

MONTHLY WEATHER REPORT OF THE METEOROLOGICAL OFFICE.

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

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DECEMBER, 1923: A VARIABLE MONTH; CONSIDERABLE SNOWFALL IN BRITAIN.

General.—At the beginning of the month the weather conditions were somewhat less severe than those of November, but snow was still lying in many parts of the country and the mean temperature of the first week was below normal except in the north of Scotland. Mist and fog prevailed generally during this period. During the second week a more southerly current of air from the Atlantic gave rise to warmer weather, and from the 11th to 13th there was an absence of frost at night. The maximum temperatures occurred about the middle of the month. In the north and west this milder weather was accompanied by much rain although no very large daily falls were recorded. Between the 19th and the 22nd cold northerly winds prevailed and falls of snow were general. During the remainder of the month the repeated approach of depressions moving south-east from Iceland towards the continent caused temporarily mild periods alternately with cold ones. On the whole, cold weather predominated in the eastern part of Great Britain, but during the last ten days of the month severe ground frosts were experienced in all parts of the country. From the 19th to the 28th precipitation in the form of snow or sleet occurred daily in some region or other. Sharp frost was recorded generally early on Christmas Day, and in some places the lowest readings of the month were obtained on that day. High southerly winds and gales were experienced on the coasts early in December, and the westerly and northerly winds were frequently rough during the latter part of the month.

The general character of the month is illustrated by the following remarks taken from observers' notes:—Coppdock (Suffolk).—With the exception of 1906 and 1917 the coldest December in 23 years; sunshine and rainfall normal. Malvern.—Night temperatures very variable. Morwenstow (Cornwall).—A mild month without big rains. A good deal of wet fog. Paignton.—Fair weather generally, good sunshine, rainfall small, frosty nights, no snow. Newquay.—Temperature about normal, sunshine good, rainfall below average. Skegness.—On the whole an average December: the first part of the month notably dry. Very little north wind. Arisaig (Inverness).—Very variable; some frost and snow and a good deal of mist and darkness. Dublin City.—The outstanding feature was the high mean relative humidity, 88.3%. An open month of westerly and south-westerly winds with rainfall considerably below the average. Kaleidoscopic changes during the second half of month.

Pressure and Winds.—The mean pressure was above normal everywhere. The excess of monthly means of pressure at fixed hours from the normal varied from 7.6mb. at Valencia to 1.5mb. at Kew. The isobars of mean pressure were again irregular but trended in general from W. to E.

Seven primary depressions crossed some portion of the country, and one secondary depression coming within this category is also indicated on the map. A pressure of 1042mb. was recorded at Valencia on the 20th and one of 977mb. at Castlebay on the 7th.

High southerly winds and gales were experienced on the coasts about the 2nd and 7th in connection with the depressions indicated by Tracks B and D respectively. Some high winds were also experienced in the latter part of the month. Of the anemometer stations Lerwick recorded 8 days during which the wind had a mean strength of more than 38 m.p.h. for a period of not less than an hour, and Scilly had 6 such days. No other station recorded more than 2 days. A gust of 80 m.p.h. was experienced at Lerwick on the 18th when a depression (Track G) was passing from Iceland to Norway. No other gust recorded during the month reached 70 m.p.h.; Paisley had one of 66 m.p.h. on the 18th.

Temperature.—The mean temperature of Districts 1 to 10 was 40°F. The mean temperature of all Districts was below the normal except in the case of the two Irish Districts and the Channel Isles and Scilly. The largest excess, 1.1°F., was experienced in Ireland N. (mean temperature 37°F.). The week ending on the 29th was the coldest of the month, and the week 2nd—8th was also comparatively cold. In Scotland the week 23rd—29th was much the coldest week of the year; at Nairn on the 26th the temperature did not exceed 29°F. Maximum readings of about 50°F. were obtained on the 7th and 8th, but the warmest period was the 16th—22nd.

The characteristic of the month was the violent changes of temperature which occurred throughout. In the daytime the temperature was comparatively high, and one or two days were very mild and humid. The night temperatures were, on the other hand, very variable, cold and mild nights often alternating with one another. In general the night temperatures were not as low as those of the end of November.

At Christmas there was an unusually sharp contrast between the south-west and northerly portions of Great Britain, the former being

mild with rain and a temperature frequently above 50°F., and the latter cold with a heavy snowfall. At Ross-on-Wye a great temperature rise, 29°F. in 14 hrs., took place on the 25th, the readings being 22°F. at 8h. 30m. and 51°F. at 22h. 30m.

The extreme temperatures for the month were:—(England and Wales) 56°F. at several stations from the 16th—23rd, 17°F. at Tenby on the 25th; (Scotland) 55°F. at several stations from the 10th—17th, 6°F. at Braemar on the 25th; (Ireland) 55°F. at Killarney on the 26th and 27th, 22°F. at Kilkenny on the 1st. Ground frosts were very numerous; many stations had 20 and over, while Chopwellwood and Hampstead had 27. Temperatures of 10°F. and below were recorded over grass or snow; Eskdalemuir had 8°F. on the 25th.

Precipitation.—This was slightly in excess in six Districts and below normal in the remaining six. With few exceptions the precipitation lay within the limits 50%—150% of the normal. The regions with a deficit were central Scotland from Inverness and the Isle of Skye to Dumfriesshire, south-west England, southern Wales and the whole of Ireland except the extreme north. A small area in the extreme south of Cork and Waterford had under 50%. The general precipitation of the British Isles expressed as a percentage of the normal was 99; the values for the several countries were:—England and Wales 102, Scotland 101, Ireland 89.

Among the largest falls registered were 534mm. at Ben More (Isle of Mull) and from 382mm. to 510mm. in the Snowdon region. On the other hand a number of falls in England E. and the extreme south of Ireland did not reach 50mm.

In the majority of Districts precipitation was below normal during the first three weeks of the month; in the week 23rd—29th it was everywhere above, except in Scotland N. Some of the largest daily falls were 62mm. at Llyn Fawr (Glamorgan) and 57mm. at Treherbert (Glamorgan) on the 1st, 55mm. at Trecastle (Breconshire) on the 2nd and 31mm. at Arrochar (Dumbartonshire) and Ford (Argyllshire) on the 9th. There were extensive floods in south Lincolnshire on the 28th.

A large amount of the precipitation of the month occurred in the form of snow. The number of days of snowfall was very variable in different parts of the country. Deerness had 17 and York 11, while a few Scottish stations had only 2 or 3 and most stations in England S.W. and Ireland had none. In the London area from 2 to 6 days of snowfall were experienced. Snow fell at the higher levels in Scotland early in the month but in general did not occur till after the 9th. The London falls occurred mainly on the 19th, 21st and 26th. A heavy fall occurred on the evening of Christmas Day in the north; 4 to 6 inches (10—15 cm.) fell on the Yorkshire Wolds and 8 inches (20 cm.) at Galashiels and in parts of the Glasgow area. The Glasgow snowfall was said to be the heaviest for 33 years. Balmoral reported as many as 24 days of "snow lying" in the month.

A thunderstorm was experienced in Sutherlandshire on the 19th and at one or two stations on the east coast of England. Cromer reported vivid lightning in the evening. Some hail showers occurred during the month, but not extensively.

Sunshine.—With the exception of England E. and Ireland S. the duration of sunshine was above normal in all Districts. The largest mean daily excess occurred in Scotland W. (0.65 hr.) and the largest deficiency in Ireland S. (0.16 hr.). Scotland W., England S.W. and the Channel Isles and Scilly had 22% of the possible duration, while Scotland N. had only 11%. The extreme south of Devon and Cornwall had the largest number of hours of sunshine. In most Districts sunshine was in excess of the normal for each week of the month. A number of stations obtained daily amounts of between 6 and 7 hrs., especially in the first half of the month. Calshot recorded 7.0 hrs. on the 23rd.

Fog.—Fog was prevalent, though some stations reported none at the morning observation during the month. Geldeston and Coventry recorded 19 days of fog and Cullompton 15 days, but the average number was considerably less than this. The week 2nd—8th was very foggy in England; there was a dense fog in Birmingham on the evening of the 6th and a sudden dense fog in London on the following evening. There was much fog in Scotland from the 25th onwards.

Miscellaneous Phenomena.—Solar and lunar halos and coronæ were very frequently observed. A parhelion was seen at Armagh on the 8th. Glazed frost was experienced in many parts of the country, notably about the 5th. An aurora was observed at Gordon Castle (Elgin) on the 19th. The Zodiacal Band was seen at Wadhurst (Sussex) on the 1st, 2nd, 3rd, 4th, 6th, 9th, 28th and 29th.