

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. } No. X.
Vol. XXXVII. (New Series).

OCTOBER, 1920.

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

Sunny but with much Fog and Mist.

The outstanding characteristic of October was the abundant sunshine in the east and south of England. At Yarmouth only 7 mm. of rain were recorded, and there were nineteen days on which the duration of bright sunshine exceeded six hours, whereas at Valencia Observatory (Co. Kerry) there were 203 mm. of rain and only one day with as much as six hours sunshine. At Felixstowe, the sunny hours during the month amounted to 207, and at Copdock (Ipswich), 200 were recorded, the latter figure being largely above any October total recorded at this station during the past eighteen years. The observer at Southport reports that it was the driest, and yet the most humid October for at least 50 years, and that easterly winds were exceptionally persistent.

A depression which advanced quickly from the westward during the night of the 1st caused gales from the south-east and south in Ireland, in the Hebrides, and in the south-west of England early on the morning of the 3rd, but did not affect the eastern districts. This gale was severe in the south of Ireland, and especially in Cork Harbour, where much damage was done to wharves and shipping. At Valencia Observatory a gust of 67 miles per hour was recorded at 5 h., and there was one of 54 miles per hour at Weaver Point (Cork Harbour) at 11 h. 40 m. Much rain accompanied this gale.

After the 5th, pleasanter conditions set in, and under the influence of a warm southerly current of air, a spell of summer-like weather, which synchronized with "St. Luke's Summer," was widely experienced. For many consecutive days the temperature rose to 294° and above, and in some instances maxima unequalled in October since 1908 were recorded. At Sheepstor (Devon) on the 9th the maximum was 296°, the first time that 294° has been reached at this station in October during 14 years. The nights also were very warm, and minima between 286° and 289° were frequently registered, some of the minima being as high as the normal maxima for the time of year.

During the last two weeks of the month there was high pressure over Scandinavia, and the dry easterly winds brought clear skies to England. The days were generally sunny and mild, but there was much local fog and mist; on the other hand the nights were cold and there were occasional frosts. During the week which ended on the 30th the mean daily amount of sunshine was 8.9 hours at three widely separated stations: Cromer, St. Leonards, and St. Heliers; the percentage of the possible duration being 89, 88 and 87 respectively. These figures may be compared with 87 per cent. at Deerness for the week ending 19th June, and 78 per cent. at Castlebay for the previous week. Over a large part of the country there was no cloud from the 24th to the 30th, with the exception of low-lying fog and mist, these and the previous sunny days, combined with unusually bright moonlight nights, making the month the most brilliant October experienced for very many years.

In Scotland, during the greater part of the month, the temperature was decidedly above the normal, though rather low for a day or two before the 7th; the highest readings occurred between the 7th and 10th. Very unsettled conditions were general during the first few days, with exceptionally heavy rain in hilly districts in the North-East. Thus Lednathie had more than 50 mm. on the 1st and again on the 4th, and Braemar a total of 110 mm. from the 1st to the 5th. As a result of this incessant rainfall, disastrous floods occurred in many districts, more particularly in Aberdeenshire, where at some points the rivers were reported to have risen to as high a level as in the "Moray Floods" of August, 1829. The latter floods, however, affected a very much wider area, as did those of September, 1915.

Flying Weather.—As the result of the long spells of fine weather, the conditions for daylight flying were much better than in an average October. There was much fog at night and in the morning, but, except in the immediate neighbourhood of large towns, it never lasted all day. Near the beginning and in the middle of the month there were spells of unsettled weather, but there was no continuously bad day in the south-east area. In the extreme west, conditions were less favourable for flying than elsewhere.

Air Pressure.—As shown by the map on page 129 the trend of the isopleths of mean pressure differed largely from the normal. The type of pressure distribution was south-easterly instead of the normal south-westerly, and the gradient was much steeper than usual. At 7 h. on the 1st an irregular shaped depression covered England and extended far out into the Atlantic to the south of Iceland, a system which caused an easterly gale in the North of Scotland. During the night 1st—2nd, this depression (track A) advanced quickly over Ireland and also spread southwards and caused gales from the south-east or south, and dull rainy weather in Ireland, the Hebrides, and south-west England early on the morning of the 3rd. Some heavy falls of rain accompanied this depression, as much as

28 mm. falling at Valencia Observatory on the 2nd, and 25 mm. at Falmouth on the 3rd. On these two days, the sunshine records in the south and east of England were good and many stations recorded 8½ hours per day, but parts of the west were sunless. The weather during the next few days was determined by a large Atlantic depression, an extensive anticyclone at the same time being centred over southern Scandinavia, conditions maintained until the 7th. In Shetland the Atlantic depression caused a continuous south-easterly gale during the four days 2nd to 5th, and it brought also further falls of rain, 32 mm. falling at Birr Castle on the 4th and 24 mm. at Tynemouth. On the 5th secondaries passed northward over St. George's Channel and caused thunderstorms and heavy rain in several places. From the 7th to the 12th anticyclonic conditions prevailed and although there was much mist and fog during this period there was plentiful sunshine, many stations on some days having 9½ hours per day. On the morning of the 13th a depression was shown on the weather map approaching the British Isles from the south-west, and as it moved eastwards across France (track U) this system caused an unsettled and rainy type of weather over the greater part of the British Isles. Thunderstorms occurred at many places on the 14th and 15th, accompanied in some instances by very heavy rain, 29 mm. falling in half an hour on the latter date at Bournemouth. At Newquay on the 17th 57 mm. of rain fell between 16h. and 19h. 30m. From the 18th to the 28th the weather over the British Isles was anticyclonic. Owing to depressions which spread southwards from the Icelandic regions, the weather of the 29th—31st was boisterous and rainy, and there was a southerly gale in the North of Scotland, in the Hebrides, and in the North Sea on the 30th, and on most parts of the east and south-east coasts on the 31st. Rain fell heavily in Ireland, 30 mm. falling at Donaghadee on the 30th and 50 mm. on the 31st.

Temperature.—The mean temperature of the month was above the normal in all Districts, the excess ranging from 2.0° in Ireland North to 0.8° in Scotland East. This was the fifth month during the present year in which all Districts exceeded the normal, the other four months being February, March, May and June. In July and August, the mean in all Districts was below the normal. Of the temperatures recorded at individual stations during October the highest was 297° reported at Brighton on the 9th, and the lowest 266° which occurred at Braemar on the 26th and at West Linton on the 28th.

Precipitation.—Except in Ireland North and South, where there were excesses of 21 mm. and 46 mm. respectively, the total rainfall for the month was below the normal in all Districts (see Table I, p. 128), the deficiency ranging from 90 mm. in Scotland North to 12 mm. in the Midlands. Over the British Isles as a whole the rainfall was in general below the normal, but the local departures from the latter were very remarkable. In England a considerable area in East Anglia had less than 13 mm., while in Devon and Cornwall 150 mm. were recorded. In Scotland and Ireland an inversion of the usual distribution occurred, the wet areas being in general to the East. The North of Scotland was unusually dry, large areas recording less than 50 mm. and only 20 per cent. of the normal. In Ireland the total fall was below 75 mm. only in the west, but nearly the whole of the east coast had more than 150 mm. At Brook Lodge (Waterford) only two wetter Octobers have been recorded since 1850. The general rainfall expressed as a percentage of the normal was:—England and Wales 58, Scotland 67, Ireland 127, and the British Isles as a whole 79.

Sunshine.—The mean daily amount of sunshine varied from 5.51 hr. in England East to 2.25 hr. in Scotland West, the former District having 52 per cent. of the possible duration and the latter only 21 per cent. In England East there was an excess of 2.18 hr. per day above the normal, in England North-West the excess was 1.20 hr., and in England South-East 1.18 hr. In Scotland West and in Ireland South there were daily deficiencies of 0.43 hr. and 0.33 hr. respectively.

Optical Phenomena were rarely reported during the month. The Zodiacal Light was seen at St. Louis Observatory (Jersey) on the 11th, 12th, 13th, 14th, 22nd, 24th and 25th.

Aurora was observed in Orkney on the 10th, 12th, 16th, 17th and 26th; at Fort William and Paisley on the 10th; at Aberdeen on the 16th; at Baltasound and various places as far South as Eskdalemuir on the 17th; and at Banff on the 26th.

90
80—300
70
60—290
50
40—280
30—270

Temperature
Scales.