

## MONTHLY WEATHER REPORT OF THE METEOROLOGICAL OFFICE.

SUMMARY OF OBSERVATIONS COMPILED FROM RETURNS OF OFFICIAL STATIONS AND VOLUNTEER OBSERVERS IN THE UNITED KINGDOM, AND AT GIBRALTAR AND MALTA, WITH A CHART OF RAINFALL CONTRIBUTED BY THE BRITISH RAINFALL ORGANIZATION.

ISSUED BY THE AUTHORITY OF THE METEOROLOGICAL COMMITTEE.

PRINTED AND PUBLISHED BY HIS MAJESTY'S STATIONERY OFFICE. To be purchased through any Bookseller or directly from H.M. STATIONERY OFFICE at the following addresses:—IMPERIAL HOUSE, KINGSWAY, LONDON, W.C.2, and 28, ABINGDON STREET, LONDON, S.W.1; 37, PETER STREET, MANCHESTER; 1, ST. ANDREW'S CRESCENT, CARDIFF; 23, FORTH STREET, EDINBURGH; or from E. PONSONBY, LTD., 116, GRAFTON STREET, DUBLIN.

FORTY-FIFTH YEAR.  
Vol. XXXVII. (New Series)

No. XII.

DECEMBER, 1920.

[Price 6d. Net, Post free, 7d.]

## Cold at First, then abnormally Mild.

Outstanding features of the weather in the British Isles during December were the wintry spell which occurred during the second week, and the unusual warmth which set in just before Christmas. Other notable events were the gales which were experienced all over the Kingdom on the 3rd, and the fogs which were very general between the 6th and 9th.

In Scotland, after mild weather until the 4th or 5th, there was a fairly steady fall of temperature until the evening of the 24th, when unusually mild conditions set in, with highest readings very generally on the 25th and 26th (286 a at Fort William). The cold was not specially severe for mid-winter (261 a at West Linton on the 18th and at Braemar on the 23rd), and much more wintry weather occurred in the south of England than anywhere in Scotland. In the week which ended on the 18th the temperature contrasts were extraordinary. Thus, in the far north, the mean for this week was well above the normal, whilst going southwards there was a steadily increasing deficiency, and the following were some of the means and differences from the normal: Lerwick 278.6 a, + 1.0 a; Edinburgh 274.4 a, - 2.6 a; York 273.8 a, - 3.4 a; and London (Kew Observatory) 272.7 a, - 5.5 a. In Scotland the weather was very stormy on the 3rd and 4th and around the 21st, and conditions were rather wintry about the 12th and 18th, with some snow or sleet, but no general snowstorm occurred. Fog occurred at times in the Glasgow area, more particularly on the 6th and 18th.

**Flying Weather.**—The month was, on the whole, unfavourable for flying, being characterised by much low cloud and generally poor visibility. Conditions were very unsettled early in the month, with a south-west gale on the 3rd and a northerly gale next day. Afterwards there was a long spell of north-east winds and generally overcast weather, the clouds being usually very low, though occasionally above 2,000 ft. In the south-east of England conditions were rendered very unfavourable by fog on the 8th, snow on the 11th, and low clouds, rain and drizzle from the 17th to 19th. In the last ten days there was a change to a south-west type and rather better conditions, with some fine days of good visibility. In the south-east and east conditions were more favourable than elsewhere in this period, but low clouds and rain caused very bad flying weather on the 21st, 24th, 28th and 31st.

**Air Pressure.**—As shown by the map on p. 157, the mean monthly trend of the isopleths was more south of west than normally, and the gradient less steep than usual. On the first day of the month an anticyclone extended over the Baltic and Central Europe, and at the same time a large cyclonic system, the main centre of which lay near Iceland, affected the British Isles, to which it brought gales and rainy weather, 24 mm. of rain falling at Blacksod Point and 19 mm. at Portland Bill. During the night of the 1st-2nd a depression over the English Channel moved across France and filled up and another depression crossed the North of Ireland, the cyclonic area being characterised by strong gales and unsettled weather, with maximum temperatures as high as 286 a on the 2nd over a large area in England and Ireland. On the 3rd this depression moved first in a north-easterly direction to the North Sea and then southwards towards Holland; and within the affected area there were further gales from the west or north-west with unsettled weather generally. Gusts exceeding 30 metres per second were recorded on the 3rd at places as far apart as Dyce (near Aberdeen) and Falmouth, and at Southport 37 metres per second (84 miles per hour) was attained. Much damage was done to shipping, and on the moors near Halifax a tram-car was blown over and people injured. The weather map for this date records some very interesting changes in wind direction and in temperature, the latter being especially striking, the readings at Baldonnell (Dublin), for example, falling from 285 a at 1h. to 280 a at 7h., whereas at Lympne (Kent), during the same period, there was a rise from 280 a to 284 a.

An anticyclone which spread over the British Isles from the south-west in the rear of this depression reached Scandinavia by the 5th and remained the dominant feature on the weather map until the 18th. During this period the weather of the British Isles was also affected by depressions moving across the Icelandic region, but for the greater part the temperature was low, and although some of the days were sunny, fog occurred from time to time, and there were also occasional falls of snow and sleet. During the 5th sunshine was abundant in the south-west parts of the British Isles and 7.4 hours were recorded at Penzance and 6.4 hours at Valencia Observatory. Fog was widely experienced on the 6th, 7th and 9th; on the 6th at Renfrew and on the 9th at Manchester it persisted all day; and during the night of the 7th there was fog over practically the whole of England.

On the 10th there was slight snow in east and south-east England and there was more over a wide area on the 11th, when it fell to a depth of 14 in. at Clacton. Mr. F. L. Bland, the observer at Copdock (Ipswich), reports that the heavy snowstorm on the night of the 11th ranks among the memorable falls of the last half-century, for it is extremely rare to find a uniform covering of 8 in. without any drifting at all. The snow fell light and dry so that the yield of water (17 mm.) is not large compared with some other snowstorms of recent years. Snow also fell at many places on the 12th, 13th, 15th and 16th, the melted snow yielding 15 mm. at Jersey on the 12th, and 22 mm. at Plymouth on the 13th, the latter figure being in notable contrast to the fall which occurred at Princetown (9 mm.) and at Sheepstor (3 mm.). At Salcombe (Devon) snow began to fall on the night of the 12th and continued all the 13th, and lay on the ground for 10 days. It was the heaviest fall at this station for 29 years, the general depth being from 12 to 15 in. Some very low temperatures were associated with this wintry spell, and readings below 264 a were recorded at many stations and were below 266 a in parts of the London area on the 13th. The lowest reading reported was 255 a at Raunds (Northants), other low minima in the shade being 257 a at Cambridge and Oundle.

In striking contrast with these conditions was the abnormally mild weather which set in on the 18th and continued until the end of the year, the distribution of pressure over the British Isles during this period under the influence of Atlantic depressions being persistently cyclonic. At Christmas the weather was conspicuously abnormal. During the night of the 23rd a warm current from the south developed; and the warm air had reached a line extending from the Thames Estuary to the north-west of Ireland by 7h. on the 24th, on which day maximum temperatures of 286 a were recorded at many southern stations. On Christmas Day, although there was a general deficiency of sunshine, maxima of 286 a were reached at many places and 288 a at Bude and at Llandudno. At Valencia Observatory the minimum was only 284 a, 283 a at Pembroke, Roche's Point, and Scilly, and only 282 a at Kensington Palace, compared with 273 a at Nairn and 274 a at Stornoway, Renfrew and Eskdalemuir. Rain was general on Boxing Day, but the temperature remained high and maxima as high as 286 a were common, and except in the northern parts of the kingdom, these abnormally mild conditions were maintained until the close of the month.

**Temperature.**—In Scotland north and in England east the mean temperature of the month was equal to the normal and in the Midlands and England north-east the mean was 0.1 a above the normal. In all other districts the mean was below the normal the deficiency ranging from 0.8 a in Ireland south to 0.1 a in England south-east and in Ireland north.

**Precipitation.**—Except in Scotland east and in England north-east and east, where there were excesses of 3 mm., 14 mm., and 8 mm. respectively, the total rainfall for the month was below the normal in all districts (see Table I., p. 156), the deficiency ranging from 44 mm. in Scotland north to 2 mm. in the Midlands. Over the British Isles as a whole the total rainfall for the month was in excess of the normal in nearly all parts of England and Wales, but the excess was extremely moderate. In Scotland and Ireland there was a slight deficiency except in parts of the east. Less than 75 mm. fell over the greater part of the English Midlands and in the north-east of Scotland, but practically all western districts had more than 100 mm. The areas with 250 mm. were apparently smaller than usual. The general rainfall expressed as a percentage of the normal was:—England and Wales, 101; Scotland, 91; Ireland, 97; and the British Isles as a whole 96.

**Sunshine.**—The mean daily amount of sunshine varied from 1.70 hr. in Ireland south to 0.33 hr. in Scotland north; and the departures from the normal ranged from +0.60 hr. per day in Scotland east to -0.49 hr. in the English Channel.

**Optical Phenomena.**—Except for an occasional lunar halo towards the end of the month optical phenomena were rarely reported.

**Aurora** was widely seen in Scotland and at Bidston on the 4th, and at a few stations on various other dates, among them being Seskin (Carrick-on-Suir) on the 31st.

