

MONTHLY WEATHER REPORT OF THE METEOROLOGICAL OFFICE.

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

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NOVEMBER, 1931. Abnormal prevalence of southerly winds. Very mild and wet.

A remarkable feature of November was the abnormal prevalence of southerly winds. Except in the north of Scotland and in the east of England where there was a deficiency, precipitation greatly exceeded the normal everywhere. The month was unusually mild and in most parts rather dull.

On the 1st and 2nd the south and east of England lay within the influence of an anticyclone over the Continent; brilliant weather was enjoyed over a wide area, sunshine records exceeding 8 hours in many places. Meanwhile unsettled conditions were spreading from the west and by the 3rd a complex depression lay to the north-west of Ireland and Scotland causing widespread heavy rain and strong winds and gales over the southern half of the country. In the west the falls from the 2nd to 4th were abnormally heavy (see under Precipitation). Unsettled mild and wet weather continued during the next few days. On the 9th a deep depression westwards of Ireland advanced slowly north-eastwards and by the morning of the 12th was centred off the north-east of Scotland. Heavy rain fell widely on the 9th, 10th and 11th. Southerly gales in the Channel on the 10th to 11th coincided with high tides and along parts of the south coast of England much damage was done by flooding. After the 11th followed a short period of sunny weather, from 7 to 8 hours' sunshine being recorded in the south-east of England on the 12th and 13th. Subsequently the depressions followed a course far out in the Atlantic, but on the 14th a small secondary depression caused heavy rain in Wales and the Isle of Man; 61 mm. of rain fell at Douglas, Isle of Man, in 22 hours on the 13th and 14th. On the 15th an anticyclone extended from Norway across the British Isles, and a short spell of fair weather occurred. On the 17th, however, fog occurred in many parts of eastern England, especially in the Thames Estuary. The 21st was generally sunny, but the fine spell ended on the 22nd, when a deep secondary to a complex depression in the North Atlantic travelled north-eastward across the country, causing strong winds and heavy rains in Ireland and the western parts of Great Britain. Among the heavy falls on the 23rd were 71 mm. at Ballinacurra, Co. Cork, 44 mm. at Springburn Park, Glasgow, and 41 mm. at Aberdeen. There was serious flooding in several parts of Scotland, in western Ireland and again in the Isle of Man. On the 29th pressure rose rapidly as an anticyclone spread in from the south-west, and the accompanying light winds favoured the development of widespread fog over most of England and southern Scotland.

Pressure and Winds.—The pressure distribution was highly abnormal for November. Pressure was much above the normal over northern and central Russia and well below normal over Iceland. The intense and persistent high pressure over the Continent prevented depressions from following their normal eastward course, most of them, as the Track chart (chart 2) indicates, passing to the north-east between Scotland and Iceland. Monthly mean pressures were below the normal in all parts of the British Isles, the deficiency ranging from 3.4 mb. at Yarmouth to 12.6 mb. at Malin Head. South-easterly to southerly winds were remarkably prevalent; at Southport the duration of these winds was nearly twice the normal.

Gales occurred in southern districts on the 3rd–4th, a wind velocity of 82 mi./hr. being recorded in a gust at Pendennis Castle on the 4th. The passage of a deep depression from westwards of Ireland on the 9th to the north-east of Scotland on the 12th was accompanied by southerly gales in the English Channel on the 9th, 10th and 11th. During the passage of this depression the unusually low mean sea-level pressure of 961.0 mb. was recorded at Blacksod Point at 13h. on the 10th. A great deal of damage by flooding was done along the south coast of England by the conjunction of rough seas and an exceptionally high tide; houses on the shore were battered by the waves. A great lagoon covered the low-lying ground from Winchelsea beach to Rye Harbour, and the road was four feet under water. At Shoreham-by-Sea considerable damage was done to bungalows. Part of the Isle of Wight west of the river Yar and Freshwater Bay was completely cut off from the rest of the island at high tide. In parts of Littlehampton the streets were flooded to a depth of 2 ft. Gales occurred in many western districts on the 18th, the wind in a gust attaining a velocity of 83 mi./hr. at the Butt of Lewis. In many parts of the country, strong winds reaching gale force locally occurred also during the period 22nd to 27th.

Temperature.—Associated with the remarkable predominance of southerly winds was the abnormal mildness of the month; in all districts the mean temperature was above the normal, the excess ranging from 1° F. to 5° F. Earth temperatures at 1 ft. were from 2° F. to 3° F. above the normal in England. The warmest days were the 2nd to 4th, the temperature on the 3rd, a day with widespread rain and strong southerly winds or gales, reaching or slightly exceeding 60° F. In many parts of England and Wales the night of the 3rd to 4th was remarkably mild; at Ross-on-Wye and Kew Observatory the minimum temperature, 57° F. was the highest in November in records extending back more than 70 years and 60 years respectively. The month was the warmest November at Ross-on-Wye since 1913 and at Malvern since 1917. At the majority of stations the air temperature remained above the freezing point and where screen frost occurred it was generally slight. At Ross-on-Wye the absence of screen frost in November has only once been

previously experienced, viz. in 1881. In most places the number of ground frosts was less than the normal.

The extreme temperatures for the month were:—(England and Wales) 64° F. at Llandudno on the 3rd, 23° F. at Rickmansworth on the 2nd (Scotland), 61° F. at Banff and Gordon Castle on the 3rd, 22° F. at Dalwhinnie on the 16th (Ireland), 64° F. at Killarney on the 2nd, 25° F. at Kilkenny on the 16th.

Precipitation.—An outstanding feature of November was the pronounced excess of precipitation in most districts and the frequent heavy falls especially in western districts, on the 2nd, 3rd, about the 10th, and on the 14th, 18th and 23rd.

The general precipitation of the British Isles, expressed as a percentage of the normal for the period 1881–1915, was 153; the values for the constituent countries were:—England and Wales, 143; Scotland, 143; Ireland, 192. The month was the wettest November over Ireland as a whole since comparable records became available in 1881.

In Scotland rainfall aggregates north of a line extending from Skye to Aberdeenshire were below the average, whilst south of this line they were greatly in excess; the deficiency in the north was well-marked in Caithness and Sutherland, while in the south the excess was most pronounced in south-western counties and around the Tay estuary. In the north it was locally the driest November on record while in the south the wettest. At Rothesay it was the wettest November since at least 1800, at Colmonell since 1876 and at Arbroath since 1888. Rainfall totals in northern districts were in places under 50 millimetres, whilst in the south 250 millimetres were exceeded in many localities. Another important feature of the rainfall was the frequency of heavy falls and the absence of dry days, both contributing in many areas to rather widespread flooding. The largest daily falls were 66 mm. at Ardour and at Kinlochquoich on 2nd, and 64 mm. at Eskdalemuir, on the 3rd. Many places only experienced one or two dry days and these were mostly the 15th or 16th.

In England and Wales a deficiency occurred locally in the north-east, more generally in the east and also in the London area; elsewhere there was a decided excess, especially in the west, more than twice the normal rainfall being recorded at several stations including Southport, Manchester, Haverfordwest, Ross-on-Wye, Teignmouth and Redruth. At Southport (Hesketh Park) with the exception of November, 1890, the month was the wettest November in 61 years' observations. Usually heavy rain fell in the west of England on both the 2nd and 3rd, amongst the largest amounts being:—

	Total, Nov. 2nd–3rd.
Borrowdale (Lake District)	193 mm.
Keswick { " " }	180 mm.
Patterdale { " " }	220 mm.
Llynfarr Fach (Black Mountains, Carmarthen)	220 mm.
Trecastle (Brecon)	244 mm.
Ashburton (Devon)	130 mm.

The rain began a little before midnight on the 2nd, and the heavy totals were therefore concentrated within 36 hours. In Patterdale three inches fell in three hours. Serious flooding developed; Derwentwater and Bassenthwaite, which are about five miles apart, were joined in one great lake. In Ireland there was an excess of precipitation everywhere, slight in the extreme north-west but very pronounced in the south and east where totals exceeded twice the normal. At Cork and Cahirciveen the month was the wettest November in records extending back to 1884 and 1870 respectively.

Thunderstorms occurred locally on the 11th and 21st. Snow or sleet was reported very locally in Scotland on the 21st and 24th.

Sunshine.—Sunshine aggregates exceeded the normal locally in the north of Scotland, the Midlands and in the south-west of England, the Channel Isles and in most parts of Ireland but were generally below the normal elsewhere. In the south-east where aggregates were generally below the normal, London had about or over the normal sunshine allowance for November. Representative totals of sunshine for Districts, expressed as a percentage of the normal, ranged from 73 per cent. in Scotland West to 120 per cent. in the Channel Isles. Sunshine records were particularly good on the 1st, 2nd and 12th in the south-east (9.0 hrs. at Calshot and Tunbridge Wells on the 1st, 8.8 hrs. at Tunbridge Wells on the 2nd and 8.2 hrs. at Croydon on the 12th), widely on the 13th, in the west on the 15th and widely on the 21st and 24th (8.0 hrs. at Calshot on the 24th).

Fog.—Fog occurred fairly frequently in the north-east and Midlands of England and in the estuary of the Clyde; it occurred over a wide area in England on the 22nd and was widespread also during the last two days. At Renfrew continuous dense fog occurred from late morning till evening on the 16th.

Miscellaneous Phenomena.—Aurora was observed in Scotland on the nights of the 3rd, 5th, 13th, 15th, 16th, 25th and 30th, that of the 5th being seen as far south as Leuchars and Tiree.