

## 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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**Stormy, Mild, and Rainy, then Cold, with much Snow.**

Barometric pressure was highest far to the south and south-east until the 19th, while depressions travelled over the United Kingdom and its immediate neighbourhood from the Atlantic—some of them with gradients sufficiently steep to cause Southerly to Westerly gales on sections of the coast, while a few gave general gales. Subsequently the situation was reversed. Pressure became highest to the northward, while depressions—mostly shallow and undergoing frequent modifications in form, size, intensity, and direction of movement—appeared over the Bay of Biscay, France, the Netherlands, and England. The Easterly and North-Easterly winds prevalent under this régime blew a fresh to strong breeze at times, and were accompanied by much snow, but seldom attained the force of a gale.

The first general gale was brought by a depression which remained on the Atlantic but produced steep gradients for South and South-West winds over these Islands. Force 9, Beaufort Scale, was reported at several southern and south-eastern stations on the 3rd, and force 10 at Dungeness on the 4th. Among the highest velocities in gusts were 26 m/s at Paisley and Shoeburyness, 27 m/s at Warlingham, 32 m/s at Plymouth, and 33 m/s at Pendennis Castle. Gales were again felt on the most north-western coasts on the 5th, and in almost all parts of the Kingdom on the 6th, the highest gust velocities being 26 m/s at Edinburgh and 28 m/s at Quilty. Large quantities of rain accompanied the gale on the 3rd in the western districts; 70 mm. at Princetown, 57 mm. at Sheepstor, 54 mm. at Falmouth, 46 mm. at Ashburton and Redruth, 35 mm. at Torquay, and about the same quantity in the Forest of Dean district. On the 5th heavy rain occurred in the Snowdonia region; 88 mm. at Pen-y-Gwryd. Local thunderstorms were experienced in central England and at Cardross on the 4th, and in Ireland and Scotland on the 6th and 7th, and about this time heavy snow fell in several Scottish localities. Between the 7th and 13th the wind continued fresh or strong generally, veering temporarily to North-West or North, and blew a gale daily on some exposed parts of the western and north-western coasts, while a few western stations had further heavy rains, and other districts snow showers. In various districts there were local thunderstorms.

From the 14th to the 17th the conditions were more generally stormy, with rain, hail, sleet, or snow. The chief depressions were a small secondary that passed over southern England early on the 15th, marked G on the map, p. 15, and a more important system, track H, that travelled across Scotland early on the 16th. Gales were experienced on practically all coasts; many places reported force 9, and here and there force 10 was attained. On the 14th Southport had a gust velocity of 30 m/s. On the 15th or 16th there were gusts of 30 m/s at Kew, 33 m/s at Spurn Head and Edinburgh, 34 m/s at Eskdalemuir, South Shields and Shoeburyness, 35 m/s at Quilty, 36 m/s at Southport, and 39 m/s at Holyhead; and on the 17th, 31 m/s at Scilly and 34 m/s at Eskdalemuir. The precipitation during this time was not heavy except very locally in the west, but many parts of the Kingdom experienced passing thunderstorms.

After the change of type the wind increased to a gale from the North-Eastward on the 23rd over a considerable part of England, and continued on some exposed points of the coast on the 24th. With the lower temperature snow began in the north and east on the 21st, became more general during the 22nd and 23rd, and subsequently fell over the entire Kingdom, the quantity being very heavy over a large area. On the 24th the melted snow yielded about 25 mm. of water in the gauge at Claypole, Chatsworth, Nottingham, and Lincoln, 31 mm. at Rauceby, and 40 mm. at Belper; on the 28th there was 28 mm. at Kenninghall.

**Air Pressure.**—It will be seen by chart 1 p. 15, that the general trend of the isobars did not differ very materially from the average except in the south-west. The mean readings were, however, considerably lower, especially in the north and south-east, the defect in the former district being due to the cyclonic systems during the earlier part of the month, and in the latter district to those of the last week. The mean gradient was steeper than usual in the west. Over the greater part of England pressure was highest on the 1st, when an anticyclonic system extended over from the Baltic, the maximum point reached being 1034 mb. In the north and west of the Kingdom, however, the readings were highest on the 23rd. The deep depression of the 3rd and 4th brought the barometer down to its lowest level for the month in most districts, but in Scotland East and West and England North-East and East the minimum readings occurred on the 16th, when the centre of a deep depression passed directly over our northern districts. On the latter occasion the rather unusual value of 963 mb. was recorded. In the northern districts the range of pressure during the month was large; in Scotland North it amounted to 74 mb.

**Temperature.**—With the Southerly to Westerly type of conditions the temperature was generally high for the time of year, but a veering of

the wind to the North-West and North in the rear of depressions during the second week brought the thermometer down several degrees for a time. In some parts of England the mildest period was between the 13th and 19th, but over the Kingdom generally the temperature was highest during the first week. Maximum readings above 283° A. (50° F.) were recorded rather frequently in all districts—288°·5 A. (60° F.) at Wistanstow, on the 16th—and very few nights had a low minimum temperature. With the change of the wind to the East, however, the decrease of temperature was very pronounced. Frost at night formed the rule, and the diurnal range of temperature became very slight. On most days the thermometer rose above 275° A. (35°·6 F.), but on the 24th, 25th, and 26th a large portion of southern and south-eastern England had no higher maxima than 273° A. (32° F.). At High Wycombe the maximum on the 24th was 272° A. (30° F.). Severe night frosts occurred locally in Scotland and northern England on the 20th, a minimum of 256°·4 A. (2° F.) being recorded at Braemar, 259° A. (7° F.) at Balmoral, and 267° A. (22° F.) at Garforth. On the 25th 263°·5 A. (15° F.) was registered at Tunbridge Wells, 264° A. (16° F.) at Benson, 264°·7 A. (17° F.) at Ardingly, 265° A. (18° F.) at Grayshott, and 265°·8 A. (19° F.) at Sevenoaks and Chelmsford. At Scilly, Malin Head, and Holyhead the month was without frost.

For the month as a whole the temperature was below the average except in England East. The departure was, however, slight, the most marked being 0°·8 A. (1°·4 F.) in Ireland. The difference between the mean of the coldest district—Scotland East—and the warmest—the English Channel—was 4° A. (7°·4 F.).

**Sea Surface Temperature and Coastal Fog.**—The mean temperature of the water was higher than that of the air on all parts of the coast. Fog visited parts of the western coast from time to time, but was never at all general. The southern and eastern coasts were almost quite free. At Belper, the mean temperature of the River Derwent was 279°·3 A. (43°·4 F.), that of the air 275°·8 A. (37°·0 F.).

**Rainfall.**—The total amount, much of which fell in the form of snow, sleet, or hail, was more than the average in all parts of the Kingdom, the excess being very large in England. Over a very considerable area in England the fall was at least twice the average, increasing at some places in the south-west to about three times. At Norwich the percentage was 261, at Rousdon 296, and at Woolacombe 312. Precipitation was much heavier during the evening and night than in the day time. At 17 stations, measuring twice in the 24 hours, the hourly rate of fall between 9 a.m. and 6 p.m. was 3·2 mm., and between 6 p.m. and 9 a.m. 5·3 mm. At 10 stations, measuring for the 12 hours ending 9 p.m. and 9 a.m., the hourly rate of fall was 3·6 mm. and 5·5 mm. respectively. The level of the underground water at Kew varied from 297 cm. above M.S.L. on the 4th to 351 cm. on the 29th.

**Snowstorms.**—The snow showers experienced in many districts during the earlier part of the month were mostly slight, but in various parts of Scotland and locally in north-eastern England the fall was heavy. At West Linton on the 8th the snow lay to a depth of 30 to 36 cm. At Ardross on the 14th there was a depth of 25 cm., and on the 16th 28 cm. At Edgbaston, a fall of snow on the 14th covered the ground to a depth of 15 cm., and yielded 14 mm. of water. Between the 22nd and 28th snow gave as much as 53 mm. of water in the gauge, and during most of the time its depth was from 26 to 28 cm. From the 24th onward, the falls extended over a much wider area and were also heavier, particularly over the eastern half of Britain. At several stations on the 24th, 25th, or 26th, the depth of snow was 30 cm., at many others between 25 and 30 cm. At Tenbury the snow measured, between the 23rd and 28th, lay to a depth of 31 cm., and yielded 28 mm. of water when melted; in some of the drifts the depth was 2 metres. At Cullompton on the 24th the ground was covered with snow to a depth of 19 cm., and at Bournemouth on the 26th there was a layer of 15 cm. In the Dartmoor region some of the drifts were 3½ metres deep at Princetown, and 2½ at Sheepstor.

**Bright Sunshine** exceeded the average in Ireland, the west and north of Scotland, and the south-east of England. At Jersey the percentage of the average was only 69, at Woolacombe 73, Edinburgh 70, and at Rhyl 76. At Douglas it was 119, Deerness 127, Armagh 135, and at Westminster 154.

**Aurora, etc.**—Aurora was observed at Lerwick on the 8th and at Deerness on the 4th and 23rd; a double solar halo at Benson and Stonyhurst on the 10th; and mock suns at Skegness on the 13th.