

3rd, 46° N., 33° W., h'y NW. and SW. gales. 2nd to 23rd, 40° 20' N., 41° 30' W., to banks of Newfoundland, continuous and terrific WSW. to WNW. gales. 4th, 45° N., 29° W., h'y gales. 5th, 50° N., 32° W., h'y gale. 7th, (?) 47° N., 5° W., violent hurricane. 10th, 51° 53' N., 21° 10' W., h'y gale; 51° 11' N., 47° W., h'y gales. 15th, 45° N., 33° W., h'y west gale; 41° 15' N., 65° W., violent west gale; off Cape Hatteras h'y gale. 16th, 49° 42' N., 26° 04' W., h'y NNW. gale. 17th, between Capes Cod and Elizabeth, h'y NW. gale; off Spanish Town, near San Francisco, h'y gale. 20th, 57° N., 30° W., S. to W. gale. 24th, 49° 56' N., 10° 54' W., h'y SE. to NW. gale; 53° N., 55° W., h'y N. gale. 29th, 19° N., 62° 30' W., h'y gale.

TEMPERATURE OF THE AIR.

The isothermal curves and figures upon chart No. II illustrate the general distribution of the temperature of the air for the present month. A reference to the table in the lower left-hand corner of the same chart will show that the average is above that for years on the Pacific coast; it is below in the other districts, especially in the South Atlantic and Middle Atlantic States, Minn., St. Lawrence valley and Lake region.

Minimum and Maximum Temperatures, respectively, are given for the following stations, viz: Albany, 23°, 70°; Alpena, 25°, 65°; Atlantic City, 30°, 74°; Augusta, 36°, 86°; Boston, 26°, 70°; Bismarck, 14°, 74°; Breckenridge, 8°, 66°; Buffalo, 24°, 73°; Cairo, 32°, 83°; Cape Hatteras, 42°, 76°; Cape May, 34°, 73°; Cheyenne, 23°, 75°; Chicago, 28°, 73°; Cincinnati, 29°, 74°; Cleveland, 26°, 75°; Corsicana, 36°, 92°; Davenport, 25°, 75°; Denver, 24°, 85°; Detroit, 24°, 72°; Dodge City, 24°, 85°; Duluth, 23°, 67°; Eastport, 28°, 60°; Fort Gibson, 32°, 82°; Indianapolis, 26°, 75°; Indianola, 50°, 85°; Jacksonville, 43°, 85°; Key West, 68°, 91°; Leavenworth, 29°, 80°; Lynchburg, 32°, 80°; Malone, 21°, 74°; Marquette, 28°, 73°; Mobile, 43°, 82°; Mt. Washington, 5°, 48°; Nashville, 29°, 86°; New London, 30°, 67°; New Orleans, 50°, 84°; New York, 31°, 78°; North Platte, 22°, 81°; Omaha, 23°, 75°; Oswego, 29°, 70°; Pembina, 6°, 76°; Pittsburgh, 28°, 80°; Pike's Peak, —2°, 41°; Philadelphia, 31°, 75°; Portland, Or., 42°, 79°; Salt Lake City, 30°, 83°; San Diego, 48°, 80°; San Francisco, 52°, 72°; Santa Fe, 27°, 78°; Shreveport, 38°, 85°; Vicksburg, 35°, 86°; Virginia City, 20°, 71°; Washington, 30°, 78°; Wilmington, 32°, 80°; Wood's Holl, 32°, 68°; Yankton, 16°, 77°.

Ranges of Temperature.—At Key West, 23°; San Diego, 32°; San Francisco, 20°; Portland, Or., 37°; Gulf States, 34° to 56°; South Atlantic States, 34° to 50°; Middle Atlantic States, 39° to 48°; New England, 32° to 50°; Lower Lake region, 41° to 49°; Upper Lake region, 35° to 48°; Ohio valley and Tennessee, 45° to 56°; Upper Mississippi and Lower Missouri valleys, 47° to 52°; Valley of the Red River of the North, 58° to 70°; Dakota and western portions of Nebraska and Kansas, 59° to 61°; Pike's Peak and Mt. Washington, 43°; Denver, 61°; Virginia City and Santa Fe, 51°; Cheyenne, 52°; Salt Lake City, 53°.

First frosts of the season.—Ala., Mt. Vernon and Green Springs, 2nd. Cal., San Jose, 13th; Camp Independence, 22nd and 23rd. Conn., Southington, 2nd. Col., So. Pueblo, (just enough to kill vines,) and Denver, 1st. Ill., Anna and Cairo, 7th. D. C., Washington, 8th. Ind., Spiceland, 1st. La., Lake Charles, 2nd, (unusually early.) Ky., Louisville, 7th. Md., Fallston, 8th. Mass., Williamstown, 2nd; Somerset, 3rd; Westboro', (also freeze,) 3rd; Worcester and Andover, 8th. Miss., Brookhaven and Fayette, 2nd. N. H., Shelburne, 2nd; Auburn, 8th. N. J., Freehold and Linden, 8th. N. Y., Brookhaven, 3rd; Hudson, 7th; Rodman, 8th; Hector, 9th; New York City, 15th. N. C., Smithville, 2nd; Attaway Hill, 4th. Ohio, Cincinnati, (Mt. Auburn,) 7th. Penn., Chambersburg, 8th. Texas, Gilmer, 1st; Melissa, (heavy,) 2nd. Vt., Norwich, 3rd; Westminster, 8th. Va., Prospect Hill, 12th. W. Va., Morgantown, 7th.

First heavy or killing frosts, freeze or ice.—Ala., Green Spring, (ice,) 16th. Miss., Jackson, 2d. Ark., Monticello, cotton injured, 2d. Conn., Colebrook, 8th. D. C., Washington, 12th. Del., Milford, 12th. Ga., Gainesville, 1st; Atlanta, (ice,) 2d and 3d. Ill., Riley, (potato and tomato vines killed,) 5th; Anna, 12th; Carbondale, (ice,) 16th. Ind., Laeonia, 7th; Wabash, (ice,) 8th; St. Meinrad, (ice,) 16th. Iowa, Rockford, (ice,) 1st; Davenport and Keokuk, (ice,) 7th; Council Bluffs, (ice,) 11th. Me., Cornish, 31; West Waterville, 10th. Mass., Worcester, 12th. Ky., Louisville, (ice,) 15th. Kan., Dodge City, (ice,) 1st. Mich., Litchfield, 5th; Detroit, 9th; Fort Huron, (ice,) 15th. N. H., Auburn, (ice,) 9th. N. J., Freehold and Linden, (ice,) 9th. N. Y., Palermo, (ice,) 12th. N. C., Lenoir, 2nd; Attaway Hill and Asheville, 16th. Ohio, Bellefontaine, 4th; Kenton, 8th; Urbana and Cincinnati, (Mt. Auburn, ice,) 9th; Cincinnati, 15th. Penn., Chambersburg, 9th; Tioga, 12th; Philadelphia and Erie, (ice,) 15th. Tenn., Rockwood, 16th. Texas, Gilmer, 16th; Melissa, (ice,) 17th; Clarksville, cotton crop injured by frosts. Va., Lynchburg, Accotink and Comorn, 12th; Prospect Hill and Hampton, (the earliest, since 1868,) 16th. West Va., Morgantown, (ice,) 12th. Utah, Kanab, 20th, (killing vines, &c.)

PRECIPITATION.

Upon chart No. III is represented the amount of rain-fall and melted snow. The figures 15.87, accidentally printed in southeastern Fla., belong to Daytona, Volusia County, lat. 29° 13', long. 81° 01'. The excess in the South Atl. and Eastern Gulf States is due to storm No. IV; and the hurricane No. VII; that on the Pacific, to the rainy weather along the coast of northern Cal., Or. and Wash. Ty., from 15th to 22nd and 28th to 31st. In western Texas the rain-fall was 1.01 in. at Fort Stockton and 1.27 at Fort Duncan; in northern Texas, 1.50 at Fort Griffin.

Stations at which *not any rain* fell during the month.—Fort Lyon, Col.; Jackson, Miss.; Sydney Barracks, Neb.; Fort Concho, Tex.; Camp Brown, Fort Fetterman and Cheyenne, Wy.; Mount Solon, Va.; Yuma and Stanwix, A. T.

First rain-fall of the season.—Cal.: Benicia Barracks, 16th; El Monte, 17th; Vallecitas, 28th.

Heavy Rain-falls.—Newport, Fla., 4.4 in. 7th, 8.2 in. 8th, and 3.0 in. 9th; Quitman, Ga., 11 a. m. 7th to 5 a. m. 11th, 14.25 in.; Daytona, Fla., 1 p. m. 6th to 9th, 7.18 in., and 18th, 19th and 20th, 8.20 in.

First snow of season.—Mass., Billerica, 15th. Mich., Ft. Wayne, 7th. N. Y., Albany, 11th; West Point and Brookhaven, 15th; North Argyle, 17th. R. I., Newport, 15th. Me., West Waterville, 11th. N. H., Shelburne, 11th. Ohio, Hudson, 7th. Penn., Philadelphia, 15th; Tioga, 28th. Va., Norfolk and Richmond, 15th. Vt., Woodstock and Lunenburg, 8th; Westminster, 16th. D. C., Washington, 15th.

Total Snow-fall.—Penn., New Castle, 1 in. N. Y., Cazenovia, 6 in.; White Plains, 3 in. Mich., Northport, 2.7 in. Col., Summit, 2.3 in.

Cloudy Days.—The number on which the cloudiness has averaged eight-tenths or more, as reported by the volunteer observers, ranges in New Eng. from 5 to 13; Mid. States, 4 to 17; South Atl. States, 3 to 14; Gulf States, 0 to 15; Ohio valley, Tenn. and Ark. 4 to 16; Lake region, 6 to 21; Northwest, 3 to 17.

Rainy Days.—The number on which a greater or less quantity of rain or snow fell averages as follows in the various districts: Atl. States, 10; Gulf States, 4; Tenn., 9; Ohio valley, 12; Lower Lake region, 19; Upper Lake region, 14; Upper Miss. valley, 8; Mo. valley, plains of Ne., Ks. and Indian Ty. and Cal. coast, 7; Or., 15; Rocky Mt. stations, varies from 3 to 13.

Droughts.—Me., water in Sebago very low 31st. Mass., water in Watuppa Lake 58½ inches below high water mark, probably lowest since 1857. Miss., Brookhaven, droughts very severe. N. H., at Shelburne and Dumbarton, wells, springs and streams low, 31st. N. Y., Cooperstown, streams and springs low 31st; Wappinger's Falls, water in lake very low, factory only able to run half time. Vt., Woodstock, drought severe; West Charlotte, Lake Champlain very low 31st. West Va., Salem, very dry, streams low 31st. Texas, Corsicana, continued droughts, (and grasshoppers,) have destroyed the stock ranges, and in some parts of country people are hauling water 10 or 12 miles—no wheat planted, ground too hard to plough. Utah, Kanab, water low in creeks, 2nd.

RELATIVE HUMIDITY.

The average relative humidity ranges, for the Atlantic coast stations, from 67 to 74 per cent.; interior of the Mid. and New Eng. States, 64 to 74; South Atl. States, 68 to 75; Gulf coast, 69 to 77; interior of Gulf States, Tenn. and the Ohio valley, 55 to 66; Lower Lake region, 65 to 70; Upper Lake region, 59 to 77; Upper Miss. valley, 51 to 65; Mo. valley, 51 to 63; Minnesota, 65 to 72; plains of Kan. and Neb. 54; Rocky Mt. stations, 32 to 71; Pacific coast, 64 to 81. *Moist stations:* Mt. Washington averages 91 per cent; Portland, Or., 81; San Francisco, 78; St. Marks and Alpena, 77; Charleston and Indianola, 75; Cape Hatteras, Smithville and Albany, 74; Escanaba and Wilmington, 73. *Dry stations:* Denver averages 32 per cent; Cheyenne, 39; Salt Lake City, 47; Virginia City, 48; Santa Fé, 49; St. Louis, 51; Bismarck, 53.

WINDS.

Prevailing winds.—The points of the compass from which the winds have blown most frequently are indicated by the arrows, flying with the wind, upon chart No. II. On Mt. Washington they have been from the NW.; Yuma, S.; Camp Lowell, Maricopa and Stanwix, A. T., W.; Campo, (west of Yuma,) W.; Bourac, (northwest of San Antonio,) Tex., S.; Smithville, N. C., SW.

Maximum velocities.—On the summit of Pike's Peak, NW. 72, 23rd; Mt. Washington, NW 96, 15th; Santa Fé, W. 38, 19th.

Total movements.—The largest total movements of the wind, independent of direction, have been recorded at the following stations, viz: Pike's Peak, 13,703 miles; Cape May, 12,394; Cape Lookout, 12,084; Sandy Hook, 11,697; Grand Haven, 10,928; Erie, 10,056; Pembina, 9,298; Key West, 9,736; Cape Hatteras, 9,405; Barnegat, 9,062. No continuous record has been obtained for Mt. Washington. The following stations report the smallest movements: Lynchburg, 2,385 miles; Portland, Or., 2,535; Augusta, 2,755; Nashville, 3,023; Vicksburg, 3,140; Shreveport, 3,334; Salt Lake City, 3,418; Memphis, 3,489; Virginia City, 3,493; Springfield, 3,524.

VERIFICATIONS.

Probabilities.—As worked up three times daily and issued to the public, they have been carefully compared with the actual conditions during the succeeding twenty-four hours, and the following result obtained, viz: the percentage verified averages 90.1 for New England; 90.1, Middle States; 92.5, South Atlantic States; 88.6, East Gulf States; 87.1, West Gulf States; 91.9, Ohio valley and Tennessee; 88.5, Lower Lake region; 91.9, Upper Lake region; 91.7, Upper Mississippi valley; 91.2, Lower Missouri valley. The average is 92.8 per cent. for the Weather; 90.1, Wind Direction; 91.1, Temperature; 87.7, Barometric Changes. For the whole country the average verified is 90.4 per cent. There were 4 omissions to predict out of 3,720, or 0.1 per cent.

Cautionary Signals.—They were ordered to be displayed at 167 stations, along the Lakes and Atlantic and Gulf coasts. Of these 120 were justified; 3, lowered too soon; 1, displayed late. Out of 47 not justified, 20 were ordered during the advance of the hurricane, No. VII, viz: 5 along the Gulf coast before it was certain what course it would pursue, and 15 from Virginia to Maine, to prevent vessels from running into it. There were 55 cases reported, generally from scattered stations, in which the wind-velocity reached 25 miles, and over, per hour, without the display of Signals. To the Canadian stations 52 warnings have been sent, but with what result is not known.