low ground were killed at Georgetown, Cal. Vegetation was badly injured at Sacramento, Cal., on the 15th. At Jacksonville, Fla., tender vegetation was injured by frost and ice formed on the 18th. During the week ending November 21st vegetation was slightly injured by frost in parts of Los Angeles and Orange counties, Cal.

The heavy frost of the 18th in northern Florida and along the Gulf coast was about two weeks earlier than the average date of first killing frost in those districts.

Attending the cold wave of the last 3 days of the month frost occurred on the Gulf coast, and on the 30th it was reported as far south as Pasadena, Pasco Co., Fla.

PRECIPITATION (expressed in inches and hundredths).

The distribution of precipitation over the United States and Canada, for November, 1891, as determined from the reports of nearly 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.

In November the monthly precipitation is usually greatest on the northwest coast of Washington, where it exceeds 10.00; it exceeds 8.00 along the immediate Pacific coast north of the 40th parallel; it exceeds 4.00 in the Mississippi Valley south of the 36th parallel, along the Gulf coast from Galveston, Tex., to the Florida Peninsula, in an area extending from the west part of the Carolinas over the eastern half of Tennessee, along the North Carolina coast, and along the immediate Atlantic coast north of New Jersey. West of a line traced from the Red River of the North Valley to central Texas the normal precipitation for November is generally less than 1.00, except along the Pacific coast, and in the mountains of Idaho and western Montana.

In November, 1891, the monthly precipitation was greatest on the extreme north Pacific coast, where it exceeded 20.00, and a depth of 23.06 was reported at Neah Bay, Wash. The monthly amount exceeded 10.00 at stations in east-central Arkansas, central Illinois, at Central City, Ky., Cheneyville, La., Natchez, Miss., Linville, N. C., and Dyersburgh, Tenn., and was more than 8.00 along the Oregon and Washington coasts, in areas in the middle and lower Mississippi and lower Ohio valleys, and in western North Carolina. Over the greater part of southern California and thence eastward over the southern plateau region to western New Mexico there was an almost entire absence of precipitation, and in the extreme northwest and over the greater part of the country west of the 100th meridian, save on the north Pacific coast, and in the mountains of Idaho and western Montana, the monthly amount was less than 1.00.

DEPARTURES FROM NORMAL PRECIPITATION.

The monthly precipitation was in excess of the average amount for November from the central part of the Lake region southward over the Ohio and Mississippi valleys to southern Alabama and Mississippi; it was also in excess from the north Pacific coast to the Red River of the North Valley. At Neah Bay, Wash., the excess was more than 10.00; it exceeded 5.00 along the Washington coast; and exceeded 2.00 in an area extending from Georgian Bay to the eastern lower Mississippi valley. In the Atlantic coast states and Florida, from Texas westward to the south and middle Pacific coasts, and from the southeastern slope of the Rocky Mountains to western Lake Superior the monthly precipitation was deficient. The most marked deficiency, 4.06, was noted at Sydney, C. B. I., and there was a deficiency of more than 2.00 on the North Carolina coast, at points along the New England coast, in central Texas, and at San Francisco and Red Bluff, Cal.

Considered by districts the average percentage of the normal in districts where the precipitation was in excess was about as follows: north Pacific coast, 170; upper Mississippi valley, 160; extreme northwest, 155; upper lake region, 150; lower lake region, and Ohio Valley and Tennessee, 130; east Gulf states, 120. In districts where the precipitation was deficient the percentage of the normal was about as follows: south Pacific coast, 4; southern plateau region, 6; southeastern slope of the Rocky Mountains, 9; middle Pacific coast, 18; Rio Grande Valley, 27; middle plateau region, 37; middle-eastern slope of the Rocky Mountains, 40; New England, 56; middle Atlantic states, 57; Missouri Valley, 62; south Atlantic states, 67; Key West, Fla., 80; west Gulf states, 90. On the northeast slope of the Rocky Mountains, and at Spokane Falls, Wash., the monthly precipitation averaged about normal.

DEVIATIONS FROM AVERAGE PRECIPITATION.

The following table shows for certain stations, as reported by voluntary observers, (1) the average precipitation for November for a series of years; (2) the length of record during which the observations have been taken and from which the average has been computed; (3) the total precipitation for November, 1891; (4) the departure of the current month from the average; (5) and the extremes for November during the period of observation and the years of occurrence:

State and station.	County.	(1) Average for the month of Nov.	(2) Length of record.	(3) Total for Nov., 1891.	(4) Departure from average.	(5) Extremes for Nov.			
						Greatest.		Least.	
						Am't.	Year.	Am't.	Year.
Arkansas.		*Inches*	*Years*	*Inches*	*Inches.*	*Inches.*		*Inches*	
Lead Hill	Boone	4.11	10	8.85	+4.74	8.85	1891	2.50	1885
California.									
Sacramento	Sacramento	2.01	41	0.46	−1.55	9.65	1885	0.00	'50,'62
Connecticut.									
Middletown	Middlesex	3.90	31	3.00	−0.90	7.29	1877	0.75	1890
Florida.									
Merritts Island	Brevard	2.45	13	1.67	−0.78	5.67	1884	0.17	1886
Georgia.									
Forsyth	Monroe	3.44	17	3.56	+0.12	5.41	1888	0.50	1890
Illinois.									
Peoria	Peoria	2.32	35	4.08	+1.76	4.93	1879	0.31	1865
Riley	McHenry	2.30	40	3.75	+1.45	8.38	1876	0.08	1862
Indiana.									
Logansport	Cass	3.59	15	7.69	+4.10	7.69	1891	1.43	1880
Vevay	Switzerland	3.29	26	5.77	+2.48	6.34	1888	0.73	1872
Iowa.									
Cresco	Howard	1.52	20	1.01	−0.51	5.20	1879	0.18	1875
Monticello	Jones	2.39	36	2.55	+0.16	5.72	1862	0.12	1865
Logan	Harrison	1.37	21	0.60	−0.77	3.85	1871	0.00	1873
Kansas.									
Lawrence	Douglas	1.93	25	0.81	−1.12	5.15	1879	0.01	1872
Wellington	Sumner	1.23	12	.....	.....	3.14	1890	0.18	1886
Louisiana.									
Grand Coteau	St. Landry	3.10	8	4.85	+1.75	5.72	1883	1.51	1890
Maine.									
Orono	Penobscot	4.59	21	2.78	−1.81	8.76	1886	1.78	1882
Maryland.									
Cumberland	Allegany	2.27	20	2.92	+0.65	5.34	1889	0.82	1887
Massachusetts.									
Amherst	Hampshire	4.65	46	2.71	−1.94	7.48	1854	1.33	1882
Newburyport	Essex	4.38	13	2.34	−2.04	8.15	1889	0.97	1882
Somerset	Bristol	4.59	19	2.95	−1.64	9.02	1876	1.04	1890
Michigan.									
Kalamazoo	Kalamazoo	2.72	15	4.96	+2.24	5.77	1877	1.25	1882
Thornville	Lapeer	2.97	14	5.32	+3.35	5.32	1891	1.42	1882
Minnesota.									
Minneapolis	Hennepin	1.32	25	0.82	−0.50	4.13	1868	0.31	1878
Montana.									
Fort Custer	Custer	0.41	12	1.68	+1.27	1.68	1891	0.05	1887
New Hampshire.									
Hanover	Grafton	3.75	39	2.00	−1.75	6.62	1885	0.59	1882
New Jersey.									
Moorestown	Burlington	3.37	28	2.30	−1.07	7.02	1889	0.98	1890
South Orange	Essex	3.63	21	2.86	−0.77	11.37	1889	0.78	1890
New York.									
Cooperstown	Otsego	3.07	37	3.15	+0.08	5.38	1858	1.45	1876
Palermo	Oswego	3.67	37	2.88	−0.79	6.60	1866	1.01	1882
North Carolina.									
Lenoir	Caldwell	3.33	19	4.50	+1.17	7.60	1877	0.00	1890
Ohio.									
N. Lewisburgh	Champaign	3.38	16	7.20	+3.82	7.20	1891	0.85	1884
Wauseon	Fulton	3.13	19	5.02	+1.89	5.83	1881	1.46	1884

Deviations from average precipitation—Continued.

State and station.	County.	(1) Average for the month of Nov.	(2) Length of record.	(3) Total for Nov., 1891.	(4) Departure from average.	(5) Extremes for Nov.			
						Greatest.		Least.	
						Am't.	Year.	Am't.	Year.
Oregon.		*Inches*	*Years*	*Inches*	*Inches.*	*Inches.*		*Inches*	
Albany	Linn	3.83	12	7.32	+3.49	8.40	1885	0.44	1890
Eola	Polk	4.18	21	6.93	+2.75	13.01	1877	1.42	1890
Pennsylvania.									
Dyberry	Wayne	3.27	20	1.85	−1.42	7.00	1886	1.40	1882
Grampian Hills	Clearfield	3.01	22	3.27	+0.26	6.03	1886	1.42	1872
Wellsborough	Tioga	4.43	12	4.11	−0.32	9.07	1889	0.93	1890
South Carolina.									
Statesburgh	Sumter	1.86	10	2.01	+0.15	3.90	1882	0.87	1886
Tennessee.									
Austin	Wilson	3.87	21	5.72	+1.85	7.24	1874	1.57	1890
Texas.									
New Ulm	Austin	4.85	19	2.61	−2.24	14.93	1873	0.48	1887
Vermont.									
Strafford	Orange	3.51	18	2.05	−1.46	6.20	1888	0.50	1874
Virginia.									
Birdsnest	Northampton	2.94	22	2.10	−0.84	5.80	1885	T.	1890
Washington.									
Fort Townsend	Jefferson	2.68	16	3.30	+0.62	9.21	1874	0.39	1884
Wisconsin.									
Madison	Dane	2.02	22	3.31	+1.29	4.92	1856	0.53	1870

PRECIPITATION, JANUARY TO NOVEMBER.

For the period January to November, 1891, inclusive, the precipitation averaged about normal in the middle Atlantic states, at Key West, Fla., in the Ohio Valley and Tennessee, and over the middle plateau region. In the extreme northwest, on the northeastern and middle-eastern slopes of the Rocky Mountains, and on the north Pacific coast the precipitation was one-tenth to three tenths greater than usual, and in the New England, south Atlantic, east and west Gulf states, the Rio Grande, upper Mississippi and Missouri valleys, the Lake region, on the southeastern slope of the Rocky Mountains, over the southern and northern plateau regions, and on the middle and south Pacific coasts the precipitation was seven-tenths to nine-tenths of the normal amount for the period named.

YEARS OF GREATEST PRECIPITATION FOR NOVEMBER.

The greatest monthly precipitation ever reported for November occurred at Mobile, Ala., Lead Hill, Ark., Columbus, Cleveland, Sandusky, and North Lewisburgh, Ohio, Detroit, Port Huron, and Thornville, Mich., Fort Buford, N. Dak., Fort Custer, Mont., Port Angeles, Neah Bay, and Fort Canby, Wash., and Astoria, Oregon, in 1891; over Arkansas and northern Louisiana in 1889; along the middle and south Pacific coasts and over the west part of the middle plateau region in 1885; from the lower Missouri valley over upper Michigan and the northern part of lower Michigan in 1879; and in Maryland and Virginia, except along the eastern coasts, in 1877.

In November, 1891, the excess above the greatest monthly precipitation previously reported for November was 0.24 at Mobile, Ala.; 3.08 at Lead Hill, Ark.; 0.07 at Columbus, Ohio, to 0.59 at Detroit, Mich.; 0.44 and 0.58 at Fort Buford, N. Dak., and Fort Custer, Mont., respectively; and 0.38 at Fort Canby, Wash., to 3.46 at Neah Bay, Wash.

YEARS OF LEAST PRECIPITATION FOR NOVEMBER.

The least monthly precipitation ever reported for November occurred at Abilene and El Paso, Tex., Concordia, Kans., Montrose, Colo., and Keeler, Cal., in 1891, the deficiency as compared with the least amount previously reported varying from 0.01 at El Paso, Tex., and Keeler, Cal., to 0.49 at Montrose, Colo.; on the Pacific coast and the west parts of the middle and northern plateau regions, and in an area extending from southern New England along the coast to Virginia and North Carolina and thence to the middle Gulf coast in 1890; in the extreme upper Mississippi valley, and thence over the upper valley of the Red River of the North, northern and western Iowa, and eastern Nebraska in 1888; over the greater part of New England in 1882; in the upper Mississippi valley in 1875; and in the Ohio Valley in 1872.

In 1891, when the monthly precipitation was the greatest on record for November at stations on the central Gulf coast, northern Arkansas, the west part of the lower lake region, northwestern North Dakota, eastern Montana, and along the Washington coast, it was the least on record for the month at stations in the south-central and southwestern districts.

EXCESSIVE PRECIPITATION.

The following tables show, by states, the number of stations reporting monthly precipitation to equal or exceed 10.00; precipitation to equal or exceed 2.50 in 24 hours; and precipitation to equal or exceed 1.00 in 1 hour in November, 1891:

Monthly precipitation to equal or exceed 10.00.

State.	Number of stations.	State.	Number of stations.
Oregon	6	Louisiana	1
Washington	5	Mississippi	1
Illinois	2	North Carolina	1
Arkansas	1	Tennessee	1
Kentucky	1		

Precipitation to equal or exceed 2.50 *in* 24 *hours.*

State.	Number of stations.	Dates.	State.	Number of stations.	Dates.
Mississippi	21	8-9, 9, 20-21, 21, 21-22.	Washington	3	7-8, 8, 8-9.
Tennessee	11	9, 9-10, 10, 16, 22.	Georgia	2	22, 28.
Arkansas	8	8, 15, 16, 20.	Kentucky	2	16, 21.
Oregon	6	3, 4.	Michigan	2	9, 9-10.
Alabama	5	9, 9-10, 20-21.	Missouri	2	15-16, 22-23.
Louisiana	5	8-9, 9, 21.	North Carolina	2	9-10.
Illinois	4	8-9, 16, 21-23, 22-23.	Ohio	2	23.
			Indiana	1	9.
			Texas	1	16.
			West Virginia	1	23.

Precipitation to equal or exceed 1.00 *in* 1 *hour.*

State.	Number of stations.	Dates.	State.	Number of stations.	Dates.
Texas	4	1, 8, 9, 16.	South Carolina	1	11.
Mississippi	1	9.	West Virginia	1	23.

Table of excessive precipitation, November, 1891.

State and station.	Monthly rainfall 10 inches or more.	Rainfall 2.50 inches, or more, in 24 hours.		Rainfall of 1 inch, or more, in one hour.		
		Amt.	Day.	Amt.	Time.	Day.
Alabama.	*Inches.*	*Inches.*		*Inches*	*h. m.*	
Cordova		3.02	9			
Decatur (1)		4.17	9-10			
Decatur (2)		3.89	9-10			
Lynn		2.86	9-10			
Do		2.78	20-21			
Mobile		3.06	9-10			
Mount Vernon Barracks		2.92	9			
Arkansas.						
Black Rock		2.85	15			
Brinkley		3.80	8			
Fayetteville		3.80	8			
Harrisburgh		3.50	16			
Monticello		2.92	8			
Newport (2)		2.60	8			
Osceola	10.03	3.25	8			
Do		3.27	16			
Ozone		3.78	20			
Georgia.						
Athens (1)		2.65	28			
Gillsville		2.60	22			
Illinois.						
Golconda		2.56	16			
Louisville		2.75	22-23			
Olney (2)	10.92	5.98	21-23			
Pana	10.09	2.50	8-9			
Indiana.						
Huntingburgh		3.00	9			
Kentucky.						
Canton		2.89	16			
Central City	10.01					
Edmonton		2.55	21			

Table of excessive precipitation—Continued.

State and station.	Monthly rainfall 10 inches, or more.	Rainfall 2.50 inches, or more, in 24 hours.		Rainfall of 1 inch, or more, in one hour.		
		Amt.	Day.	Amt.	Time.	Day.
Louisiana.	*Inches.*	*Inches.*		*Inches*	*h. m.*	
Cameron		3.59	21			
Cheneyville	11.14	5.70	9			
Edgard		3.08	9			
Emilie		3.52	9			
Marksville		5.25	8-9			
Michigan.						
Berrien Springs (2)		2.50	9			
Mottville		3.26	9-10			
Mississippi.						
Aberdeen		3.50	22			
Agricultural College		4.45	21			
Batesville		2.60	22			
Booneville		6.12	21-22			
Brookhaven		3.28	22			
Canton		3.30	21			
Columbus (1)		2.72	20-21			
Columbus (2)		3.15	21-22			
Fayette		3.60	8-9			
Do		3.98	20-21			
Hazelhurst		5.00	22			
Kosciusko		5.00	21-22			
Louisville		3.70	21			
Meridian		3.15	9	1.25	1 00	9
Natchez	10.30	4.50	9			
Okolona		3.10	22			
Palo Alto		3.54	21-22			
Pontotoc		5.02	22			
Rienzi		4.34	22			
Summit		2.90	9			
Do		2.81	22			
Vicksburg		4.28	21-22			
Washington		4.08	8-9			
Water Valley		3.01	21			
Missouri.						
Zeitonia		2.61	15-16			
Do		2.90	22-23			
North Carolina.						
Hendersonville		4.00	9-10			
Linville	10.79	5.25	9-10			
Ohio.						
Elyria		4.54	23			
Oberlin		3.06	23			
Oregon.						
Astoria	15.18					
Bandon		2.78	4			
Burns		3.75	3			
Cascade Locks	13.25					
Gardiner	10.29					
Langlois	14.53					
Newport	10.51					
Toledo	10.81					
South Carolina.						
Saint Georges				1.85	1 40	11
Tennessee.						
Bethel Springs		2.50	22			
Covington (2)		2.50	9			
Dyersburgh (2)	11.45	5.10	16			
Fayetteville		2.84	10			
Florence Station		2.76	9-10			
Lynnville		3.68	9-10			
Nashville		3.04	9-10			
Nunnelly		2.50	22			
Rockwood		3.20	22			
Sparta		2.56	22			
Union City		2.70	16			
Texas.						
Corpus Christi				1.59	0 55	1
Hallettsville				1.60	0 30	8
Longview		2.55	16			
Round Rock				1.52	1 00	16
Sugar Land				1.87	1 30	9
Washington.						
Aberdeen	19.96	3.90	8			
Fort Canby (Weather Bureau)	14.10					
Fort Canby (Post Hospital)	14.25					
Neah Bay	23.06	2.55	7-8			
Olympia	10.83					
Tatoosh Island	17.68	2.84	8-9			
West Virginia.						
Bluefield		2.50	23	2.50	2 00	23

MAXIMUM RAINFALL IN ONE HOUR OR LESS.

The following table is a record of the heaviest rainfall during November, 1891, for periods of five and ten minutes and one hour, as reported by regular stations of the Weather Bureau furnished with self-registering gauges:

Station.	Maximum fall in—					
	5 min.	Date.	10 min.	Date.	1 hour.	Date.
	Inch.		*Inch.*		*Inch.*	
Atlanta, Ga	0.07	23	0.11	23	0.38	10
Bismarck, N. Dak	0.01	10	0.02	10	0.08	10

Maximum rainfall in one hour or less—Continued.

Station.	Maximum fall in—					
	5 min.	Date.	10 min.	Date.	1 hour.	Date.
	Inch.		*Inch.*		*Inch.*	
Boston, Mass	0.06	17, 27	0.10	17, 27	0.41	27
Buffalo, N. Y	0.03	11	0.05	11	0.15	23
Cincinnati, Ohio	0.10	10	0.11	10	0.25	10
Chicago, Ill	0.02	9	0.04	9	0.13	8
Cleveland, Ohio *						
Denver, Colo †						
Detroit, Mich	0.03	22	0.05	22	0.22	22
Dodge City, Kans ‡						
Duluth, Minn †						
Eastport, Me	0.07	17	0.10	17	0.25	17
Galveston, Tex	0.06	24	0.10	24	0.35	16
Indianapolis, Ind	0.04	10	0.08	10	0.18	10
Jacksonville, Fla	0.16	29	0.17	29	0.30	10
Jupiter, Fla	0.20	10	0.35	10	0.90	10
Kansas City, Mo	0.01	16	0.02	16	0.10	16
Key West, Fla *						
Marquette, Mich	0.02	11	0.03	11	0.15	11
Memphis, Tenn	0.40	16	0.70	16	0.95	16
New York, N. Y	0.08	23	0.10	23	0.17	26
New Orleans, La	0.08	22	0.14	22	0.61	22
Norfolk, Va	0.03	29	0.06	29	0.16	29
Philadelphia, Pa	0.05	11	0.10	11	0.17	11
Philadelphia Water Works	0.08	23	0.12	23	0.22	17
Pittsburg, Pa	0.07	17	0.10	17	0.13	17
Portland, Oregon	0.05	9	0.06	9	0.20	3
Saint Louis, Mo	0.15	22	0.26	22	0.61	22
Saint Paul, Minn †						
San Diego, Cal ‡						
San Francisco, Cal ‡						
Savannah, Ga	0.20	10	0.25	10	0.43	10
Washington, D. C	0.35	23	0.35	23	0.40	23
Wilmington, N. C	0.04	10	0.08	10	0.26	10

*Self-register out of order. † No record on account of snow. ‡ Less than 0.05 in 1 hour.

The following tables show the number of years for which monthly precipitation to equal or exceed 10.00 inches, daily precipitation to equal or exceed 2.50 inches, and hourly precipitation to equal or exceed 1.00 inch has been reported in the several states and territories for November during the last 22 years:

Excessive monthly precipitation.

State.	No. years noted.	State.	No. years noted.
Washington	12	Arkansas	2
Oregon	9	Alabama	1
California	5	Colorado	1
Maryland	4	Connecticut	1
Texas	4	Delaware	1
Mississippi	4	Georgia	1
North Carolina	4	Kansas	1
Louisiana	3	Michigan	1
Massachusetts	3	Pennsylvania	1
New York	3	Wisconsin	1
Florida	2	Illinois	1
Indiana	2	Kentucky	1
New Hampshire	2	Tennessee	1
New Jersey	2		

Excessive daily precipitation (24 hours).

State.	No. years noted.	State.	No. years noted.
Louisiana	17	South Carolina	6
Texas	17	Washington	6
North Carolina	16	California	5
Massachusetts	12	Kentucky	5
Alabama	12	Michigan	5
Tennessee	12	Ohio	5
Georgia	11	Maryland	3
Florida	10	Rhode Island	3
Mississippi	10	Virginia	3
New York	9	Wisconsin	3
Illinois	9	West Virginia	3
Indiana	9	Colorado	2
Connecticut	7	Delaware	2
Pennsylvania	7	Indian Territory	2
Arkansas	7	Vermont	2
Missouri	7	Arizona	1
Oregon	7	The Dakotas	1
Iowa	6	District of Columbia	1
Kansas	6	Minnesota	1
Maine	6	Nebraska	1
New Hampshire	6	New Mexico	1
New Jersey	6		

Excessive hourly precipitation.

State.	No. years noted.	State.	No. years noted.
Texas	7	Kansas	1
Florida	3	Kentucky	1
North Carolina	3	Michigan	1
Tennessee	3	Nebraska	1
Mississippi	3	New York	1
California	2	Pennsylvania	1
Indiana	2	South Carolina	1
Alabama	1	Virginia	1
District of Columbia	1	West Virginia	1
Georgia	1		

The following tables give exceptionally heavy monthly, daily, and hourly precipitation reported for November during the last 22 years:

☔ *Monthly.*

Station and state.	Am't.	Year.	Station and state.	Am't.	Year.
	Inches.	*Year.*		*Inches.*	*Year.*
Crescent City, Cal	31.93	1885	Neah Bay, Wash	23.06	1891
Delta, Cal	29.38	1885	Fort Stevens, Oregon	22.21	1877
Fort Gaston, Cal	24.54	1885	Point Pleasant, La	20.89	1877
Georgetown, Cal	24.12	1875			

Daily (24 hours).

Station and state.	Amount.	Date.	Station and state.	Amount.	Date.
	Inches.			*Inches.*	
Fort Barrancas, Fla	10.39	26, 1878	Cheneyville, La	5.70	9, 1891
San Luis Obispo, Cal	10.04	17-18, 1885	Galveston, Tex	5.63	6, 1872
Bluff Settlement, Tex	8.00	14-16, 1874	Fayette, Miss	5.60	27-28, 1880
Cheneyville, La	7.91	15-16, 1890	Wellsborough, Pa	5.50	23, 1884
Fort Seldon, N. Mex	7.75	24-26, 1888?	Boston, Mass	5.43	20-21, 1876
Dover, Del	7.58	18-20, 1876	Barnegat City, N. J	5.33	24-25, 1877
Point Pleasant, La	7.10	20, 1877	Linville, N. C	5.25	9-10, 1891
Marion, Ala	7.00	6-7, 1885	Ft. Independence, Mas	5.25	21-22, 1874
Melissa, Tex	7.00	1, 1877	Newport, Mich	5.25?	24-25, 1884
Belmont Farm, Tex	7.00	1, 1877	Charleston, Ill	5.21	26-27, 1887
Point Pleasant, La	6.80	8, 1877	Okaloosa, La	5.20	9, 1879
Quitman, Ga	6.70	5-6, 1880	Mattoon, Ill	5.11	26, 1887
Milton, Mass	6.20	25-27, 1888?	Dyersburgh, Tenn	5.10	10, 1891
Booneville, Miss	6.12	21-22, 1891	Palestine, Tex	5.05	10, 1883
Fort Barrancas, Fla	6.07	16, 1881	White Plains, N. Y	5.04	27-28, 1890
Point Pleasant, La	6.03	11-12, 1881	Lake Charles, La	5.00	16, 1890
Greensborough, Ala	6.00	6-7, 1885	Sandy Springs, Md	5.00	23-24, 1877
Red Bluff, Cal	5.93	8-9, 1885	Vandalia, Ill	5.00	26, 1887
Charleston, S. C	5.84	16-17, 1889	Elsworth, N. C	5.00	28, 1880
Thatchers Island, Mass	5.75	18-19, 1878	Reidsville, N. C	5.00	7-8, 1885

One hour and less.

Station and state.	Amount.	Time.	Date.
	Inches.	*h. m.*	
New York, N. Y	0.25	0 02	18, 1886
Memphis, Tenn	0.40	0 05	16, 1890
Washington, D. C	0.35	0 05	23, 1891
Jupiter, Fla	0.30	0 05	29, 1890
Galveston, Tex	1.48	0 15	5, 1877
Vicksburg, Miss	1.82	0 20	15, 1879
Galveston, Tex	3.50	0 30	2, 1873
Hallettsville, Tex	1.60	0 30	8, 1891

❄ SNOW (in inches and tenths).

The first snow of the season was reported as follows: 1st, Grand Haven, Manistee, and Thornville, Mich.; Duluth, Minn.; Fort Niobrara and Fremont, Nebr.; Kimball, Onida, and Tindall, S. Dak.; Peshtigo, Wis. 2d, Wichita, Kans.; Farmington, Me.; Grand Forks, N. Dak.; Castlewood and Huron, S. Dak.; Dodgeville, Wis. 3d, Olney, Sandwich, and Springfield, Ill.; Marion, Ind.; Louisville and Shelbyville, Ky.; Mottville, Mich.; Cincinnati and Kenton, Ohio; La Crosse, Wis. 4th, La Fayette, Ind.; Nantucket, Mass.; Albion and Lansing, Mich.; Sandusky, Ohio; Aqueduct, Pa.; Harpers Ferry, W. Va. 5th, Washington, D. C.; Baltimore, Frederick, Taneytown, and Woodstock, Md.; Blooming Grove, Corry, Harrisburg, Huntingdon, Lock Haven, and Wilkes Barre, Pa.; Fort Myer and Woodstock, Va.; Martinsburgh, W. Va. 6th, Power, N. Dak. 7th, Gering, Nebr. 8th, Antelope Springs, Chama, Embudo, Fort Stanton, Dulce, Estalina Springs, Monero, Santa Fe, Taos, and Wallace, N. Mex.; Parker, S. Dak.; Hansford and Hartley, Tex.; Levan, Utah. 10th, Morris, Minn.; Napoleon, N. Dak.; Aberdeen, Mitchell, and Wolsey, S. Dak.; Appleton, Wis. 11th, Aurora and Ottawa, Ill.; Des Moines and Dubuque, Iowa; Minneapolis, Red Wing, and Saint Paul, Minn.; Crete, Harvard, and Lincoln, Nebr.; Ellendale, N. Dak.; Forestburgh, Forest City, Gary, Howard, Millbank, Parker, Parkston, Pierre, Wentworth, Wessington Springs, and Yankton, S. Dak.; Walla Walla, Wash.; Beloit, Black River Falls, Harvey, Kenosha, Meadow Valley, Milwaukee, Oshkosh, Prairie du Chien, Sparta, Viroqua, Waukesha, and Whitehall, Wis. 12th, Payette, Idaho; Davenport, Iowa; Abilene, Allison, Concordia, and Manhattan, Kans.; Columbia, Fayette, Glasgow, Harrisonville, La Monte, Sedalia, and Warrensburgh, Mo.; Hartington, Marquette, and North Platte, Nebr.; Fargo, N. Dak.; Beulah, Oregon; Pomeroy, Wash.; Embarrass and Green Bay, Wis. 13th, Rock Island Arsenal, Ill.; Sioux Falls, Iowa; Globe and Wakefield, Kans.; Berrien Springs, Mich.; Fox Creek, Marshall, and Saint Louis, Mo.; De Soto, Nebr.; Lakeview, Oregon.

14th, Charleston, Griggsville, Oswego, Chicago, Riley, Sycamore, and Winnebago, Ill.; Indianapolis, Ind.; Atchison, Kans.; Kalamazoo, Mich.; Napoleon, Sidney, Wauseon, Ohio; Erie, Pa.; Strafford, Vt.; Spokane, Wash. 15th, Hennepin, Ill.; Woodward, Ind. T.; Jamestown, N. Y.; Bement, Caledonia, Canton, Mansfield, Tiffin, Toledo, Westerville, Wheeler, and Wooster, Ohio; Fort Simcoe, Wash.; Menomonie and Osceola Mills, Wis. 16th, Black Rock, Ark.; Dodge City, Lakin, and Oberlin, Kans.; Earlington, Ky.; Royalston, Mass.; Springfield, Mo.; West Milton, Ohio; East Sound, Fort Townsend, Olympia, Port Angeles, and Tatoosh Island, Wash. 17th, Mount Carmel, Ill.; Jeffersonville, Logansport, and Vevay, Ind.; Wallace, Kans.; Central City, Edmonton, Fort Thomas, Louisa, Newport Barracks, and Richmond, Ky.; Manton, Marshall, and Port Huron, Mich.; Bellevue, Columbus, Demos, Gratiot, North Lewisburgh, and Portsmouth, Ohio; Chattanooga, Tenn.; Charleston, Glenville, Parkersburgh, Tannery, and Wheeling, W. Va. 18th, Winslow, Ark.; East Canterbury, N. H.; Lowville, N. Y.; Marietta, Ohio; Easton, Pa.; Grapevine, Tex.; Piedmont, W. Va. 19th, Mountains near Redding Cal.; Ozone, Ark.; Madison, Wis.

20th, Pine Bluff, Ark.; Shelbina, Mo. 21st, Fort Supply, Ind. T.; Horton, Hutchinson, and Salina, Kans.; Centreville, Harrison, and Concordia, Mo. 22d, Conway, Corner Stone, Harrisburgh, Hope, Osceola, Paragould, Stuttgart, Arkadelphia, Hot Springs, Little Rock, and Prescott, Ark.; Murray, Iowa; Havensville, La Harpe, Leavenworth, Lebo, and Yates Centre, Kans.; Saint Charles, Minn.; Booneville and Water Valley, Miss.; Carrollton, Dadeville, Eight Mile, and Lebanon, Mo.; Albert, N. Mex.; Oklahoma City, Okla. T.; Hartland, Vt. 23d, Forrest City, Lonoke, and Newport, Ark.; Cairo, Ill.; Evansville and Mount Vernon, Ind.; Bowling Green and Pellville, Ky.; Pontotoc and University, Miss.; Gordonville and Marble Hill, Mo.; Nashville, Tenn.; Big Stone Gap, Va.; Koepenick, Wis. 24th, Falmouth, Ky.; Bakersville, N. C.; Circleville, Ohio. 25th, Baraboo, Wis. 26th, New Hartford and Southington, Conn.; Mason City, Iowa; Portland, Me.; Amherst and Vineyard Haven, Mass.; Antrim, Concord, and Manchester, N. H.; Bluefield, W. Va. 27th, Peoria, Ill.; Cornish, Me.; Lunenburgh, Vt.

28th, Caddo, Ky.; Barren Creek Springs, Md.; Beverly, N. J.; New York, N. Y.; Southern Pines, N. C.; Philadelphia, Pa.; Enosburgh Falls, Vt.; Clarksville and Spottsville, Va. 29th, Augusta and Point Peter, Ga.; Leonardtown, Md.; Woods Holl, Mass.; Atlantic City and Egg Harbor City, N. J.; Charlotte, Fayetteville, Lexington, Louisburgh, Lumberton, Morganton, Mount Airy, Oak Ridge, Raleigh, Salisbury, Saxon, Soapstone Mount, Wadeville, Wadesborough, Weldon, Wilmington, and Willeyton, N. C.; Belmont, Charleston, Columbia, Effingham, Saint Matthews, Simpsonville, and States-

burgh, S. C.; Rogersville, Tenn.; Cape Henry, Christiansburgh, Bedford City, Birdsnest, Cape Charles, Dale Enterprise, Staunton, Lexington, Mossing Ford, Petersburgh, Stanardsville, Richmond, Salem, Danville, Fort Monroe, Lynchburgh, and Norfolk, Va.; Grafton, W. Va. 30th, Athens, Ga.; Chapel Hill, Hatteras, Kitty Hawk, and Lillington, N. C.; Cheraw, S. C.

At Hatteras, N. C., the snow of the 30th was one day earlier, at Louisville, Ky., the snow of the 3d was 3 days earlier, and at Olympia, Wash., the snow of the 16th was more than one month earlier than the date of earliest snow previously reported for the respective stations. Prior to the current year the date of the first snow was December 1, 1876, at Hatteras, N. C.; November 6, 1886, at Louisville, Ky.; and December 20, 1889, at Olympia, Wash.

The snow of the 5th at Baltimore, Md., and Washington, D. C., was 10 and 20 days, respectively, earlier than usual; that of the 29th at Lynchburgh and Norfolk, Va., was 9 and 21 days, respectively, early; and that of the 29th at Wilmington, N. C., and Augusta, Ga., and of the 30th at Hatteras, N. C., was more than one month early. In Arkansas the snow of the 22d was more than one month early. Along the Ohio River it was one to 4 weeks early, and at Olympia and Walla Walla, Wash., respectively, the snow of the 16th and 11th was 3 to 4 weeks early. At New York, N. Y., and Philadelphia, Pa., the snow of the 28th was about 2 weeks later than usual; in the Lake region the first snow of the season noted was generally 2 to 3 weeks late; and in the upper Mississippi and lower Missouri valleys, Kansas, Nebraska, and northern New Mexico the first snow of the season reported for the current month was one to 2 weeks later than the average date of first snow.

On the 8th a snowfall of 4 feet was reported near the base of the Sierra Capitan Mountains east of Fort Stanton, N. Mex. On the 10th and 11th a general snowstorm prevailed over the Dakotas and extended into Iowa on the 11th. An unusually heavy November snowstorm prevailed over Minnesota and a part of the Dakotas on the 15th, a depth of 5.0 to 7.0 being noted. Heavy snow fell in southern Iowa and western Missouri on the 22d; trains in the Missouri Valley were delayed. Light snow fell in the northern part of Mississippi on the 23d, 28th, and 29th; in each instance the ground was barely covered, and the snow melted rapidly. The first heavy snow of the season fell in northern western New York on the 27th; a depth of 3.0 was reported at Lockport, Niagara county, at midnight of that date. A snowstorm prevailed over the Atlantic coast states and extended as far south as central South Carolina and northern Georgia on the 29th. In central and northern North Carolina the depth of snowfall on this date exceeded 6.0. The snow was exceptionally heavy throughout Virginia. At Norfolk, Va., 6.7 fell, and street traffic was interrupted, and a depth of more than one foot was reported in the south-central part of the state. Snow fell to a depth of 5.0 to 6.0 in eastern Maryland. This snowstorm was followed on the 30th by the coldest weather of the month in the Atlantic coast states. A report of the 30th stated that at the close of the month there was a depth of 1 to 3 feet of snow near Deadwood, S. Dak., and that in some localities snow had caused an entire suspension of business.

MONTHLY SNOWFALL.

The depth of snowfall for the month, as reported by regular and voluntary observers of the Weather Bureau, is shown on Chart V. The greatest depth reported was 67 at Climax, Colo.; more than 30 was noted in extreme northern upper Michigan; more than 20 in northeast southern Idaho; and more than 10 in north-central and the interior of western New York, and in northeastern Ohio, south-central Pennsylvania, south-central Virginia, central North Carolina, northern Indiana, northern Wisconsin, west-central Minnesota, over the greater part of North Dakota, and in northern South Dakota. The southern limit of snow is shown by a line traced from central South Carolina westward to south-central New Mexico, thence to the mountains of east-central California, and thence along the Sierra Nevada and Cascade ranges of mountains to western Washington.

Snowfall of 5 inches, or more, was reported as follows, and in states and territories where the maximum depth was less than that amount the station reporting the greatest is given:

Arkansas.—Black Rock, 4. *California.*—Summit, 3. *Colorado.*—Climax, 67; Dillon, 40.2; Breckenridge, 37.2; Red Cliff, 30.1; Stamford, 20; Steamboat Springs, 19; Ward District, 15; Smoky Hill Mine, 14.5; Springfield, 14.3; Pagoda (near), 14; Twin Lakes, 12.1; Meeker and Watervale, 12; Georgetown, 11.8; Dumont, 11.6; Moraine, 11.5; Apishapa, 11; Gold Hill, 10.5; Aspen and Bennet, 9; Jefferson, 8.7; Denver, 8.5; Box Elder, Castle Rock, and Downing, 8; Fort Collins, 7.8; Cumbres, 7.5; Gaynor, 7.4?; Carson, 7.3; Magnolia, 7.2; Glen Eyrie, 7; Como (near), 6.9; Saint Cloud, 6.5; Platoro, 6.4?; Loveland, 6.2?; Fort Collins (near), 6.1?; La Porte, 6?; Middle Box Elder, 5.1; Greenhorn and Manhattan, 5. *Connecticut.*—New Hartford (1), 0.5. *District of Columbia.*—Washington, D. C., 2.5. *Georgia.*—Athens, 0.5. *Idaho.*—Henrys Lake, 25.5. *Illinois.*—Aurora (2), 8.1; Aurora (1), 8; Lanark and Oswego, 7.5; Ottawa and Rockford, 7.2; Sandwich, 7; Chicago, 6.8; Winnebago, 6.5; Sycamore, 5.7; Hennepin, 5.

Indiana.—Michigan City, 13; Angola, 10.6; Columbia City, 8. *Indian Territory.*—Woodward, 2? *Iowa.*—Carroll, 9; Alta (1), 7; Murray, 5. *Kansas.*—Horton, 5. *Kentucky.*—Pellville, 1.7. *Maine.*—Mayfield, 4. *Maryland.*—Leonardtown, 5. *Massachusetts.*—Florida (2), 6. *Michigan.*—Bellaire, 35.4; Atlantic and Calumet, 31; Rockland, 28; Ivan, 21.9; Berrien Springs (1), 20.2; Benzonia, 18; Paw Paw, 17.5; Marquette, 17.4; Sault de Ste. Marie, 14; Weldon Creek, 12.8; Bear Lake and Colon, 12.2; Charlevoix, 12; Mottville, 11.6; Caldwell, 11; Vandalia, 10.8; Concord, 10.2; Fremont, 10; Vienna, 9.9; Bronson and Hudson, 9.5; Albion, 8.8; Hanover and Marshall, 8.7; Fairview, Fitchburgh, Grayling, Parkville, and Rawsonville, 8.5; Benton Harbor, 8.3; Grand Haven, 8.2; Fort Wayne, 8.1; Noble and Sand Beach, 8; Pulaski, 7.8; Madison, 7.6; Allegan and Manistee, 7.5; Grape, 7.2; Williamston and May, 7; Ypsilanti, 6.9; Detroit and Lansing, 6.8; Berrien Springs (2) and Cheboygan, 6.5; Eden, 6.2; Alma, Ann Arbor, Howell, Kalamazoo, and Olivet, 6; Grand Rapids, 5.8; Adrian, 5.6; Port Huron, 5.4; Birch Run, 5.1; Arbela, Birmingham, Hart, Pontiac, and Saint Ignace, 5.

Minnesota.—Crookston, 12; Farmington, 11; Fort Snelling, 9.5; Minneapolis, 8.5; Saint Paul and Saint Vincent, 8; Leech Lake, 7; Rolling Green, 6.5; Duluth, 6; Pine River, 5.8; Alexandria and Moorhead, 5.2; Kinbrae, Morris, and Redwood Falls, 5. *Mississippi.*—Pontotoc, 0.2. *Missouri.*—Oak Ridge (1 and 2) and Saint Joseph, 8; Platte River, 5.5; Pickering, 5.2. *Montana.*—Camp Poplar River, 9.4; Helena, 5.3. *Nebraska.*—Hay Springs, 7; Bassett and Springview, 6; Crete, 5.9; Gering, 5.2. *Nevada.*—Battle Mountain, 2. *New Hampshire.*—Littleton and Stratford, 5. *New Jersey.*—Cape May C. H., 4. *New Mexico.*—Folsom, 4. *New York.*—Arcade, 16.5; Turin, 15.9; Humphrey and Le Roy, 15; Constableville, 13.5; Eden Center and Sherman, 12; Number Four, 11.4; Rochester, 9.7; Malone, 8.1; Potsdam, 8; Lowville, 7.4; Lockport, 7; Buffalo, 6.9; Oswego, 6.7; Hess Road Station, 6.4; Canton and Palermo, 6. *North Carolina.*—Soapstone Mount, 10; Littleton, Weldon, and Willeyton, 6.

North Dakota.—Saint Johns, 16; Fort Buford, 12.7; Napoleon, 10.8; Bismarck, 10.4; Gallatin, 10.2; Fort Yates, 8.6; Fort Pembina, 8; Grand Forks, 7; Grand Rapids, 6.7; Power and Willow City, 6. *Ohio.*—Harbor, 19; Weymouth, 10; Garrettsville, 9; Hiram, 8.7; Montpelier, 8.5; Orangeville, 7.5; Youngstown, 7.3; Wheeler, 6.5; Wauseon, 6.4; Cleveland, 6.2; Lordstown and Van Wert, 6; Akron, 5.6; Ashland and Bangorville, 5.5; Wooster, 5.2; Toledo, 5.1; Bement and Gratiot, 5. *Oklahoma Territory.*—Oklahoma City, trace. *Ore-*

gon.—Canyon City, 7.3; Joseph, 7.2; Sparta, 5.3. *Pennsylvania.*—Blue Knob, 11; Warren, 7; Grampian Hills, 6. *Rhode Island.*—Kingston (2), trace. *South Carolina.*—Camden, Cheraw, Chester, Effingham, Evergreen, Florence, Nichols, Simpsonville, Society Hill, Tillers Ferry, and Wateree, trace. *South Dakota.*—Webster, 13.1; Aberdeen, 13; Britton and Wolsey, 9; De Smet, 8.5; Clark, 8; Forest City and Huron, 7.5; Parker, 6.5; Howard, Tindall, and Wentworth, 6; Wessington Springs, 5.7; Castlewood, 5.5; Sioux Falls, 5. *Tennessee.*—Clarksville, 2. *Texas.*—Hartley, 0.2. *Utah.*—Soldiers Summit, 6.5. *Vermont.*—Burlington, Chelsea, Enosburgh Falls, and Strafford, 4. *Virginia.*—Clarksville, 14; Spottsville, 8.5; Birdsnest, 7.8; Bedford City, 7.5; Norfolk, 6.7; Cape Charles and Mossing Ford, 6; Danville, 5. *Washington.*—Pomeroy, 1.5. *West Virginia.*—Parkersburgh, 3.7. *Wisconsin.*—Bayfield, 10.2; Osceola Mills, 9; Barron, 7.5; Shell Lake, 6.5; Hammond, 5. *Wyoming.*—Fort McKinney, 20.6; Fort Yellowstone, 13; Sundance, 11.6; Laramie (2), 10.5; Cheyenne, 8.5; Casper, 8; Lander, 7.6; Wheatland, 6; Evanston, 5.8.

DEPTH OF SNOW ON GROUND ON 15TH AND AT THE CLOSE OF THE MONTH.

Chart VI shows the depth of snow on the ground at the close of the month, as reported by regular and voluntary observers of the Weather Bureau.

On the 15th a depth of 4 to 8 was reported in the eastern part of North Dakota and the northeastern part of South Dakota; 1 to 4 was reported in western Iowa; trace to 4 in northern Nebraska; depths varying from 0.4 at Miles City to 3 at Helena, Mont.; 0.5 at Denver, Colo.; 0.4 to 2.5 in northern Wyoming; trace to 1 in central and northern Nevada; 6 at Henrys Lake, Idaho; and 1.6 at Baker City, Oregon. In the Lake region trace was noted at Buffalo, N. Y., and Detroit, Mich.; 1 to 2 in upper Michigan; and 3 to 4 in the western Lake Superior region, and in the extreme upper Mississippi valley.

On the 30th snow was generally reported on the ground in the interior of the Atlantic coast states as far south as central South Carolina, in northern, central, and western New York, in the Lake region, the north part of the Ohio Valley, in the Mississippi Valley north of the 41st parallel, generally in Minnesota and the Dakotas, and in eastern Wyoming and the mountains of Colorado. In parts of North Carolina and Virginia a depth of 5 to 8 was reported; in northern New England and northern and western New York, 3 to 6; in lower Michigan, 5 to 7; in upper Michigan, 3 to 4; in Minnesota and the Dakotas, trace to 9; and in eastern Wyoming and the mountains of Colorado, trace to 5.

HAIL.

Description of the more severe hailstorms of the month is given under "Local storms." Hail was reported as follows: 1st, North Carolina. 4th, Indiana and Ohio. 6th, Indiana, North Dakota, Oregon, and Washington. 7th, Arkansas, Iowa, Michigan, Missouri, and Ohio. 8th, Arkansas, Illinois, Indiana, and Texas. 9th, Arkansas. 12th, New York. 13th, New York and West Virginia. 14th, Illinois, Kansas, and Missouri. 15th, Arkansas, Kansas, New York, and Washington. 16th, Arkansas, Illinois, and Texas. 17th, Arkansas, Indiana, New Hampshire, New York, and Pennsylvania. 18th, Missouri. 19th, Kansas and Texas. 20th, Kansas. 21st, Missouri and Texas. 22d, Illinois, Kentucky, and Missouri. 23d, Maryland, New Mexico, New York, Ohio, Pennsylvania, Virginia, and West Virginia. 24th, Kentucky and West Virginia. 26th, Kentucky, Maryland, and Mississippi. 29th, Maryland and North Carolina. 30th, North Carolina.

SLEET.

Sleet was reported as follows: 1st, New York. 2d, Kansas, Missouri, and Nebraska. 3d, Illinois and Kentucky. 4th, Arkansas. 5th, Pennsylvania. 6th, Washington. 7th, Pennsylvania and Utah. 8th, Pennsylvania and Texas. 9th, Louisiana and Pennsylvania. 10th, Minnesota. 11th, Wisconsin. 12th, Michigan. 14th, Illinois, Kansas, Missouri, Nebraska, Ohio, and Vermont. 15th, Indian Territory, Kansas, Ohio, Pennsylvania, South Dakota, and Wyoming. 16th, Arkansas, Illinois, and Washington. 17th, Colorado, Indiana, Massachusetts, New York, Ohio, Pennsylvania, Tennessee, and Washington. 18th, Arkansas, Kansas, Louisiana, Ohio, Texas, Vermont, and West Virginia. 19th, Arkansas, Illinois, Indiana, Iowa, Louisiana, Michigan, Mississippi, and Missouri. 20th, Ohio. 21st, Kansas and Missouri. 22d, Arkansas, Kansas, Missouri, and Vermont. 23d, Arkansas, Missouri, Ohio, and Pennsylvania. 24th, Nebraska. 25th, Arkansas and Ohio. 26th, Arkansas, Ohio, Pennsylvania, and South Dakota. 27th, Colorado, Maine, Ohio, and South Dakota. 28th, Maine, Mississippi, and Vermont. 29th, North Carolina and Virginia.

WINDS.

The prevailing winds in November, 1891, are shown on Chart II by arrows flying with the wind. In New England and the middle Atlantic states, over the southern plateau region, and on the middle Pacific coast west to northwest winds were most frequently noted; in the south Atlantic states and over the Florida Peninsula they were generally from northwest to northeast; in the east Gulf states, from north to northeast; in the west Gulf states, the Rio Grande Valley, the Ohio Valley and Tennessee, and over the northern plateau region, from southeast to south; in the lower lake region and on the north Pacific coast, from southeast to southwest; in the upper lake region, the upper Mississippi valley, on the southeast slope of the Rocky Mountains, and over the middle plateau region, from southwest to northwest; in the extreme northwest, the lower Missouri valley, on the middle-eastern slope of the Rocky Mountains, and along the south Pacific coast, from west to northwest; and on the southeast slope of the Rocky Mountains, variable.

HIGH WINDS.

[In miles per hour.]

Wind velocities of 50 miles, or more, per hour were reported at regular stations of the Weather Bureau as follows: 2d, 61, se., at Fort Canby, Wash. 3d, 62, s., at Fort Canby, Wash. 4th, 63, s., at Fort Canby, Wash.; 50, s., at Tatoosh Island, Wash. 5th, 50, s., at Fort Canby, Wash. 6th, 54, w., at Fort Canby, Wash. 7th, 63, ne., at Block Island, R. I.; 60, ne., at Block Island, R. I.; 54, ne., at Nantucket, Mass. 8th, 50, w., at Fort Canby, Wash. 10th, 60, nw., at Fort Assinaboine, Mont.; 50, nw., at Bismarck, N. Dak. 11th, 66, e., at Tatoosh Island, Wash.; 52, nw., at Valentine, Nebr. 17th, 54, sw., at Buffalo, N. Y. 18th, 52, nw., at Kitty Hawk, N. C.; 50, sw., at Dodge City, Kans. 19th, 51, s., at Chicago, Ill. 20th, 50, w., at Fort Canby, Wash. 21st, 60, nw., at Pueblo, Colo.; 50, nw., at Denver, Colo. 23d, 60, sw., at Buffalo, N. Y.; 60, sw., at Lexington, Ky.; 54, se., at Harrisburg, Pa.; 54, sw., at Washington, D. C.; 54, w., at Erie, Pa. 24th, 66, sw., at Buffalo, N. Y. 26th, 50, sw., at Chicago, Ill. 29th, 60, s., at Fort Canby, Wash.; 53, ne., at Kitty Hawk, N. C.; 50, n., at Hatteras, N. C.

LOCAL STORMS.

High wind and heavy rain prevailed on the Washington coast during the first decade of the month. Heavy rain fell over the Puget Sound watershed until the 9th; heavy snow in the mountains was melted; streams overflowed their banks, flooding bottom lands and causing considerable damage to railroad and private property. On the 3d the British ship