

MONTHLY WEATHER REPORT OF THE METEOROLOGICAL OFFICE.

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

ISSUED BY THE AUTHORITY OF THE METEOROLOGICAL COMMITTEE.

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MILD AND SHOWERY.

THE conditions over north-west Europe during March were of a westerly to south-westerly type, with frequent depressions in the neighbourhood of the Arctic circle, and relatively high pressure between the Azores and Central Europe. In the west and north of the British Isles the weather was stormy and unsettled, with a good deal of rain. In the south and east, and the adjacent regions on the Continent, the weather was mostly fair and dry. As in the two preceding months, there was a marked absence of severe wintry weather over western Europe generally, and even in Sweden there was little frost after the 9th. Brief incursions of Polar air were accompanied by snow in the northern districts of the British Isles at times in the first week, and in the western districts on the night of the 28th, but milder weather followed at once in every case.

The month opened with deep depressions moving eastward near the Arctic circle, bringing heavy rain to west Scotland, 22 mm. being measured at Eskdalemuir on the 3rd. Temperature was variable, and there was snow in parts of Scotland on the 2nd, and a heavier fall on the 5th, on the north side of a small depression which formed off north-west Ireland and moved eastward. Near sea-level in the south of Scotland there was rain or sleet on this occasion, amounting to 20 mm. at Renfrew and 19 mm. at Leith. An associated "V"-shaped secondary crossed England on the following day and caused rain or sleet generally. In south-east England a fine warm day was followed by a very cold wet evening, the wind veering suddenly from west to north. The cold snap was very brief, as pressure fell rapidly in Iceland and a warm westerly type was again established by the 8th, which proved the beginning of a long spell of mild weather, with a series of deep depressions moving north-east across Ireland, and an anticyclone over Central Europe. In the south-east half of England the weather was fair, but the western and northern districts were affected by a series of small secondaries which moved quickly north-eastward, causing gales and heavy rain in places, and occasional local thunder and hail. Among the more notable rainfall measurements during this period were 21 mm. at Blacksod Point on the 10th (partly in the form of sleet), 25 mm. at Valencia Observatory on the 12th, 27 mm. at Eskdalemuir on the 13th, and another 27 mm. at the same station on the 15th. The pressure distribution became more westerly by the 18th, and small secondaries moving eastward caused moderate falls of rain in all districts, including south-east England. On the afternoon of the 20th there were thunderstorms at Felixstowe and Yarmouth in a cold north-west current. Next day fair mild weather set in again except in the western districts, Aberdeen having a maximum of 28.9a. By the 23rd there was again a very deep depression over Ireland, and an anticyclone over Central Europe, with rain in the west and north-west, but fair weather in the south-east. The anticyclone moved westward, and the weather was brilliantly fine in southern England on the 24th and 25th. At South Farnborough temperature reached 29.1a on the 24th and on the 25th, but fell to 26.9a in the screen on the night of the 24th.

The anticyclone continued to move westward, and the weather became cloudy and showery and colder generally on the 26th. On the 28th a deep depression from the Atlantic reached the north of Scotland and caused a gale in many places in England and Ireland, and rain generally, as much as 33 mm. at Eskdalemuir. In the evening the depression suddenly became stationary and began to fill up, but a "V"-shaped secondary caused snow in Ireland, Wales and parts of the west of England during the night, and showers of hail and rain and local thunder in other parts of England during the 29th. There was local frost on the night of the 29th, the minimum at Howden being 26.9a. Mild weather soon set in again as the depression and its secondary filled up rapidly and pressure fell decidedly in Ireland. On the last day of the month an anticyclone approaching from south-west caused fair mild weather to set in over England and east Scotland, temperature reaching 29.0a at Ross-on-Wye and at Aberdeen.

Except locally in the early hours of the 25th, fog was almost entirely absent during the month. Low clouds were prevalent in the western but not in the eastern districts. In south-east England there was no day with persistent very low cloud.

Numerous depressions affected the Scandinavian area, causing frequent gales and rain, but no very large individual rainfall records were made at any of the stations from which reports are received. There were occasional reports of snow, but on the whole the month was unusually mild. Further south the weather was mainly fair, but the secondaries which brought rain to the south-east of England also affected the adjacent regions of the Continent. In France the only large rainfall readings recorded in the *Daily Weather Report* were 51 mm. at Lyons on the 7th and 25 mm. at Biarritz on the 20th. In the Mediterranean area the conditions were mainly anticyclonic, but shallow depressions caused occasional heavy falls of rain. On the 6th 59 mm. of rain fell at Gibraltar, 30 mm. at Sanguinaire (Corsica), and there were some heavy falls in Italy. Limasol (Cyprus) had 28 mm. on the 9th and 26 mm. on the 13th. There were readings of 40 mm. at Malta on the 10th, and also at Sanguinaire on the 21st.

In Scotland on the 5th there was a sudden incursion of wintry weather, lasting for three or four days, with lowest readings for the month nearly everywhere on the night of the 6th and 7th (25.8a at Braemar and 26.0a at Balmoral in the screen, and at Balmoral a reading as low as 25.5a in the open). Thereafter there was a return of mild conditions, with high readings on the 24th (29.1a at Banff) followed by moderate temperature for a few days and a decided recovery in eastern districts on the 31st. The weather was stormy around the 4th; very stormy on the 15th and 16th in all districts, and especially in the

Hebrides, where great structural damage was done; and somewhat stormy on the 23rd and 24th. Snow fell widely on the morning of the 5th, quickly giving place to rain in many districts, but continuing very heavily in Aberdeenshire on the 6th. There was again a little snow towards the end of the month. Some rapid temperature changes occurred in Southern districts on the 5th, with a rise of as much as 4.5 a at Eskdalemuir in one hour (27.5.4a at 13 h to 27.9.9a at 14 h).

The following notes supplied by observers illustrate the general character of the month:—**COPDOCK (Ipswich)**—The month at this station was extraordinarily dry, the total rainfall (22 mm.) being the lowest for March except in 1918 when there were only 21 mm. The mean temperature 28.0.6a was identical with that of 1920 and was the highest yet recorded here in March. There was a sharp thunderstorm during the afternoon of the 20th making the second during the winter season, a phenomenon which I do not remember occurring previously in my 20 years' observations. Ponds which usually are at their fullest now are in many cases in this district completely empty; some are emptier than they commonly are even at the end of a fairly dry summer. **BELPER (Quarry Bank)**—The mean temperature was 28.0.0 a, and only once during 44 years has this been exceeded at this station, namely in 1893 (28.0.2 a). **TOTLAND BAY (Isle of Wight)**—March nights this year have been unusually warm, equal to those commonly experienced during the last week of April. Only one March at this station during 35 years has been warmer at night, namely in 1912 when the mean minimum temperature for the month was 27.9.2 a. Only once this year has the screened minimum thermometer fallen below the freezing point. **SOUTHPORT (Lancs.)**—A very mild, cloudy, and showery month, winds from southerly directions being remarkably prevalent for March. **SHEEPSHOL (Dartmoor)**—From December 19th to March 29th, a period of exactly 100 days, not a flake of snow fell at this high-level station, an event unprecedented in the memory of the oldest inhabitant. **DUBLIN (Fitzwilliam Square)**—A generally mild and favourable month. Very constant south-west and west winds were noted, while the traditional easterly winds of March were conspicuously absent. There was a remarkable coincidence in the means of the instruments at 9 h and 21 h. For the first time this year snow fell in Dublin, and this happened twice, namely on the 14th and 28th.

Air Pressure. As shown by the map on page 31 the mean monthly trend of the isopleths was of a normal type, but the gradient was much steeper than usual. At the telegraphic reporting stations the departures of the monthly means from the normal varied from -4.7 mb. at Stornoway to +6.1 mb. at Jersey.

Temperature. The mean monthly temperature was above the normal in all districts, the excess ranging from 2.4 a in England East to 0.9 a in Scotland North. At some of the stations in the North-east and East of England the excess was especially large; it was as much as 5.3 a at Yarmouth, 5.2 a at Skegness, and 5.1 a at Clacton and Hull. These conditions were in marked contrast with the inclement weather which prevailed in March of last year, in which month the mean temperature in all districts was below the normal.

Precipitation. The number of rain-days recorded in the various districts (see Table I. p. 30) was very varied and ranged from 27 in Scotland North, Scotland West, and Ireland North to 13 in England East and 15 in England South-east. The departures of the monthly totals were equally varied and ranged from +69 mm. in Scotland West to -26 mm. in the English Channel. The rainfall was again markedly below the normal in England except in the extreme West, being less than half the normal in the east Midlands. An excess of more than 50 per cent. occurred over the whole of the western half of Scotland and locally in Ireland, and more than twice the normal fell in the West Highlands. In the latter district the area with more than 250 mm. was exceptionally large for the season, extending from Bute to Cape Wrath. More than 500 mm. fell in the west of Inverness-shire and in the centre of the English Lake District. As much as 250 mm. fell only locally in the Welsh uplands. In the dry district of the East less than 25 mm. fell practically everywhere between the Thames estuary and Northumberland, the 25 mm. line through the Midlands being as far to the West as Leicester. Only relatively small areas in the East of Scotland and Ireland had less than 75 mm. The general rainfall expressed as a percentage of the normal was:—England and Wales 101; Scotland 170; Ireland 129; and the British Isles as a whole 133.

Sunshine. In England East the mean daily amount of sunshine was 0.74 hr above the normal, and in the Midlands and in England South-east there was an excess of 0.10 hr and 0.61 hr respectively. In all other districts the sunshine was deficient, the largest deficiency being 0.99 hr in Ireland South.

Optical Phenomena. Lunar and solar halos were frequently reported; the Zodiacal Light was seen at Tenbury (Worcester) on the 2nd, 18th, and 20th, and a lunar rainbow was observed at Eskdalemuir on the 20th.

Aurora was seen on the 1st at Aberdeen, Fort William, Gordon Castle, and Paisley, and at Deerness on the 11th, 15th, and 16th, and faintly at Aberdeen on the 29th.

Note. The article by Captain C. K. M. Douglas in the *Meteorological Magazine* for April has been utilized in the preparation of these notes.

