MONTHLY WEATHER REPORT.

JANUARY 1884.

SECTION I.

General Summary for the Month.

The principal features in the weather of this month have been an excess in the mean pressure at our Southern stations, and a deficit in the North; the prevalence of moderate gradients during the earlier portion of the period, and of unusually steep ones later on; and the rapidity with which the changes in pressure took place (readings exceeding 30·6 inches being recorded over England and Ireland on one occasion, while within 10 days of that time we had depressions in the centre of which the minimum readings ranged from a little below 27·4 inches to about 28·4 inches). Then, too, there was the extraordinary warmth of the weather, and the prevalence of a large amount of cloud, but accompanied by comparatively little rain (until after the 19th), and lastly there was the small proportion of Northerly or Easterly wind, contrasted with the extreme violence of the winds from South-west to North-west which prevailed between the 20th and 28th. These give the weather of the month a very decided character. It was generally of a Westerly type, the tracks of the depressions shown in Plate II. lying almost entirely to the North of Scotland, and thereby producing conditions favourable to Westerly winds.

January 1–5.—At the commencement of the month a large anticyclone lay over Germany, where the weather was cold and calm. From this area, as will be seen on the charts in the Weekly Weather Report, No. 1, an extensive arm or ridge of high pressure stretched in a west-north-westerly direction over Denmark, the North Sea, and all the northern parts of the United Kingdom, having slight gradients for South-easterly and Easterly winds on its Southern side, and steeper ones for Westerly winds in the North. Temperature near its centre was rather low, the 8 a.m. readings being 26° at Cuxhaven and 28° at Fano and the Helder; fogs prevailed within its limits, and over the whole of our islands the period was particularly dull and sunless, the maximum duration of bright sunshine during the week in any district being four hours! The barometer then fell gradually, the ridge became less clearly defined, and moved eastward, the winds veered towards South and freshened, temperature and humidity rose, and the system finally disappeared from our area on the 5th. On the 2nd a cyclonic system, apparently rather large, advanced towards the Atlantic coasts of Europe, from the south-westward, but on its eastern edge reaching the Bay of Biscay the centre appears to have moved northward, and to have passed in that direction outside our extreme western coasts on the 3rd. It was during this movement that the wind veered from South-east to South over our islands, and mild showery weather set in, but the centre of the depression was too far from our coasts for its track to be drawn on Map 2, Plate II. A shallow subsidiary system was formed over England as the centre passed by, and this made the winds South-westerly for a time over the southern counties. On the 4th another small depression appeared over the Baltic near Gothland. It was apparently subsidiary to a larger system whose centre lay over Northern Russia, and soon passed away to the south-eastward, without affecting the winds over the United Kingdom.

January 5–11.—During this period, of nearly a week, gradients for Westerly winds prevailed over the United Kingdom, the North Sea, and France. In the south they were slight,

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but in the north moderate. The winds experienced were chiefly from between West and South, and (except on the 6th and 11th) were of no great strength. Temperature was high for the season, the maxima reaching 55° in many places on the 9th, and the rainfall slight; but, except in the east of Scotland and the Channel Islands, the deficiency of bright sunshine was still notable. It was during the earlier part of this period that the cyclonic system No. 1 (page 4) passed over our area, and later on anticyclone No. 1 (page 6) was formed over France. In addition to these, an apparently well-formed depression passed in a north-easterly and northerly direction outside our extreme north-western coasts early on the 8th, and caused the wind to freshen considerably from South-west and South over the northern and north-western parts of the kingdom; but its distance from our islands was too great for its influence to be felt much in the east and south, or for its movements to be shown on Map 2.

January 12–14.—During this interval the distribution of pressure, as shown by the maps in the Weekly Weather Report, No. 2, was mainly favourable for the prevalence of North-westerly winds. In the extreme West of our islands and over the Bay of Biscay the conditions were anticyclonic, and the winds moderate; but over the North Sea they were cyclonic, and the winds proportionately stronger. Temperature at first fell quickly, so that the 12th was one of the coldest days that were experienced over our islands throughout the month. The 13th and 14th, however, were warmer, as owing to the appearance of some small depressions off the north-west coast of Norway, and to a slight southerly motion of the high pressure area in the west, the wind backed somewhat to the Westward on those days. The weather remained fair over the greater part of the United Kingdom, but some cold showers fell in the extreme west and north-west, as well as on the eastern shores of the North Sea. The period was in fact transitional from the Westerly type last mentioned, to the anticyclonic and North-westerly period which now came on. On the 14th and 15th two small depressions, subsidiary to larger systems over Northern Russia, passed over the Northern parts of Scandinavia and the Gulf of Bothnia, in a direction about parallel to the broken line marked A on Map 2. Their effect on the winds over our islands was extremely slight, but Westerly and North-westerly gales were felt on the Eastern shores of the North Sea.

January 15–18.—A great change now took place. A well-defined anticyclone appeared off our western coasts and moved slowly in a south-easterly direction to France and the Mediterranean, the eastern and northern parts of the system passing over the British Islands also. Westerly breezes prevailed in the north, North-westerly in the east, Northerly over France, and North-easterly on our south-west coasts and over the Bay of Biscay. Temperature decreased somewhat at first, but soon rose again, and the mean for the period, notwithstanding the anticyclonic tendency, remained decidedly higher than that for the corresponding portion of the 20 years 1861 to 1880. The rainfall was very slight, except in the Northern parts of Scotland, but the sky was on the whole cloudy, sometimes foggy, and as a result the amount of bright sunshine recorded was extremely small, except at our Eastern stations. The anticyclone now reached France, and the weather completely lost the "open" character hitherto exhibited.

January 19–28.—This was an interval during which storms of unusual violence passed rapidly over North-western Europe from the Atlantic. The general type of the weather was Westerly, but for variations in pressure, violence of wind and amount of electrical disturbance (especially between the 25th and 27th), the period was most remarkable. The first depression reached us on the evening of the 19th, advancing towards the Hebrides from the south-westward. So steep were its gradients and so rapid its motion that at Stornoway the barometer fell no less than 0·96 inch between 6 p.m. and 10 p.m. Strong to violent South-westerly gales were experienced over the greater part of Scotland and fresh gales in the west of Ireland, with rain. The centre reached our shores during the night, so that it has seen found impossible to draw the track accurately; but so far as can be judged, it appears

to have moved in about the direction shown by the broken line marked II. on the map. This was the first of a series of storms which gradually spread more and more over the country, and culminated in the gale of extraordinary severity January 26th–27th, during which the barometer fell to below 27·4 inches in the East of Scotland. An analysis of each of these cyclones will be found in the Table of Cyclonic Systems, pp. 4 and 5, and their movements on map 2, Plate II. The temperature of the period was rather high, but occasionally (as the wind veered to the North-west and lulled between two storms) the thermometer fell considerably. It was owing to such conditions that many of our stations recorded their lowest temperatures for the month on the 27th, immediately in the rear of storm No. VI. Rainfall was greatly in excess; large quantities of snow fell in the North, and a smaller amount in most other places; hail showers with thunder and lightning were reported in several localities.

Their positions at 8 a.m. and 6 p.m. on each day are shown in the Weekly Weather Report, No. 4, and as, owing to interruptions in telegraphic communications caused by the violence of these storms, the charts published in the Daily Weather Reports were very incomplete, those for the 26th, 6 p.m., and the 27th, 8 a.m., were reproduced on page 4 of the Daily Weather Report for February 22.

January 29–31.—The weather now changed slowly to a more Southerly type, and conditions improved generally. The wind backed slowly round to the Southward, pressure soon recovered, temperature, after the decided fall just mentioned, rose again quickly, and although the cyclonic system No. VII. appeared off our North-west coasts on the 30th, its distance from us was too great for our weather to be much affected by it except in the most western and northern parts of the kingdom.