

## MONTHLY WEATHER REPORT OF THE METEOROLOGICAL OFFICE

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

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## DECEMBER, 1933.—Exceptionally dry; very cold in the south.

The weather of the month was mainly anticyclonic, exceptionally dry and abnormally cold in southern districts. Heavy local rain in the west and south-west on the 1st was associated with a trough of low pressure extending from a depression near Iceland to the Bay of Biscay. On the 2nd a large anticyclone centred over Scandinavia began to spread westward and anticyclonic conditions were maintained for the most part over the British Isles until the 11th, with cold, easterly winds, particularly in the south. By the 11th, the highest pressure was situated westward of Ireland and between the 11th and 13th an Icelandic depression moved south-south-east across this country and deepened considerably over the Bay of Biscay. Rain or snow fell in most districts and widespread easterly gales were experienced in England on the 13th. Subsequently a ridge of high pressure over Scotland moved slowly south and anticyclonic conditions were re-established. By the 21st the high pressure system was centred over northern France and an Atlantic depression moving north-east caused southerly winds which reached gale force locally on the west and north-west seaboard on the 21st and 22nd. Weather continued dry over most of England but occasional rain or drizzle was reported in the west and north. Between the 25th and 26th a trough of low pressure spread over the country from the west and subsequently a deep depression moved south-east across the British Isles from the South of Iceland. Unsettled weather persisted for the most part until the end of the month, with rain, sleet or snow at times and local gales in the north-west and north on the 29th and 30th and in the extreme south-west on the 27th and 28th.

**Pressure and Wind.**—Mean pressure for the month was everywhere markedly above the normal, the excess at 7h. varying from 17.3 mb. in the north at Lerwick to 6.7 mb. in the south at the Scilly Isles. The map shows a centre of high pressure over northern England and southern Scotland with pressure decreasing most rapidly over southern England. In some districts, including north-west England and southern Scotland, the month was less windy than usual. The observer at Southport records that it was the calmest month of any name that has occurred since the Marshside anemograph was established in 1897. In eastern districts of England, winds from between north and east were very prevalent while in western districts of England and southern Ireland, winds from a westerly quarter were almost absent. Gales were fairly widespread in the west and north of the British Isles on the 1st and in England on the 13th. They occurred locally also on the 3rd, 14th, 21st, 22nd and from the 27th to 30th. Among the highest speeds recorded in gusts were 72 m.p.h. at Cahirciveen on the 1st, 62 m.p.h. at Gorleston on the 13th, 63 m.p.h. at Butt of Lewis on the 22nd, 69 m.p.h. at Scilly on the 28th and 67 m.p.h. at Lerwick on the 30th.

**Temperature.**—A distinguishing feature of the weather of the month was the persistently low temperature experienced over most of England and Wales. For example, at Greenwich, Oxford, Ross-on-Wye and Totland Bay, it was the coldest December since 1890. At Newquay and Redruth it was the coldest December since observations were begun in 1892 and 1901 respectively, and at Redruth the mean temperature was 2.2°F. lower than the previous lowest December mean. On the 20th it was reported in some London newspapers that the Thames was frozen over in its upper reaches above Oxford, while the observer at Rickmansworth reported that about the 9th–11th, the river Chess was frozen over and the observer at Usk recorded that the river there was slightly frozen over on the 10th. The number of ground frosts was unusual, many stations in England recording 25 or more, while Rickmansworth recorded 31, Hampstead 30 and Roade 29. In contrast to

the severe cold in the south, mean temperature at some places in the north of Scotland exceeded the normal, the excess amounting to as much as 2.6°F. at Wick and 2.5°F. at Kirkwall. In Scotland, W. and Ireland, the mean was below the normal but the deficiency was not nearly so great as in most of England. The mean temperature chart (fig. 3) shows how much colder conditions were in most parts of England than they were elsewhere. The highest temperatures occurred generally on the 21st or 22nd when warm Atlantic air raised the temperature to 55°F. at Strathpeffer and Forres and to 54°F. at Blacksod Point.

The extremes for the month were:—(England and Wales) 53°F. at Gulval on the 1st, 13°F. at Thetford on the 6th; (Scotland) 55°F. at Strathpeffer and Forres on the 22nd, 13°F. at Dalwhinnie on the 10th and 14th; (Ireland) 54°F. at Blacksod Point on the 21st, 20°F. at Markree Castle on the 7th.

**Precipitation.**—The general precipitation of the British Isles expressed as a percentage of the normal for the period 1881–1915 was 34, the values for the constituent countries being England and Wales 29, Scotland 32 and Ireland 49. Over the British Isles as a whole it was just drier than December, 1926, which had previously been the driest December since 1870. In an elongated belt stretching from the north of Scotland across the inland districts of Great Britain to the south of England most stations recorded less than 20 per cent. of the normal. The deficiency was generally least in a coastal strip extending from Aberdeen to Tynemouth, the percentage of the normal round the latter station being about 80. In Ireland, the western half of the country was the drier, considerably less than 50 per cent. being recorded at many places in these districts, while more than 50 per cent. was registered at most stations in the eastern counties. The total rainfall for November and December was so small that the shortage of water became acute in some parts of the country. Heavy rain fell in the south-west and west on the 1st and locally in the west and north on the last few days, notably the 27th. Among the heaviest falls in 24 hours are included 56 mm. at St. Austell, 55 mm. at Fofanny (Co. Down), 53 mm. at Holne (Devon) and 49 mm. at Llyn Fawr (Glamorgan) on the 1st.

Sleet or snow (generally slight) was reported at times, mainly on the 1st, from the 8th to 16th and 28th to 30th. It was widespread on the 12th and 4 inches were recorded on that day at Newquay, where there has been only one heavier fall (5 inches on January 16th, 1917) in 41 years.

**Sunshine.**—Broadly speaking, sunshine aggregates were above the normal in Ireland, the western half of England and the Channel Islands and below the normal elsewhere, the deficiency being greatest in England, N.E. with 79 per cent. of the normal. In eastern districts of England, the latter half of the month was mainly very dull, but some good records were obtained earlier in the month. The 14th was a sunny day, many places in southern England registering 7 hours or more of bright sunshine.

**Fog.**—After the 4th, fog was unusually prevalent in England and south Scotland, particularly on the 6th, 7th, 12th and almost daily from the 16th to the end of the month. It was frequently thick in places.

**Miscellaneous Phenomena.**—The aurora was observed in Scotland on the nights of the 4th, 9th, 10th, 11th, 16th and 18th. Solar haloes were noted at Oxford on 5 occasions.