FOR OFFICIAL USE.

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 AND DRY.

Cloudy weather prevailed north and west of a line joining the Severn to the Wash, but nevertheless the month was everywhere dry except in the north and east of Scotland. It was characterized by great and sudden variations of temperature which culminated in a rapid change from the heat of summer to unusual cold after the shift of wind to the Northward late in the period, and severe night frosts over a large portion of the Kingdom as the pressure distribution again became anticyclonic between the 25th and 27th.

The pressure distribution was more varied than that of April. Although high pressure systems predominated there were periods when centres of cyclonic disturbances travelled across the Kingdom, and some of these were sufficiently deep to cause gales in several districts. By the 3rd the anticyclone which had persisted since the middle of April moved away to central Europe, and the droughty condition was at length broken in the south-east of England. The advancing depression came on slowly. By the 5th, when its centre lay to the westward of Scotland, the wind rose to a gale from the South-West and West on isolated parts of the coast, the highest gust velocity being 24 m/s (metres per second) at Shoeburyness. This depression passed away quickly to northern Europe, and on the 7th to 8th another system of similar intensity travelled from south-west to north-east directly across these Islands. Thunderstorms were experienced in several English localities, and the rain with this disturbance was heavier generally than that with its predecessor. In the north and north-west some very large amounts were recorded: 3·4 in. at Drumnadrochit, 3·2 in. at Ardross Castle, and 2·5 in. at Keith; and in the south-east, at Isleworth, 1·0 in. fell in an hour. The wind was also stronger, and gales occurred over a wider area. Some stations on all parts of the coast registered gale force on the 8th, when the centre of the depression lay off the east of Scotland, the direction being Westerly on the Channel and North-Westerly to Northerly on the western and northern coasts. The gale from the Northward continued on some parts of the northern and north-western coasts until the 9th, when Holyhead reported a gust velocity of 27 m/s and Alnwick and Shields 26 m/s. This depression finally disappeared over the North Cape region on the 10th. It was closely followed by a disturbance of moderate depth that came on from Iceland and underwent great modification in form as its minimum passed over the north of these Islands. It brought little wind and only moderate falls of rain, and by the time it had reached Norway, early on the 12th, the north-eastern boundary of an anticyclone over the Azores region had extended to the north-west of Great Britain. This high pressure system, accompanied by fine and generally warm weather, proved the main factor in the pressure distribution over this country and its vicinity for some time, and over a considerable portion of England there was no rain for nine or ten days. A complete change was brought about by the arrival of a depression over the North Sea from the Bay of Biscay region at the same time that an increase of pressure was in progress on the Atlantic to the westward of Ireland. A decided current of wind from the Northward was thus set up over these Islands, and on the 22nd, and less generally on the 23rd, thunderstorms were widespread over England, accompanied or immediately followed by a rapid decrease of temperature. The depression soon passed off and the pressure distribution again assumed an anticyclonic type, the temperature continuing low for some days.

The highest point reached by the barometer was recorded during the main dry anticylonic period. On the 15th pressure rose to 1,034 millibars in the extreme north of Scotland, and on the 19th the same value was registered in Ireland and the northern districts of England. The lowest pressure was brought by the depression of the 5th, when in the far north of Scotland the mercury fell to 989 millibars, and in the north of Ireland to 990 millibars. There were, however, readings nearly as low on the 8th in the east of Scotland.

The temperature for the month as a whole was below the normal, except in the north-east and east of England and in the most southern districts, the greatest divergence being about 1° in the north and west of Scotland. Warm and cold periods occurred alternately. The first week was mild, the second normal or rather cold, the third very warm, and the fourth very cold. Night frost was experienced locally in the north on the 2nd. At Ardross Castle the sheltered thermometer fell to 22° and at Worksop (Hodsock Priory) to 24°. In the latter neighbourhood much damage was wrought to nearly all kinds of fruit trees and forest trees; oaks and ash were blackened, especially on low ground. Slight frost was recorded in many districts on the night of the 10th, but for many subsequent nights the temperature was relatively mild. During the dry and bright anticyclonic period after the 13th the thermometer rose considerably, and ultimately reached a maximum of 80° or a little higher in eastern and southern England on the 22nd or 23rd. The fall that ensued with the thunderstorms and Northerly wind was more rapid over England, where the weather had been warmest, than elsewhere, but while the wind continued Northerly and cyclonic the thermometer remained above freezing point. The night frosts that followed on the 25th, 26th, and 27th occurred after the pressure distribution had again become anticyclonic, the wind light and variable, and the sky clear. Over an extensive area the injury to vegetation was very serious. Many of the observers draw special attention to the effect of the frost. At Meltham the observer noted: "With the exception of 1894 the most disastrous frost I have registered. All young oak leaves destroyed, many beech leaves also. All potatoes cut down to the ground. Part of the gooseberries turned soft and brown. Most of the rhododendron flowers that were fully out cut off. Half the strawberry bloom killed. At Raunds.—"Terrible havoc with potatoes." At Allens Green.—"All potatoes killed; much damage to fruit." At Oundle.—"The frost of the 26th caused much damage. It practically destroyed the early potatoes, beans, strawberries, &c., in exposed situations." At Watlington, Oxon.—"Frosts damaged potatoes, strawberry and raspberry bloom, and much tender vegetation." At Grayshott.—"Fern, potatoes, and some oak leaves blackened by frost." At Isleworth.—"The high temperature, with drought, about the 18th to 22nd, damaged the stone fruit and late flowering apples, and the cold winds and ground frost that followed increased the damage." At Wisley.—"Potatoes, beans, mulberry, bracken, &c., damaged by frost." There were, nevertheless, large areas—mostly in the south and west—where frost by the screened thermometer was not recorded, and the instrument exposed on the grass fell very little below freezing point.

The temperature of the sea surface water was 2° to 3° higher than that of the preceding month and was also above the normal. The divergence was, however, less pronounced than during April, especially late in the month, and there was little difference between the mean temperature of the air and water.

Coastal fogs were rarely experienced on the Channel, and were not very common in the east and west. During the quiet weather between the 13th and 22nd, however, the phenomenon was reported daily from several stations both in the east and west, and the same tendency was observed from the 29th onward.

Rainfall exceeded the normal in many parts of Scotland and also in a few scattered localities in England, but generally it was below it. The cyclonic disturbances between the 4th and 11th were accompanied by frequent rains, and although heavy falls were few, the aggregate for the period exceeded the average. From that date until the change to the thundery conditions on the 22nd rain was seldom experienced except in the extreme north and north-west, and the last week of the month was again mostly dry. Even during the thunderstorms the rain was insignificant over a considerable portion of southern and south-eastern England and in some parts of southern Ireland, while locally in South Wales the change of weather type passed without rain. At Haverfordwest there was absolute drought from the 12th to the 28th, inclusive, and at Ballinacurra, Co. Cork, the only rain between the 12th and 31st was 0·16 in. on the 22nd. Among other places with droughty periods between the 11th or 12th till the 27th or later were Ilfracombe, Bude, Falmouth, and Hastings. At none of these places did the fall on the 22nd exceed 0·05 in., but locally the fall on that day was heavy. At New Malden as much as 0·4 in. fell in six minutes. A heavy storm of large hail passed over Oundle on the 8th, snow showers occurred in the north of Great Britain with a strong Northerly wind on the 9th, and another local hailstorm visited Oundle on the 22nd, cutting off leaves and branches of trees. Some of the hailstones were an inch in diameter. In Scotland the total rainfall varied greatly. At Nairn it was 198 per cent. of the average, and at Fort Augustus 183 per cent., while at Rothesay it was only 61 per cent., and at Crieff 58 per cent. Over large tracts of England and Ireland the percentage was below 60, the lowest being 53 per cent. at Cambridge, 44 at St. Leonards, and 48 at Roche's Point.

Bright Sunshine.—Over the Kingdom generally there was a marked deficiency, but in the east and south-east of England there was a slight excess. At Glasgow the percentage of the average was only 61, and at Deerness 72. At Stonyhurst the figure was 66 per cent., at Newton Rigg 72, and among the Irish stations it was as low as 65 per cent. at Valencia and 72 at Dublin. The greatest excess was recorded at Margate, the percentage being 117, and this was followed by 113 per cent. at Westminster, 105 at Greenwich, and 103 at Geldeston and Little Massingham.

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