

MONTHLY WEATHER REPORT OF THE METEOROLOGICAL OFFICE

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

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DECEMBER, 1937.—Cold; widespread snow and frost from the 4th—21st.

The weather of the month was distinguished by considerable snow and frost during the period 4th–21st. Rainfall was excessive in the eastern and south-eastern districts of Great Britain and deficient on the whole elsewhere.

During the opening days a depression off the west of Ireland moved south-east to the English Channel and then east-north-east to Germany. Rain fell generally and was heavy locally in England; temperature, which was somewhat high over England at first, decreased with the advance of northerly winds in the rear of the depression. Between the 4th and 16th complex depressions moved from the neighbourhood of Iceland south-eastward and then eastward over the British Isles; occasional heavy falls of sleet and snow occurred in some parts, particularly in the north, and caused serious dislocation of road traffic. On the 7th there was heavy snow locally in the south; roads were blocked in the New Forest and snow was reported to be 2 feet deep at Shaftesbury on the 8th and 9th. Severe frost was also experienced; temperature in the screen fell to -7°F. at Braemar and -5°F. at Logie Coldstone on the 13th. Between the 16th and 18th a belt of high pressure passed east over the country; considerable periods of bright sunshine were enjoyed locally but rain fell in some districts and was heavy locally in south-east England on the 16th. On the 19th a shallow depression over Wales moved away south-east.

Subsequently an anticyclone over southern Scandinavia moved south to Germany and later extended westward to France; meanwhile pressure was low westward of the British Isles and mild, mainly southerly winds prevailed. The rise in temperature began in the extreme south-west on the 20th and was experienced over the country generally by the 22nd; in some places the maximum temperature on the 24th was about 20°F. higher than on the 20th. Heavy rain fell locally in the west and north but falls were generally slight in the east.

On the 25th the anticyclone extended northwards and widespread fog occurred over England. Subsequently the anticyclone moved north and then north-west and by the 28th it was situated over Scotland and maintained its position with little change until the end of the month. This was a period of rather dull weather with a little local rainfall; somewhat widespread fog occurred, particularly in England, until the 28th. Temperature fell again appreciably towards the end of the month.

Pressure and Wind.—Mean pressure exceeded the average for the most part except in the south-east of the British Isles where it was somewhat deficient; the deviation from the average at 7h. varied from -2.1 mb. at Kew Observatory to $+10.1$ mb. at Lerwick. In consequence the mean pressure over the British Isles was very uniform.

Local gales occurred on a number of occasions chiefly from the 2nd–8th, 10th–15th, 20th–22nd and 24th–25th but were not generally severe. Gales were reported on 9 days at Lerwick, 8 days at Wick and 7 days at St. Ann's Head and Valentia Observatory. Among the highest speeds recorded in gusts were 71 m.p.h. at South Shields on the 12th and 70 m.p.h. at the Lizard on the 4th and at Scilly on the 5th.

Winds from between north-west and north-east were somewhat prevalent.

Temperature.—Mean temperature was considerably below the average generally, the deviation from the average for districts 1–10 being -2.9°F. The deficiency was most marked at certain individual stations in Scotland; it amounted to 6.7°F. at Braemar and 6.0°F. at Balmoral and Glenbranter. The period 4th–20th was unusually cold with frequent and sometimes severe frosts; on the 13th temperature in the screen fell to -7°F. at Braemar, -5°F. at Logie Coldstone, -3°F. at Balmoral and 0°F. at Dalwhinnie. The value -7°F. is the lowest temperature recorded under standard conditions anywhere in Scotland since November 14th, 1919 when -10°F. was registered at Braemar. In England and Wales minimum temperatures of 20°F. or below were recorded at numerous stations, while 10°F. was registered at Houghall on the 13th, 11°F. at Newton

Rigg on the 12th and 20th, 12°F. at Rhayader on the 10th and 13°F. at Usk on the 18th and at Bellingham on the 13th.

It was mild in England and Wales on the 1st and a mild spell occurred generally from the 22nd–26th. Temperature fell appreciably again in most districts towards the end of the month.

The extremes for the month were:—(England and Wales) 59°F. at Llandudno on the 24th, 10°F. at Houghall on the 13th; (Scotland) 57°F. at Glenbranter on the 24th, -7°F. at Braemar on the 13th; (Ireland) 59°F. at Glasnevin and Trinity College, Dublin, on the 24th, 19°F. at Birr Castle on the 8th, at Markree Castle on the 9th and at Aldergrove on the 18th.

Precipitation.—The general precipitation of the British Isles expressed as a percentage of the average for the period 1881–1915 was 93, the values for the constituent countries being England and Wales 108, Scotland 76 and Ireland 71. More than the average occurred in the east and south-east of Great Britain and in a few rather isolated areas elsewhere; more than twice the average occurred in a narrow strip extending from Marchmont, Berwickshire, to Felixkirk in the North Riding of Yorkshire and at a few somewhat isolated stations in the east and south-east. Less than 50 per cent of the average was received over a wide area in the north-west and north of Scotland and less than 30 per cent at a number of stations in this area. Less than 50 per cent occurred also at a few stations in the north-west of England, south Wales and County Cork.

Among the heaviest falls in 24 hours were the following:—

- 2nd 2.11 in. at Ferriby Sluice, Lincoln, 2.20 in. at Doncaster and 1.90 in. at Patrington, Yorkshire.
- 7th 4.14 in. at Newport, Isle of Wight, 2.52 in. at Calshot, 2.10 in. at Ventnor and 2.09 in. at Ryde.
- 10th 2.59 in. at Frandy (Perthshire) and 2.12 in. at Tayport, (Fife).
- 13th 2.46 in. at Gorebridge (Midlothian) and 2.00 in. at West Hopes (E. Lothian).

Snow occurred frequently, particularly from the 4th–20th. The falls were heavy at times and caused serious dislocation of road traffic. The falls of the 7th–8th were heavy in parts of the south of England; roads in the New Forest were blocked. In Scotland the heaviest falls occurred between the 8th and 15th. Snow drifts 6 ft. deep blocked the main road from England to Scotland over Shap Fell and conditions were hardly less severe in many other places; some highland roads remained blocked until the end of the month. Undrifting snow was 18 inches deep at Balmoral on the 15th. In Ireland there was a good deal of snow, some roads being practically impassable. In the north of England "snow-lying" was reported at numerous places from about the 5th–22nd; at Bellingham (Northumberland) it was 14 in. deep on the 13th and 14th and at Durham nearly 11 in. on the 11th.

Local thunderstorms occurred on several days, those on the 7th being somewhat widespread in Scotland and southern England. The storms in southern England on the 7th were accompanied by heavy rain, hail, sleet and snow. At Newport, Isle of Wight, 4.14 inches of rain were measured in the 24 hours ending 9 a.m. on the 8th.

Sunshine.—Sunshine was variable; the percentages of the average for the districts ranged from 64 in England, E. to 138 in Scotland, W. An excess was recorded at most stations in the west and north of Scotland, locally in the east of Scotland and in Ireland and at some stations in England chiefly in the north-west and south-west. On the other hand over England as a whole there was a substantial deficiency and less than the average was registered at a number of stations in Scotland, E. and in Ireland.

Fog.—There was a good deal of fog, chiefly on the 1st, from the 4th–11th, 14th–15th and 18th–28th. The fog on Christmas Day was dense over a large part of England.

Miscellaneous Phenomena.—The aurora was seen in Scotland on 12 nights, the phenomenon being most widely observed on the night of the 24th–25th. Solar halos were noted at Oxford on ten days.