

SUMMARY OF OBSERVATIONS.

SEPTEMBER, 1906.

General Summary.—The most striking feature of the season was the great accession of warmth which occurred at the close of August, when the thermometer, which had previously been maintained at a very moderate level, suddenly rose in many localities well above 80° on the 30th, and above 90° on the 31st. During the first three days of September there were numerous instances of maximum values from 90° to 96° at various stations in England, and as high as 89° in Scotland, as far north as Strathpeffer, and 84° in Ireland. In the sun's rays the heat was intense, there being many solar radiation temperatures of 130° and upwards, 148° at Epsom on September 2nd, and 152° at the Royal Observatory, Greenwich, on August 31st, and September 2nd. As suddenly as it appeared this unusual heat at such a late period of the year passed away, and on the 4th there were very few maxima up to 75° , the majority being below 70° . The hot spell, therefore, was limited to only five days. Subsequently nearly every station in the kingdom had one or more instances of maxima below 60° , so that the range in the afternoon temperatures was very large, 30° and upwards at half the stations, exceeding 40° at York, or about equal to the extreme day and night range in an ordinary September. It is not a little remarkable that the abrupt change from the very hot to much cooler conditions was not accompanied by a thunderstorm in any part of the country, the only storms reported during the month being on the 15th or 16th, at Clacton-on-Sea, Dungeness, Eastbourne, Swarraton, and Scilly; reports of thunder or lightning alone were also rare. Although there were a few heavy falls of rain in the course of the month, the first half was, speaking generally, moderately dry, and the remainder very dry; in several localities the last 15 days were rainless. Coastal fog was rather frequent, and during the closing week thick mist or fog was reported every morning, more especially over the inland counties of England, where it was at times dense and wet. For nearly the whole month the days were more or less sunny. Auroral displays were witnessed in the north of Scotland on the 16th, and in many parts of Scotland and the north of England on the 22nd. For the month as a whole pressure, temperature and bright sunshine were in excess of the normal; the winds showed a complete anticyclonic circulation; and precipitation was deficient.

Pressure.—*Mean at 8 a.m.* ranged from 30.23 ins. at Bath and Oxford to below 30.1 ins. in the extreme north of Scotland, 30.06 ins. at Sumburgh Head. The highest mean pressure occurred over the Midland Counties. The gradient was very slight. At all stations the values were decidedly above the average*, the excess amounting to 0.19 in. at Dungeness and Portland Bill, and exceeding 0.27 in. at Aberdeen and Donaghadee. *Highest* readings were observed on the 18th (30.50 ins. at Aberdeen and Sumburgh Head), on the 23rd (30.61 ins. at Aberdeen), and on the 27th (above 30.6 ins. in many parts of England, 30.66 ins. at Oxford). *Lowest* values were recorded on the 6th (29.16 ins. at Sumburgh Head), and on the 15th (29.3 ins. and less at several northern and north-western stations, 29.22 ins. at Stornoway). *Range* was moderate, from 0.8 in. at Jersey to 1.4 in. at Sumburgh Head.

Depressions.—Several Atlantic low pressure systems skirted our western and northern coasts, following a north-easterly course, and two areas originating over the Holstein region moved south-westward across the Low countries, but only one very shallow depression traversed any portion of these islands, crossing south-eastern England on the 3rd.

Anticyclones.—There were only two days in the month on which the barometer was below 30 ins. all over the kingdom, but in the first half of the period the centres of the high pressure areas were, with the exception of that on the 10th, on the Continent or outside our western and south-western coasts. During the second half the country may be said to have been continuously under high pressure conditions, one or more districts being within the central space of the anticyclone every day after the 20th.

Winds.—Following closely the mean disposition of atmospheric pressure, the wind results show a circulation round the region of highest pressure—from East on the English Channel, to between South and West on the western coasts, and North-Westerly to Northerly and North-Easterly along the east of Britain. Gale force was attained on 4 days at Malin Head and on 2 days at Cockle Park and Blacksod Point.

Temperature.—*Mean at sea level* ranged from 62° at Jersey and 60° and upwards at some other southern stations, to below 56° in nearly all parts of Scotland, in the Isle of Man and in the inland parts of Ireland and Wales, below 52° in the Shetlands. The general distribution was in fair agreement with the normal, but the actual values were in almost every instance above the average*, by more than 3° at a few stations, 4° at Scarborough, and 5° at Lairg. *Highest* readings were registered in the first three days, 96° at Bawtry, 95° at Colly Weston, Epsom and Maidenhead; 89° at Dumfries, Lairg and Strathpeffer; and 84° at Clongowes Wood and Malin Head. *Lowest* readings occurred in the last week, 26° at Garforth, 27° at Crathes, and 28° at Llangammarch Wells, Marlborough and Wokingham. *Range* was exceptionally large, 50° and upwards at half the stations, as much as 63° at Maidenhead and Nottingham, 64° at Garforth, and 65° at Bawtry and Wokingham, while at Spurn Head and Portland Bill it was 22° , and at Scilly only 16° . *Vapour Pressure* ranged from 0.325 in. at Wick (8 a.m.) to 0.45 in. at Portland Bill (6 p.m.). *Relative Humidity* ranged from 67 per cent. at Jersey (6 p.m.) to 92 per cent. at Garforth (9 p.m.). *Mean Earth Temperature* at 1 ft. depth ranged from 54° at Bettws-y-Coed to 61° at Bath and Plymouth; and at 4 ft. depth from 56° at Garforth to 62° at Bath.

Rainfall.—At every station the precipitation was below the average*, the deficiency ranging upwards to 3 ins. at Cally, 3.1 ins. at Glencarron, and 3.2 ins. at Stornoway. The largest aggregates for the month were 6.3 ins. at Laudale, 5.5 ins. at Fort William, and 5.3 ins. at Glencarron; the smallest 0.4 in. at Kingstown, Seaham and Shields. The only falls of an inch or more in a day were 1.7 in. at Ventnor on the 4th, and 1 in. at Fort Augustus, 1.4 in. at Laudale, 1.9 in. at Fort William, and 2 ins. at Glencarron on the 5th. Two-thirds of the stations had less than 10 days with rain, Ampleforth only 3 days, the largest number being 16 days at Sumburgh Head.

Bright Sunshine.—The duration of bright sunshine was everywhere above the average*, by more than 60 hours at one-third of the stations, by nearly 88 hours at Llandudno. The smallest total was 127 hours, or 34 per cent. of the possible duration, at Newcastle-on-Tyne; the largest 238 hours, or 64 per cent., at Guernsey (Villa Carey). Over the greater part of the country more than 50 per cent. of the possible amount was recorded.

Observations in the Upper Air.—Kite observations were obtained on the 4th, 5th (kite and balloon), 6th (4), 9th, 12th, 13th, 15th (2), 17th, 18th, 19th (2), 23rd, 24th (2), 25th, and 30th.

* The averages employed are—*Pressure*, *Temperature* and *Rainfall* for the 35 years 1871–1905; and *Bright Sunshine* for the 25 years 1881–1905. The values will appear in Appendix III. to the Weekly Weather Report for 1906.