

MONTHLY WEATHER REPORT OF THE METEOROLOGICAL OFFICE.

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

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SEPTEMBER, 1922: COOL AND UNSETTLED.

Throughout the greater part of September the weather was cool and unsettled, the only periods of comparatively settled conditions being from the 3rd to the 10th and for a few days about the 23rd. Rainfall was not greatly in excess, but sunshine was deficient and in most places only amounted to about two-thirds of the normal.

On the 1st a low pressure area with several centres extended from Spitzbergen over the British Isles to the Bay of Biscay, while there were anticyclones over Scandinavia and the Azores. Unsettled weather resulted generally, except in Scandinavia, with heavy rain and thunder locally. A thunderstorm at Blackpool on the 1st gave 78mm. of rain and caused considerable damage. On the 3rd and 4th the Scandinavian anticyclone extended in a south-westerly direction, with generally quiet but dull weather. A large anticyclonic system was thus established, extending from the Azores to Scandinavia, which persisted for several days, giving a period of quiet weather with night fogs and fairly warm days. Temperature rose slightly above the normal and reached 70°F. at several stations. In Scotland 72°F. was recorded at Kilmarnock on the 4th and at Paisley on the 8th. On the latter date pressure at the Scandinavian end of the "ridge" had decreased, but at the Azores end it had increased, and the area affected had extended north to include Iceland. By the 9th winds had become northerly and there was a decided fall of temperature, 24°F. being recorded at West Linton on the 10th. The northward extension had begun to recede on the 9th before a depression to the north of Iceland, which caused gales and rain, and by the morning of the 11th the anticyclone was established in its more usual position over the Azores, with the whole of Scotland under the influence of the Icelandic depression.

On the 12th, a depression, off the Hebrides in the morning, moved south-eastwards over the British Isles, causing general rainfall and gales in the Channel (see Map, Track D). Acquiring a northerly component on the 13th this depression moved slowly across the North Sea on the 13th, 14th and 15th, with strong cold northerly winds and cloudy showery weather, with local thunder behind it. Snow fell on some of the higher peaks in Scotland on these days.

The appearance of another depression off the Hebrides on the morning of the 16th brought three distinct cyclonic systems into our area, the one which had crossed England being over the Baltic and a third within the Arctic Circle south of Spitzbergen. In all northern areas rainy weather resulted, but southern England and Central Europe enjoyed a fair day. The eastward movement of this complex system on the 17th and 18th brought a showery type of weather to the British Isles and gales in Scandinavia. A depression north of Scotland moving rapidly to the east gave much rain and wind on the 19th and improving colder weather on the 20th. A "high" following this gave a few days of generally pleasant settled weather.

On the morning of the 25th a very deep depression was situated off the west of Ireland (see Map, Track L). At 7h. G.M.T. the "Aquitania," near the centre of the depression, reported a pressure of 952mb.; at 13h. the same day she reported a wind of hurricane strength (Force 12; Beaufort scale). Fortunately this depression filled up as it drifted slowly eastwards, it finally disappeared over France on the 28th. Although gales were caused on parts of the coast, they were not of excessive violence. A somewhat irregular type of pressure distribution caused variable weather during the closing days of the month.

The following remarks by observers illustrate the generally cold and unsettled character of the month:—Hodsock Priory (Nottingham),

—A very sunless month. Ipswich (Suffolk).—The month has been cold and sunless, the thermometer only reaching 70°F. on one day. The total rainfall has only once been exceeded in my twenty years' record. Sunshine is over thirty hours less than the average. Southport (Lancashire).—A dull, calm, humid and rather cool month. Dublin.—September proved cloudy, cool and changeable.

Air Pressure.—The general trend of the isobars was in accordance with the normal, but the mean pressure was slightly deficient in the south. The gradient was less steep than usual. At the telegraphic reporting stations the highest reading recorded during the month was 1036mb. at Stornoway on the 9th, and the lowest 980mb. at Shotwick on the 13th.

Temperature.—Temperature was everywhere deficient. That maxima exceeding 70°F. were rare must be largely attributed to the deficiency of sunshine. To the cloudy skies must also be attributed the fact that no very low minima were reported, although the temperature was decidedly low in Scotland during the middle of the month with frequent ground frosts. The departure of the monthly means from the normal ranged from -0.9°F. in Ireland North to -2.1°F. in the English Channel.

Precipitation.—During the month approximately half the area of the British Isles received less than the normal rainfall. This area was mainly in the centre and south of England, the north coast of Ireland, and included practically the whole of Scotland. The deficiency was nowhere very large except in the Western Highlands of Scotland, where little more than half the normal was recorded. On the other hand in northern and eastern England the total was in some cases from 50 to 100 per cent. above the normal. An excess of more than 50 per cent. also occurred in Pembrokeshire, Suffolk, and the north-eastern coast of England. At Newcastle more than twice the normal fall was recorded. Amongst the heaviest falls in one day were 42mm. at Holyhead on the 12th and 83mm. at Mallarany on the 18th. The distribution of the total rainfall of the month over the British Isles was rather more uniform than is usual at this season. Falls of less than 50mm. occurred mainly in Southern England, south of a line from London to Yeovil; also in Scotland in the neighbourhood of Moray Firth and Loch Ness. In eastern Kent falls of more than 100mm. were widespread and formed a notable feature of the month's rainfall. Falls of more than 250mm. were confined to the English Lake District and Snowdonia. Snow fell on the Cairngorm mountains on the 15th. On the 18th it lay on Ben Nevis down to 2,000ft. above sea level. The general rainfall expressed as a percentage of the average was:—England and Wales 123, Scotland 87, Ireland 117, British Isles 110.

Sunshine.—Nearly everywhere there was a large deficiency of sunshine. The district value in no area exceeded 37 per cent. of the possible duration. Stornoway received nearly its normal allowance, but over Scotland generally the month was cloudy. The departure from the normal ranged from -0.50 hr. per day in Scotland north to -1.61 hrs. per day in England north-east.

Optical Phenomena.—Solar and lunar halos were frequently observed in various parts of the British Isles. Observations of aurora were fairly common in Scotland during the latter half of the month, especially on the 14th, 15th and 17th. An aurora was also seen at Seskin (Co. Waterford) on the 14th. At Oxford sun pillars were observed on the 18th and 27th, and parhelia on the 25th, 26th, 27th and 30th. A parhelion was also observed at Ross-on-Wye on the 18th. A lunar rainbow was seen at Lympne on the 2nd.

The article by Mr. R. A. Watson in the *Meteorological Magazine* for October has been utilised in the preparation of this summary.