

# MONTHLY WEATHER REPORT OF THE METEOROLOGICAL OFFICE.

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

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## FEBRUARY, 1931. Squally, westerly winds, with frequent wintry precipitation.

Squally, westerly or north-westerly winds and frequent wintry precipitation were the chief features of the weather during the month. Monthly mean temperatures were, as a rule, within 1° F. of the normal. Unusually high day maximum temperatures, in many places exceeding 55° F., occurred on the 25th. Over a large part of England and Wales and in the north of Scotland and Ireland there was a pronounced excess of precipitation. Sunshine aggregates were in general deficient.

At the beginning of the month pressure was low over the British Isles with centres of depressions passing eastwards or south-eastwards across the country. North-westerly to westerly gales prevailed in western districts on the 1st in the rear of a depression centred over northern Germany; at St. Mary's, Scilly, a gust of 79 miles per hour was recorded on the early morning of the 1st. On the 3rd a ridge of high pressure extended from south-west to north-east across the British Isles and on the 3rd, 4th and 5th, quiet, cold weather with north-easterly winds and varying amounts of sunshine prevailed over the greater part of the country. Snow or sleet was reported from parts of Scotland on the 2nd and 3rd and occurred widely on the 4th. Good sunshine records were obtained in the west of England on the 1st (7.5 hours at Falmouth) and in the south of England on the 2nd (7.5 hours at Eastbourne). On the 5th warm air from the Atlantic reached the western seaboard. During the night of the 5th to 6th and on the 6th rain or snow was widespread; at Harrogate, snow lay to a depth of 4½ inches on the morning of the 7th. Later a deep depression approaching from the west gave mild weather generally from the 8th to the 12th, day maximum temperatures on the 9th exceeding 50° F. in most places (55° F. at Ross-on-Wye).

Heavy rain occurred in western Ireland on the night of the 7th to 8th and over the country generally on the night of the 9th to 10th and on the 11th, 58 mm. being measured at Llyn Fawr, Glamorgan, on the 9th and 39 mm. at Oughtershaw, Yorkshire, on the 11th. In the rear of the depression which crossed the country on the 11th, strong north-westerly winds reaching gale force in exposed places were experienced and caused an appreciable drop in temperature. Precipitation again took the form of hail, sleet or snow in the north and west. North-westerly winds continued to be experienced up to the 17th. The 14th was sunny, over 8 hours bright sunshine being recorded in the south-east of England on that day. On the 18th and 19th a belt of high pressure stretched from the Azores to Scandinavia, and over England and Wales north-easterly winds and wintry precipitation were experienced. Meanwhile, a depression centred near Iceland on the 19th extended its influence southwards on the 20th; winds became south-westerly to westerly and the temperature rose. The 21st and 22nd were markedly sunny, 9.4 hours' sunshine being recorded at Plymouth on the 21st. On the 24th the anticyclone over the Bay of Biscay spread northwards, bringing with it air of tropical origin; on the 25th the temperature rose to an unusually high level, 60° F. being recorded at Worksop and 59° F. at Aberdeen. On the 26th, the winds veered north-west and another cold spell ensued, maximum temperatures not exceeding 32° F. locally in the Midlands on the 28th. Gales occurred in the north and west on the 28th and on the evening of that date snow fell generally over the whole country.

**Pressure and winds.**—Monthly mean pressures exceeded the normal in the extreme south of Ireland and in the Channel Isles; elsewhere they were below the normal, the deficiency at 7h. G.M.T. ranging from 1 mb. at Birr Castle to 7 mb. at Lerwick. The prevailing winds were from a westerly point and were frequently strong and squally. Gales occurred in the west on the 1st, widely between the 10th and 13th, on the 16th and 17th, and in the west on the 28th. In the extreme north of Scotland in exposed places, gales occurred more frequently; at Butt of Lewis (Hebrides) gales occurred on 15 days, and at Lerwick on 13 days. The highest wind velocity in a gust, 87 miles per hour, was recorded at Butt of Lewis on the evening of the 27th. On the following morning (28th) 82 miles per hour was recorded in a gust at Kirkwall (Orkney). In most districts, however, the highest wind velocities were recorded on the 11th or 12th, and were associated with a secondary to a complex low pressure area near Iceland; amongst the highest gust velocities recorded were 78 miles per hour at Liverpool (Bidston) and 77 miles per hour at Aldergrove on the 11th and 79 miles per hour at Tiree on the 12th.

**Temperature.**—In many parts of the west and southwest of England, in Wales and in the west of Ireland, monthly mean temperatures slightly exceeded the normal, but in the majority of places they were below the normal, the departures, however, in most cases not exceeding 1° F. Day temperatures were rather low on the 4th and 5th. Later southwesterly winds gave mild weather generally from the 8th to 10th; on the 9th, 56° F. was recorded at Dublin and at Ross-on-Wye, 55° F., the highest recorded there since November 24th, 1930. Cool weather with severe night frost was again experienced on the 13th, 14th, 17th and 18th. Subsequently temperatures rose above the normal, and on the 25th the maximum temperatures recorded were the highest in February for many years; 60° F. was recorded at Worksop and 59° F. at Aberdeen, Cleethorpes and Newcastle (Wicklow) on that day. Low screen minima were recorded in several places from the 2nd to 6th, on the 14th, 16th, 19th, from the 22nd—24th, and on the 28th. Ground frost was a common occurrence in most districts.

The extreme temperatures for the month were:—(England and Wales) 60° F. at Worksop on the 25th and 17° F. at Rickmansworth on the 22nd; (Scotland) 57° F. at Aberdeen on the 25th, and 9° F. at Dalwhinnie on the 23rd; (Ireland) 59° F. at Newcastle, Wicklow, on the 25th and 26° F. at Phoenix Park and Hazelhatch on the 19th.

**Precipitation.**—The general precipitation of the British Isles, expressed as a percentage of the normal for the period 1881–1915, was 118 per cent.; the values for the constituent countries were:—England and Wales 124, Scotland 118, Ireland 104. In Scotland precipitation in the northern and western districts and in parts of the Lothians was generally above the average, whilst in areas lying between the upper reaches of the Dee and Don to the Firth of Forth and in Border Counties it was subnormal. Amongst the largest daily falls were 74 mm. at Kinlochquoich on 12th and 63 mm. at Corrie on 11th. In western and north-western counties several places experienced rain or snow each day during the month. The precipitation was frequently in the form of snow, sleet or hail, snow being reported from somewhere or other on each day. The most widespread falls of snow occurred between the 1st and 6th, 11th and 17th, 20th and 24th and again from the 26th to the 28th.

Apart from a deficiency in the extreme north-east and locally in the south of England (and in Anglesey) monthly totals of precipitation in England and Wales were decidedly above the normal, many places in a broad belt stretching from Lancashire and Northern Wales to East Anglia recording from one and one half to twice the normal; Manchester (Oldham Road) had 195 per cent. of the normal precipitation for February, Meltham (Yorks, W. Riding) 179 per cent., Strelley (Notts.) 170 per cent., Cranwell 181 per cent. and Lowestoft 200 per cent. Amongst the largest daily falls were 58 mm. at Llyn Fawr, Glamorganshire on the 9th, 39 mm. at Oughtershaw (Yorkshire), 33 mm. at Meltham and 32 mm. at Dean Prior (Devon), on the 11th and 37 mm. at Darwen (Lancashire) on the 25th.

In Ireland monthly totals of precipitation were below the normal in the south and east and above the normal in the north and west; Dublin (City) had only 58 per cent. of the normal although measurable precipitation fell on 17 days or one more than the normal. Although there were 23 days with measurable precipitation at Kilkenny or as many as eight days more than the normal, the month's total precipitation was 17 per cent. below the normal. In the north-west, on the other hand, precipitation both as regards amount and number of days was decidedly above the normal; Malin Head had about one and three-quarter times the normal precipitation on 27 days.

A notable feature of the weather of the month was the frequency with which precipitation took the form of snow, sleet or hail. Practically every district had some snow, but falls were most frequent in Scotland, the north of Ireland, the northern, midland and eastern districts of England and on high ground in the south. At the high level stations, Dalwhinnie (Inverness), 1,176 ft., and Braemar, 1,120 ft. there were 23 and 14 days respectively on which snow fell, while at both these places snow lay throughout the month. At Deerness the number of days on which snow fell, 17 days, was the highest in February since 1898. Snow fell on 25 days at Kirkmichael and on 22 days at Eskdalemuir. Amongst the largest number of days of snow in England were 17 days at Sheffield and Huddersfield (Oakes) and 15 days at Cranwell, Belper and Buxton. Owing to stormy conditions there was much drifting at times and in the north many roads were blocked. On the 16th, snow lay to a depth of 12 inches at Dalwhinnie. Hail also occurred frequently in the north and west, for example, at Stornoway and Malin Head on 14 days, at Lerwick on 11 days, at West Kirby (Lancs.) on 10 days, and at Arlington (Devon) on 9 days. Thunderstorms were reported from various districts on one or two days.

**Sunshine.**—A moderate excess of sunshine was recorded in the Orkneys and Hebrides, on the east coast of Scotland, the south coast of England and the south-east coast of Ireland, but at the majority of places sunshine aggregates were below the normal. Representative totals of bright sunshine for Districts, expressed as a percentage of the normal for the period 1881–1915, ranged from 109 per cent. in England S.E. and 97 per cent. in Scotland E. to 76 per cent. in England N.W. Sunshine records were good on the 1st and from the 12th to 14th and again in some districts on the 18th and 19th and 21st to 23rd, in the east of Scotland on the 26th and 27th and widely on the 28th. Amongst the largest daily amounts recorded were 9.4 hours at Plymouth on the 21st, 9.0 hours at Aberdeen on the 26th, 8.7 hours at Lympne on the 19th and 8.5 hours at Shoeburyness on the 14th.

**Fog.**—Fog occurred locally in various districts of England on the 5th, in the south-east and east on the 7th, in the south on the 9th and in a few places from the 24th to 26th.

**Miscellaneous Phenomena.**—Aurora was observed in Scotland on the 13th, 15th, 16th and 25th, the display on the 13th being noted as far south as West Linton. Halo phenomena were observed at Oxford on the 4th, 18th, 20th and 24th. An observer at Compton (near Wolverhampton) saw an upper arc of contact of the 46° halo with brilliant coloration at approximately 10h. 15m. G.M.T. on the 24th. The arc was reported to be nearly a complete circle. Almost simultaneously the observer at Petersfield saw what was presumably the same phenomenon, a "circumzenithal arc" (a horizontal circle rather more than 46° above the sun), and also a faint 22° halo.