low area VIII was apparently central over the northeast part of the Gulf of Saint Lawrence, and by the morning of the 29th this storm had passed northeastward off the Labrador coast. By the 30th the center had advanced to the 45th meridian and a storm of considerable strength had advanced from the northwest over the British Isles.

OCEAN FOG IN SEPTEMBER.

The limits of fog belts west of the 40th meridian, as reported by shipmasters, are shown on Chart I by dotted shading. Near the Banks of Newfoundland fog was reported on 19 dates; between the 55th and 65th meridians on 5 dates; and west of the 65th meridian on 3 dates. Compared with the corresponding month of the last 4 years the dates of occurrence of fog near the Grand Banks numbered 4 more than the average; between the 55th and 65th meridians, 1 less than the average; and west of the 65th meridian, 6 less than the average. The fog reported by shipmasters and that noted by observers of the Weather Bureau on the New England and middle Atlantic coasts generally attended the advance or passage of general storms.

OCEAN ICE IN SEPTEMBER.

Ice was reported only in, and slightly to the eastward of, the Straits of Belle Isle, where it was encountered throughout the month. A reference to the table will show that in the last 10 years there have been but two Septembers, in 1891 and 1892, for which ice has not been reported south of the 50th parallel, and that the eastern limit of ice for the current month is nearly 3° farther west than previously reported for September. The positions of icebergs and field ice reported for September, 1892, are shown on Chart I by ruled shading.

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

Southern limit.			Eastern limit.		
Month.	Lat. N.	Long. W.	Month.	Lat. N.	Long. W.
	° ′	° ′		° ′	° ′
September, 1883	48 25	47 10	September, 1883	49 01	44 33
September, 1884	46 00	53 21	September, 1884	47 39	49 14
September, 1885	45 40	48 22	September, 1885	48 40	46 27
September, 1886	46 40	53 00	September, 1886	48 00	48 40
September, 1887	45 37	40 50	September, 1887	45 37	40 50
September, 1888	Off Cape	Race	September, 1888	53 00	52 08
September, 1889	46 21	48 22	September, 1889	48 59	46 48
September, 1890*	45 30	48 00	September, 1890	50 30	46 22
September, 1891	Straits of	Belle Isle	September, 1891	53 18	51 20
September, 1892	Straits of	Belle Isle	September, 1892	52 04	54 55
Mean	47 34	50 52	Mean	49 36	48 06

*On the 4th a large lump of ice 100 feet long and 6 feet above water was reported in N. 36° 49′, W. 42° 18′; this is the lowest latitude in which ice was ever reported in the north Atlantic Ocean.

TEMPERATURE OF THE AIR (expressed in degrees Fahrenheit).

The distribution of mean temperature over the United States and Canada for September, 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 temperature 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 in the lower Colorado and Gila valleys, where it was above 90, and it was above 80 in western and southern Arizona, southeastern California, and at Key West, Fla. In the south Atlantic, Gulf, and Southwestern states, the west and south portions of the southern plateau region, and in the central valleys of California the mean temperature was above 70. The lowest mean temperature was noted in the upper Saskatchewan valley, on the north coast of Lake Superior, and at mountain stations in Colorado, where it was below 50, and the mean values were below 60 north of a line traced from the central New England coast over the central lake region, thence to east-central Montana, thence to northern New Mexico, thence to eastern Oregon, thence to northeastern California, and east of this line traced thence over eastern Oregon, and thence eastward over the valley of the Columbia River. The mean temperature was also below 60 along the immediate Pacific coast north of San Francisco, Cal.

DEPARTURES FROM NORMAL TEMPERATURE.

The mean temperature was above the normal, except in the middle and south Atlantic and Gulf states, and along the middle and south Pacific coasts. The greatest departure above the normal temperature was noted over the eastern part of the plateau region, and over northern Minnesota and parts of the Dakotas and Upper Michigan, where it was 4 to 5. The most marked departure below the normal temperature was reported in the interior of the middle Gulf states, at Baltimore, Md., and San Diego, Cal., where the month was 2, or more, cooler than usual.

The following table shows for certain stations, as reported by voluntary observers, (1) the normal temperature for September 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 September, 1892; (4) the departure of the current month from the normal; (5) and the extreme monthly mean for September, during the period of observation and the years of occurrence:

State and station.	(1) Normal for the month of Sept.	(2) Length of record.	(3) Mean for Sept., 1892.	(4) Departure from normal.	(5) Extreme monthly mean for September.			
					Highest.	Year.	Lowest.	Year.
	°	Years	°	°	°		°	
Arizona.								
Fort Apache	66.2	20	66.2	0.0	71.4	1879	61.0	1884
Fort Mohave	85.6	20	88.0	+ 2.4	90.2	1875	81.8	1876
Whipple Barracks	66.3	21	67.8	+ 1.5	74.4	1879	60.5	1884
Arkansas.								
Keesees Ferry	71.0	11	70.2	− 0.8	76.4	1884	67.5	1883
California.								
Fort Bidwell	62.1	21	61.9	− 0.2	65.9	1880	54.0	1884
Riverside	72.7	10	.....	.....	76.8	1883	69.2	1884
Colorado.								
Las Animas	65.4	10	67.6	+ 2.2	67.6	1892	63.5	1883
Florida.								
Merritts Island	79.7	10	80.0	+ 0.3	82.5	1882	78.0	1890
Georgia.								
Forsyth	76.4	18	75.2	− 1.2	82.2	1884	72.8	1888
Idaho.								
Boise Barracks	61.1	18	63.0	+ 1.9	68.0	1888	54.6	1884
Fort Sherman	56.2	9	58.6	+ 2.4	58.6	'85, '91, '92	52.9	1881
Illinois.								
Centralia	66.3	11	.....	.....	76.0	1881	52.5	1882
Indiana.								
Lafayette	64.1	9	65.4	+ 1.3	69.7	1891	61.2	1883
Indian Territory.								
Fort Supply	69.7	11	71.2	+ 1.5	71.7	1886	66.6	1890
Iowa.								
Cresco	58.8	19	60.8	+ 2.0*	64.6	1891	54.3	1873

Departures from normal temperature—Continued.

State and station.	(1) Normal for the month of Sept.	(2) Length of record.	(3) Mean for Sept., 1892.	(4) Departure from normal.	(5) Extreme monthly mean for September.			
					Highest.	Year.	Lowest.	Year.
	°	Years	°	°	°		°	
Kansas.								
Eureka Ranch	69.9	9	67.4	− 2.5	74.3	1884	67.1	1883
Independence	70.0	20	72.4	+ 2.4	74.9	1881	66.2	1889, 1890
Salina	70.3	10	70.4	+ 0.1	77.3	1884	65.1	1890
Louisiana.								
Grand Coteau	77.4	9	75.2	− 2.2	81.6	1884	74.7	1890
Maine.								
Orono	57.0	21	57.7	+ 0.7	60.8	1891	52.4	1873
Maryland.								
Cumberland	62.3	21	64.0	+ 1.7	70.0	1881	59.3	1888
Michigan.								
Kalamazoo	62.2	16	63.0	+ 0.8	69.0	1881	55.2	1879
Missouri.								
Sedalia	69.7	8	70.5	+ 0.8	75.9	1881	64.6	1890
Montana.								
Fort Custer	58.4	13	64.8	+ 6.4	64.8	1892	54.0	1884
Nebraska.								
Fort Robinson	61.4	9	63.7	+ 2.3	67.6	1891	56.1	1886
Genoa (near)	62.8	16	65.2	+ 2.4	67.0	1891	59.9	1883
Nevada.								
Browns	69.6	20	72.2	+ 2.6	75.9	1888	64.6	1881
Carson City	60.8	15	62.5	+ 1.7	65.1	1888	55.8	1884
New Hampshire.								
Hanover	56.0	21	56.7	+ 0.7	62.9	1881	53.1	1887
New Mexico.								
Deming	76.6	10	77.7	+ 1.1	82.0	1888	73.4	1882
Fort Wingate	63.4	21	64.5	+ 1.1	67.3	1879	59.5	1886
New York.								
Cooperstown	55.6	21	56.6	+ 1.0	66.7	1881	53.9	1871
Plattsburg Barracks	59.2	21	58.3	− 0.9	65.3	1881	53.8	1888
North Carolina.								
Lenoir	65.3	20	65.4	+ 0.1	71.1	1884	55.2	1878
Oklahoma.								
Fort Reno	71.8	9	.....	.....	78.1	1884	68.4	1889
Fort Sill	72.9	21	71.3	− 1.6	77.6	1884	68.8	1882
Oregon.								
Bandon	54.4	8	54.4	0.0	57.2	1888	51.2	1886
Eola	59.5	21	59.6	+ 0.1	65.3	1876	51.2	1881
Pennsylvania.								
Dyberry	58.1	19	55.9	− 2.2	66.9	1881	51.8	1871
Grampian	60.6	21	60.5	− 0.1	72.0	1881	54.2	1871
Wellsboro	58.9	13	54.8	− 4.1	73.8	1881	52.3	1883
South Carolina.								
Statesburg	72.5	11	71.1	− 1.4	77.9	1881	69.9	1888
South Dakota.								
Fort Sully	62.1	21	67.8	+ 5.7	68.3	1891	57.3	1873
Texas.								
Austin	77.7	19	79.3	+ 1.6	83.2	1884	70.3	1887
Silver Falls	72.6	6	74.5	+ 1.9	74.8	1891	70.4	1890
Utah.								
Terrace	66.5	19	.....	.....	78.5	1888	52.0	1884
Vermont.								
Strafford	59.9	19	57.7	− 2.2	64.4	1879	56.2	1876
Virginia.								
Dale Enterprise	69.6	12	66.9	− 2.7	72.9	1886	59.9	1890
Washington.								
Fort Townsend	57.2	17	57.1	− 0.1	63.5	1874	53.9	1884
West Virginia.								
Parkersburg	66.2	11	65.0	− 1.2	.....	.....	61.9	1888
Wisconsin.								
Embarrass	60.6	21	60.0	− 0.6	65.6	1891	56.6	1873
Madison	61.2	16	61.5	+ 0.3	67.0	1891	56.6	1883
Wyoming.								
Fort Washakie	56.9	9	59.4	+ 2.5	59.9	1887	52.9	1889

YEARS OF HIGHEST MEAN TEMPERATURE FOR SEPTEMBER.

At Fort Stanton, N. Mex., Montrose, Las Animas, and Denver, Colo., Rapid City, S. Dak., Fort Buford, N. Dak., Fort Custer, Mont., and Fort Sherman, Idaho, the mean temperature for the current month was the highest ever reported for September during the respective periods of observation. The highest mean temperature for September occurred generally in north-central districts in 1891; over the Rocky Mountain and plateau regions and along the Pacific coast in 1888; in south-central districts in 1884; and generally east of the Mississippi River in 1881.

YEARS OF LOWEST MEAN TEMPERATURE FOR SEPTEMBER.

The lowest mean temperature for September occurred generally in Texas in 1889; at points on the New England and New Jersey coasts in 1888; generally over the Rocky Mountain and plateau regions and on the middle and north Pacific coasts in 1884; in the southern and eastern lake regions in 1883; in the Dakotas in 1881; in the Gulf States in 1880; from the extreme upper Mississippi valley over Upper Michigan in 1873; and generally in the middle Atlantic states in 1871.

MAXIMUM TEMPERATURE.

At Helena, Mont., the maximum temperature was as high, and at Tatoosh Island, Wash., it was higher than previously reported for September.

The highest temperature reported at a regular station of the Weather Bureau for September, 1892, was 111, at Yuma, Ariz., on the 27th. The maximum temperature was above 100 in the Sacramento, San Joaquin, Gila, and lower Colorado valleys, and was above 90 over the west part of the plateau region, in districts between the Mississippi River and the Rocky Mountains, and over Florida and southern parts of the east Gulf states and Georgia. At points on the immediate middle and extreme north Pacific coasts the maximum temperature was below 70, and along the immediate Pacific coast north of San Francisco, Cal., on the New England coast, and in northern New England the maximum readings were below 80.

Reports of voluntary observers show maximum temperature 115 to 118 in the lower valley of the Colorado River and in the Colorado Desert, Cal., respectively, and readings above 100 were noted on the middle-eastern and southeastern Rocky Mountain slopes, and at points in the plateau region south of the 40th parallel.

MINIMUM TEMPERATURE.

At Key West, Fla., the minimum temperature, 69, noted on the 27th, was the lowest temperature ever reported at that place for September.

The lowest temperature reported by a regular station of the Weather Bureau was 28, at Lander and Cheyenne, Wyo., on the 11th. The minimum temperature was 29 at Huron, S. Dak., on the 14th, and at Havre, Mont., on the 25th; 30 at Northfield, Vt., on the 21st, and at Baker City, Oregon, on the 22d; and 31 at Saint Vincent, Minn., on the 26th. The minimum values were below 40 north of a line traced from the interior of Maine over the northern lake region to Minnesota, thence to central Iowa, thence to southwestern Kansas and southern Colorado, thence to extreme northern Utah, thence to east-central California, and east of this line traced thence over western Oregon, thence eastward over the valley of the Columbia River, and thence to northwestern Washington. The minimum temperature was highest in Florida, and at points along the Texas coast, where it was above 65, and it was above 60 along the south Atlantic and Gulf coasts, and in the Gila and lower Colorado valleys.

Reports of voluntary observers show temperature below freezing in the interior of New England, New York, and Pennsylvania, and at points in the Dakotas, Nebraska, and the middle and northern Rocky Mountain and plateau regions.

RANGES OF TEMPERATURE.

The greatest daily ranges of temperature are shown in the table of miscellaneous meteorological data. The greatest monthly ranges of temperature were noted in areas in the Missouri Valley and northern Rocky Mountain region, where they exceeded 60. From the west-central and northwestern districts the monthly ranges decreased eastward to 20 on the south New England coast, southeastward to less than 30 along the south Atlantic and Gulf coasts, and westward to less than 30 on the extreme south Pacific coast, and at points along the immediate middle and north Pacific coasts.

TEMPERATURE, JANUARY TO SEPTEMBER.

For the period January 1 to September 30, 1892, the temperature averaged about normal in the middle Atlantic states, the lower lake region, the upper Mississippi valley, on the northeastern and middle-eastern slopes of the Rocky Mountains, over the southern plateau region, and along the north

Pacific coast. In New England, the upper lake region, and on the southeastern slope of the Rocky Mountains the temperature averaged less than 1 above, and in the extreme northwest and over the middle plateau region it was 1 to 2 above the average. In the west Gulf states, the Ohio Valley and Tennessee, in the Missouri Valley, and over the middle plateau region the temperature was less than 1 deficient, and in the south Atlantic and east Gulf states, at Key West, Fla., and along the south Pacific coast it was 1 to 2 below the average for the period named.

PERIODS OF HIGH TEMPERATURE.

The month opened with temperature 10 to 15 above the normal in the valley of the Red River of the North. This warm wave extended over the Lake Superior region on the 2d, and reached the Saint Lawrence Valley on the 3d. On the 5th the temperature rose rapidly on the northeast slope of the Rocky Mountains. On the 6th the warm wave extended southeastward, and the temperature was 10 to 15 above the normal in the middle Missouri valley. On the 7th and 8th the temperature changes east of the Mississippi River were slight. A warm wave which appeared over the western Saskatchewan valley on the 13th reached the middle Missouri valley on the 14th, with a 24-hour temperature rise of 12 to 18, and overspread the middle Mississippi and lower Ohio valleys on the 15th. No marked rise in temperature occurred in the eastern districts. One of the more notable warm waves of the month appeared in the Northwest on the 16th; on the 17th it occupied an area extending from the northern lake region to Kansas, with temperature 10 to 18 above the normal, and the highest temperature, 94, at Bismarck, N. Dak.; on the 18th this warm wave extended from the middle Mississippi valley over New England, and on the 19th the highest temperature of the month was reported at points on the New England coast. On the 19th a warm wave appeared over the Northwest; on the 20th the temperature was 14 to 20 above the normal in the Dakotas; on the 21st the warm wave advanced over the Lake region, and reached New England on the 22d. An important warm wave extended eastward over the middle plateau region on the 21st, occupied the middle-eastern slope of the Rocky Mountains on the 22d, with temperature 15 to 20 above the normal, and extended over the Lake region on the 23d. Attending this warm wave the highest temperature of the month was reported from the middle-eastern slope of the Rocky Mountains over the Lake region from the 22d to the 24th, and in the Southern States on the 25th and 26th. On the 24th and 25th the temperature rose over the northern Rocky Mountain and plateau regions; on the 26th the warm area extended from Colorado to Minnesota, with temperature 10 to 20 above the normal in the Red River of the North Valley; on the 27th it extended from the lower Missouri valley over the Great Lakes; and during the 28th the warm wave passed off the middle Atlantic and New England coasts. Another of the more important warm waves of the month occupied the Northwest on the 28th, with temperature 20 to 25 above the normal, and the highest maximum temperature of the month in Montana, western Wyoming, and western Colorado; on the 29th the warm wave extended over the upper lake region, with temperature 16 to 20 above the normal, and the highest temperature of the month in the middle Missouri valley and northeastern Colorado; on the 30th the warm wave extended from the middle Missouri valley over the New England and middle Atlantic states, and the temperature rose 20 to 30 in 24 hours in northern New York and northern New England.

PERIODS OF LOW TEMPERATURE.

On the 1st and 2d the temperature fell 10 to 20 below the normal in the Northwest. On the 3d the cool wave extended over the Missouri Valley, reached the western lake region on the 4th, with a 24-hour temperature fall of 14 to 24 over Upper Michigan, covered an area from the Great Lakes to the Gulf of Mexico on the 5th, with a temperature fall of 10 to 20 from Tennessee to the lower lakes, and reached the middle Atlantic and New England coasts on the 6th. On the 6th a cool wave occupied the northern plateau and Rocky Mountain regions. On the 7th the temperature fell 10 to 20 in the Missouri Valley, and the cool wave overspread the middle-eastern slope of the Rocky Mountains on the 8th. No marked fall in temperature occurred east of the Mississippi River. On the 9th the temperature was about 10 below the normal north of Montana. During the 10th the cool wave overspread the middle and lower Missouri valleys and the middle-eastern slope of the Rocky Mountains, with temperature 10 to 15 below the normal. On the 11th the cold area extended from Lake Michigan to Texas, the temperature fell 20 in southern Missouri, and the lowest temperature of the month, 28, was noted at Cheyenne and Lander, Wyo. On the 12th this cool wave occupied the middle Mississippi and lower Ohio valleys, and a second cool wave appeared in the Red River of the North Valley. On the 13th the cool wave extended from the middle Missouri valley over the western lake region and the Ohio Valley, with temperature 10 below the normal; it reached the middle Atlantic states on the 14th and New England on the 15th. Attending this cool wave and a fall in temperature which extended over the middle Missouri valley and the middle-eastern slope of the Rocky Mountains on the 15th, the lowest temperature of the month was reported between the Mississippi River and the Rocky Mountains. From the 17th to the 20th a cool wave advanced from the middle and northern plateau regions to the middle Atlantic coast. From the 17th to the 19th the lowest temperatures of the month occurred generally in California. On the 19th the temperature was 10 below the normal over the middle and northern plateau regions. On the 20th the cool wave extended over the northeastern slope of the Rocky Mountains and reached the Missouri Valley on the 21st. Slight temperature changes were caused east of the Missouri Valley. On the 22d the lowest temperature of the month, 30, was recorded at Baker City, Oregon. On the 23d a cool wave occupied the northern plateau and Rocky Mountain regions. On the 24th the temperature fell 20 to 30 in the Dakotas and Red River of the North Valley. On the 25th a temperature fall of 20 to 28 occurred in Upper Michigan. On the 26th the cool wave overspread the Ohio Valley and the lowest temperature of the month, 31, was noted at Saint Vincent, Minn., and on the 27th the cool wave reached the Atlantic coast, with the lowest temperature of the month at stations in the east-central districts. On the 27th a cool wave appeared in the Northwest; on the 28th it extended over the lower Missouri valley and the Lake region, with the lowest temperature of the month in the east Gulf and south Atlantic states, and reached the middle Atlantic and New England states on the 29th.

FROST.

The first heavy frost of the season was reported as follows: 1st, Marquette, Mich. 4th, Havre, Mont. 5th, Bismarck and Woodbridge, N. Dak. 6th, Cresco, Iowa; Neillsville, Wis. 7th, Blue Knob, Pa.; Medford, Wis. 11th, Gering, Nebr.; Sundance, Wyo. 12th, Fort Stanton, N. Mex.; Fort Stevenson, N. Dak. 13th, Ashley and Fort Buford, N. Dak.; near Rapid City, S. Dak. 14th, Alta, Atlantic, Denison, and Panama, Iowa; Moorhead, Minn.; Crete and Oakdale, Nebr.; Forman and Wild Rice, N. Dak.; Elkton, Huron, and Yankton, S. Dak. 15th, Napoleon, N. Dak. 16th, Larrabee, Iowa; Power, N. Dak.; Valley Junction, Wis. 20th, Alpena, Mich.; Malone, N. Y. 21st, Spokane, Wash. 26th, East Peoria, Ill.; Black River Falls, Wis. 27th, Philo, Ill.; Jacksonboro, Ohio. 29th, Berlin Mills, N. H.; Number Four, N. Y. 30th, Volun-

town, Conn.; Manchester, N. H. The occurrence of heavy frost was about seasonable at the several stations named.

The first light frost of the season was reported as follows: 1st, Sycamore, Ill.; Hampton, Iowa; Alpena, Cheboygan, and Grand Haven, Mich.; Rondout, N. Y.; Port Angeles, Wash.; Cadiz, Madison, and Valley Junction, Wis. 2d, Ottawa, Ill.; Cornish, Me.; Frederick, Md.; Royalston, Mass.; Thornville, Mich.; Berlin Mills, N. H.; Lowville, N. Y.; Garrettsville, Kenton, Lordstown, and North Lewisburg, Ohio; Blue Knob, Grampian, State College, and Wellsboro, Pa.; Northfield, Vt. 3d, Upper Mattole, Cal.; Vinton, Iowa; Westboro, Mass.; Helena, Mont. 4th, Fort Stevenson, N. Dak. 5th, San Jose, Cal.; Watseka, Ill.; Alta, Iowa; Rockland, Mich.; Moorhead and Saint Charles, Minn.; Fort Buford and Napoleon, N. Dak.; Huron and Rapid City, S. Dak. 6th, Chicago and Walnut, Ill.; Cedar Rapids, Delaware, near Dubuque, Independence, Iowa Falls, Monticello, and Washington, Iowa; Franklin, Ky.; Detroit, Mich.; Red Wing, Minn.; Hannibal, Mo.; Wauseon, Ohio; Black River Falls, Fond du Lac, near Green Bay, Koepenick, and Oconomowoc, Wis. 7th, Taunton, Mass.; Dyberry, Pa. 8th, Orono, Me.; East Canterbury, N. H.; Buffalo, N. Y.; Moxee, Wash.

9th, Haigler, Nebr. 11th, Denver, Colo.; Gove City, Kans.; Kimball and North Platte, Nebr. 12th, Panama, Iowa; near Allison, near Dodge City, and Downs, Kans.; Beatrice, Nebr. 13th, Corning, Larrabee, and Logan, Iowa; Morris, Minn.; Princeton, Mo.; Crete, Dunning, Norfolk, Springview, and Valentine, Nebr.; Ellendale and Power, N. Dak. 14th, at points in Arkansas; Clarinda, College Springs, Des Moines, Hopeville, Mount Ayr, Murray, Sioux City, and Storm Lake, Iowa; Horton, near Leavenworth, Manhattan, Morse, and Topeka, Kans.; Bethany, Carrollton, Clinton, Columbia, East Lynne, Excelsior Springs, Gallatin, Grovedale, Harrisonville, Kansas City, La Monte, Langdon, Oregon, Phillipsburg, Pickering, Platte River, Poplar Bluff, Rea, Springfield, Stellada, and Vermont, Mo.; Auburn, Genoa, Harvard, Lexington, Lincoln, Marquette, Oakdale, and York, Nebr.; Grafton and Seymour, N. Dak.

15th, Seneca, Kans.; Staunton, Va. 16th, Amana, Ames, Belle Plaine, Eagle Grove, Marshall, and Williams, Iowa; Grand Rapids, Mich.; Duluth, Minneapolis, and Saint Paul, Minn.; Bluefield, W. Va.; Viroqua, Wis.; Carlinsville, Ill.; Fairfield, Iowa; Mottville, Mich.; Ithaca, N. Y.; Orangeville and near Sandusky, Ohio. 19th, Geneva, N. Y.; Losee, Utah. 20th, Manistee, Mich.; Winnemucca, Nev.; Oswego and Palermo, N. Y.; Wheeler, Ohio; Burlington, Vt. 21st, New Hartford, New London, and Voluntown, Conn.; Blue Hill and Vineyard Haven, Mass.; Manchester, N. H.; Blooming Grove and Quakertown, Pa.; Levan, Utah; Hartlandt, Vt.; Pine Hill, Wash. 22d, Ericson, Nebr.

24th, Easton, Pa. 26th, Grinnell, Iowa; Saint Vincent, Minn.; Austin, Tenn. 27th, Martinsville, Olney, near Springfield, and White Hall, Ill.; Indianapolis, Lafayette, Mauzy, and near Vevay, Ind.; Harrodsburg, Lexington, Matlock, Mumfordville, Shelbyville, and South Fork, Ky.; Gordonville and Olden, Mo.; Bakersville, N. C.; Gratiot, Tiffin, and Westerville, Ohio; Big Stone Gap and Marion, Va.; Central Station, W. Va. 28th, Lexington, Va. 29th, Williamsburg, Ky.; Williamstown, Mass.; Antrim, N. H.; Washington, N. C. 30th, Arcata and Forestville, Cal.; Amherst and Leicester, Mass.; Beverly, Bridgeton, and Egg Harbor City, N. J.; New York, N. Y.; Spencer, W. Va.

Frost injurious to vegetation was reported as follows: 1st, Grand Haven, Mich., slight damage to tender shoots of tomato plants. 2d, Blue Knob, Pa. (near), tomato plants killed. 5th, Fort Buford, N. Dak., cucumber vines and potato tops slightly injured; Bismarck, N. Dak., garden vegetation damaged. 7th, Blue Knob, Pa., tender vegetation frozen. 8th, Lander, Wyo., tender plants injured. 11th, Gering, Nebr., corn and potato plants killed; Lander, Wyo., all vegetation injured. 12th, Fort Stanton, N. Mex., garden vegetables injured. 13th, Fort Buford, N. Dak., garden vegetables badly damaged. 14th, Alta, Iowa, corn in low places injured; Oakdale, Nebr., tender vegetation and corn damaged; Huron, S. Dak., late vegetation injured. 14–15th, Reynolds, N. Dak., vegetation damaged slightly. 16th, Williams, Iowa, slight damage; Fayette, Iowa, buckwheat and corn injured. 19th, Sault Ste. Marie, Mich., slight damage to garden vegetables. 20th, Alpena, Mich., considerable damage to garden vegetables. 27th, Martinsville, Ill., corn nipped.

PRECIPITATION (expressed in inches and hundredths).

The distribution of precipitation over the United States and Canada for September, 1892, as determined from reports of about 2,000 stations, is exhibited on Chart III. In the table of miscellaneous meteorological data the total precipitation 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 precipitation and departure from the normal show, respectively, the averages for the several districts. The normal for any district may be found by adding the departure to the current mean when the precipitation is below the normal and subtracting when above.

The September rainfall is usually greatest over eastern and southern parts of the Florida Peninsula, on the North Carolina and Texas coasts, and in extreme northwestern Washington, where it exceeds 6.00, and the normal amount exceeds 4.00 along the south Atlantic and Gulf coasts, over a great part of Mississippi, Louisiana, and eastern Texas, and in an area extending from the interior of Iowa over northern Wisconsin, Upper Michigan, and northern Lower Michigan. In the Northwest and over the Rocky Mountain and plateau regions, except in parts of the northern plateau region and in northern New Mexico, the September precipitation is less than 1.00, and generally over the western part of the plateau region and in central and southern California the normal amount for that month is less than 0.25.

In September, 1892, the monthly precipitation was greatest on the east coast of the Florida Peninsula, where it was 14.00 to 16.00, and more than 10.00 fell along the Atlantic coast from Charleston, S. C., to a point south of Jupiter, Fla., over the interior of southern Florida, and in extreme northwestern Washington. Over the greater part of the country east of the Mississippi River and along the immediate coast of Washington the monthly rainfall was 2.00 to 4.00; at Neah Bay, Wash., it was 10.91. Over the Rocky Mountain and plateau regions, in the Northwest, and on the middle and south Pacific coasts the monthly amount was less than 1.00; over the greater part of those districts less than 0.50 was reported; and in southern and southwestern California no rain fell.

DEPARTURES FROM NORMAL PRECIPITATION.

The monthly precipitation was generally deficient. Small areas of excess appeared in western Nova Scotia, on the south New England, south Atlantic, eastern Florida, and middle Gulf coasts, in central Arkansas, central Kentucky, and central Tennessee, in eastern Lower Michigan and southern Ontario, and on the north Pacific coast. The most marked de-