

## MONTHLY WEATHER REPORT OF THE METEOROLOGICAL OFFICE.

(Supplement to the Weekly Weather Report.)

SUMMARY OF OBSERVATIONS COMPILED FROM RETURNS OF OFFICIAL STATIONS AND VOLUNTEER OBSERVERS IN THE UNITED KINGDOM, WITH A CHART OF RAINFALL CONTRIBUTED BY THE BRITISH RAINFALL ORGANISATION.

ISSUED BY THE AUTHORITY OF THE METEOROLOGICAL COMMITTEE.

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## DULL, DRY, AND RATHER COOL.

**Pressure, Winds and Weather.**—With the exception of a few very shallow depressions, some of them not more definite in their formation than irregularities in the course of the isobaric lines, the distribution of atmospheric pressure over the British Isles during the period now under notice was almost wholly of an anticyclonic type. The area of high pressure which embraced the whole of this country through the closing week of June, occupied practically the same position in the opening days of July, the barometer standing at about 30·5 in. in the north and north-west of Ireland on the 1st and 2nd, the highest level attained at the home stations during the month. Very slowly the system began to drift to the westward and south-westward out over the Atlantic, and at the same time areas of lower pressure, covering the region from Spitzbergen down to Southern and South-Eastern Europe, expanded westward towards the eastern districts of Britain. In a small secondary irregularity on the western border of a depression centred over Southern Sweden and the Baltic on the 6th, the barometer descended to 29·70 in. at Yarmouth, and to 29·71 in. at Clacton, and these proved to be the lowest readings registered in this country throughout the month. As gradually as it had withdrawn to the Atlantic, the anticyclone returned; on the 23rd its central space was extending north-eastward between Scotland and Iceland towards Northern Norway. During this period, however, there were again some minor irregularities of pressure, associated with slight variations in the weather. While one of these depressions was moving eastward from off the south of Iceland to Scandinavia, the barometer dropped to 29·72 in. at the extreme northern stations—Stornoway, Wick and Lerwick—on the 17th. This and the 6th were the only days on which readings as low as 29½ in. were reported. On the 21st, when the anticyclone occupied the Eastern Atlantic, from Iceland southward, a shallow depression formed off the north-west of Ireland and near the region of maximum pressure; on arriving over Wales, on the following morning, it dispersed. A disturbance of considerable activity affected the east coast of Britain early on the 23rd. It was travelling along an almost circular path, its first appearance being over the Crimea on the morning of the 20th. From thence it passed across Riga to Southern Sweden, Denmark and Holland, then down to Italy and eastward across South-Eastern Europe.

From the 1st to the 23rd a North-Westerly (Westerly to Northerly) wind prevailed over these islands, but on the 24th the area of maximum pressure took up a position between Scotland and the Arctic Circle, subsequently returning to the neighbourhood of our north-western coasts. Most of the depressions, generally very shallow ones, were now found to the southward, between the Azores and Southern Europe, and the closing week of the month was consequently marked by a North-Easterly (Northerly to Easterly) wind current, which prevailed over nearly the whole of these islands, the only interruption being a weak Westerly flow over the far north of Scotland towards the end of the month.

With the general prevalence of anticyclonic conditions, and the entire absence of depressions of any considerable depth, the mean pressure for the whole period was everywhere in excess of the normal, least in the south-east, 0·04 in. at Dover, and 0·05 in. at Jersey, greatest in the north-west and north—more than 0·2 in., as much as 0·23 in. at Castlebay, and 0·24 in. at Stornoway. The distribution of mean pressure differed widely from the average, the central space of an anticyclone being indicated on the Atlantic, between Ireland and the Azores, and of a cyclonic system over Russia, the barometric results ranging from 30·28 in. at the Azores, and above 30·15 in. on the west coast of Ireland to 30·04 in. at Dover, and 29·76 in. at Moscow. Over the United Kingdom, therefore, the gradient was slight and of a distinctly Northerly type. About 50 per cent. of the wind observations were represented by calms, and of the remainder only a few directions were from points in the southern half of the compass.

From what has been said above it will be gathered that, in the absence of any cyclonic systems possessed of much energy, the month as a whole was exceedingly quiet. Calms and light to moderate breezes formed the great bulk of the wind observations, which disclosed very few instances of the force of a strong breeze being exceeded, even in gusts. A temporary increase in the Northerly pressure gradient on the 7th resulted in a high wind (force 7) at Lerwick, Wick and Newquay. With the westward expansion, on the 22nd, of a depression of moderate intensity centred near Stockholm there was a marked steepening of the Northerly pressure gradient on the east coast of Britain, the wind increasing to force 7 in squalls at a few places, and at Aberdeen gusts of 42 and 47 miles per hour were recorded. By the morning of the 23rd the centre of the depression had moved to the Netherlands, and at Spurn Head the wind increased to a gale from 2 a.m. to 7 a.m., at one time rising to a strong gale (force 9). The Shoeburyness anemometer registered a gust of 44 miles per hour. At Dungeness the extreme force was that of a high wind. A fishing fleet had a rough experience off the south coast of

Cornwall on the morning of the 30th, when the centre of a shallow disturbance was over the mouth of the Channel. The East wind was strong at Scilly, a high wind at Plymouth, with a squall of 61 miles per hour, and the Pendennis anemometer registered a mean hourly velocity of 38 miles, with a gust at the rate of 60 miles an hour at 5.40 a.m.

There was a great deal of cloudy dullness during the month, especially over the eastern half of the kingdom, but this fact notwithstanding, rain was both light and uncommonly rare, and thunderstorms unusually infrequent and slight for the time of year. The reports for the 6th disclosed almost inappreciable irregularities of pressure over these islands, yet rain fell in nearly all places, mostly in small amounts, but here and there it was very heavy, an inch at Sheffield, 1·3 in. at Westbourne, Hidcote Campden, Leyland and Hutton, 1·4 in. at Blundellsands, and 1·7 in. at Hawarden. Thunderstorms occurred at Westbourne, Sheffield, and Belper, thunder at a few other isolated stations. Again, on the 10th, there were only some trifling variations in the barometric readings, but thunderstorms were experienced over the south-eastern quarter of England. Worthing and Heathfield received an inch of rain, Sevenoaks 1·1 in., and Preston (Sussex) 2 in. At Lewisham (south-east London) 0·72 in. fell in 27 minutes in a slight storm. A very shallow depression, barometer about 29·9 in., which moved eastward across Scotland on the 14th occasioned sporadic thunderstorms, the rainfall ranging up to an inch at Hildenborough and Newick, 1·1 in. at Preston and Rounton, 1·2 in. at Norwich and Midhurst, 1·5 in. at Geldeston, and 2 in. at Wallington. In the night of the 14th–15th a violent thunderstorm with very heavy rain, over 3 inches, was experienced at Mayfield, Sussex. In the small depression which brought rough weather to the mouth of the Channel in the night of the 29th–30th thunder and lightning were observed in the immediate neighbourhood, a violent thunderstorm breaking over Guernsey, with a torrential fall of rain and hail, one station receiving 1·8 in., the other 2·2 in.

No rain fell over the greater part of the kingdom after the 19th or 21st. Marchmont was rainless from 14th to 29th (16 days), Torquay 10th to 29th (20 days), Exmouth and Teignmouth 10th to 31st (22 days), the drought continuing into August.

The month generally was cool, afternoon temperatures as high as 75° being attained but seldom. On the 1st, however, a few localities in England, Scotland and Ireland touched 78° or 79°, and Killerton (Devon) 81°. Between the 27th and the 29th slightly higher readings were recorded in widely scattered localities, 82° at Marlborough, Welshpool and Ruthwell, and 83° at Killerton. Only about a score of night minima as high as 60° were reported. The lowest day temperatures were between the 6th and the 9th, 53° at Baltasound, and 52° at Gordon Castle. At various times there were night minima of 40° and under, the lowest, 32° at Ardrross Castle, on the 23rd, and 31° at Balmoral next morning. Some South-Eastern stations were more than 4° below the month's normal.

An aurora was seen at Eltham on the evening of the 10th.

There was a general increase in the temperature of the sea water round our coasts. Compared with June it was 4° or 5° warmer in several districts. In most localities the water was cooler than the air, by 3° or 4° in places.

Fog was noted frequently on the western coasts; mostly from the 1st to the 5th, and the 9th to the 15th on the eastern coasts; while along the south coast it was seldom mentioned.

**Rainfall.**—The map of rainfall distribution presents a very exceptional appearance, the dry weather having affected even the normally very wet mountain regions. Aggregates of 2 in. or more were very few in number, but there were some instances above 3 in. in South-Eastern England. Considerable areas in South-Western England, Southern Ireland and Eastern Scotland had less than ½ in., several stations less than ¼ in. Worthing had 149 per cent. of the normal, Shoeburyness 141, Guernsey (Brooklyn) 127, and Geldeston 123 per cent. Nearly all other stations had less than the average, down to 11 per cent. at Scilly, 10 at Falmouth and Roche's Point, and only 6 per cent. at Waterford. At a very large proportion of the stations rain was measured on less than 10 days, in numerous instances on five or six days, and at Portland Bill and Hovingham Hall on four days only.

**Bright Sunshine.**—Excepting at a few isolated stations in the far north and west there was a deficiency of insolation, which was most marked in South-Eastern England. Glasgow returned 135 per cent. of the usual record, Valencia 129, Fort Augustus 124, and Markree Castle 114, while at the other extreme Cambridge and Strelley returned 47, Rothamsted 43, and Little Massingham only 40 per cent.