NORTH ATLANTIC STORMS FOR FEBRUARY, 1892 (pressure in inches and millimeters; wind-force by Beaufort scale).

The paths of storms that appeared over the west part of the north Atlantic Ocean during February, 1892, are shown on Chart I. These paths have been determined from reports of observations by shipmasters received through the co-operation of the Hydrographic Office, Navy Department, and the "New York Herald Weather Service."

In February there is usually a decrease of pressure over the north Atlantic Ocean, except near Newfoundland and in an area south of the Azores, the decrease being most marked from the British Isles westward to the 40th meridian where it varies from .05 to .10. A decrease of more than .05 occurs in an area south of the Banks of Newfoundland. In the area of higher pressure south of the Azores the increase is less than .05. The principal track of February storms over the north Atlantic Ocean is traced from south of Newfoundland north of east to the 40th meridian, where the track divides, one branch being traced northeastward toward Iceland, and the other east-northeast to the region north of the British Isles. An average of 2.6 storms per month traverse the ocean from the American continent to Europe in February, and the average velocity of storms for that month, about 23 statute miles per hour, is the greatest noted for the year.

In the first decade of February, 1892, stormy weather prevailed along the trans-Atlantic steamship routes from coast to coast, and 2 storms from the American continent, low area XIII for January and low area I for February, apparently reached the European coast. From the 10th to the 14th there was a succession of hard gales over the western part of the ocean, the storms of the 13th attending low area IV being especially severe. From the 12th to 14th the pressure was high over mid-ocean, and high pressure continued over the British Isles from the 9th to 14th. During the 15th and 16th, and from the 19th to 28th the pressure was high off the middle Atlantic and New England coasts, and this condition extended eastward over the Banks of Newfoundland after the 20th.

From the 16th to 23d low pressure prevailed from west of the Azores to the British Isles, causing a prevalence of north to east gales along the steamship tracks east of the 40th meridian. A heavy snowstorm, with hard gales, set in over the British Isles the night of the 15th–16th, and the weather continued stormy in that region until the 23d. From the 17th until the close of the month the weather was unsettled over the southwest part of the ocean. From the 24th to 29th a storm of considerable energy passed from western Cuba to the region east of Bermuda, and low area VII caused unsettled weather off the south Atlantic coast preceding the appearance of this storm. At the close of the month low area IX was central off the middle Atlantic coast.

The morning of the 1st low area XIII for January was central east of Cape Breton Island, with pressure below 29.40 (747). Passing northeastward over Newfoundland and thence north of east over the ocean this storm disappeared north of the British Isles after the 4th, its passage being unattended by disturbances of marked intensity. On the 1st the pressure was low over the British Isles, with strong westerly winds, and unsettled weather continued in that region until the 7th. On the 4th low area I was central southeast of Nova Scotia, with pressure below 29.40 (747) and hard gales. On the 5th the center had reached the Grand Banks attended by northwest gales of force 9 to 10. By the 6th it had advanced to mid-ocean, with strong to whole gales from the 30th to 50th meridians, and by the 7th it was central north of the British Isles.

On the 7th a storm of considerable strength appeared northeast of the Banks of Newfoundland, and southwesterly gales reaching force 11 were reported in that region. By the 8th this storm had moved northeast to mid-ocean, where it disappeared after the 9th. The morning of the 8th a storm of marked energy appeared off the New England coast. By the 9th the center had advanced to the Grand Banks, with pressure below 29.40 (747), and westerly gales of force 8 to 10, and passing thence northeastward disappeared north of the region of observation after the 11th. The evening of the 11th low area IV moved off the New England coast, with northwest gales of force 10 in the steamship tracks west of the 65th meridian. Under the influence of this low area strong westerly gales continued west of the 50th meridian during the 12th. The morning of the 13th the center was east of Cape Breton Island, with the lowest pressure noted for the month, 28.48 (723), at Sydney, C. B. I., and gales of force 10 to 11 in the southern quadrants. By the 14th the center of disturbance had disappeared north of Newfoundland.

On the 15th low pressure was reported over the British Isles, and high winds and heavy snow set in at night. On the 16th a low area appeared near the Azores and the pressure was low thence over the Bay of Biscay and Great Britain, with east to northeast gales along the steamship routes east of the 40th meridian. On the 17th the pressure continued low from the Azores over the British Isles, and a storm appeared central southeast of Nova Scotia. Pressure 29.10 (739) was reported in the Hebrides, and a snowstorm prevailed in Wales and the Highlands of Scotland. On the 18th low pressure continued from the Grand Banks to the Azores and thence over the Bay of Biscay and the British Isles. Pressure 28.90 (734) was reported at the Scilly Islands. Northeasterly gales of force 10 to 11 were encountered east of the 30th meridian, and northwesterly gales of force 8 to 9 were reported west of the 50th meridian. On the 19th the pressure conditions remained materially unchanged. Pressure below 29.00 (737) was noted in the Bay of Biscay. Northeasterly gales of force 8 to 10 prevailed east of the 30th meridian, and fresh northerly gales were reported south of Newfoundland and Nova Scotia. Heavy snowstorms prevailed over Great Britain, and a number of marine disasters were reported on the British coasts.

On the 20th a trough of low pressure extended from south of the Banks of Newfoundland to the British Isles, and the pressure fell to 28.75 (730) in Ireland. Fierce gales swept the English Channel and heavy snow continued over England. On the 21st the western end of the trough of low pressure had swung southward and it extended from west-southwest of the Azores to the British Isles, and the position of this elongated area of low pressure was materially unchanged on the 22d, when heavy gales prevailed throughout the British Isles, and disastrous storms were reported in Spain. On the 23d the low pressure area had contracted, a storm was central southwest of the Azores, and the pressure was 29.10 (739) in southwestern Ireland. Many vessels were reported wrecked off the English coast. On the 23d the pressure increased rapidly over and near the Azores.

The low pressure area over the British Isles apparently shifted position to the westward from the 24th to the 27th, and at the close of the month was central west of the Bay of Biscay. The night of the 21st low area VII moved off the south Atlantic coast, where the pressure continued low until the arrival of a storm which advanced from south of the Florida Peninsula to the region east of Bermuda from the 24th to 29th. The morning of the 29th the presence of a cyclonic area of slight energy was indicated off the south Atlantic coast, and the evening of that date low area IX passed off the Virginia coast.

OCEAN FOG.

The limits of fog belts west of the 40th meridian, as reported by shipmasters, are shown on Chart I by dotted shading. East of the 55th meridian fog was reported on 9 dates; between the 55th and 65th meridians on 2 dates; and west of the 65th meridian on 4 dates. Compared with the corresponding month of the last 4 years the dates of occurrence of fog east of the 55th meridian numbered 2 less than the average; between the 55th and 65th meridians 4 less than the average; and west of the 65th meridian 1 less than the average. The occurrence of

fog along the steamship tracks west of the 40th meridian and at stations of the Weather Bureau along the middle Atlantic and New England coasts generally attended the approach or passage of general storms.

OCEAN ICE.

The region in which ice was reported for the current month is shown on Chart I by ruled shading. The southernmost ice reported, a small iceberg observed on the 11th in the position given, was nearly 4° north of the average southern limit of Arctic ice for February, and the easternmost ice noted, 2 small bergs sighted on the 8th in the position given in the table, was nearly 3° west of the average eastern limit of ice for February. Ice was reported during the month as follows: 8th, N. 49° 05′, W. 46° 20′, 2 small icebergs; N. 48° 34′, W. 48° 36′, several small bergs. 9th, N. 47° 48′, W. 52° 10′, 5 miles of field ice. 11th, N. 47° 25′, W. 47° 55′, a small berg. 12th, 10 miles east-northeast from Saint Johns, N. F., field of ice. 15th, N. 47° 40′, W. 48° 40′, an iceberg 25 feet out of water. 16th, N. 47° 59′, W. 48° 38′, several small floes of ice.

The following table shows the southern and eastern limits of the region within which icebergs or field ice were reported for February during the last 10 years:

Southern limit.			Eastern limit.		
Month.	Lat. N.	Long. W.	Month.	Lat. N.	Long. W.
	° ′	° ′		° ′	° ′
February, 1883	42 01	52 46	February, 1883	46 10	45 44
February, 1884	42 00	50 00	February, 1884	46 50	43 45
February, 1885	41 50	51 12	February, 1885	47 52	42 00
February, 1886	46 10	47 15	February, 1886	48 00	44 47
February, 1887	40 00	48 00	February, 1887	46 26	41 50
February, 1888	44 59	45 08	February, 1888	44 59	45 08
February, 1889	45 35	48 00	February, 1889	45 35	48 00
February, 1890	41 12	50 12	February, 1890	44 30	35 30
February, 1891	44 20	48 00	February, 1891	44 33	44 59
February, 1892	47 25	47 55	February, 1892	49 05	46 30
Mean	43 33	48 50	Mean	46 24	43 49

TEMPERATURE OF THE AIR (expressed in degrees, Fahrenheit).

Many of the voluntary stations do not have standard thermometers or shelters.

The distribution of mean temperature over the United States and Canada for February, 1892, is exhibited on Chart II by dotted isotherms. In the table of miscellaneous meteorological data the monthly mean temperature and the departure from the normal are given for regular stations of the Weather Bureau. The figures opposite the names of the geographical districts in the columns for mean temperature and departure from the normal show, respectively, the average for the several districts. The normal for any district may be found by adding the departure to the current mean when the departure is below the normal and subtracting when above. The monthly mean temperature for regular stations of the Weather Bureau represents the mean of the maximum and minimum temperatures.

The mean temperature was highest over the southern part of the Florida Peninsula, where it was above 65; it was above 60 over a great part of the Florida Peninsula, along the middle and west Gulf coasts, in Texas south of the 30th parallel, and at stations in the Colorado Desert in southeastern California; and was above 50 in the Gulf States, southern and western Arizona, southern California, and in California west of the Sierra Nevada Mountains and south of the 41st parallel. The lowest mean temperature was noted in Manitoba, where it was below zero; the mean readings were below 20 along the northern border of the country east of the 110th meridian, and in the Red River of the North and middle Missouri valleys; and values below 30 were reported north of a line traced from the south New England coast westward to the middle-eastern slope of the Rocky Mountains, thence to northern New Mexico, and thence irregularly northwestward to north-central Washington.

DEPARTURES FROM NORMAL TEMPERATURE.

The mean temperature was generally above the normal, except in the Atlantic coast states from Virginia over the Florida Peninsula. The greatest departure above the normal temperature, 10, was reported at Helena, Mont., and the excess was more than 5 over the northern plateau region, on the northeast slope of the Rocky Mountains, from Minnesota and Wisconsin over the lower Missouri valley, from northeastern Ontario to the Gulf of Saint Lawrence, and in the interior of eastern Texas. The most marked deficiency in temperature occurred along the North Carolina coast, where it was 2 to 3.

DEVIATIONS FROM NORMAL TEMPERATURE.

The following table shows for certain stations, as reported by voluntary observers, (1) the normal temperature for February for a series of years; (2) the length of record during which the observations have been taken, and from which the normal has been computed; (3) the mean temperature for February, 1892; (4) the departure of the current month from the normal; (5) and the extreme monthly mean for February during the period of observation and the years of occurrence:

State and station.	(1) Normal for the month of Feb.	(2) Length of record.	(3) Mean for Feb., 1892.	(4) Departure from normal.	(5) Extreme monthly mean for February.			
					Highest.	Year.	Lowest.	Year.
Arizona.	°	Years	°	°	°		°	
Fort Apache	39.6	20	40.9	+ 1.3	43.6	1879	32.4	1880
Fort Mohave	56.2	20	57.7	+ 1.5	62.0	1879	50.2	1882
Whipple Barracks	39.1	20	36.6	− 2.5	46.1	1879	30.0	1880
Arkansas.								
Lead Hill	41.1	10	.....	.....	49.9	1882	32.2	1885
California.								
Fort Bidwell	33.2	21	35.2	+ 2.0	42.8	1886	25.3	1874
Riverside	52.1	10	53.8	+ 1.7	58.0	1886	48.0	1891
Colorado.								
Las Animas	30.9	10	34.2	+ 3.3	37.9	1888	22.2	1883
Florida.								
Merritts Island	66.2	10	63.9	− 2.3	72.6	1883	58.0	1889
Georgia.								
Forsyth	52.4	18	54.9	+ 2.5	59.6	1890	44.5	1885
Idaho.								
Boise Barracks	34.1	18	29.9	− 4.2	40.3	1888	21.3	1883
Fort Sherman	26.9	9	.....	.....	37.0	1886	17.0	1887
Illinois.								
Centralia	33.0	13	38.0	+ 5.0	44.0	1880	22.0	1885
Indiana.								
La Fayette	28.8	12	35.0	+ 6.2	38.0	1882	14.7	1885
Indian Territory.								
Fort Supply	36.5	13	38.8	+ 2.3	44.1	1882	32.0	1883
Iowa.								
Cresco	15.4	20	23.3	+ 7.9	31.3	1878	1.0	1875
Kansas.								
Eureka Ranch	29.8	9	35.6	+ 5.8	37.6	1888	25.8	1885
Independence	35.5	20	41.1	+ 5.6	45.7	1882	25.2	1885
Salina	30.1	9	34.9	+ 4.8	37.0	1886	23.4	1885
Louisiana.								
Grand Coteau	59.3	9	60.6	+ 1.3	64.6	1887	52.4	1885
Maine.								
Orono	19.0	22	22.9	+ 3.9	25.0	1877	13.3	1885
Maryland.								
Cumberland	31.4	33	34.5	+ 3.1	40.0	1890	19.4	1868
Michigan.								
Kalamazoo	26.0	16	30.2	+ 4.2	35.0	1882	11.2	1885
Missouri.								
Chillicothe	30.9	8	41.2	+10.3	41.2	1892	23.0	1885
Sedalia	33.4	9	37.4	+ 4.0	45.9	1882	20.7	1885
Montana.								
Fort Custer	19.2	11	.....	.....	30.2	1886	2.4	1887
Nebraska.								
Fort Robinson	24.4	8	27.2	+ 2.8	33.7	1886	15.9	1891
Genoa (near)	22.0	16	26.0	+ 4.0	32.8	1877	13.2	1891
Nevada.								
Browns	37.6	21	39.8	+ 2.2	49.0	1872	24.8	1883
Carson City	34.0	15	34.2	+ 0.2	42.2	1886	23.9	1883
New Hampshire.								
Hanover	18.7	55	23.0	+ 4.3	27.2	1840	10.8	1885
New Mexico.								
Deming	47.8	10	50.4	+ 2.6	51.3	1887	41.8	1889
Fort Wingate	33.4	21	36.0	+ 2.6	40.0	1879	26.0	1880