

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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Sunny and Warm at First, then Cool and Rainy.

Until about the 19th the weather of the month was of a seasonable character, with many hot days, the sunshine during the second and third weeks being very abundant. After the 19th, however, there was a great decrease in the temperature, the weather of the closing week being very inclement for the time of year, and during this period at several stations the thermometer on some days did not rise above 28.4a, the maximum at Buxton on the 30th being only 28.2a. Very generally the warmest days of the month were the 7th and 11th, temperatures of 30.0a and above being recorded at many English stations. To a large extent these high readings balanced the low ones experienced during the last week, with the result that very commonly the mean temperature for the whole month did not differ very much from the normal. Similarly, the abundant sunshine recorded between the 5th and 19th made up for a deficiency during the subsequent days, so that in this respect also the totals for the month were about normal. At many stations the precipitation was deficient, and in other instances the month's aggregate, especially at some of the Irish and West Coast stations, was largely accounted for by a heavy downpour which accompanied a thunderstorm on the 12th. At some of the English stations the drought which commenced during the early days of May continued unbroken until the 19th of June. Thunder was frequently reported, the thunderstorms of the 1st, 10th, 12th, and 21st being experienced over a wide area. Fog was very prevalent at some of the coast stations, and ground frosts were registered at some inland places, mostly during the opening and closing days of the month. Owing to the almost entire absence of depressions which passed directly across the British Isles, gales were infrequent.

In Scotland, except for one or two rather cold nights, the early part of the month was decidedly warm, as had been the last three weeks in May, but after the 12th the weather became steadily colder. At many places the 29th or 30th was the coldest day of the month, and everywhere the last week had a mean temperature much below the normal. The warmest day in most localities was the 7th. During the severe thunderstorm on the 12th some heavy hail fell, and considerable damage was done by lightning, the torrential rains being followed in many districts by floods.

The following notes supplied by observers illustrate the general character of the month:—*Deighton Grove (Yorks.)*.—Up to the 15th the weather was fine and hot, but after that date there was a prevalence of cold, dry winds. *Copdock (Suffolk.)*.—The month divided itself into two well-marked sections, the conditions from the 1st to 18th being fine and dry; but on the 19th the weather broke, and thereafter was cold and unsettled, with much northerly wind. The nett result was a very average month, the sunshine being slightly above and the rainfall slightly below the normal, the temperature according closely to normal. *Weston Turville (Bucks.)*.—Drought continued until the third week, and seriously injured the hay crop and stunted vegetation generally. *Tenbury (Worcester.)*.—Fine, warm, and dry, but remarkably windy. It was the driest June for more than twenty years. Hay crops are considerably under the average. *Southport (Lancs.)*.—The windiest June, by far, during 48 years' records. West and North-West winds were prevalent during almost exactly the same very unusual number of hours that was recorded in June, 1918, but the speed this time was much greater. *Dublin (Fitzwilliam Square.)*.—At first the month was fine, quiet, and summerlike. Thunderstorms occurred on the 10th and 12th, the storm on the latter date being accompanied by a heavy downpour of 46 mm. The last half of the month was cloudy, windy, and cold. The rainfall on the 12th equalled 58 per cent. of the total precipitation for the month, and that of the 24th (17 mm.) 21 per cent. *Carregoran (Co. Clare.)*.—We had slightly more than our normal rainfall, and one rain-day in excess. Gloomy days, with a low temperature and frequent high winds, prevailed throughout the month. *Hurdlestown (Co. Clare.)*.—The total rainfall for the month (71 mm.) was 7 mm. above the normal, and the rain-days one above. As a whole, it was, however, a dry June, as a large part of the total fell on the 11th (27 mm.). Although it was a very cold month, crops of all kinds are looking well.

Air Pressure.—As shown by the map on p. 63, the mean monthly distribution of air pressure was abnormal, the trend of the isobars being of a north-westerly type instead of the customary south-westerly, the barometric gradient being, moreover, much steeper than usual. At the telegraphic reporting stations the departures of the individual monthly means from the normal were very varied, and ranged from -0.8 mb. at Lerwick to +7.6 mb. at Scilly, the highest of the daily readings being 1035 mb. at Yarmouth and Portland Bill on the 10th, and the lowest 996 mb. at Stornoway on the 19th. Of the depressions which affected the weather of the month, only one passed directly across the British Isles, the rest of them moving along tracks passing to the North of Scotland or down the North Sea. Some of the more prominent features connected with the movements of the depressions

and anticyclones were as follows:—During the first six days of the month an anticyclone lay over the Azores and the eastern part of the Atlantic, "lows" being shown on the weather map in the neighbourhood of Iceland and over Scandinavia, conditions which brought cool, showery weather to the British Isles, and thunderstorms on the 1st and 4th, the accompanying winds blowing mainly from points between North and West. At 7h. on the 7th a deep depression was centred to the South-West of Iceland, and moderate or fresh south-westerly winds became general. Very commonly this was one of the warmest days of the month. This depression also determined the weather of the following day, squally and showery weather being reported locally. On the 12th, at 7h., a depression, which had spread in from the Atlantic was centred over the Irish Sea, and was the only depression which crossed the British Isles during the month. During the previous day at the front of this oncoming depression there was a marked increase in the temperature, and at many of the English stations this was the hottest day of the month. This system also caused thunderstorms and heavy rain at many places on the 12th, the precipitation being especially abundant at some of the Irish stations, 68 mm. being recorded at Mountmellick and 56 mm. at Birr Castle and Lisburn. The passage of a thunderstorm over Eskdalemuir was well shown by the various autographic records at this observatory on the 12th. By the morning of the 13th this depression had moved eastward to the North Sea, the weather map at the same time also showing another depression over Iceland and a secondary over Denmark, with a ridge of high pressure extending from the Azores to the Orkneys, conditions which very generally were associated with winds from the North-West. During the following days, until about the 20th, the weather was largely dominated by depressions passing between Scotland and Iceland, the resulting winds, which reached gale force locally, being mainly westerly. On the last-mentioned day rain fell heavily in the South-East of England, as much as 23 mm. being registered at Greenwich and 26 mm. at Kew Observatory. From the 20th until the close of the month depressions to the northward of the British Isles, with an anticyclone stretching northwards from the Azores, maintained the weather in a showery and unsettled condition, the temperature, especially during the last two or three days, being very low for the time of year. No gales of a general character were experienced during the month, the highest gusts recorded by the anemometers being 28 m/s. at Southport on the 13th and 23rd, and at Pendennis Castle on the 12th.

Temperature.—In England South-West and in the English Channel the mean monthly temperature was exactly normal, the departures from the latter in other districts ranging from +0.6a in the Midlands to -0.6a in Ireland North. In Scotland East, England South-East, and England North-West the departure was as small as +0.1a, and only -0.1a in Ireland South. At the individual stations the highest of the daily maxima was 30.2a, a reading recorded at several English stations on the 7th or 11th; the lowest of the minima being 27.1a at West Linton (Peebles) on the 3rd.

Precipitation.—Except in Scotland North and West and in Ireland North, in which three districts there was an excess of 43 mm., 39 mm., and 20 mm. respectively, the monthly aggregates of rainfall were below the normal, the shortages ranging from 29 mm. in the Midlands to 5 mm. in Scotland East. The percentages of the normal were very varied, being as much as 162 in Scotland North, 153 in Scotland West, and 133 in Ireland North, but only 49 in England North-East and 55 in England South-West. Similar contrasts occurred at some of the individual Scottish stations, the aggregate at Aberdeen, for instance, being 77 per cent. of the normal, Perth 58, Marchmont 67, but Stornoway 234, Fort William 189, Kilmarnock 233, and Colmonell 194. At Stornoway it was the wettest June on record, but at Glasgow the total of 115 mm. was only half that recorded in June, 1872. During a thunderstorm on the 12th Colmonell recorded 69 mm., and Glasgow 60 mm. between 15h. 15m. and 20h.

Sunshine.—The mean daily amount of sunshine was, as a rule, in fair agreement with the normal, the departures from the latter ranging from -0.84 hour per day in Scotland North to +0.60 hour in England East. In the English Channel, in England East, and in England South-East the daily mean was as much as 7.59 hr., 7.46 hr., and 7.35 hr. respectively, but only 4.33 hr. in Scotland North and 4.99 hr. in Ireland North.

Optical Phenomena.—Solar halos were reported at several stations on various dates during the first half of the month, but lunar halos were rarely seen. A sun-pillar was observed at Oxford on the 15th.

