

## MONTHLY WEATHER REPORT OF THE METEOROLOGICAL OFFICE.

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

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## MARCH 1924: COLD AND VERY DRY. SUNNY IN ENGLAND.

**General.**—The deep depression centred in the neighbourhood of the Shetlands at the end of February continued to affect the weather over the British Isles, and for the first five days of the month our air supply was drawn from the Arctic regions and northern Europe. Temperature fell even lower than in February and in Scotland this period was bitterly cold. Snow and hail occurred in many parts of the country, and snow lying to a depth of several inches was reported at a number of stations. About the 6th pressure rose quickly over England and the adjacent parts of the continent, producing a change to fine, sunny weather with a gradual increase of day temperature. The nights, however, continued cold. Sunshine was abundant, and this factor in combination with the light winds prevalent after the 6th gave wide daily ranges of temperature about the middle of the month. Little rain fell between the 6th and the 20th and absolute drought prevailed at a good many stations. After the 20th depressions from the Atlantic spread over the British Isles and south-westerly winds with mild rainy weather were experienced in the south. In the north snow or hail occurred. During the last week winds were between E. and N.E. and the weather cold and cloudy with showers of hail or sleet in places.

The general character of the month is illustrated by the following remarks taken from observers' notes:—Ardingly (Sussex).—Bright sunny days from the 6th to 21st, with sharp frost at night. Snow lying in many places until the 16th. Berwick-on-Tweed. —Cold, calm, dry and foggy. River very low on the 9th, probably due to freezing of tributaries. Copdock (Suffolk).—The sunniest March in my records, except March 1907, also the driest one. Newquay. —The warmth of the sun in conjunction with the biting wind of the second week was very trying. Skegness. —The sunniest March since 1907 and the driest since 1910, with a drought from the 3rd to the 20th. Average temperature but with a marked predominance of light easterly winds. Southport. —Only one-third of the normal duration of S.W. wind and about half that of W., N.W. and N. winds, the normal duration of E. and S.E. ones being more than doubled. Fine and dry with warm afternoons but very cold nights. Torquay. —A cold month, the long spell of bitter E. to S. winds being most unusual. Walton-on-Naze. —Unusually dry and cold, with abundance of the proverbial "dust." Ballintuim (Perthshire). —Frost nearly every night. Glenelg (Inverness). —The driest month since the start of the record in January, 1899. Jardington (Dumfries). —Dry bright weather prevailed throughout most of the month. Frost on 26 nights. Ullapool (Ross and Cromarty). —The blizzard of February continued into the first week of March. Dublin. —A cold very dry month with a mild period from the 22nd to the 26th.

**Pressure and Winds.**—The mean pressure was below normal in the west and above normal in the east. The excess of monthly means of pressure at fixed hours from the normal varied from +6.3mb., at Greenwich to -4.7mb. at Valencia. The isobars of mean pressure were irregular but trended roughly from N. to S. so that the prevailing winds were northerly or north-easterly.

Seven primary and two secondary depressions crossed some part of our Islands during periods at the beginning and end of the month. The depression (Track C) pursued a remarkably zigzag course on reaching the North Sea. Throughout the middle period conditions were essentially anticyclonic though the high pressure systems were not centred over the British Isles. Pressures of 1034mb. occurred at several stations in England E. and S.E. on the 7th, while one of 969mb. was recorded at Aberdeen on the 1st.

Some high winds occurred, mainly on the 1st, but the number of gales did not exceed one or two at any anemometer station. A gust of 71 m.p.h. was recorded at Scilly on the 2nd and one of 62 m.p.h. at Pendennis the same day, in connection with the depression (Track B). Only two other recorded gusts reached 60 m.p.h. or over.

**Temperature.**—The mean temperature of Districts 1-10 was 40°F. That of every District was below normal, the largest deficiency, 3.1°F., being experienced in England N.E. (mean temperature 38°F.), and the smallest deficiency, 0.1°F., occurring in the Channel Isles and Scilly (mean temperature 45°F.). The first week of the month was the coldest and the second the warmest generally, the third being fairly cold. The highest day temperatures were registered in the middle of the month. The nights were, however, cold throughout and in conjunction with the cold winds and warm sunshine made the month of a treacherous character. At Paisley and Perth the mean night temperature was 5°F. lower than that of February.

Very large daily ranges of temperature occurred during the middle of the month in England; ranges of 30°F. were recorded in some places. On the 15th S. Farnborough experienced the remarkable range of 40°F. At the same time at a few places, notably in Scotland and Ireland, where the sky was overcast the range amounted to only 2°F. or 3°F.

Ground frosts were very numerous and occurred on 25 nights or over at a large number of stations. The temperatures given by the terrestrial

radiation thermometer were frequently below 20°F. and -2°F. was registered at Balmoral on the 3rd. At Copdock (Suffolk) the readings were 32°F. or below on every night from February 12th to March 21st inclusive, constituting a record since observations were started.

The extreme screen temperatures for the month were:—(England and Wales) 63°F. at Reading on the 12th, 3°F. at Garforth on the 3rd; (Scotland) 62°F. at Liberton and Ruthwell on the 13th, 2°F. at Balmoral on the 3rd; (Ireland) 63°F. at Killarney on the 15th and 11°F. at Lisburn on the 3rd.

**Precipitation.**—There was a remarkable deficit in every District with the exception of the Channel Isles and Scilly, in which the rainfall was normal. In only a few relatively small areas did the precipitation exceed 75 per cent. of the normal, of these the chief were the major portion of the Devon-Cornwall peninsula and area embracing southern Kent and the greater part of Sussex. The normal value was slightly exceeded at Stornoway, in Shetland and at Dungeness. Two regions had less than 25 per cent., the Cumberland coast and a large area embracing the extreme northern Irish coast and a considerable proportion of the west coast and centre of Scotland. Within this area was a dry region of considerable extent round about Loch Linnhe where totals representing only 8 per cent. of normal were obtained. The general precipitation of the British Isles expressed as a percentage of the normal was 50; the values for the several countries were:—England and Wales 58, Scotland 40, Ireland 41.

With very few exceptions precipitation in every District was below normal during each week of the month. The driest period was from the 6th to the 20th which constituted an absolute drought at some stations, e.g. at Berkhamsted. The observer at Belper stated that his total rainfall for the first three months of the year was 121mm. and that since 1877 there have been only two years (1887 and 1891) with less.

The month's total was only 7mm. at Ilderton (Northumberland) and 9mm. at Parson Drove (Cambs.). Isolated instances of fairly large daily falls occurred, e.g., 41mm. at Treherbert and 37mm. at Llyn Fawr (Glamorganshire) on the 22nd.

Snowfall was general in all parts of the British Isles, very few stations reporting none at all. It occurred mainly in the first half of the month. Lerwick had 16 days of snow. Snow lying was frequently reported; Balmoral had 15 days, West Witton (Yorks.) 12 days and Rhayader (Radnor) 10 days. The blizzard of February 29th in Scotland was followed by two or three days snowfall in places and at Achnashellach the depth of snow lying on March 1st was 15 in.

Southport and Guernsey reported 4 days of hail. A number of stations had from 1 to 3 days.

Thunder was practically absent. A few English stations and also Malin Head had one day of thunder, while Newquay had two days.

**Sunshine.**—The duration of sunshine was below normal in Scotland N. and E. and Ireland S., elsewhere it was above normal. The largest mean daily excess occurred in England S.E. (1.76hr.) and the largest mean daily deficiency in Scotland N. (0.42hr.). The Channel Isles and Scilly had 49 per cent. of the possible duration while Scotland N. had only 22 per cent. The week 23rd to 29th was the least sunny and sunshine was deficient in every District during that period. The week 9th to 15th was remarkably sunny, many parts of the country having over twice the normal duration, while a few places, including London (Westminster) had three times the normal. The total for the month exceeded 180hrs. in some areas, while the total of 187hrs. at Teignmouth constitutes a record for the month.

**Fog.**—There was a considerable amount of mist and fog, especially about the 23rd and 25th. The number of days of fog reported varied considerably. A few stations had 10 or more days while Southampton had 20 days.

**Miscellaneous Phenomena.**—Solar and lunar halos were of frequent occurrence. A parhelion was seen at Oxford on the 22nd, while on the 15th the arc of contact of the 46° halo was observed without associated phenomena at Biggin Hill. Sun pillars were observed over a very wide area of eastern and southern England on the evening of the 13th, while they were also seen at a few stations on the 14th and 15th (for a full account of these phenomena see the Meteorological Magazine for April pp. 52-56). Sun pillars were also seen at Mayfield (Staffs.) on the 3rd and at Markree Castle at sunrise on the 13th. Aurorae were seen at Southport on the 10th, at Baltasound on the 21st, at Monach (Outer Hebrides) on the 27th and 28th, at Roshven (Inverness) and Sumburgh Head (Shetland) on the 30th and at Gordon Castle on the 31st. The Zodiacal Light was seen at Oxford on the 3rd, 4th, 6th, 8th, 29th, 30th and 31st, at Stonyhurst on the 27th and 29th, at Deerness on the 30th and at Wadhurst (Sussex) on the 1st, 4th to 10th inclusive and on the 30th. The Counter glow was seen at the latter station on the 4th, 8th, 9th, 10th and 12th.