurred generally in the period from the 9th to the 20th, both Bramley and Maidenhead registering 91° , Southampton exceeding 87° , and Tunbridge Wells 86° on the 17th. In the extreme north Deerness had a maximum of 64° and Sumburgh Head 62° on the 30th. *Lowest* night values were recorded on very varied dates, Lairg sinking to 35° and Garforth to 36° on the 8th, Wick and Braemar to 38° , and Nairn and Markree Castle to 39° in the third week. Eastbourne and Scilly did not pass below 55° . *Range* was 40° and upwards in many places, 43° at Bramley and Garforth, and 45° at Maidenhead, while at Eastbourne and Deerness it was 19° , and at Scilly only 15° . *Vapour Pressure* ranged from 0.48 in. at Jersey and 0.47 in. at Dungeness and Clacton-on-Sea to 0.36 in. at Aberdeen, and 0.34 in. at Sumburgh Head. *Relative Humidity* ranged from 92 per cent. at Malin Head and 90 per cent. at Donaghadee to 75 per cent. in London, and 74 per cent. at Bath.

Rainfall.—There was considerable variation in the rain distribution, all stations in the north and east of Scotland and north-west of England, and nearly all in the west of Scotland, and the north-east and extreme south-east of England reporting amounts below the average*, while the majority in all other districts had an excess. Glencarron had a deficiency of 3.7 ins., and Cullompton and Plymouth an excess of 2.9 ins., but the differences generally were well under 2 ins. The largest aggregate totals were 5.8 ins. at Cullompton, 5.6 ins. at Plymouth, 5.2 ins. at Fort William, 4.8 ins. at Killarney, and 4.7 ins. at Arlington and Valencia. There were a few instances of less than an inch, Bognor and Nairn totalling 0.6 in., and Brighton 0.5 in. On the 30th there was a fall of 2.2 ins. at Hillington, and many parts of England between the 24th and 26th had over an inch in a day, Geldeston 1.7 in., and Hereford and Skegness 1.8 in. The rain frequency showed a large range, from 5 days at Dungeness and St. Leonards to 24 at Arlington and Markree.

Bright Sunshine exceeded the average* at nearly all stations, by more than an hour per day in many localities, the aggregate excess at Margate and in London amounting to 70 hours, and at St. Leonards to 88 hours. The percentage of possible duration ranged from 66 at St. Leonards, 65 at Littlestone, and 62 at Eastbourne and Tunbridge Wells to 26 at Edinburgh, 25 at Aberdeen and Glasgow, and 20 at Deerness.

* The averages employed are—*Pressure and Temperature* for the 30 years 1871–1900; *Rainfall* for the 35 years 1866–1900; and *Bright Sunshine* for the 20 years 1881–1900. See Appendix III. "Weekly Weather Report," 1901.