

MONTHLY WEATHER REPORT OF THE METEOROLOGICAL OFFICE.

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

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OCTOBER, 1931.—Dry and Sunny.

Following a dull wet summer, October provided a pleasant contrast by its unusual dryness and its sunniness. Mild conditions prevailed generally during the first half of the month but the last ten days were cold in most places with very severe frost at night.

Unsettled mild weather with south-westerly to westerly winds, strong in exposed northern and western districts on the 1st and 2nd and between the 7th and 9th, prevailed during the first ten days. Heavy rain fell in Scotland and Ireland during this period, more than 50 mm. being recorded locally on the 1st, 4th and 9th. In the south and east the amounts measured were small and the rainfall less frequent. There were considerable bright intervals, much sunshine being recorded on the 3rd, 7th and 10th. Thunderstorms occurred in the Orkneys on the 2nd and locally in England on the 7th.

After the 10th conditions became anticyclonic in the south and by the 15th a large anticyclone covered the British Isles. The days were dry and sunny but less mild, with frequent fog in the east and south-east of England. A change to a much colder type, associated with a wide and deep northerly air current in the rear of a deep depression over the Baltic, occurred about the 20th. A ridge of high pressure across the country from the 21st to 23rd was followed by northerly winds on the 24th and 25th, associated with an anticyclone to the west of the British Isles. Snow was reported from numerous places in northern Scotland on the 24th and 25th and also from a few places in the north of England on the 24th.

On the 26th and 27th an anticyclone covered the southern districts while northern districts came under the influence of a depression near the Faroes. In Scotland and the north of Ireland moderate rain fell on the 27th. During the next few days northerly winds prevailed over most of Great Britain with rain on the 28th and 29th. Although dry and sunny, particularly from the 24th to 28th, the days were cold, and at night severe frost was experienced widely, screen minima below 20° F. being recorded in many places during the nights of the 24th to 27th. On the 31st south-westerly winds brought milder conditions to all districts, the temperature rising to 61° F. at Birr Castle and 60° F. at Falmouth.

Pressure and Winds.—Owing to the prevalence of anticyclonic conditions during the second half of the month, mean pressures exceeded the normal by 7 or 8 millibars over the greater part of England and Wales. Strong winds, which in some coastal districts, chiefly in the north, occasionally reached gale force, occurred at the beginning of the month, from the 7th to 9th and on the 20th, 24th, 29th and 30th. On the whole, however, the month was a quiet one. The highest wind velocity reported during the month was 82 mi./hr. at Lerwick on the 20th. Over England and Wales there was a notable prevalence of northerly winds.

Temperature.—During the first half of the month maximum temperatures were mostly above the normal but in consequence mainly of a spell of cold northerly winds from about the 21st to the 30th, during which clear skies at night gave rise to some abnormally low minimum temperatures, monthly mean temperatures were generally about or below the normal in England and Wales, the deficit, however, being in most places less than 1° F. In Scotland and Ireland, where the frequency of northerly winds was not so pronounced as in England, monthly mean temperatures were generally above the normal. The highest temperatures were recorded from the 4th to the 6th, 70° F. and over being reported from places as far apart as Stonehaven (Kincardine) on the 4th and 5th, Rathfarnham (Dublin) on the 4th and Cromer on the 6th. During a period of quiet anticyclonic conditions, severe frost both in the screen and on the ground was recorded widely during the nights of the 24th to 27th; at Ross-on-Wye the minimum temperature in the screen on the morning of the 27th, 21° F., was the lowest October reading in 70 years' records. Other record low values for October were 26° F. at Copdock on the 27th, the lowest in October since records were begun there in 1901, 27·9° F. at Totland Bay (I. of W.) on the 28th, the lowest in October during 45 years, 24° F. at Greenwich Observatory on the 28th, a reading which has only been equalled in three previous Octobers during 90 years, and 25° F. at Richmond (Kew Observatory) which, in over 60 years' records, has been recorded only twice before in October, viz., in 1881 and 1895.

Ground frost occurred frequently during the second half of the month and was particularly severe on the mornings of the 21st to 29th; amongst low grass minimum temperatures reported were 10° F. at Dalwhinnie and 11° F. at Renfrew on the morning of the 25th, 10° F. at Braemar and 11° F. at Balmoral on the morning of the 26th and 10° F. at South Farnborough on the morning of the 28th.

The extreme temperatures for the month were (England and Wales) 72° F. at Cromer on the 6th, 15° F. at Rickmansworth on the 27th and 28th; (Scotland) 70° F. at Stonehaven on the 4th and 5th, 15° F. at Braemar on the 26th; (Ireland) 72° F. at Rathfarnham (Dublin) on the 4th, 20° F. at Markree Castle on the 25th.

Precipitation.—The most conspicuous feature of October's weather was the general deficiency of precipitation, no important falls having been recorded in many parts of England since the abnormally heavy rain during the first four days of September. Over most of the Midlands monthly totals were less than one-quarter of the normal and over the greater part of the south of England less than one-fifth of the normal. In the south-east of England the month, normally the wettest month of the year, was the driest month so far experienced this year. At Brighton the month's rainfall was only 9 per cent. of the normal. The month was a record dry October in several places, mostly in southern England; it was the driest October at Teignmouth for at least 60 years, at Redruth for 52 years, at Cork for 48 years, at Hereford for 37 years, and at Eastbourne for 35 years. At Ross-on-Wye only once has there been a drier October, viz., in 1830 (13·5 mm.) although October 1922 was as dry. At Hampstead (London) the rainfall was the smallest for October since 1921. An absolute drought (i.e. a period of at least 15 consecutive days to none of which is credited ·01 inch of rain or more) was experienced at Littlehampton and Worthing from the 8th to the 28th; at Bognor from the 8th to the 31st; at Totland Bay from the 8th to the 26th, and at Hereford from the 10th to the 27th, the only absolute drought recorded at this station in 37 years.

Over most of Scotland rainfall totals were below the normal for October, although there were few days quite free from rain; locally, particularly at Achfary, Loch Carron and Baltasound there was only one dry day, that being either the 16th or 17th. A decided excess of rainfall, mainly on the western side of the Grampians from Inverness-shire to the Clyde estuary, was in sharp contrast to the general deficiency. Most of the heaviest daily falls reported during the month occurred in this area, amongst the most notable being 66 mm. at Kinlochquoich and 53 mm. at Glenbranter on the 1st and 76 mm. at Kinlochquoich on the 4th. The driest areas in Scotland were located in eastern coastal districts, the deficiency being greatest in the Tay estuary and locally in the Border Counties; at Perth the month was the driest October since 1919, and at Marchmont since 1904. In Ireland monthly totals were everywhere below the normal, only about one-third of the normal October rainfall being recorded in the south-east.

Thunderstorms occurred locally on one or two days whilst snow, hail or sleet was reported mostly from stations in Scotland and the north-east of England; Aberdeen had 6 days with snow and Baltasound nine days with hail. In Scotland the snow tended to lie locally from the 24th, particularly in and around Balmoral where the snow was 3 inches deep on the 25th.

The general precipitation for the month expressed as a percentage of the normal for the period 1881–1915 was 49; the corresponding values for the constituent countries were:—England and Wales 32, Scotland 82, Ireland 56.

Sunshine.—Not only was the month remarkably dry but it was conspicuously sunny, the only large area with a deficiency being the north of Scotland. Representative totals of sunshine for Districts, expressed as a percentage of the normal for the period 1881–1915, ranged from 87 per cent. in Scotland N. to 152 per cent. in England N.E. In most districts the month was the first since March in which aggregates exceeded the normal, whilst in the Channel Isles January was the only other month this year with an excess of sunshine. The month was the sunniest October at Liverpool (Bidston) and West Kirby since 1908 and at Eskdalemuir since records commenced there in 1910. Good sunshine records were obtained in several places on the 3rd, 7th, 10th and frequently from the 11th onwards, the period 24th to 28th being unusually sunny, daily records on one or more of these days exceeding 8 hours and in a few places 9 hours. Amongst some outstanding daily records were 10·3 hours at Falmouth and 9·9 hours at Calshot on the 3rd, 10·4 hrs. at Aberystwyth and 9·5 hrs. at St. Anne's Head and Shrewsbury on the 10th, 9·6 hrs. at Birmingham on the 11th, 9·5 hrs. at Lympne on the 12th, 9·2 hrs. at Plymouth on the 14th, 10·9 hrs. at St. Anne's Head on the 20th and 9·2 hrs. at West Kirby on the 21st and 25th and at Plymouth on the 25th.

Fog.—The prevalence of quiet anticyclonic conditions was favourable to the occurrence of fog. In the Midlands and east of England fog was most prevalent from the 11th to 15th, 22nd to 24th, 27th to 28th and 31st. In the north-west fog was reported from the 16th to 18th.

Miscellaneous Phenomena.—Aurora was observed in Scotland on 12 nights, that on the night of the 12th, the most widely observed, being reported as brilliant from Duntuln (Skye) and Kirkwall. A well-defined corona of 5° in diameter was observed in very fine cirrus cloud at Salt Island, Holyhead, on the 14th. The occurrence of a corona in cirrus cloud is a comparatively rare phenomenon.