

MONTHLY WEATHER REPORT OF THE METEOROLOGICAL OFFICE.

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

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JULY, 1927: UNSETTLED, THUNDERY AND MAINLY DULL. WET IN ENGLAND AND WALES.

General.—Unsettled thundery conditions prevailed generally during the first ten days of the month. Except in the south-eastern districts of the British Isles where severe thunderstorms and heavy rain were experienced from the 10th to the 13th the weather then became fairer and by the 18th fine weather was established in most districts. There was a renewal of unsettled weather on the 20th which continued until the end of the month.

On the 1st the weather over the southern half of England was affected by a depression centered near the Straits of Dover and in several districts continuous rain was experienced, heavy falls occurring locally, including 42mm. at Portland Bill. The observer at Hellingly states that he measured 57.7mm. which fell between 3h. 10m. and 18h. 30m. on the 1st. In Scotland and most parts of Ireland fairer weather prevailed. After an interval of mainly fair weather, heavy rain and high winds on the 4th, reaching gale force in exposed places in the south-west of England, were associated with a depression which deepened considerably as it approached our western coasts and during the next few days generally unsettled weather with fair periods and local thunderstorms were experienced. Severe thunderstorms occurred widely in the north of England on the 5th and in the south-east of England on the 6th to 7th.

During the next few days the passage of depressions across Northern France maintained unsettled rainy weather in most districts, but there were considerable fair intervals, 13.4 hours sunshine being recorded at Pendennis on the 7th, 11.9 hours at Scilly and 11.7 hours at Lerwick on the 8th and 15.5 hours at Lerwick and 13.8 hours at Pendennis on the 9th. On the 10th a ridge of high pressure extended north-eastwards from the Azores anticyclone over Scotland and Ireland while over northern Germany there was a deep depression. Over the British Isles the winds were northerly, but the air having originated in a warm easterly current which prevailed for some days over southern Scandinavia and the Baltic, day temperatures rose to about 80°F. over a large part of England and exceeded 75°F. in many parts of Scotland. At most places the 10th was the warmest day of the month. During the next few days fair weather prevailed over the north and west of Ireland and Scotland, but over England thundery weather associated with the development of shallow areas of low pressure was experienced. An unusually severe thunderstorm accompanied locally by remarkably heavy rain occurred in London and the south-east of England on the 11th. After the 14th the unsettled sunless conditions were confined to the south-east of England and on the 18th and 19th the anticyclone moved across Great Britain giving fine warm weather over nearly the whole country during those two days. A fresh depression however was approaching our south-west coasts, and an unsettled type of weather with fair periods was renewed and maintained from the 20th to the end of the month.

The following remarks taken from observers' notes illustrate the character of the weather of the month:—Southport—Calmer July on record and much the duller except July, 1912. Half the normal frequency of west winds replaced by south-east winds. Humidity very excessive but rainfall quite moderate. Giggleswick—Cold, wet and very dull. West Kirby—A very unsettled month with severe thunderstorms. Malvern—Showery month with poor sunshine record and high humidity for July. Teignmouth—An exceptionally dull humid month. Rain was frequent, especially in the latter half of the month. Night temperatures were relatively high. Redruth—Highest average humidity since observations started in 1901. Markree—Fine generally and warm. Dublin—A cloudy showery month of average mean temperature with a dry spell extending from the 10th to the 18th inclusive. Cork—A wet cloudy month with light variable winds and about average temperature.

Pressure and Winds.—Owing to the large number of depressions whose paths lay near or across the British Isles, the mean pressure was below the normal in all districts. Winds were mostly light to moderate. High winds occurred during the first ten days of the month and on the 3rd and 4th gales were reported from a few stations in Devon and Cornwall and in the south of Ireland.

Temperature.—The mean temperature was above the normal in the Scottish and Irish districts and in the western districts of England and Wales and about normal in the remaining districts. In Scotland N. and W. the mean temperature was appreciably above the normal, a result largely due to the frequent occurrence of decidedly warm nights. The highest temperatures of the month occurred on the 5th in some eastern districts, widely on the 10th, about the 18th and on various days during the last week of the month. The lowest screen temperatures occurred during the first few days and during the third week of the month.

The extreme temperatures for the month were:—(England and

Wales) 83°F. at Calshot on the 10th, 36°F. at Castleton on the 3rd. (Scotland) 82°F. at Ruthwell on the 10th, 37°F. at Braemar and W. Linton on the 17th. (Ireland) 78°F. at Mallaranny on the 18th 39°F. at Markree on the 14th.

Precipitation.—The general precipitation over England and Wales and Ireland was above the normal and about normal over Scotland. The distribution of monthly totals however was rather irregular owing mainly to the frequency of occurrence of local thunderstorms.

In most districts of England and Wales monthly totals and number of rain days were above the normal, rainfall amounts exceeding twice the normal over certain areas in the south of England including parts of Kent, Hampshire and Wiltshire. Areas with a deficiency of rainfall occurred in eastern and some north-western districts. Thus at Holyhead the total rainfall for the month amounted to only 64 per cent. of the normal and at Yarmouth to 70 per cent. of the normal.

In the north-west, the extreme north and in the north-east of Scotland precipitation was deficient with little more than one-third of the normal at Gordon Castle and hardly half the normal at Wick. Elsewhere, with much of the month's rainfall of thunderstorm origin, the distribution was irregular, with a deficiency here and there, but at Blair Atholl and Dumfries more than twice the normal. In the extreme north hardly any rain fell until the 20th, and at Kirkwall about half of the month's moderate total of 1.23 in. (31mm.) was accounted for on that day. From the 3rd to the 7th conditions were unsettled in most districts, with some heavy local falls on the 5th, e.g., 2.14 in. (54mm.) at Pitlochry, and on the 10th and 13th some limited areas had heavy falls. Some heavy falls occurred on the 20th, 21st, 27th, and 28th. Thus on the 21st, Rosneath (Dumbartonshire) had 2.95 in. (75mm.) nearly the whole of which fell within 3 hours; but Arrochar only .19 in. (5mm.).

In Ireland the distribution was very irregular but in general areas with a deficiency of rainfall occurred in the central and western districts and areas with an excess in the eastern and south-eastern districts.

July, 1927 will be chiefly remembered, however, for the severe thunderstorms which most districts experienced, notably those of the 5th, the night of the 6th to 7th, the 10th to the 13th and the 21st. In Scotland thunderstorms occurred over limited or more or less wide areas on as many as 21 days. In the northern districts of England the storm on the 5th was responsible for severe flooding. Crops suffered severely and in some places damage was done to buildings by lightning. Heavy persistent rain accompanied the storm during the night of July 6th to 7th in the south-east of England. The storm was one of the worst experienced at Dover for many years. More than 2 in. was recorded at Sheringham (near Cromer), between Colchester and Clacton and in the south-east of Kent. At Deal the fall just exceeded 3 in. Severe thunderstorms swept over many parts of the country on the 11th. In London the storm occurred in the afternoon and was accompanied in places by torrential rain. The heaviest rain fell in the western and south-western districts, the fall exceeding 2 in. over an area between Hammersmith Bridge, Wormwood Scrubbs and Kensington Gardens. The largest amount recorded on the 11th was 3.42 in. (87mm.) in Kensington (Holland House). Exceptionally heavy falls occurred at Kensington Palace where 1.00 in. fell in 12 minutes and at Balham High Road 1.50 in. in 18 minutes, which represent an hourly rate of 5.00 in. Another unusual feature of the storm in London was the intense darkness. In the Staffordshire and Oldham districts considerable damage by floods is reported to have occurred. Heavy rain accompanied the thunderstorms on the 21st and extensive floods were reported from Ashton-under-Lyne, Sunderland, Glasgow and Greenock.

Sunshine.—A characteristic feature of the weather of the month was the relatively small sunshine aggregates recorded in most districts. The mean daily duration of sunshine was above the normal in the north and north-west of Scotland and in parts of Ireland, but elsewhere there was a decided deficiency notably in the Midlands, the south-east of England and the Channel Isles. At several places in these areas the daily loss ranged on the average from two to three hours and at one or two places exceeded three hours. At Totland Bay the month's total was the smallest recorded in any July since 1887 at that station. The observer at Copdock states that from the 12th to the 23rd inclusive only 11.9 hours sunshine were recorded "an experience which is quite unique in any summer month throughout the period of my observations extending now over some thirty years in East Anglia."

Fog.—Fog occurred in all districts but with greatest frequency in Scotland and the northern districts of England. Dense fog occurred on the north-east coast of Scotland around the 7th and 22nd.

Miscellaneous Phenomena.—Solar halos were observed at several places on various dates. An aurora was observed at Kirkwall (Orkney) on the 29th.