

# MONTHLY WEATHER REPORT OF THE METEOROLOGICAL OFFICE.

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

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## DECEMBER, 1929. Mild, abnormally wet and stormy, but with frequent sunny periods.

The outstanding features of the weather of the last month of a remarkable year were the excessive rainfall and the persistence of violent gales. Apart from a spell of cold weather from about the 17th to the 22nd during the last few days of which snow fell in many districts, the month was mild and in practically all districts monthly mean temperatures were above the normal. A noteworthy feature was that in spite of the very unsettled conditions and heavy rainfall, sunshine aggregates exceeded the normal in most districts.

During the first fourteen days of the month, conditions were very unsettled, depressions passing frequently from the Atlantic along our north-western seaboard while intense secondaries passed north-eastwards across the country. Rain fell daily and was both persistent and heavy during the period 1st to 11th, falls of 25 mm. and over being recorded locally on several days. More noteworthy, however, were the strong winds and gales that affected most districts during the period 5th to the 12th. The gales were most severely felt in the south-western districts of the British Isles where unusually high wind velocities were recorded, Scilly reporting a gust of 111 mi/hr. on the 6th, the highest wind velocity so far recorded there. Between the depressions there were intervals of bright weather, the sunniest days of the first half of the month being the 3rd, 4th and 10th, when about 5 hrs. bright sunshine were recorded at many places. Thunder was heard occasionally, the southern districts experiencing heavy thunderstorms during the evening of the 6th and northern England on the 8th and 9th. Temperature was high throughout this period, maxima being usually about or above 50° over the kingdom generally.

After the 14th there was a change to fair anticyclonic conditions with local fog; good sunshine records were obtained during the period 16th to 19th, more than 7 hours being reported from places in southern England on the 19th. Temperature fell to a more seasonable level, screen minima below freezing point and severe ground frost occurring at night in many places.

On the 19th pressure fell generally over the whole country and unsettled weather spread in from the west. Snow or sleet fell in Scotland and northern England from the 20th to 23rd, lying locally to a depth of 1 to 2 inches, and maximum temperatures on the 20th-22nd were round 35° F. generally; 25° F. was recorded at Renfrew, 32° F. at Harrogate and 33° F. at Durham and Ross-on-Wye on the 22nd. Gales occurred at many places during these days and fog locally on the 22nd and 23rd. On the 23rd there was a renewal of mild rainy weather with gales, severe locally, on the 25th, 28th and 29th. The heaviest rain of the month was experienced on the 28th, when 84 mm. fell at Rosthwaite (Cumberland), 79 mm. at Oughtershaw (Yorkshire) and 78 mm. at Dungeon Ghyll (Westmorland). The year closed, however, with a mainly fine quiet day.

**Pressure and Winds.**—In consequence of the frequent passage of depressions and associated secondaries across the British Isles during the month, monthly mean pressures were below the normal in all districts, the deficiency at 7h. G.M.T. varying from 15 mb. at Stornoway to 7 mb. at Scilly. The prevailing winds were from a south-westerly or westerly point and were frequently strong, unusually stormy conditions prevailing during the period 5th to the 12th and on the 20th, 21st, 24th, 25th, 28th and 29th. The gales were most severe in coastal districts in the south and west of England and Wales and in the south of Ireland. The most violent gales were associated with the deep and vigorous disturbances which followed the tracks D and G (Map 1). At Blacksod Pt. the mean sea level pressure at 7 hours on the 5th was as low as 950.2 mb. while at Cahirciveen a mean sea level pressure of 949.5 was recorded at 19h. 30m. on the 6th. On the morning of the 5th the wind attained a mean hourly velocity of 70 mi/hr. at Pendennis and in gusts reached 94 mi/hr. at Pendennis, 84 mi/hr. at Plymouth, 81 mi/hr. at Scilly and 68 mi/hr. at Croydon. At Quilty in the evening of the same day, 84 mi/hr. was recorded in a gust. Even greater velocities were recorded during the night of the 6th to 7th when the wind momentarily touched 111 mi/hr. at Scilly, the highest velocity on record there, 103 mi/hr. at Falmouth and 80 mi/hr. at the inland station Worthy Down (near Winchester, Hants). In another exceptionally violent gale on the morning of the 7th, Scilly and Falmouth reported a gust of 102 mi/hr. and Liverpool 84 mi/hr. Amongst the greatest gusts reported on the 8th were 98 mi/hr. at Pendennis, 94 mi/hr. at Scilly, 81 mi/hr. at Liverpool (Bidston) and 80 mi/hr. at Calshot and Holyhead. Gusts exceeding 80 mi/hr. were again reported from the south-west during the night of Christmas Eve and on the morning of the 29th (88 mi/hr. at Cahirciveen and 81 mi/hr. at Weaver Point on the 24th and 83 mi/hr. at Pendennis, 82 mi/hr. at Scilly and 81 mi/hr. at Calshot on the 29th). The eastern districts of Great Britain escaped the full fury of the gales and in only a few places did the wind exceed 70 mi/hr. in gusts.

**Temperature.**—Apart from a spell of wintry weather from about the 17th to the 22nd the month was very mild and in all districts monthly mean temperatures exceeded the normal. Unusually high temperatures for the time of year occurred at the beginning and about the middle of the month; amongst the highest readings recorded were 60° F. at Llandudno on the 2nd, 59° F.

at Sealand (near Chester) and Llandudno on the 13th and 59° F. at Rhyl and 58° F. at Richmond (Kew Observatory), Maldon (Essex) and Lowestoft on the 14th. The maximum temperature of 58° F. at Richmond on the 14th has only once been equalled since at least 1871, viz., in December, 1918. The coldest days and nights extended from about the 16th to the 22nd. Day maximum temperatures which on the 14th exceeded 55° F. in many parts of England were considerably lower on the 16th and in some places failed to exceed 40° F.; thus Croydon reported 38° F. as the highest temperature on the 16th as against 57° F. on the 14th. During this period the temperature in the screen fell below freezing point during the night and severe ground frosts were widely reported; amongst the lowest grass minima reported were 13° F. at Burnley, 14° F. at Birr Castle and 15° F. at Winchester on the 16th, 11° F. at Rhayader and Winchester on the 17th, 8° F. at Balmoral and 10° F. at Renfrew on the 22nd.

The extreme temperatures for the month were :—(England and Wales) 60° F. at Llandudno on the 2nd, 20° F. at Usk on the 17th and at Castleton (Yorks) on the 18th. (Scotland) 56° F. at Onich and Edinburgh on the 2nd, and at Edinburgh, Smeaton and Dumfries on the 13th, 14° F. at Renfrew on the 22nd. (Ireland) 60° F. at Hazelhatch (Co. Dublin) on the 2nd, 22° F. at Markree (Sligo) and Dublin (Glasnevin and Phoenix Park) on the 17th.

**Precipitation.**—December like November was excessively wet, monthly totals almost everywhere greatly exceeding the normal; over large areas, there was extensive flooding. Over the British Isles as a whole the month was the wettest December since 1876, although December, 1914, was almost as wet. The general precipitation of the British Isles expressed as a percentage of the normal for the period 1881-1915 was 183; the values for the constituent countries were: England and Wales 190, Scotland 168, Ireland 184.

In England and Wales few districts recorded less than one and a half times the normal. Many places had more than twice the normal and a few more than two and a half times the normal, e.g., the month was the wettest December at Ross-on-Wye since 1876, at Meltham since at least 1881 and at Teignmouth since 1915. At Meltham the total for December, 1929, has only twice been exceeded in any month, viz., in January, 1928 (317 mm.) and September, 1918 (351 mm.). Heavy daily falls were very frequent; amongst the most noteworthy were :—84 mm. at Rosthwaite (Cumberland), 79 mm. at Oughtershaw (Yorkshire), 78 mm. at Dungeon Ghyll (Westmorland), 54 mm. at Keswick and 41 mm. at Giddeswick on the 28th, 54 mm. at Dean Prior on the 4th, 52 mm. at Rhayader on the 6th and 41 mm. at Giggleswick on the 28th.

In Scotland a few places around the Moray Firth reported totals less than the normal, but elsewhere there was a decided excess and in some parts the rainfall was more than twice the normal. There were many large daily falls, these being centred mostly around the 1st, 5th, 12th, 20th and 28th. Heavy falls of snow occurred locally on the 20th; at Otterden (Maybole) 5 in. lay on the 20th and at Glenbranter 4 in. on the 21st.

In Ireland monthly totals exceeded one and a half times the normal in most places and in the east and south-east more than twice the normal; at Cahirciveen (Co. Kerry) the month was the wettest December for more than half a century.

**Sunshine.**—A noteworthy feature of the weather of the month was the excess of bright sunshine recorded in most districts. Representative sunshine totals for Districts, expressed as a percentage of the normal for the period 1881-1915, ranged from 149 per cent. in the Midland Counties to 99 per cent. in Scotland N. The sunniest period occurred during a period of anticyclonic weather from the 16th to the 19th, when more than 6 hours bright sunshine were recorded in many districts in the south and east. Amongst the largest daily amounts recorded were 7.3 hr. at Weymouth on the 16th and 7.3 hr. at Plymouth and 7.1 hr. at Calshot on the 19th. At Copdock (Suffolk) 22.2 hrs. sunshine were recorded during the period 16th to the 19th, which is more than on any four consecutive December days since records commenced there in 1901. At Rothamsted the month was the sunniest December since 1852. At Southport the month was the sunniest December since records were commenced there 39 years ago. Amongst other days on which good records were obtained in various districts were the 3rd, 4th, 10th, 24th, 26th, 29th and 31st.

**Fog.**—The first half of the month was almost entirely free from fog; it occurred in many districts on the 14th and 15th, extensively during the period of anticyclonic weather from the 16th to the 19th and on the 22nd and 23rd.

**Miscellaneous Phenomena.**—Solar halos, accompanied on some occasions by parhelia, were observed at Oxford on several days, especially during the first half of the month. Aurora was observed in the northern districts of Scotland on the 3rd, 4th, 5th, 6th, 9th, 16th, 17th, 20th, 22nd, 24th and 29th. Observers in the south of England reported having seen a brilliant meteor at about 18h. G.M.T. on the 2nd. The observer at Ross-on-Wye also reported having seen a meteor at 7h. 11m. G.M.T. on the 3rd.