

MONTHLY WEATHER REPORT OF THE METEOROLOGICAL OFFICE.

SUMMARY OF OBSERVATIONS COMPILED FROM RETURNS OF OFFICIAL STATIONS AND VOLUNTEER OBSERVERS.

PUBLISHED BY HIS MAJESTY'S STATIONERY OFFICE. To be purchased through any Bookseller or directly from H.M. STATIONERY OFFICE at the following addresses:
 IMPERIAL HOUSE, KINGSWAY, LONDON, W.C. 2, and 28, ABINGDON STREET, LONDON, S.W. 1; 37, PETER STREET, MANCHESTER; 1, ST. ANDREW'S CRESCENT, CARDIFF;
 23, FORTH STREET, EDINBURGH.

VOL. 39, No. 12.

ISSUED BY THE AUTHORITY OF THE METEOROLOGICAL COMMITTEE.

Price 9d. Net, Post free, 10d.
 Annual Subscription, including
 Annual Number and Introduction,
 10s. post free.

DECEMBER, 1922: MILD. QUIET AT FIRST. STORMY LATER.

The first half of the month was anticyclonic in character but by the third week the pressure over the British Isles was falling and depressions from the Atlantic extended their influence further south so that small secondaries frequently crossed England. After the 18th a day seldom passed on which the wind did not attain gale force on some part of the British Coasts. The month was mild with temperature everywhere in excess of normal. Sunshine was also in excess in the eastern part of Great Britain.

At the beginning of December, an anticyclone was situated over the Bay of Biscay, and this high pressure area maintained its position with little change for the first week or so of the month. During this period westerly winds with mild weather prevailed over the British Isles. There was little rain in the southern districts, but further north the weather was affected by Atlantic depressions and there were occasional gales on the coast. By the 8th the high pressure area stretched from Madeira to Iceland and on the following day its central portion covered the British Isles. The Atlantic depressions subsequently began to take a more southerly course and up to the end of the month the weather was stormy and unsettled. The first of the series was a deep depression which approached the British Isles on the 18th; that evening it was centred off the Hebrides, causing south to south-west gales on the coasts; thunderstorms were experienced at various places. In the early hours of the morning of the 20th an intense secondary depression with a separate circulation appeared at the mouth of the Channel and moved north-eastwards accompanied by gales and heavy rain over southern England. In the rear of this secondary sleet and snow fell in Scotland and parts of England. On the morning of the 21st an exceptionally deep depression, with pressure near its centre as low as 952mb. appeared off the west of Ireland, and as it moved north-eastwards there was a general renewal of gales. An associated secondary depression crossed southern England, giving heavy rain and thunderstorms, particularly in the western districts. On the morning of the 25th another large depression appeared off the Hebrides and moved slowly north-eastwards being followed by yet another one, the latter crossing England on the 30th. By the following day this depression had reached southern Scandinavia while a secondary associated with it moved along the south coasts of the British Isles.

The general character of the month is illustrated by the following remarks taken from observer's returns. Dornoch (Sutherland),—Unusually mild, three varieties of primrose are in bloom in my garden. Cargen (Kirkcudbright),—Gardens still show many blooms; farm work at a standstill. Southport,—Extremely mild and equable with a notable deficiency of south-easterly winds. Barometer high and steady with much cloud but fair weather during the earlier half of the month, very low and unsteady with frequent and considerable rainfall but many sunny intervals afterwards. Lenton Fields (Nottingham),—There was a marked difference between the anticyclonic weather of the first fortnight and the stormy weather of the second. Alfriston (Sussex),—Last half of the month very stormy. Dublin (City),—An open month, westerly and south-westerly winds prevailing almost to the exclusion of all others. The first 12 days had a rainfall of only 4mm. The remainder of the month was very unsettled, without, however, very heavy rain. Seskin (Carrick-on-Suir),—The absence of rain to any extent for the first 10 days and the paucity of sunshine for 17 days were unprecedented during my observations in December.

Air Pressure.—The mean pressure of the month was everywhere low. The distribution was anticyclonic during the first eleven days and subsequently cyclonic of the usual south-westerly character. At the telegraphic reporting stations the departure of the monthly means of pressure from the normal varied from -1.0 mb. at Scilly to -5.0 mb. at Stornoway, Wick and Inchkeith. The highest reading recorded during the month was 1036mb. at Valencia on the 6th and the lowest 957mb. at Blacksod Point on the 22nd.

NOTE:—The article by Mr. W. C. Kaye in the *Meteorological Magazine* for January has been utilised in the preparation of this summary.

Temperature.—The mean temperature for the month was decidedly above the average in all districts, though appreciably below that of December, 1921. England north-west had a mean temperature of 43.6°F ., an excess of 2.8°F . above the normal and the Midland counties had an excess of 2.7°F ., the mean temperature being 41.9°F .. The smallest excess, $+0.8^{\circ}\text{F}$., occurred in southern Ireland, the Channel Isles and Scilly. The extreme temperatures recorded for the whole of the British Isles were 15°F . at Balmoral on the 11th, 59°F . at Banff on the 12th and this high reading provides an interesting example of the rise in temperature of a south-west wind in its passage across the Scottish Highlands.

Precipitation.—The general rainfall of the month was practically normal. With the exception of England east the whole of England and Wales and Ireland had more than the average while in Scotland there was a widespread but not very large deficiency. Departures from the average ranged from $+24$ mm. in the Midland counties to -27 mm. in Scotland west. Departures of more than 50 per cent. from the average were rare and occurred chiefly in a wet patch in the centre of Yorkshire. Rain fell frequently in quantities of 20mm. or more and some measurements exceeded 40mm., 41mm. falling at Plymouth during the night of the 19th and 42mm. at Petersfield during the 24 hrs. ending at 9 hrs. on the 22nd. In Scotland the first half of the month was dry in the eastern districts but rather wet in the west (72mm. fell at Ardgour on the 12th), whilst during the second half rain was very general, though heavy falls were largely confined to western districts. The most widespread falls occurred on the 22nd (54mm. at Leadhills), and on the 25th (65mm. at Glen Etive and 55mm. at Killin). On the night of the 29th rather heavy falls were experienced in the east and south. Snow, hail and sleet, were frequent during the second half of the month and snow lay over considerable areas in western and central districts on the 27th and 28th, though it soon melted except on high ground where some drifting occurred. There was, however, no general snowstorm and a Perthshire observer described the month as singularly free from snow for December. During the latter part of the month showers of snow or sleet fell once or twice in southern Ireland and England.

Thunderstorms occurred locally in all parts of the country during the last week of the month.

The general rainfall expressed as a percentage of the average was England and Wales 122; Scotland 86; Ireland 102; British Isles 106.

At Armagh a remarkable cloud pendant was seen on the 12th in the form of "a long funnel-shaped cloud sloping sharply from south to north and ending in a spherical fuzzy wisp." The pendant lasted for about 5 minutes.

A whirlwind was seen at Guernsey at 13h. 30m. on the 27th. It lasted about 10 minutes and "caused large seas over a small area."

Sunshine.—The distribution of sunshine showed a clearly marked contrast; the north of Scotland and the whole of the eastern part of Great Britain having a duration in excess of the normal while the western part of Great Britain, including the Channel Isles and Scilly, and the whole of Ireland had a deficit. England south-east had the greatest daily mean duration of sunshine, 1.51 hrs. and England north-west the least, 0.79 hr. The departure from normal of the daily mean duration ranged from $+0.20$ hr. in Scotland north to -0.47 hr. in the Channel Isles and Scilly. 7 hrs. sunshine were recorded at Lympe on the 24th.

Optical Phenomena.—Solar and lunar halos were numerous. Lunar rainbows were observed at Inverness on the 4th and 9th and at Durham on the 5th. Parhelia were seen at Oxford on the 28th and 29th.

Aurora was observed at Gordon Castle and Banff on the 14th and at Fort Augustus on the 30th.