

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 FOGGY MONTH: MUCH GROUND FROST.

Pressure, Winds and Weather.—The distribution of atmospheric pressure over and around the United Kingdom passed through several important phases during the period now under review. At the close of September the conditions over a large portion of the country were abnormally wet, under the influence of depressions which were crossing the southern districts from the Atlantic. On the opening day of October one of these was passing away across the North Sea, the lowest barometer reading for the month, 28.87 in., occurring at Yarmouth, and another was nearing the south-west of Ireland. Next day the latter altered its course and bore away to the southward across the Bay of Biscay to the Spanish Peninsula. At the same time an anticyclone, which had previously occupied the Greenland-Iceland region, moved southwards, and on the 3rd and 4th the whole of this country was covered by a well-developed area of high pressure. It was the most pronounced of the anticyclones experienced thus far this year, the barometer rising to 30.6 in. and upwards over nearly the whole of England and Ireland on the 4th, touching 30.65 in. at Bath, 30.66 in. at Roche's Point, and 30.67 in. at Oxford. By the morning of the 5th, however, the central space of the system had been transferred to Germany. Thenceforward, until the middle of the month, the British Isles occupied a position between a high pressure area, covering practically the whole of the Continent, and a succession of very deep cyclonic systems crossing the upper region of the Atlantic, from Newfoundland and Labrador towards Greenland, Iceland and Spitzbergen, with the barometer frequently between 28.5 in. and 29 in. One of these threw off a secondary disturbance, the centre of which skirted our north-western and northern coasts on the 13th and 14th, but this was followed immediately by a great expansion of the continental high pressure out to the Azores region, and on the 15th this country was under an anticyclone having its central space, above 30.4 in., over southern England. With these two comparatively unimportant interruptions there was not much alteration in the pressure distribution—high from south-west to east, and low from west to north—until the 20th, when a change of great magnitude was developing, pressure becoming highest over the lower Atlantic, Northern Russia, and to the northward of Iceland. Under the circumstances a low pressure type was established over the Upper Atlantic, the British Isles and Western Europe, and this was maintained generally until the close of the month. Most of the depressions of this period were of considerable depth as they crossed these islands, the barometer descending to nearly 29 in. on various dates, and on the 30th it went slightly below this level at most of the Irish stations.

The barometric range was thus fairly large, amounting to nearly 1½ in. in the Channel Islands, and 1¼ in. in Ireland and at Yarmouth. For the whole month the mean pressure is lowest, less than 29.55 in., off the south of Iceland, and the highest, above 30.15 in., over eastern and southern Russia, the British Isles occupying the intermediate region, with mean values between 29.76 in. at Stornoway, and 29.98 in. at Jersey. Over southern and eastern England and in Shetland the values were above the normal, by nearly 0.04 in. at Dover, while elsewhere they were below it, to the extent of 0.1 in. at Blacksod Point. The resultant gradient was favourable to the general prevalence of winds from between South and West.

Owing to the proximity of the numerous disturbances out on the ocean there was considerable wind on the western and northern coasts throughout the month, the 9th and the 11th being the only days on which no telegraphic reporting station registered more than a strong breeze. The disturbances of the first two days caused much wind from between North and East over the greater part of the kingdom, a gale (force 8) at Lerwick, Spurn Head, Dungeness and Blacksod Point, and a whole gale (force 10) at Wick. Over southern England, in continuation of the rainstorm of September 29th and 30th (*see p. lxxxix.*), very heavy rain fell on the 1st, exceeding an inch at a number of places, while Weymouth received as much as 1.3 in., and a few stations reported a thunderstorm. In the north St. Andrews registered 1.4 in.

A spell of a somewhat mixed type of conditions now set in. Strong to high South-Westerly winds to a gale or a strong gale were of almost daily occurrence on the western and northern seaboard as part of the cyclonic circulation on the ocean, while calms and light variable breezes prevailed in the southern and eastern districts, under the influence of the Continental anticyclone. Over England the weather became unusually foggy for such an early period in the season, the fogs being reported as thick and wet on several days in succession. But though the atmosphere was very damp there was, other than on the 1st, little or no rain through the first half of the month. Numerous stations had 12 to 14 successive rainless days, while Oundle, Ridlington, Raunds and Sparkhill measured no rain on the first 15 days. The secondary depression of the 13th and 14th caused some heavy rainfalls locally in the north-west, 1.1 in. at Castlebay, Crieff and Graythwaite, 1.6 in. at Pen-y-Gwryd (Snowdon), and 2.1 in. at Seathwaite. An

Iceland depression brought heavy rain to Western Scotland on the 15th, as much as 2.5 in. to Cruachan.

The change of type which made its appearance on the 20th proved to be the commencement of the most disturbed spell of the month. Several rather deep cyclonic systems visited these islands during this interval, the last of them passing to the North Sea on the 31st, when an Atlantic anticyclone was expanding steadily eastward to cover Western Europe by the following day. The first of this series of depressions moved on a south-easterly course from Iceland across this country to France, rough weather prevailing extensively on the 20th and 21st, the wind shifting through various quarters, and attaining gale force in many localities, a whole gale from South-West at Malin Head on the 20th, and a storm (force 11) from North-West next day. According to the anemometrical records gusts at the rate of 61 miles per hour were felt at Pendennis, of 66 miles at Scilly, and of 67 miles at Quilty. Thunderstorms, accompanied in some instances by hail, occurred in various districts, but though rain was general each day, there were only a few cases of as much as an inch in 24 hours. Comparative quiet reigned from the 22nd to the 25th, though an Easterly or a Westerly gale or strong gale blew here and there.

On the morning of the 26th a large depression appeared off the Kerry coast and during that and the succeeding days the weather was maintained in a very disturbed state, and especially so over England and Wales, where the rainstorms of the first three days were very heavy over an extensive area. Falls of more than an inch in a day were far too numerous to be referred to in detail, but on the 26th the amounts ranged up to 2 in. at Graythwaite, 2.1 in. at Seathwaite, 2.4 in. at Bettws-y-Coed, and 4½ in. at Pen-y-Gwryd; and on the 27th to 2 in. at Tavistock, 2.5 in. at Ashburton, 2.8 in. at Sheepstor, 3.1 in. at Redstone, 3.2 in. at Two Bridges, and 3.6 in. at Princetown (all in the Dartmoor region). For these two days 6.2 in. was registered at Copper Mill, and 6.4 in. at Intake (Snowdonia). Gales were of daily occurrence, a whole gale from East North-East at Lerwick, on the 27th, being the most severe. Gusts at the rate of more than 50 miles an hour were registered each day, at Pendennis 63 miles on the 27th, 69 miles on the 29th, and 70 miles on the 30th. Thunderstorms visited many localities between the 27th and 31st. There was again an unusual amount of fog from the 23rd to the 27th.

Temperature was below the normal nearly all through. Afternoon maxima above 60° were uncommon. Jersey on the 10th, Sparkhill on the 11th, and Colwyn Bay on the 12th touched 66°, but there were few other records as high as 65°. There were, on the other hand, some very cold days, with maxima below 45°, and as far south as Hodsock Priory and Nottingham, in a thick fog on the 25th, the thermometer did not rise above 40°. Frost occurred on several nights, the lowest of the shade minima being registered on the morning of the 4th, when Llangammarch Wells touched 21°, and Eskdalemuir 20°. The nights of the 13th and 26th were mild, with minimum temperatures round 55° in many places, 57° at Penzance on the latter night. Ground frost was exceptionally frequent; at the majority of stations on 10 or more nights, on 21 at Coventry and Newton Rigg, 23 at Berkhamsted, and 24 at Hampstead. The temperature of the soil, both at 1 ft. and 4 ft. depth, was considerably lower than the normal.

An aurora was seen at Deerness and Eskdalemuir late in the evening of the 14th.

Fog was experienced on the coasts at the same time as it visited the inland districts, as described above.

A general decrease in the temperature of the sea round our coasts was taking place, the reduction on the September records being as much as 4° to 6° locally. The water was everywhere warmer than the air on shore, to the extent of 4° to 5° in many neighbourhoods, 6° off Selsey and St. Ann's Head.

Rainfall.—As may be gathered from the foregoing remarks, with one half of the month dry and the other wet, the distribution of precipitation was very irregular, some localities receiving much less, others much more than usual, the percentage values ranging from only 40 at Armagh, 55 at Geldeston, and 56 at Phoenix Park to 141 at Bath, and 142 at Salisbury. The aggregates were as small as 1.1 in. at Armagh, 1.4 in. at Clacton-on-Sea and Kingstown, and 1.5 in. at Geldeston and Fortrose, and as large as 14.6 in. at Seathwaite, 15 in. to 19½ in. in Snowdonia, and 19½ in. at Glenquoich. Rain was measured at Oundle, Temple Bruer and Wellington on 9 days, and at Dungeness and Kingstown on 10 days, against 27 at Castlebay, Stornoway and Wick, and 28 at Baltasound.

Bright Sunshine.—The duration of insolation was somewhat irregular, but generally it was in excess of the normal. Deerness registered 74 per cent. of the average duration, Aberdeen 78, and Stornoway 79, while many places exceeded 125 per cent., up to 140 at Guernsey, and 148 at Tunbridge Wells.