SUMMARY OF OBSERVATIONS.

FEBRUARY, 1906.

General Summary.—Numerous Atlantic disturbances occasioned very unstable weather during this month. Barometric fluctuations were frequent and rapid, strong winds and gales, mainly from between South-West and North-West were common and often attended by rain, and at times hail, sleet or snow, but there were no snow-storms of any great magnitude. There were several "V"-shaped disturbances, all presenting different characteristic features. That of the 8th affected a great part of England, and was remarkable for a striking barometric oscillation—in London the mercury rose 0·08 in. in four minutes—a sudden gloomy darkness, a violent squall of rain, hail or snow, and, for the time of year, exceptionally sharp thunderstorms. Much structural damage was caused by wind and lightning, and two fire-balls were seen in the Eastern Counties. The disturbance of the 13th passed across the country very quietly, while that of the 17th produced an almost continuous North-East rain over the southern counties. At Oxshott, in the last mentioned case, a kite ascended to 3,350 feet, where the North-East wind failed. Heavy rain continued throughout the ascent, and temperature fell only 6°, compared with 12° and 13°·5 for the same elevation at Oxshott and Petersfield respectively on the previous day, when at the former station there was a decided inversion of temperature above 5,000 feet, and at the latter at 3,400 feet. Thunder and lightning occurred at Newquay on the 14th, lightning at Fort William on the 14th and 15th, and thunder at Swarraton on the 16th and 26th. Notwithstanding the generally unsettled type there were during the month many very fine sunny periods. There were few mild days, but the nights were not so cold as usual, frosts being rare, as a rule of no great severity, and limited to the early morning hours. For the month as a whole pressure was below the normal; the winds were mainly in the South-West and North-West quarters; temperature was nearly everywhere in defect; there was an excess of precipitation over the greater part of the country; and the duration of bright sunshine was well above the normal.

Pressure.—*Mean at* 8 *a.m.* ranged from 29·88 ins. at Jersey, and above 29·80 ins. at the south-western stations to below 29·50 ins. in the north-east of Scotland and to 29·40 ins. at Sumburgh Head. The values were everywhere below the average*, by 0·06 in. at Valencia, the deficiency increasing at all other stations, to as much as 0·30 in. at Wick, and 0·35 in. at Sumburgh Head. The general distribution differed from the normal, the gradient being steeper, and the isobars running from west-north-west to east-south-east rather than in the usual west-south-westerly to east-north-easterly direction. *Highest* readings were recorded between the 4th and the 7th, 30·39 ins. being reached at Roche's Point late on the 4th, and 30·53 ins. at Valencia at midday on the 7th. *Lowest* values occurred in all districts on the 10th and 11th, Malin Head touching 28·40 ins. and some other stations reporting below 28·5 ins., Jersey and Scilly being the only stations which remained above 29 ins. On the 15th Stornoway recorded 28·70 ins., and on the 25th 28·54 ins., and on the 28th Sumburgh Head touched 28·85 ins. *Range* amounted to nearly 2 ins. at Donaghadee and Malin Head, and exceeded 1¾ in. generally over the northern and north-western districts, but was only 1·3 in. at Jersey and Dungeness.

Depressions.—Many areas of low atmospheric pressure visited the British Isles or their neighbourhood, the majority of them having their centres outside our coasts to north-west and north-east, but one, the deepest of the month, crossed the south of Scotland on the 10th, and four others visited the southern parts of England.

Anticyclones.—Nearly the whole of the high pressure systems were found outside these islands, occupying regions between Portugal and north-eastern Russia. A small anticyclone, with barometer readings below 30·4 ins., moved slowly across Ireland and southern England on the 4th and 5th, but the highest barometer readings occurred on the 7th, the centre of the system being out at sea, passing down to the Bay of Biscay and Spain.

Wind.—In most localities the direction of the wind was mainly from points in the western half of the compass, North-Westerly to Westerly in the western districts, Westerly to South-Westerly in the east. The days on which gales were experienced numbered 11 at Deerness, 8 at Durham, 7 at Malin Head, and 6 at Holyhead and Stornoway.

Temperature.—*Mean at sea level* ranged from nearly 45° at Scilly to below 35° at Lairg and Fort Augustus. The general distribution was in fair agreement with the normal, but almost without an exception the actual values were below the average*, by from 3° to 4° at Kilkenny Castle, Malin Head, Llangammarch Wells and Fort Augustus. *Highest* readings occurred on very irregular dates, and were generally lower than usual, 53° being the maximum, reached at Rhyl (11th), Killarney (20th), Maidenhead (25th), and Ballinacurra (28th). *Lowest* values were also on various dates, very few below 20°, but on the 13th Fort Augustus touched 12° and Balmoral 11°. *Range* was, in the general absence of high maxima and low minima, unusually small, only a few stations exceeding 30°, Fort Augustus and Lairg showing 34°, and Balmoral 38°. There were numerous cases of 20° or less, only 16° at Scilly and Spurn Head. *Vapour Pressure* ranged from 0·24 in. at Scilly (8 a.m. and 6 p.m.) and Roche's Point (6 p.m.) to 0·16 in. at Strathpeffer (9 a.m.). *Relative Humidity* ranged from 93 per cent. at Brixton and Spurn Head (8 a.m.) to 78 per cent. at Westminster, Portland Bill, Scilly, Jersey and Valencia (6 p.m.). *Mean Earth Temperature* at 1 ft. depth ranged from 36° at Lincoln and Nottingham to 42° at Markree Castle; and at 4 ft. depth from 39° at Nottingham to 44° at Bath.

Rainfall.—There was a deficiency of precipitation at various stations in the north-eastern and midland counties of England and in the south of Ireland, Roche's Point being 1·4 in. below the average*, but generally there was an excess, of as much as 3·2 ins. at Lairg and 4 ins. at Stornoway. The largest aggregates for the month were 8·9 ins. at Laudale, and 8 ins. at Stornoway; the smallest, 0·9 in. at Newcastle-on-Tyne, and 0·8 in. at Saltburn-by-the-Sea and Leith. Falls of an inch or more in a day were very few, the heaviest being 1·5 in. at Falmouth on the 22nd, and at Stornoway on the 25th. The days on which any precipitation was measured ranged from 27 at various stations in Ireland and Scotland to 12 at Durham, and 11 at Clifton and Southend.

Bright Sunshine.—With the exception of a nominal deficiency at Margate the duration of bright sunshine was everywhere above the average*; the excess amounting to 50 hours at Edinburgh, 48 at Glasgow, 46 at Torquay, 45 at Aberdeen, above 40 hours at some other stations. Many places totalled more than 100 hours, Cockle Park and Crathes 118, and Torquay 121 hours. The percentage of possible duration ranged from 45 at Aberdeen and Crathes to 20 at Manchester and Westminster, and 14 at Bunhill Row (London).

Observations in the Upper Air.—Kite observations were obtained on the 1st, 2nd (2), 5th, 9th, 10th, 14th, 15th, 16th (2), 17th, 19th, 20th, 26th (2), 27th and 28th.

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* The averages employed are—*Pressure*, *Temperature* and *Rainfall* for the 35 years 1871–1905; and *Bright Sunshine* for the 25 years 1881–1905. *See* Appendix III. "Weekly Weather Report," 1906.

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