

MONTHLY WEATHER REPORT OF THE METEOROLOGICAL OFFICE.

BRITISH METEOROLOGICAL AND MAGNETIC YEARBOOK. PART II.

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

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JULY, 1921; FINE AND WARM.

Except in the extreme north-west of the British Isles, July was remarkable for the heat and drought which prevailed during the greater part of the month. In every district in England and Wales it was the seventh month in succession during which the temperature was above the normal, and the fourth month during which precipitation was deficient.

During the first three weeks anti-cyclonic conditions predominated, but towards the close of the month depressions in the Icelandic region caused unsettled weather and appreciable rainfall in the north-west. No real break in the drought occurred in the south.

At the beginning of the month the weather over the whole of the British Isles was under the influence of an anticyclone situated between Scotland and Iceland. The weather inland was warm during the daytime, but north-easterly breezes produced cooler conditions along the east coast. The nights were cool, with ground frost locally inland. The anticyclone moved southwards on the 4th and on the following day completely covered these islands. Its position changed little until the 12th, and with clear skies and light breezes temperature rose steadily. On the 10th and 11th it reached 305a or above in parts of England. 302a was reached as far north as Aberdeen on the 10th and as far west as Cahireiveen on the 12th. After the latter date the anticyclone moved away towards Scandinavia, and a depression lay to the west of Ireland. With cloudier conditions the heat became less intense, but the weather remained dry generally except in the north-western districts. Even in the latter, precipitation was for the most part slight, although 16mm. of rainfall were recorded in 18 minutes at Holyhead during a thunderstorm on the 15th. Local thunderstorms also occurred about this time at a few isolated stations in the east and south-east of England. On the 17th, the Scandinavian anticyclone again moved in a south-westerly direction, and on the following day amalgamated with the Atlantic anticyclone. The depression which had remained practically stationary off the west of Ireland for some days moved away towards Iceland. The weather again became very fine and warm over England, and temperatures of 305a were recorded in parts of England on the 19th. The following night was unusually hot, the thermometer not falling below 294a at Kensington Palace, and 292a at Portland Bill. After the 21st, the anticyclone moved still further towards the south-west, and the greater part of the British Isles came largely under the influence of depressions between Scotland and Iceland. Rain and strong winds were experienced in the west and north, but in the south of England the weather remained dry and warm. A deep depression which appeared off southern Ireland on the 27th and travelled across southern England (track κ on map) produced little rain in the south-east, but in the west and north there were considerable falls over a wide area. 47mm. were registered at Holyhead during the night of the 28th, and 63mm. at Baldonnel (Dublin) during the 36 hours ending 7h. on the 29th. A depression which passed outside the Hebrides on the 30th and 31st caused further falls of rain in the north-west.

In London the month was remarkable for brilliant sunshine, excessive warmth and deficient rainfall. The mean temperature at Camden Square was 3.3a above the average, and the highest for any month in the 64 years' record. The rainfall of 3mm. was the least in any July for the same period, the nearest approach being 11.4mm. in July, 1868.

Fog was fairly frequently reported on the western coasts, but over the greater part of our area visibility was good.

The weather over the greater part of Scotland reflected in a minor degree the warm and dry conditions which prevailed over England. Temperature was rather low on the 1st and 2nd, but subsequently became high, the warmest days being the 10th and 18th. At Aberdeen 302a was recorded on the former day; this is the highest temperature at that station since July 1876. Exceptionally warm nights occurred from the 8th to 11th. At Stirling the temperature did not fall below 289a during this time, and on the night of the 8th-9th it did not fall below 292a. The maximum reading during the month in Scotland was 303a at Perth on the 18th. The mean temperature of the month in Scotland was about the same as that for July 1911. On the 28th under the influence of the deep depression which formed off southern Ireland and caused strong north-easterly breezes, a sudden fall of temperature occurred, and readings at Braemar and West Linton on the night of the 29th-30th were as low as 273a. The dry weather continued locally until the 18th or 19th, but light to moderate rain occurred in many places about the 6th and 15th. From the 21st to the end of the month rainfall was general. 58mm. fell at Cargen near Dumfries during this period, and at Colmonell 25mm. or more fell on the 22nd, 28th and 30th. The total amount in Scotland was above the normal in the west and south, but was below normal in the east and north-east.

The warm and dry conditions which prevailed over England were experienced on the continent to an even greater extent. During the hot spell

about the 12th, Dijon and Strasbourg recorded 310a. Towards the end of the month temperatures exceeding 310a were reported, reaching 311a at Paris, 312a at Breslau, and 313a at Strasbourg on the 28th. In the south of France the temperature remained above 294a for several successive nights. Local thunderstorms accompanied by heavy rain occurred in central and southern France during the earlier part of the month. Extensive forest fires occurred in various parts of France, Germany, Norway and Denmark. Further afield the drought in Russia has very adversely affected the harvests and the country is threatened with a famine of unparalleled severity.

The following notes by observers illustrate the general character of the month. MELTHAM (Yorkshire).—Very warm month, only exceeded slightly in August, 1911. Mean maximum the highest in the record. HODSOCK PRIORY (Nottingham).—The mean temperature is higher than in any previous month in the last 42 years, this excess being much the largest in the day reading. EDGBASTON (Warwick).—Record maximum temperature for month of July. TENBURY (Worcester).—Driest July since 1906. Notwithstanding the drought the winter wheat is an excellent crop, but the spring wheat is very poor. Roots are a complete failure. LEYLAND (Lancashire).—Rain less than half the average, nearly all fell after the 20th. Hottest July on record, just exceeding July, 1911. SOUTHPORT (Lancashire).—This was the warmest July in the 51 years for which local records are available. An absolute drought of 16 days' duration terminated with the 12th. SHEEPSTOR (Devon).—The severest drought since 1911 was broken up on St. Swithin's day. The maximum temperatures 303a on the 11th and 19th, are the highest readings recorded at Sheepstor during the last 14 years. TEIGNMOUTH (Devon).—Highest maximum reached during the 40 years' record. TORQUAY (Devon).—The total sunshine is the highest for 10 years. REDRUTH (Cornwall).—Warmest month for at least 20 years. DUBLIN.—A very warm month. The maximum shade temperature 305a recorded on the 9th was the highest reading in Dublin since July, 1905.

Air Pressure.—The general trend of the isobars was in accordance with the normal, but pressure was everywhere high, the excess being about 2mb. in the south and 3mb. in the north. The only depression which passed directly over the Kingdom was one which appeared off the south of Ireland towards the end of the month and subsequently travelled away to southern Scandinavia (see Map Track κ). At the telegraphic reporting stations the departure of the monthly means from the normal varied from +0.9mb. at Blacksod Point to +3.7mb. at Spurn Head. The highest reading recorded during the month was 1032mb. at Valencia on the 20th, and the lowest 990mb. at St. Ann's Head on the 29th.

Temperature.—The mean temperature of the month was above the normal in all districts. The excess ranged from 0.9a in Scotland North to 3.2a in Ireland South and 3.3a in the Midland Counties.

Precipitation.—There was a great deficiency of rainfall over England and Wales generally, and extensive areas in the midland and southern counties received less than 20 per cent. of the average fall. The total amount was less than 25mm. to the south-east of a line from Plymouth to Hull, and less than 6mm. over a large area in the Thames Valley and Thames Estuary. To the north-west of this line the amounts increased considerably reaching 175mm. in the mountainous districts of England and Wales, and 200mm. at mountain stations in Perthshire and Inverness-shire. In Scotland the departure from the normal varied considerably in different parts of the country, a deficiency in the east being more than counterbalanced by an excess in the Highlands and some southern counties. In Ireland the amounts were in general above the average. The general rainfall for July, expressed as a percentage of the normal was:—England and Wales 40; Scotland 105; Ireland 130; British Isles 86.

Sunshine.—Insolation was above the normal in all districts. The excess was slight in Scotland North, being only 0.14h. per day, but was as much as 1.86 h. per day in England south-east and 1.88 h. per day in England East. The mean daily duration of bright sunshine ranged from 4.32 h. in Scotland North to 9.40 h. in the English Channel.

Optical Phenomena.—Solar and lunar halos were frequently observed in different parts of the Kingdom. An exceptional mirage was observed at Skegness on the 10th between 16.30 h. and 18 h.

Note.—The article by Capt. C. K. M. Douglas in the Meteorological Magazine for August has been utilized in the preparation of this summary.

