

# FOR OFFICIAL USE. 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.

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## Easterly Type of Weather Predominant.

During the first sixteen days of the month the distribution of atmospheric pressure was mainly anticyclonic; during the rest of the period cyclonic. The month's weather conformed closely to these conditions, a notable feature being the persistence of winds from points between North-East and South-East and the infrequency of those from the West and South-West. An anticyclone which came from the eastward and persisted from the 8th to the 15th was associated with a very severe frost, which was especially intense in the eastern parts of England. The effect of this cold spell on the mean temperature was very marked, and during the week ended on the 15th the mean was 7.7a below the normal at Raunds, 6.3a at Rothamsted, 6.0a at Cambridge and Shaftesbury, and 5.8a at Tenbury. This same week accounted for a large proportion of the month's total sunshine. Many of the coast stations had more than 50 per cent. of the possible sunshine during the week, Aberystwyth having as much as 61 per cent., and St. Leonards 64 per cent. There was, however, much fog during the nights and mornings. On the 16th the weather underwent a great change; under the influence of a depression which came from the South-West the cold and frost were replaced by a higher temperature and milder winds, and at many of the English stations there was very heavy rain. Thereafter to the end of the month the weather was generally dull, unsettled, and rainy. In Scotland the cold easterly to north-easterly type of weather which had developed during the last week of January persisted practically unbroken throughout the whole of February, and judged by its mean temperature the month ranks as a very cold one. The historic February of 1895 was much colder in every respect, and those of 1900 and 1902 slightly colder; but with these exceptions no equally cold February has been experienced in Scotland during the last fifty years. Moderately high day temperatures rarely occurred, and the days were, on the whole, colder than in any February except that of 1895. The nights, on the other hand, were distinctly less cold than those of 1900 and 1902. On the night 4th-5th Kingussie recorded 25.6a and Braemar 25.7a, as compared with readings below 25.5a in both 1900 and 1902, and 24.6a at Braemar in February 1895.

The following notes by observers illustrate the general character of the month:—*Allan's Green, Northumberland*.—The month has been a dry one, with some frosts; but there has been little snow, and farm work has, as a rule, not been delayed. *Kenninghall, Norfolk*.—The first half of the month was very dry and very cold, with light easterly winds and hard frosts; but the last half was wet and cold and with stronger winds. *Weston Turville, Bucks*.—A cold, dry month. During the third week heavy rains which did not penetrate the frozen ground caused some floods, which, however, soon subsided. *Tenbury, Worcester*.—A very cold month, and, owing to heavy rain and snow on the 16th to 17th, the rainfall exceeded the normal. The low temperature caused a wholesome check to vegetation, which was too forward. *Leyland, Lancs*.—A very dry, cold month. *Southport, Lancs*.—A month notable for exceptional atmospheric stagnation (wind velocity 5 miles per hour below normal) and a remarkable prevalence of winds from easterly points. There was scarcely half the normal evaporation. *Dublin (Fitzwilliam Square)*.—A cold, dull, damp month of moderate but frequent rainfall. A complete absence of direct south-west winds was a notable feature, and so was an overwhelming prevalence of winds from an easterly point, especially from the South-East. *Carrigoran, Co. Clare*.—We had only about half our normal February rainfall, and six fewer rain-days. Easterly winds largely preponderated, and there were some extremely cold days, notably on the 2nd and 10th, but there was no snow. *Hurdlestown, Co. Clare*.—The total rainfall for the month (44 mm.) was 15 mm. below the normal, and the rain-days four below. It was, as a whole, a cold month, but favourable for cattle and farm work. The number of days with an easterly wind was remarkable.

**Air Pressure.**—As shown by the map on p. 15, the mean trend of the isobars was abnormal, the type being south-easterly instead of the customary south-westerly. As regards the individual stations the departures from the normal pressure covered the wide range from +3.7 mb. at Lerwick to -9.4 mb. at Falmouth. Some of the more prominent features connected with the movements of the depressions and anticyclones of the month were as follows: Under the influence of a westerly wind which accompanied a depression (track A), which at 7h. on the 5th was centred off the South-West of Ireland, the temperature at some places in the South-West of England rose to 28.4a; but this weather in some other parts of the country remained cold, and a minimum of 26.3a on this day was recorded at Nairn, and 26.5a at Wick. During the 6th and 7th a small depression passed up the English Channel, and during the night there was heavy rain in the South-West, 29 mm. being measured at Falmouth and 25 mm. at Jersey. This depression also brought snow and rain to other parts of the country. Depressions of considerable intensity also existed about this date over the Atlantic. These conditions as regards the British Isles were succeeded by an anticyclonic

distribution of pressure, and on the 8th the weather became almost uniformly fine, with clear skies, and as a result of nocturnal radiation some very low temperatures were recorded, especially in the Midlands, in East Anglia, and in the Thames Valley. Over the latter district the weather map at 7 h. on the 9th showed an outward bulge of the isobars, apparently due to the existence of the surface layer of cold air. By the 9th the anticyclone was well established, the air pressure at Yarmouth at 7 h. being as high as 1042 mb., the temperatures recorded during the night of the 8th to 9th being very generally the lowest for the month. It is noteworthy that coexisting with this intense anticyclone there was a steep pressure gradient in the South-West, a south-east gale of force 9 blowing at Scilly on the 9th, and force 8 at Cahirciveen, Roches Point, and Falmouth. These same stations also reported gale force on the following day, when the barometer at Nottingham was as high as 1035 mb. At 7 h. on the 16th a depression was centred at the western end of the English Channel, and advancing eastwards (track C) brought much rain to Eastern and Southern England. At 7 h. on the following morning this depression was centred over Paris, and there was again much rain in Southern England. On the 19th at 7 h. a deep depression (979 mb. at Cahirciveen) was off the South-West of Ireland, and moving eastwards (track D) caused rain very generally. A new disturbance (track E) appeared on the 21st, and at 7 h. on the 22nd was centred over Dublin, the weather map showing a complete cyclonic circulation over the British Isles, with the result that rain was again very generally distributed. This was very commonly the warmest day of the month. This depression was followed during the next few days by shallow disturbances which mostly caused a quiet although dull and rainy type of weather. On the 26th a depression of rather more importance was shown over the English Channel, and travelling eastwards (track G) was centred over Belgium the following morning. The cyclonic circulation round this system was well marked, but, as a rule, the wind was light in force. Gales were not numerous during the month, and the highest gusts recorded by the anemometers were 32 m/s at Scilly and 31 m/s at Pendennis Castle on the 10th.

**Temperature.**—The mean temperature of the month was below the normal in all districts, the deficiency ranging from 2.5a in the Midlands to 0.8a in Ireland South. This deficiency was largely due to the cold weather during the week ended on the 15th. Very generally the 9th was the coldest day of the month, the lowest of the minima being 25.6a (1° F.) at Woburn. On the 9th Woburn also recorded a grass minimum of 25.4a (-3° F.). On the 13th there was a great contrast between some of the inland minima and those at coast stations in the South-West, Woburn, for instance, recording 25.6a (2° F.) and Hitchin and Rothamsted 26.1a (10° F.), compared with only 27.9a (42° F.) at Falmouth, Fowey and Penzance. The maximum temperature for the month was 28.6a at Foynes on the 19th, and at Killerton and Paignton on the 20th.

**Precipitation.**—The precipitation totals for the month were very varied. In Scotland North and West, for example, there were shortages of 86 mm. and 72 mm. respectively; but in the English Channel and in England East there were excesses of 65 mm. and 26 mm. In Scotland, except towards the South-East, where there was a moderate excess, aggregates were below the normal, and over wide areas the deficiency was remarkable. Thus at Fort William the total (16 mm.) was only 8 per cent. of the normal, and at Glencarron, normally very wet, the total (28 mm.) equalled only 15 per cent. At the former station the deficiency amounted to 173 mm. and at the latter 159 mm. Contrasted with these totals some of those in Devonshire were equally notable, the percentages of the normal at Teignmouth, Plymouth and Ashburton being 282, 216 and 191 respectively, the excesses being 120 mm., 86 mm., and 109 mm.

**Sunshine.**—Except in Scotland North and in Ireland North, where there were excesses of 0.24 hr. and 0.77 hr. respectively, the mean daily amount of sunshine was below the normal in all districts. In the English Channel the deficiency was 0.84 hr. per day and in England North-East 0.70 hr. The sunniest district was Ireland North (3.00 hr. per day), and the least sunny the Midlands (1.80 hr.).

**Optical Phenomena.**—Solar halos were seen frequently, and lunar halos and lunar coronæ were also observed during the first half of the month. The Zodiacal Light was seen at Armagh on the 25th, and a Sun Pillar at Eskdalemuir on the 8th. A fine display of aurora was widely observed on the 27th, and others were seen on the 2nd, 4th, 18th, 21st, 22nd, 23rd, 24th, and 28th.

