

MONTHLY WEATHER REPORT OF THE METEOROLOGICAL OFFICE.

(Supplement to Weekly Weather Report.)

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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FORTY-FIRST YEAR.

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Generally Cool, Dry except in Scotland, Cloudy except in the South-West.

The succession of depressions from the Atlantic which was the chief cause of the disturbed weather in June continued until nearly the middle of July. None of the systems, however, was of sufficient intensity to produce a gale except for a brief interval locally. As a general rule, the greatest force of the wind did not exceed the force of a fresh breeze, but as the depression of the 1st passed across the country the wind velocity reached 24 m/s at Holyhead, 23 m/s at Pendennis Castle, and 21 m/s at Southport; and on the 12th force 8 Beaufort Scale was reached at Dungeness, and the velocity of 20 m/s at Shoeburyness and Pendennis Castle. Heavy falls of rain within a short space of time did not form a marked feature of the month, in spite of the numerous occasions when thunder or thunderstorms were experienced. There were, nevertheless, some notable exceptions. In various parts of the Kingdom a few heavy downpours were associated with thunderstorms, and there were some heavy persistent rains in Scotland without thunder in the neighbourhood. On the 1st the depression marked A on the map brought 36 mm. to Lisburn, and on the 2nd a like quantity, with thunder and lightning, fell at Bradford. Further falls of 25 mm. or more fell on the 6th in the south-western districts on the approach from the Atlantic of the slow-moving depression marked C. On the 7th, when the centre lay over England, thunderstorms, with little rain, were experienced over a wide area, and some heavy rain without thunder fell in the northern counties. At Scaleby there were 40 mm., while at Bridlington the unusual quantity of 25 mm. fell in about 15 minutes between 21h. and 22h. On the same day, with the wind light from between South-East and North-East, enormous amounts fell in the eastern districts of Scotland. Some of the principal downpours were:—42 mm. at Nairn, 53 mm. at Strathpeffer, 67 mm. at St. Andrews, 74 mm. at Kettins, 78 mm. at Edinburgh University, 87 mm. at Perth, and 91 mm. at Dundee. At Kirkcaldy as much as 99 mm. fell during the 36 hours from 1 a.m. on the 7th. Further to the south-west Glasgow had 21 mm. and Eskdalemuir 54 mm.

Subsequent to the departure of the depression of the 12th across the North Sea, track D, a decided change in the general distribution of pressure occurred over these Islands and the surrounding regions, and the new conditions continued with little modification for some days. The Azores anticyclone extended east and north-east towards the Bay of Biscay and the United Kingdom, while depressions of moderate intensity lay over Scandinavia. The main flow of air during this régime came from North-West and West, and as there was little sunshine the temperature continued below the normal. By the 19th the anticyclone had advanced more directly over the British Isles, and by the 21st a detached portion, accompanied by light variable winds, covered the whole of Ireland and Scotland. After some modification in form and position this finally moved away to beyond the North Sea, but as it was immediately followed by an arm of the Azores anticyclone no general break occurred in the dry, brighter, and warmer weather conditions that it had established. Although from the 20th the general situation was mainly anticyclonic thunderstorms were experienced daily in some parts of the Kingdom. These storms, associated with very slight pressure irregularities, were mostly of little violence, but on the 21st, at Tenbury, there was 34 mm. of rain, on the 23rd, very locally at Broadford, 26 mm. on the 24th at Castleforbes as much as 41 mm., and on the 27th at Belper rain and large hail gave 22 mm.

Air Pressure.—The mean air pressure was higher than the normal for July in all parts of the Kingdom, and the mean range of pressure rather less. At the Scilly Isles, where pressure was highest, the mean value was 1019.7 mb., and in Shetland, where it was lowest, 1014.8 mb. The isobaric lines showed a mean distribution in favour of winds from the North-Westward, whereas the normal July Isobars are for West to South-West winds. The lowest readings of the month accompanied the passage of the depression marked C. On the 7th, in the Midland Counties the barometer sank to 998 mb., in England North-East and South-East to 999 mb., and on either the 7th or 8th readings of 1000 mb. were recorded in nearly all other districts. During the anticyclonic period readings as high as 1025 mb. were registered at times in almost all parts of the Kingdom, that value being reached or exceeded from the 21st to the 23rd, and again from the 28th to the 31st. The highest point attained was 1032 mb. in England South-West and Ireland South on the 29th.

Temperature.—During the unsettled, dull conditions of the first fortnight the temperature was persistently below the normal in all parts of the Kingdom, and it was not until late in the month that any decided increase of warmth occurred. Even then a large portion of south-eastern and eastern England continued cold for the time of the year, mainly owing to

North-Easterly winds and cloudy skies. Until after the 15th maximum readings as high as 294° A. (70° F.) were seldom recorded. On several occasions the value was below 289° A. (60° F.) over a large area in the north. At Lerwick on the 4th and at Balmoral on the 7th the maximum was not higher than 282° A. (49° F.). At some other stations in Scotland and also in the North of England there were days with maxima below 286° A. (55° F.). In the earlier part of the month some low minimum readings were also noted. On the 6th Glen recorded a reading of 273° A. (32° F.) and West Linton 274° A. (33° F.), the thermometer on the grass at the latter station falling to 269½° A. (26° F.). Other readings below 273° A. (32° F.) on the grass were registered in several parts of the country. As far south as Hampstead and Benson grass readings of 272° A. (31° F.) were reported on the 2nd and 4th respectively, and at the latter station there was a reading of 273° A. (32° F.) on the 15th. At Haverfordwest on the 13th while the minimum reading in the screen was no lower than 278° A. (41° F.) potatoes were damaged by frost in many gardens. Late in the month maxima of 294° A. (70° F.) and above became the rule. Over a very extensive area in the north maxima above 300° A. (80° F.) were registered about the 23rd; at Paisley and Buchlyvie the value was 302° A. (84° F.). A few days later readings above 300° A. (80° F.) were common in England, the highest being 302° A. (85° F.) at Southampton on the 31st, 303° A. (86° F.) at Woking and Wilton (Salisbury) on the 30th and 31st respectively.

The rise of temperature was as much marked at night as during the day. Minimum readings above 286° A. (55° F.) were recorded over large areas, and at many stations towards the close of the month the minimum thermometer remained above 289° A. (60° F.). At Manchester on the 30th and 31st the minimum was 290° A. (63° F.), and on the latter date at Killarney also, while at Crathes on the 30th it was as high as 291° A. (64° F.). The increase of temperature set in too late to bring the mean for the month up to the normal except in Scotland North and West and in Ireland South. In England East and South-East the mean values, 287.8° A. (58.6° F.) and 288.3° A. (59.5° F.) were as much as 1° A. (1.8° F.) below the normal.

Coastal Fog.—Fog was very prevalent along the western seaboard, and during the first week and after the 16th it was also reported from the east coasts of Great Britain. Along the Channel coast it became rather common after the 20th.

The temperature of the sea surface water was a little below that over the land on almost all parts of the coast. At Belper the water of the River Derwent had a mean temperature of 288.5° A. (59.9° F.); the air 288.1° A. (59.2° F.).

Rainfall.—Over the Kingdom generally the aggregate fall was much less than the normal, but the exceptional rains connected with the depression of the 7th caused a large excess in Scotland East, and did much to bring the total near the normal in England North-East, and Scotland West and North. In the English Channel district the fall was only 37 per cent. of the normal, and in England South-East 48 per cent. but in Scotland East the percentage was 146. In many parts of the country there was little rain after the 10th or 11th, and at several stations in the south and south-west there was absolute drought after the 16th or 17th. At a few places the drought began earlier. At Bettws-y-Coed there was no rain after the 12th, at Salcombe and Plymouth none subsequent to the 13th, and at Ballinacurra none after the 14th. At Ventnor the fall was only 22 per cent. of the normal, at Jersey 24, Totland Bay 28, and over a large portion of England and southern Ireland less than 50. At Alnwick Castle there was 159 per cent., Edinburgh 208, Dundee 262, and at Perth 308. At several stations in southern and south-western England rain only occurred on 4, 5, or 6 days. The stations giving measurements twice in 24 hours showed that the mean fall in the day-time was practically the same as that in the night.

At Kew the underground water level varied from 232 cm. above Mean Sea Level on the 1st to 213 cm. on the 31st.

Bright Sunshine.—Over the Kingdom generally there was a deficiency, but in England South-West, the English Channel, and Ireland South the normal was exceeded. In England East the mean daily loss was as much as 1.9 hr., in Scotland North and East about 1.4 hr., and in England North-East 1.3 hr. The mean daily duration ranged from 8.2 hr. in the English Channel to 3.9 hr. in Ireland North, 3.8 hr. in Scotland East, and to 2.7 hr. in Scotland North. At Deerness and Stornoway the percentage of the normal was below 60, at Cambridge 64, Margate 66, and at numerous other stations less than 80. At Marlborough the value was 112, Tenby and Torquay 114, Falmouth 122, and at Cullompton 123.

A Mock Sun was observed at Totland Bay twenty minutes after sunrise on the 12th.