readings at the time of observation. The storm log from the American S. S. *West Alsek* is as follows: "Gale began on the 4th. Lowest barometer, 29.70 inches on the 5th. Position, 40° 20′ N., 71° 00′ W. End of gale on the 6th. Highest force, 10. Shifts of wind near time of lowest barometer, east to southeast."

The conditions on the 5th, 6th, and 7th are shown on Charts IX, X, and XI, respectively, and it will be noted that on the last two days unusually heavy winds prevailed in the vicinity of the Bermudas, with a well-developed LOW over the New England and Canadian coasts. On the 8th and 9th a number of vessels in mid-ocean encountered southwesterly gales, with a low central somewhere in the region between Scotland and Iceland, and an unusually steep gradient toward the south. The storm log from the Danish S. S. *Oscar II* is as follows: "Gale began on the 5th. Lowest barometer reading, 29.22 inches at 6 a. m. on the 7th. Position, 56° 20′ N., 22° 48′ W. End of gale at 8 a. m. on the 9th. Highest force of wind, 9. Shifts of wind, south to northwest through the east."

On the 11th moderate to strong westerly gales prevailed over a limited area between the 40th and 45th parallels and the 40th and 50th meridians, and at the same time there was a deep depression over the Scandinavian coast. On the 12th and 13th the conditions were comparatively featureless, with slight pressure gradients and light to moderate winds over nearly all the ocean, although on the latter date the station at Bermuda reported a southerly gale of about 50 miles an hour. On the 15th, as shown on Chart XII, there were three well-developed LOWS over the ocean, with gales prevailing over the greater part of the steamer lanes east of the 50th meridian. During the next two days all three disturbances decreased somewhat in intensity, although on both the 16th and 17th southerly gales were encountered over the northeastern section of the ocean, and on the 16th southwesterly winds of gale force occurred off the New England coast. On the 19th there was a LOW central about 200 miles east of the Virginia Capes, and heavy northwesterly winds were reported in the southwesterly quadrants. From the 20th to the 25th light to moderate winds prevailed over practically the entire ocean, although during that period a few vessels in widely scattered localities reported moderate gales.

On the 26th (see Chart XIII) a well-developed LOW was central near the west coast of Newfoundland, while southerly and southwesterly gales swept the steamer lanes west of the 40th meridian. As shown on Chart XIV, this disturbance moved but little during the next 24 hours, decreasing in intensity, and by the 27th the storm area had contracted considerably in extent. The conditions on the 28th were practically the same as on the previous day, while on the 29th the LOW had apparently filled in, light to moderate winds being the rule over the greater part of the ocean. The Danish S. S. *Oscar II* reported a westerly gale of over 60 miles an hour while near latitude 56° and longitude 24° on the 29th, and the storm log from this vessel is as follows: "Gale began on the 26th. Lowest barometer, 29.25 inches at 4 a. m. on the 29th. Position, 53° 30′ N., 27° 30′ W. End of gale on the 29th. Highest force of wind, 10. Shifts of wind, southeast to west-southwest."

NOTES ON WEATHER IN OTHER PARTS OF THE WORLD.

Nova Scotia.—Sydney, February 23.—Supplies for the inhabitants of the Magdalen Islands, icebound and on limited rations for several weeks, have been landed on Grindstone Island, one of the group, according to a wireless message received here from the government steamer *Montcalm.*—*Washington Star.*

Halifax, February 18.—Arctic ice packs, covered with walrus, seals, and other polar creatures, are the largest within memory, according to reports brought here by sailors and overland travelers.

The solid ice extends farther south than at any time within years, with the bays and inlets fringing the Newfoundland coast, locked tightly. Newfoundland railroads are completely tied up and inhabitants in the interior are suffering intensely. Communication between settlements is impossible except by dog sleds.

Reports of a strange malady have been received from Gander Bay, which is without a physician. The disease is an affection of the throat and has claimed many lives.—*New York Times, February 19, 1920.*

British Isles.—February was characterized by a mean temperature decidedly in excess of the normal, a moderate amount of sunshine, and an absence of the boisterous conditions which prevailed in January. * * * The general rainfall expressed as a percentage of the average was: England and Wales, 77; Scotland, 164; Ireland, 89; British Isles, 112.

In London (Camden Square) the mean temperature was 43°, or 3.3° above the average, it being the third successive month with an excess of more than 3° F.[1]

France.—In western Europe the rainy and stormy weather of January continued during the month, though with less severity. The heaviest rains occurred in association with a depression which passed from Portugal to the Mediterranean. At Perpignan, on the north side of its path, 25 mm. and 48 mm. of rain were measured for consecutive days, the 19th and 20th. Floods were subsequently reported at many places in the south of France. High temperatures occurred on the Continent, as in the British Isles, on the 17th, when the maximum at Strasbourg was as high as 69° F.[1]

Madeira.—Phenomenal rain fell at Madeira on the 25th and 26th, the total fall of 48 hours being 213 mm., or 8.5 inches.[1]

Turkey.—Constantinople, February 24.—A heavy snowstorm has been beating down on us for the last three or four days without ceasing; the streets are knee deep in soft snow, and since most of the houses have few facilities for heating and less fuel to make use of these with, we are all cold and shivering and miserable.—*New York Evening Post, March 27, 1920.*

Palestine.—The worst winter ever recorded is being experienced in the Holy Land and the whole region to the east of the Mediterranean. In Jerusalem there was a fall of 39 inches of snow [the greatest since 1860].[1] Great distress was caused, as the people are not prepared to resist such weather. Communication between Jerusalem and Cairo was interrupted for a week.

During the recent storms the historic tree in the Garden of Gethsemane known to the Arabs as "El Bustini" was blown down. According to local tradition the fall of this tree would presage the fall of the Turkish empire. The Turks, in order to head off such a bad sign had kept the tree bound up with iron braces, but the heavy snowfall was too much for the old tree and it was prostrated. Now the word is spreading among all the people that the long-predicted end of Turkish rule is close at hand.—*The Pathfinder, Washington, March 6, 1920.*

[1] The Metereological Magazine (London), March, 1920, pp. 31 and 36.

For several days the city was cut off from outside communication. Telegraph and telephone wires fell and railroad traffic was paralyzed, which produced an acute shortage of food. Hundreds of persons were made homeless when the roofs of their dwellings gave way beneath the weight of the snow, while other buildings fell when their foundations were undermined by the melting snow. * * *

Eight hundred homeless persons are being housed in synagogues and school rooms until new homes can be provided for them. * * * it will be months before all the damage can be repaired.—*New York Evening Mail, March 30, 1920.* (See also p. 80 above.)

Australia.—In Australia the welcome rains continued.[1]

South Africa.—The serious drought which (has) been prevalent in South Africa was broken by copious (rain) falls.[1]

DETAILS OF THE WEATHER OF THE MONTH IN THE UNITED STATES.

CYCLONES AND ANTICYCLONES.

By R. HANSON WEIGHTMAN, Meteorologist.

Cyclones.—The month was marked by the occurrence of 9 secondary developments, while the number of primary lows amounted to 11. Disturbances were more than usually numerous in southern districts (see Chart II). The table below gives the number of lows by types:

	Alberta.	North Pacific.	South Pacific.	Northern Rocky Mountain.	Colorado.	Texas.	East Gulf.	South Atlantic.	Central.	Total.
February, 1920..	6.0	0.0	2.0	2.0	2.0	1.0	1.0	3.0	3.0	20.0
Average number, 1892-1912.....	3.1	2.3	1.0	0.2	1.5	1.5	0.5	0.2	0.7	11.9

Anticyclones.—The number of highs as shown on Chart III was greater than the average as shown in the table giving the types and number of each which follows:

	North Pacific.	South Pacific.	Alberta.	Plateau and Rocky Mountain region.	Hudson Bay.	Total.
February 1920.....	0.0	1.0	7.0	2.0	0.0	10.0
Average number, 1892-1912.....	0.8	0.5	4.7	1.2	0.6	7.8

THE WEATHER ELEMENTS.

By P. C. DAY, Climatologist and Chief of Division.

[Weather Bureau, Washington, Apr. 1, 1920.]

PRESSURE AND WINDS.

The abnormally high pressure over eastern districts at the close of January was central over New England and the Canadian Maritime Provinces by the morning of February 1, with pressure still above 31 inches, some stations reporting the highest barometer readings ever observed. Temperatures also were extremely low, falling to nearly 50° below zero (F.), in northern New England. This high area moved rapidly into the Atlantic, and was quickly followed by another that prevailed for several days over the northern districts from the Great Lakes eastward. During the same period, pressure was generally high over the far West and low in the Southeast, where a shallow depression, developing over southern Florida at the beginning of the month, moved northward and by the morning of the 5th was central off the middle Atlantic coast as a severe storm. It moved slowly to southeastern New England during the following 24 hours, attended by strong winds and high tides that caused much damage to the cities and towns along the coast from Virginia northward. At points along the coast, the storm is described as being the severest ever experienced. Inland, heavy sleet and snow prevailed almost continuously for several days, accumulating to unusual depths from the Chesapeake Bay region northward, but particularly over southeastern New York and New England, where, on account of drifting and freezing, railway and other transportation interests were paralyzed, mail routes were abandoned, and business was generally demoralized.

Throughout the balance of the first decade pressure remained above normal in the far West, and in fact continued so throughout the greater part of the month. No important storm entered the country from the Pacific or from the Canadian northwest, during the second or third decades of the month, but several storms originating in the central or southern districts increased markedly in their eastward progress and on reaching the middle Atlantic coast had attained considerable proportions, frequently becoming severe over the more northern districts.

The average pressure for the month was above normal over practically all portions of the United States and Canada, from the Mississippi River and Great Lakes westward to the Pacific, the departure increasing in the far northwestern districts, where at points the average pressure for the month was the highest of record. In the eastern districts of the United States, as well as Canada, the pressure for the month as a whole averaged considerably less than normal, particularly along the middle Atlantic coast, where the barometer readings were decidedly low on several occasions.

The high pressure existing from the Missouri Valley westward to the Pacific, during the greater part of the month with its center over the far northwestern States, and the generally low pressure over the more eastern and southern districts, greatly influenced the course of the winds from the Rocky Mountains eastward where they were nearly everywhere from the Northwest. To the westward of the mountains, the winds were greatly diversified but also frequently from the northwest. High winds were observed on a number of dates along the Atlantic coast, particularly on the 4th and 5th, and again about the 14th and 15th. Over the remaining portions of the country, winds of 50 miles per hour or over were reported at a few points only, and along the Pacific coast where high winds are usually frequent during February, they were notably absent.

TEMPERATURE.

Severe cold, extending over from January, prevailed on the first of the month over the eastern districts from Pennsylvania northward, where the lowest temperatures

[1] The Meteorological Magazine, March, 1920, p. 36.