

MONTHLY WEATHER REPORT OF THE METEOROLOGICAL OFFICE.

BRITISH METEOROLOGICAL AND MAGNETIC YEARBOOK. PART II.

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

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OCTOBER, 1921; VERY WARM. Sunny and Dry, except in extreme North-West.

The outstanding feature of the weather of October was the unprecedented warmth which occurred in the southern parts of the Kingdom during the earlier part of the month and was associated with an anticyclone which lay over central Europe. This distribution of pressure continued practically unbroken during the first three weeks of the month. In the north and west the weather was unsettled owing to the presence of Atlantic depressions. After the third week the continental anticyclone drifted towards the west, and brought finer weather to those districts.

The month opened with a belt of low pressure extending from the Azores along our north-west coasts to Scandinavia. A shallow depression which lay off the south-west of these islands on the evening of the 2nd travelled across Scotland during the early hours of the 3rd and growing deeper, passed rapidly away to Scandinavia accompanied by gales and sleet (see Map, track A). It proved to be almost the only break in the anticyclonic conditions which prevailed in the south-east during the first three weeks of the month. Between the continental anticyclone and an anticyclone off the north of Scotland, which appeared in the rear of the depression, was an area of relatively low pressure. There was a marked contrast of temperature between its northern and southern sides, the former being under the influence of northerly breezes from Scandinavia and the latter under the influence of southerly breezes from France. This system remained stationary for about twelve hours and was accompanied by considerable rainfall, 44 mm. being reported at Cranwell, 25mm. at Nottingham, and 14mm. at Manchester during the night of the 3rd-4th. The southerly current appears to have been drawn directly from Africa and remarkably high temperatures were recorded both in England and on the Continent. A reading of 307a was registered at Biarritz on the 4th. Kew recorded 301a on the 5th and 6th, and 300a on the 9th. These were the highest October readings ever recorded at Kew, the previous highest being 298a on October 4th, 1886. Abnormally high minima of 290a at Kew, and of 289a at Falmouth occurred on the night of the 3rd-4th, and of 290a at Valencia on the night of the 5th-6th. These minima were records for the time of year at each of these observatories. On the evening of the 9th a well marked secondary depression appeared off the south-west of Ireland and travelled northwards (see Map, track C). Strong northerly winds prevailed in its rear, and there was heavy rain in the west and south-west of Ireland. Rain also fell in south-eastern England, and thunder was reported locally. The depression which lay over northern Ireland on the 10th and 11th gradually dispersed. Under the influence of a deep depression which lay to the north of Iceland on the 14th, and travelled away towards Spitzbergen, gales and high winds extended over a wide area embracing the north of Scotland, Scandinavia and Denmark. Cooler air in the rear of this depression invaded the south-east of England, and local ground frosts occurred on the night of the 14th-15th, and on some succeeding nights. Under the influence of an Atlantic depression unsettled weather prevailed in our western districts during the next few days. A small secondary to this depression passed up the English Channel on the 20th, and thunder was reported locally in the south. A local storm of great violence, but unaccompanied by thunder or lightning, broke over Shanklin, Isle of Wight, during the early morning of the 20th, and yielded 33mm. of rain. Considerable damage was done to roads, and low lying streets were flooded. With the approach of a depression from the Atlantic on the evening of the 21st, the long spell of mild anticyclonic weather was terminated. The depression travelled across the Kingdom from west to east on the 22nd, and on the morning of the 23rd was situated over Denmark (see Map, track J). It produced a marked fall of temperature. Minima of 267a and 271a respectively were recorded at Renfrew and Benson on the 24th. An anticyclone which appeared off the south-west of the British Isles on the 24th dominated the weather over the southern districts during the remainder of the month. An Icelandic depression caused unsettled weather in the extreme north and north-west during this period.

In London (Camden Square) it was the warmest October during sixty-four years' record, and was the 14th consecutive month with a mean temperature above the average.

In Scotland as in England, October was remarkable for the unusual warmth which prevailed during the earlier part of the month. During the last sixty years the only year with a warmer October was 1908. During the warm spell 300a was recorded at Cargen on the 9th. The only really cold weather occurred in the rear of the depression which travelled across the Kingdom on the 22nd and produced a marked fall of temperature over the whole of the British Isles. A maximum as low as 275a was registered at Eskdalemuir on this day, with snow in places from the 20th-24th. The lowest reading reported in any part of Scotland during the month was 267a at West Linton and Renfrew on the 24th. Under the influence of a depression which skirted the north-west coast rain occurred widely from the 1st to the 6th. At Paisley 25mm. or more were recorded on the 1st, and at Fort William on the 2nd and 3rd. Thunderstorms were reported at many stations on the 5th and 6th. On the former day serious flooding was experienced in the Lochaber district.

On the 13th and during the succeeding week the weather was generally unsettled. 56mm. fell at Glencarron on the 17th. From the 23rd to 30th the month was rainless in some districts, but was followed by heavy falls on the 31st. Over Scotland generally there was a very unequal distribution of rainfall. In some districts there was a deficiency, but in others an excess. This amounted to as much as 50 per cent. at Fort William where 274mm. were recorded. The month was very cloudy towards the north. At Stornoway it was the most cloudy October for at least forty years. In some southern districts sunshine amounts were above the normal.

In Ireland temperature was everywhere in excess of the normal. Generally speaking there was an excess of precipitation in the north and a deficiency in the south. Sunshine was considerably below the normal. In Dublin the mean temperature of the month was unusually high. Although the number of rain days was only one below the normal there was a considerable deficiency of precipitation.

The following remarks by observers illustrate the generally warm and dry character of the month. Huddersfield (Yorkshire).—Mildest October on the record of fifty years. Meltham (Yorkshire).—Much the warmest in the record of forty-three years.—Hodsock Priory (Nottingham).—By far the warmest October in my record. Sunshine more than in any of the previous forty years with the exception of 1893. Tenbury (Worcester).—Remarkably fine, mild and dry month. The ninth successive month with the rainfall less than the average. Ipswich (Suffolk).—The temperature of the month just ended is probably more remarkable than anything we have experienced so far during this wonderful year. In twenty years there have been in all eighteen days in which the thermometer has reached 294a in October, and of these no less than ten have been during this month. Southport (Lancashire).—This was much the warmest October since the record commenced in 1871, and was warmer than the great majority of Septembers. Sheepstor (Devon).—Between May 31st and October 23rd the temperature in the screen failed to reach 289a on two days only; an occurrence at this altitude (730 ft.) probably without precedent. Tavistock (Devon).—The driest October ever registered. Redruth (Cornwall).—Mean temperature 2.8a above average of twenty years, being the highest for the whole period of observations.

Air Pressure.—The general trend of the isobars was in accordance with the normal, but pressure was everywhere greatly in excess. The excess ranged from +9.4 mb. at St. Ann's Head to +4.4mb. at Lerwick. The highest reading recorded during the month was 1038mb. at Valencia on the 28th, and the lowest 995mb. at Spurn Head on the 22nd.

Temperature.—The mean temperature of the month was much above the normal in all districts. The excess ranged from +3.6a in England north-west to +2.3a in Scotland north.

Precipitation.—The deficiency of rainfall which has prevailed over the south-eastern half of the Kingdom for so many months in succession was again in evidence during October. The areas with an excess were mostly confined to the north-west of Ireland and the western districts of Scotland. As much as 50 per cent. above the normal was recorded locally in these districts. Less than half the normal fell over the greater part of the region lying to the south of a line from the Bristol Channel to the Wash. In the south of Kent only about 10 per cent. of the normal fall was recorded. Areas with less than 25mm. were confined to the south of England. Along the coasts of Kent and Essex the fall did not exceed 12mm. More than 100mm. fell in the usually wet districts in the north and west of the Kingdom. More than 250mm. were recorded in North Wales and in Connemara and over a large part of the Western Highlands of Scotland. At Loan, near Loch Quoich, as much as 546mm. were recorded. Heavy rain fell locally in south-eastern England during a thunderstorm on the 20th, when 62mm. were recorded at Horsmonden, near Tunbridge Wells. For the nine months from February to October a large area in the south of England has had less than half the average fall. The general rainfall for October, expressed as a percentage of the average, was: England and Wales 51; Scotland 105; Ireland 92; British Isles 80.

Sunshine.—Except in Ireland and the north of Scotland insolation was above the normal in all districts. The departure from the normal ranged from +1.90 hrs. per day in England south-east to -1.22hrs. per day in Ireland south.

Optical Phenomena.—Solar and lunar halos were frequently observed in different parts of the Kingdom. Aurora was seen at various Scottish stations; notably at Aberdeen on the 8th, 21st, 28th, and 31st, and on various dates at Lerwick.

