

MONTHLY WEATHER REPORT OF THE METEOROLOGICAL OFFICE.

(Supplement to the 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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A VARIABLE MONTH: DRY IN ENGLAND.

Pressure, Winds and Weather.—During the month now under review three separate and fairly well-defined types of atmospheric pressure distribution determined the character of the weather over the British Isles. Through the first four days the eastern and southern districts were mainly under the influence of anticyclonic systems which occupied the middle belt of the Atlantic and the greater portion of the European Continent, while the western and northern districts were affected by a succession of depressions coming from the vicinity of Hudson Bay and Newfoundland, and crossing the upper region of the Atlantic on north-easterly paths towards the Farøe and the northern extremity of Scandinavia. These disturbances, however, were of comparatively little intensity, there being very few barometer readings below 29.5 in. far out on the ocean, while over the south-east quarter of England there was no record as high as 30.2 in. On the 5th the distribution of pressure underwent some modification, small in itself, but sufficient to alter to a marked extent the conditions over this country. The anticyclones still held on the Atlantic and eastward across the Continent, but an area of relatively high pressure developed over the Greenland and Arctic Sea region. This change served to alter the paths of advance of the disturbances on the upper Atlantic, which now came more directly towards our coasts, and at the same time were deeper than their predecessors. In one of these, which skirted the Hebrides on the 7th, the barometer fell to 29.15 in. at Stornoway, and to 29.06 in. at the Farøe. The centre of a depression which appeared on the 6th parallel, in about 35° W., on the 8th maintained a steady course due East, deepening as it advanced, the barometer descending to 29 in. at Lerwick on the morning of the 10th, and slightly below 29 in. over Southern Norway in the evening; the centre subsequently passed along the Gulf of Finland into Russia. This was the deepest disturbance of the month. Immediately after its passage past Shetland there was a general rise of the barometer, and from the 11th until the end of the month the weather was almost entirely of an anticyclonic character, interrupted temporarily by a couple of shallow depressions which moved eastward across Southern Scotland in the nights of the 18th and 23rd respectively. There were a few occasions during this period of three weeks when the barometer mounted to about 30.5 in. out at the Azores, but the maximum pressure was attained on the 28th, when the central space of the system arrived over and off our south-western coasts, the barometer rising to 30.52 in. at Scilly and Roche's Point, 30.54 in. at Valencia, and slightly higher on vessels a little distance out at sea.

In the extreme north of Scotland the mean pressure for the whole month was a trifle below the normal, by 0.025 in. at Wick, but over the rest of the Kingdom it showed an excess, increasing southward to as much as 0.12 in. at Scilly, and 0.14 in. at Jersey. Compared with the corresponding month of 1912 the results are much higher, by 0.31 in. on the south-western coasts. The figures indicate an area of minimum pressure to the southward of Iceland, and one of maximum pressure extending from France westward across the Azores. Off the south coast of Iceland the barometer averaged 29.83 in., and over the British Isles the values ranged from 29.93 in. at Lerwick to 30.17 in. at Jersey. On the Brittany coast the value was 30.19 in., and at the Azores 30.35 in. The mean pressure gradient, which was of a strongly marked Westerly type, was much steeper than usual, amounting to 0.24 in. between Lerwick and Jersey, against the normal for the month, 0.09 in.

Generally the conditions which obtained in the opening days were of a quiet character, but on the 2nd the approach of one of the Atlantic disturbances towards our coasts brought about a considerable increase in the South-Westerly wind in the extreme west and north, to a high wind (force 7) at Glasgow, a gale (force 8) at Blacksod and Nairn, and a strong gale (force 9) at Malin Head. The rainfall, however, was practically confined to a few of the more mountainous districts, just over an inch on the slopes of Snowdon, and nearly an inch in the west of Scotland, at Fort William, Cruachan and Gruline.

The roughest spell of the month was from the 5th to the 10th. A shallow depression moving northward outside the western coasts on the 5th, developed irregular secondaries over Britain on that and the following day. With the exception of a high wind locally in the south-west and west, a gale at Malin Head and on the Bristol Channel, and a strong gale at Lundy, there was not much wind, but on both days thunderstorms, apparently of no great severity, visited various parts of England and Scotland. The only heavy rains were on the highlands of the west, from 1 in. to 1.5 in. in Snowdonia, and over an inch on Dartmoor (Princetown) on the 5th, and still heavier falls next day, 1.5 in. to 2.2 in. about Snowdon, and 1.3 in. at Seathwaite. Much more wind was produced by the depression which passed round the north of Scotland on the 7th and 8th, its influence being extended by the formation of secondaries on its southern border. A South-Westerly to Westerly gale was felt as far south as Pembroke and Dungeness on the 7th, gusts at the rate of 48 miles per hour being registered at Pendennis Castle, and of 54 miles at Aberdeen. Next

day the wind reached the force of a strong gale from West at Castlebay, and from North-West at Malin Head. Heavy rain was measured only at a few stations in western Scotland, on the 7th, 1.2 in. at Glencarron; and on the 8th 1.2 in. at Fort William, 1.3 in. at Cruachan, and 1.6 in. at Glencarron.

The culmination of the rough weather was reached in the unusually severe summer gale of the 9th and 10th, during the passage of the deepest cyclonic system of the month along the 60th parallel. A South-Westerly to Westerly or North-Westerly gale blew in many localities, a strong gale at Malin Head, Blacksod, Holyhead, and Caldy, and gusts of 54 miles an hour at Quilty, and 58 miles at Pendennis on the 9th; and on the 10th a strong gale at Caldy, Lundy, the Owers, Dungeness, Flamborough Head, and the Farne Islands, a whole gale (force 10) at the Scarweather, off Swansea Bay, while gust velocities of 60 miles an hour were registered at Shields, 63 miles at Southport, and 64 miles at Aberdeen. A great rainstorm occurred in the mountainous regions on the 9th; the greatest falls reported were 1.5 in. at Mount Callan, in Ireland; 1.8 in. at Fort William, and 1.9 in. at Inverary, in Western Scotland; 4.2 in. at Seathwaite, in north-western England; and 2.1 in. at Gogerddan and in Snowdonia, 3.9 in. at Intake, 4.4 in. at Llanberis (Penygwryd), and 4.6 in. at Copper Mill, in Wales. On the other hand, the lowland regions had little or none, and on the 10th there was no considerable fall at any of the mountain stations.

Through the remaining three weeks anticyclonic conditions ruled, the weather generally being very dry, numerous stations reporting only one, two or three trifling showers after the 8th, 9th or 10th, Golder's Green one shower of 0.01 in. in 22 days; Lerwick was rainless through 15 consecutive days, the 13th to the 27th. There were local exceptions, various districts being visited by thunderstorms. Some of the storms were severe, and attended by hail. The heaviest was experienced in some of the eastern counties of England on the 17th, when several places received over an inch of rain, Brampton Grange 2.1 in. in an hour and a quarter, and Great Paxton 2.9 in., of which 2.8 in. fell in an hour and a quarter. The shallow depression of the 18th gave Armagh 1.9 in. of rain, and next day Hafod Fawr, Festiniog had 4.3 in. in 8 hours. The depression of the 23rd gave Seathwaite 1.4 in. on that day, and 1.3 in. on the next; otherwise there was very little rain or wind.

Over the eastern half of the kingdom the mean temperature for the month was rather above the normal, while the western districts returned a deficiency, about 2° in Ireland. As a general rule the days were very cool, maxima below 55° being registered on various dates in several localities, 49° at Fort William on the 8th, and at Eskdalemuir on the 9th; 48° at Glencarron on the 8th; and 47° at Lerwick on the 12th. There were, however, a couple of sudden incursions of heat. On the 16th-17th the thermometer passed 80° in many places, and reached 87° at Wimbledon and Greenwich, and 88° at Wantage. The 29th was nearly as warm, 82° at Southampton, and 83° at Ross and Wilton (Salisbury). The nights were milder, relatively, than the afternoons, minima below 50° being uncommon, though there were a few below 40°, as low as 34° at Llangammarch Wells on the morning of the 2nd, and 33° at Matfield on the 1st, Eskdalemuir on the 2nd, Castle Forbes on the 12th, and Wick on the 13th. The night of the 16th had local minima as high as 60° to 63°.

A slight auroral arch from north-east to north-west, and reaching to about 45° at the centre, was observed at Southampton between 8.20 and 9 p.m. on the 3rd.

The temperature of the coastal sea water was appreciably warmer than during May, by as much as 6° or 7° in places, but the water was colder than the air on shore on the east coast of Britain and in the Western Channels, by from 5° to 7° between the Tay and the Tees. Off the north-west of Ireland the water was slightly warmer than the air.

Fog was of frequent occurrence on the western coasts; on the eastern coasts, mainly the northern half, round the 5th, and again from the 16th to the 25th. There were occasional reports of fog on the south coast from the 12th to the 26th.

Rainfall.—There was an excess of precipitation in the more mountainous districts, while the lowlands returned a considerable deficiency. Glencarron had 215 per cent. of the normal, Fort Augustus 187, Bendamph 183, Gogerddan 180, and Fort William 177 per cent., but many neighbourhoods had less than 30 per cent., Oxford, Portsmouth and Southend 23, Marlborough 22, Ventnor and Westminster 21, Kew Observatory 19, and Shobern 9 per cent. Over a great portion of southern England the total was less than ½ in., as small as 0.17 in. at Shobern, and 0.13 in. at Eltham. Glencarron measured rain on 24 days, but few other places on as many as 20 days, while a large number returned less than 10 days, as few as five at several, and only four at Wantage.

Bright Sunshine.—The duration of sunshine varied from 107 per cent. of the normal at Rothamsted and Worksop, 106 at Oxford, and 105 at Eastbourne to 73 at Markree Castle, 68 at Stornoway, and 58 per cent. at Stonyhurst. The daily values ranged from 3.6 hours at Castlebay, and 3.8 at Stonyhurst to 8.1 at Cardiff and Exmouth, and 8.2 hours at Clifton.