

MONTHLY WEATHER REPORT OF THE METEOROLOGICAL OFFICE.

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

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JANUARY, 1929: Very cold with a decided deficiency of precipitation. Dull in central and eastern districts of Great Britain.

The weather during the month was, on the whole, quiet, very cold and mainly dry with a conspicuous paucity of westerly and south-westerly winds. Apart from a few days of moderate temperature about the 10th in western districts and in all districts on the 19th and 20th and mild conditions during the last few days, temperature in most districts remained below 40° F. by day and by night frequently fell well below freezing point. Precipitation, often in the form of sleet or snow, occurred frequently, but apart from much rain on the 9th and in the south-west on the 22nd and during the last four days of the month, amounts were generally slight and except in the north-east and east of England totals for the month were below the normal. Sunshine aggregates were about or above the normal in western districts but in the central and eastern districts of Great Britain were markedly below the normal.

During the first five days of January, the weather was quiet and cold with little precipitation and varying amounts of cloud. Good sunshine records were obtained during the first three days. At Renfrew the temperature remained below freezing point and fog persisted continuously during the first four days. Snow and sleet occurred locally during the period 3rd to 7th, but the amounts measured were small. From the 5th to the 9th, temperature was very low in the more southerly districts of England, day temperatures not exceeding 32° F. for several days at some stations and remaining at or below freezing point at Leafield for as many as five consecutive days. Wide-spread fog occurred from the 8th to the 10th. There were light falls of snow locally, but on the 9th, associated with a depression to the west of the British Isles, precipitation became general over the whole country, being mostly in the form of snow or sleet in the north and east. There was a temporary rise in temperature, moderate in the south and west and in Scotland and very slight in eastern England. On the 11th an anticyclone to the north of Scotland maintained cloudy to fair weather with wintry showers on the 11th and 12th. Meanwhile the anticyclone moved to the west of the British Isles as secondaries to a deep depression over Finland moved southwards over the North Sea and in consequence northerly winds with rain or sleet and snow prevailed widely from the 15th to 17th. Snow lying to a depth of 3 or 4 inches was reported from Marchmont on the 15th and 16th and from Durham on the 16th and in parts of the north-east of Scotland the depth of snow ranged from eight to twelve inches.

During this time conditions were much milder in the west, where the temperature rose above 50° F. On the 18th these milder conditions spread over the rest of the country and the 19th and 20th were mild, sunny days, with over 7 hours bright sunshine at many places and over 8 hours in the Channel Islands. On the 21st there was a return to cold conditions in eastern and central districts but in the south-west the weather continued mild with much rain on the 22nd. Meanwhile, from an anticyclone to the north of the British Isles a ridge of high pressure began to extend southwards and with northerly winds the fall in temperature had spread to almost all districts by the 23rd. Some wintry precipitation occurred in most districts but good sunshine records were obtained from the 24th to 27th. Fog was again widespread from the 20th to 23rd. A deep depression on the Atlantic brought warm southerly winds and a marked rise in temperature on the 29th and during the remainder of the month the weather was dull and mild with frequent rain.

Pressure and Winds.—An abnormal feature of the pressure distribution was the pronounced excess of pressure in the north of Scotland. Conditions were mainly anticyclonic from the 1st to the 29th and in all districts the mean pressure for the month was markedly above the normal; in the extreme north of Scotland the excess exceeded 16 millibars and in the extreme south of the British Isles amounted to 7 or 8 millibars. There was a conspicuous paucity of westerly and south-westerly winds. Northerly and easterly winds occurred with considerable frequency. Wind force was mostly light to moderate and there was an almost complete absence of gales. At Southport the month was the calmest and least westerly January in 58 years.

Temperature.—January, 1929 was remarkable for its persistent and pronounced coldness; in all districts the mean temperature was below the normal, notably in the north and west of Scotland and in southern England. The month was the first January since 1922 in which the mean temperature was below the normal in any district and the first really cold January since 1917.

The month was the coldest January at Richmond (Surrey) since 1895. At Eastbourne the mean maximum temperature was the lowest since 1917 and the mean minimum temperature the lowest since 1895. At Halstead (Essex) the mean minimum temperature was the lowest, with one exception, since observations commenced there in 1893. At Copdock the month was the coldest January for 27 years.

Mild conditions prevailed temporarily about the 10th in western districts and generally on the 19th and 20th and from the 28th to the

31st, the highest temperature occurring in some places on the 19th, but in most places during the last few days of the month. Apart from these brief intervals of mild weather, temperature remained at a low level and in several districts in central and eastern England failed to rise above the freezing point on the 5th, 6th, 7th and 16th. At Leafield the temperature remained at or below 32° F. from the 5th to the 9th inclusive. Frost occurred frequently during the month, some unusually low readings in the grass being recorded on several nights. The following were amongst the lowest temperatures recorded on the morning of the given date:—7° F. in the screen on the 1st and 9° F. in the screen on the 2nd and 4th at Markree, 21° F. in the screen and 8° F. on the grass at Birr on the 1st, 17° F. in the screen and 14° F. on the grass at Renfrew on the 2nd, 23° F. in the screen and 11° F. on the grass at Birr on the 7th, 19° F. in the screen and 13° F. on the grass at South Farnborough on the 13th, 25° F. in the screen and 15° F. on the grass at Richmond (Surrey) on the 17th, 17° F. in the screen and 9° F. on the grass at Aberdeen on the 18th, 15° F. in the screen and 5° F. on the grass at Eskdalemuir on the 28th.

The extreme temperatures for the month were:—England and Wales, 63° F. at Aber (Bangor) on the 30th and 12° F. at Castleton, Yorks, on the 27th Scotland, 55° F. at Fort Augustus and Inverness on the 30th and at Achnashellach and Gordon Castle on the 31st and 3° F. at Braemar on the 4th. Ireland, 62° F. at Glasnevin (Dublin) on the 30th, and 7° F. at Markree Castle on the 1st.

Precipitation.—The general precipitation over the British Isles, expressed as a percentage of the normal for the period 1881—1915, was 63; the values for the constituent countries were:—England and Wales 71, Scotland 49, Ireland 57. Thus in contrast to January, 1928, when the general precipitation over the British Isles just exceeded twice the normal, January, 1929, was relatively dry. A smaller fall than that of 1929 has occurred only in the Januaries of 1880, 1881, 1896, 1907, and 1911 when the general falls were 37, 44, 53, 60 and 60 per cent. respectively. The outstanding feature of the distribution of the rainfall of January, 1929, as a percentage of the normal, was the gradient from east to west, associated with an unusual frequency of northerly and less frequent westerly winds. There was rather more than the normal rainfall along the east coast of England and less than 50 per cent. over most of the western half of Great Britain and of Ireland, with only about 25 per cent. in the western Highlands of Scotland and in the north-west of Ireland. The rainfall was most remarkable in Scotland where the month was the driest January since that of 1881. At Ardrross Castle, in eastern Ross-shire, January, 1929, with 25 mm. was the driest January since before 1870. Elsewhere, over the British Isles, the Januaries of 1880 and 1881 were most often the driest on record.

Apart from widespread precipitation on the 9th, mostly in the form of snow or sleet in the north and east, and some heavy rain in the south-west on the 22nd, precipitation was unimportant up to the 27th after which rain fell daily, heavy falls occurring locally. Amongst the daily largest measurements were 38 mm. at Ardtornish and 37 mm. at Glenbranter on the 9th and 48 mm. at Princetown and 41 mm. at Dean Prior on the 31st.

Precipitation occurred frequently in the form of snow, particularly during the period 5th to 9th and about the 16th and 27th. Up to 6 inches of snow fell in parts of Scotland on the 9th. Further snow, with strong northerly winds and some drifting, occurred in the north-east counties of Scotland from the 15th to 17th, amounts ranging up to twelve inches. Owing to the melting of snow on high ground, flooding occurred in East Lothian and parts of southern Scotland on the 29th.

Sunshine.—Sunshine aggregates were in general above the normal in the north and west of Scotland and in the western districts of England and Wales and Ireland, and below the normal elsewhere. Representative totals for Districts, expressed as a percentage of the normal for the period 1881 to 1915, ranged from 140 in Scotland N. to 64 in the Midland Counties. The sunniest periods occurred during the first three days of the month, on the 12th, 13th, 16th, 19th, 20th and from the 24th to 27th. There were many days on which no sunshine was recorded even in those districts where the aggregates for the month exceeded the normal; Stornoway with a total of 20 hours above the normal had 14 sunless days. There were 22 sunless days at Croydon 20 at Renfrew, 19 at Gorleston, 17 at Liverpool and 15 at Birr. No sunshine was recorded on twelve consecutive days at Renfrew (1st to 12th) and at Croydon (4th to 15th).

Fog.—Much fog occurred during the month, particularly in and around most large cities and manufacturing centres. Fog was in general most widespread during the periods 8th to 10th, 20th to 23rd and 28th to 31st.

Miscellaneous Phenomena.—Aurora was observed at Baltasound on the 4th and 5th, at Gordon Castle on the 2nd, 3rd and 5th and at Fort Augustus and Stornoway on the 5th. There was an auroral glow at Eskdalemuir on the 30th.