

## MONTHLY WEATHER REPORT OF THE METEOROLOGICAL OFFICE.

SUMMARY OF OBSERVATIONS COMPILED FROM RETURNS OF OFFICIAL STATIONS AND VOLUNTEER OBSERVERS IN THE UNITED KINGDOM, AND AT GIBRALTAR AND MALTA, WITH A CHART OF RAINFALL CONTRIBUTED BY THE BRITISH RAINFALL ORGANIZATION.

ISSUED BY THE AUTHORITY OF THE METEOROLOGICAL COMMITTEE.

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### Dull, Rainy, and Mild.

During the greater part of the month the air pressure over the British Isles was in a very unstable condition and, with depressions coming in frequently from the Atlantic, winds from some point between South-West and North-West predominated. As a result, the general character of the month was dull, rainy, and mild, its mean temperature at many of the English and Irish stations being about 2.5a above that of November. Gales and strong winds were frequent, the most widely experienced of the gales being those of the 2nd, 18th-19th, 30th and 31st. For the most part the precipitation was in the form of rain, which at several stations fell on every day of the month; stations having from 28 to 30 rain-days were very numerous. Snow fell frequently in Scotland, on several days in England, and less frequently in Ireland, but only in a few of the more northern localities did it lie on the ground to any considerable depth. Hail also was fairly frequent, and thunderstorms occurred on several dates, the most wide-spread storm being that of the 4th. Fogs were comparatively rare, but one of considerable density formed over London during the early hours of the 17th.

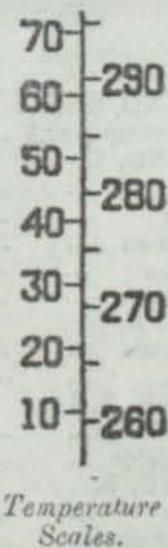
In Scotland there was a good deal of mild weather, especially during the third week, and the only cold of much importance was experienced with shifts of wind from the prevailing south-west direction to some northerly point around the 10th, 25th, and 30th.

The following notes supplied by observers illustrate the general character of the month:—*Copdock, Ipswich*.—A mild, dull, wet month with precipitation on 26 days, a larger number than in any previous December during 18 years' records, though the total fall (84 mm.) was not very largely above the normal. *Tenbury, Worcester*.—A mild, damp, and windy month, structural damage being caused by a line squall on the 18th. River Teme still very low, and springs and wells dry until the end of the month. Winter wheat, oats, and beans much retarded by frequent ground-frosts. *Ross, Hereford*.—A mild, open month, the first since August with a mean temperature in excess of the normal. River Wye twice in flood owing to heavy rain in Wales. Precipitation was frequent, but there was only one heavy fall, 11.5 mm. on the 1st. On only four days was the maximum temperature below 28.0a. *Totland Bay, Isle of Wight*.—Twice only, in 1911 and 1915, has a heavier rainfall been recorded at this station in December. There was a greater number of wet days than in any previous December during 34 years' records. *Southport, Lancs.*—A wet, open month, still further accentuating the remarkably prolonged and considerable deficiency of winds from due East. *Dublin (Fitzwilliam Square)*.—An open, cloudy, rainy month of South-West and West winds; out of 62 observations of wind direction as many as 50 were from points between South and West inclusive. The mean temperature (27.7a) was actually 2.2a above that of November, and frost never occurred in the screen.

**Air Pressure.**—As shown by the map on p. 135, the mean monthly trend of isobars was of a normal south-westerly type, the mean values being slightly lower than usual and the gradient a little steeper. The departures from the normal at the telegraphic reporting stations varied from -6.5 mb. at Stornoway to +0.1 mb. at Scilly. The following are some of the prominent incidents connected with the movements of the anticyclones and depressions of the month:—At 7h. on the 1st a depression was centred between Scotland and Iceland, the weather map also showing a well-marked secondary over South-West England. The latter system as it moved North-Eastwards caused much rain in southern England, as much as 28 mm. falling at Portland Bill, where there was also a gale. A gale was also experienced in parts of southern England during the early morning of the 2nd, and damage was done to buildings, a gust of 30 m/s. being recorded at Kew Observatory and one of 33 m/s. at Pendennis Castle, Falmouth. The depression to the North of Scotland moved slowly Eastwards until the 5th, when it had become shallower, its movements being associated with westerly winds and showery weather at most British Stations, with hail in places. On the 5th gales were reported from Dungeness, Holyhead, and Liverpool, and thunderstorms in South-East England. At 7h. on the 5th a new depression was centred near Iceland, and moving slowly was over the North Sea the following morning, and strong winds, with gales at some stations, were again general, hail and rain showers being reported at many stations, and sleet in Scotland. On the 6th, an increase in the air pressure, with an extension of northerly winds to England, was attended by brighter but colder weather. Thereafter until the 18th, the weather of the British Isles was mainly dominated by cyclonic systems of varying intensity moving in the Icelandic region, and on some days there were well-developed secondaries. Much rain accompanied some of the latter, 32 mm. falling at Donaghadee and Eskdalemuir on the 10th, 31 mm. at Castlebay and Wick on the 13th, and 29 mm. at Aberdeen on the 15th. Commonly during this period the wind over the British Isles

blew from some westerly point, and the temperature was high for the time of year. Gales occurred in exposed places on the 14th and 15th, and thunderstorms occurred at Holyhead on the 11th, in the Hebrides on the 13th, and at Eskdalemuir on the 18th. On the latter day a new depression approached Iceland, and moving rapidly reached Denmark the following morning; later in the day there were westerly gales on all British Coasts, and rain, hail, and lightning were common. During the next few days a persistent anticyclone stretched from the Azores to the Bay of Biscay, the lowest pressure being in the North, so that westerly winds and dull, damp weather prevailed over the British Islands generally, but the precipitation, which in Scotland took the form of snow, was, for the most part, slight. On Christmas Day a ridge of high pressure formed over the British Isles and northerly to north-westerly winds prevailed, with frost in many places and slight snow in Scotland. At 7h. on the 27th, a depression of considerable depth was indicated between the Hebrides and Iceland, and rain fell generally. There was a severe south-easterly gale in the North-East of Scotland and also in Shetland, where the gale was continuous for three days from the evening of the 26th, and heavy seas were raised. This depression was conspicuous on the weather map until the 30th, when it partially filled up. During this day, however, a small depression passed across England from West to East and caused gales from between the South-West and North-West at night in southern and western districts. Under the influence of a depression centred (at 7h.) over northern England, the last day of the year was rainy in all parts of the Kingdom.

**Temperature.**—The mean temperature of the month was normal in Scotland West, but both in Scotland North and in Scotland East there was a slight deficiency of warmth of 0.3a. In all other Districts the mean was rather above the normal, the excess varying from 0.1a in England North-East to 0.9a in England South-West. During the week ended on the 27th there were some striking contrasts as regards the mean temperature, which at Wick was 3.3a below the normal, and at Strathpeffer 3.2a, compared with an excess, on the other hand, of 2.9a at Salisbury and 2.8a at Ross-on-Wye. At the individual stations the highest reading during the month was 28.7a at Eye (Peterborough) on the 3rd, and at Exmouth on the 22nd and 23rd; and the lowest 26.1a at Braemar on the 26th. It may be noted that great cold prevailed on the morning of November 30th and that there was a sharp rise of temperature towards the evening of that day. At stations where the minimum temperature is read at 9 hr. the readings of December 1st gave temperatures which actually occurred on November 30th. According to rule these have been entered in Table III., unless they were followed by lower readings later in December.



Temperature Scales.

**Precipitation.**—In Scotland North the month's precipitation was exactly normal, but in all other Districts there was an excess, ranging from 78 mm. in Scotland West to 18 mm. in the English Channel. The number of rain-days during the month was notable; in England South-West and in each of the Irish Districts there were as many as 28. At Markree Castle, County Sligo, it was the wettest December for at least 48 years. In Scotland, except in the West Highlands and at points around the Moray Firth, the monthly totals were much above the normal, and at some places in the West, South-West, and South the excess was very large. At Rothsay the aggregate of 282 mm., more than twice the normal, was the greatest rainfall ever registered in any month at this station though the record covers 120 years.

**Sunshine.**—The mean daily amount of sunshine varied from 1.65 hr. in Ireland South to 0.75 hr. in Scotland North, the departures from the normal ranging from +0.36 hr. per day in Scotland West to -0.43 hr. in England South-East. The total duration of bright sunshine was 1 hour at Hull, 7 at Manchester, and 11 at Burnley, compared with 59 hours at Penzance and Torquay and 61 at Haverfordwest.

**Optical Phenomena.**—Lunar halos were observed at the beginning and end of the month, and solar halos on various dates, with parhelia at Valencia Observatory on the 8th and at Oxford frequently between the 22nd and 26th. A lunar rainbow was seen at Harrogate on the 5th, and the Zodiacal Light at St. Louis Observatory (Jersey) on the 19th and at Oxford on the 21st.

**Aurora** was observed here and there in Scotland on various dates, at Seskin (Carrick-on-Suir) and Valencia Observatory on the 15th, and at Oxford on the 30th.