

No snow fell in the Ohio Valley, except in western Pennsylvania, nor in the Mississippi Valley south of northeastern Iowa. Snowfall west of the Mississippi was confined to the mountain regions and the extreme northwest.

On the 15th and at the close of the month snow was reported only in the mountains of Colorado.

Monthly snowfall was reported as follows: *California*.—Summit, 21; Cisco, 16; Truckee, 13.5; Boca, 9; Emigrant Gap, 6; Fort Bidwell, 3. *Colorado*.—Breckenridge, 28.8; Kirk, 26; Climax, 24; Ward District, 23.5; Pikes Peak, 22.4; Gold Hill and Saint Cloud, 18; Stamford, 17.5; Wallet, 14; Moraine, 13.5; Red Cliff, 13.3; Pagoda (near), 12; Como (near) and Cumbres, 10; Lay, 9.8; Steamboat Spring, 9.7; Smoky Hill Mine, 9; Denver, 8.9; San Luis, 8.1; Abbott, Le Roy, and Monte Vista (a), 8; Husted, Monte Vista (b), and Twin Lakes, 6; Brush, River Bend, and Scissors, 5; Colorado Springs, 4.2; Yuma, 4; Agate, Gaynor, Kit Carson, La Jara, and Watkins, 3; Bennet, 2.5; Cheyenne Wells and Garnett, 2; Rico, 1.8; Fort Collins and Lavender, 1; East Dale, 0.5; Montrose, 0.1; Arboles, Deer Trail, Sheridan Lake, and Zuck, trace.

*Idaho*.—Paris, 10; Bonanza City, 4; Lake, 3.5; American Falls, 1; Idaho Falls, trace. *Iowa*.—Grinnell and Newton, trace. *Maine*.—Calais, trace. *Maryland*.—Baltimore, Glyndon, Oakland, and Sunnyside, trace. *Michigan*.—Marquette, 11.6; Lathrop, 2; Calumet, 1.2; Boon, Harbor Springs, and Sault Ste. Marie, trace. *Minnesota*.—Caledonia, 4; Maple Plain, 1.3; Alma City, Rochester, and Rolling Green, 1; Duluth, Fort Ripley, Minneapolis, Red Wing, Saint Charles, Saint Paul, and Sandy Lake Dam, trace. *Montana*.—Cokedale, 17; Virginia City, 14; Corbin and Hogan, 4; Bozeman and Deer Lodge City, 2.5; Helena, 0.2. *Nevada*.—Stofiel, 7; Wells, 5.5; Empire Ranch and Verdi, 5; Toano, 4; Austin, South Camp, and Sunnyside, 2; Fenelon and Pioche, 1; Palmetto and Virginia City, 0.8; Tuscarora, 0.5; Wabuska, 0.2; Belmont, Candelaria, Carson City, Cranes Ranch, Halleck, Hot Springs, Tybo, and Winnemucca, trace.

*New Mexico*.—Chama, 7; Santa Fe, 0.6. *New York*.—Malone, 1; Rochester and Ampersand, trace. *North Dakota*.—Oakdale, 5; Fort Buford, 2; Yule, 1; Grand Forks, Saint Johns, and Sykeston, trace. *Oregon*.—Siskiyou, 3; Crook, 2.5. *Pennsylvania*.—Pittsburg, trace. *South Dakota*.—Cross, 4.2; Spearfish, 2; Bear Valley, 1; Rapid City, 0.2; Fort Meade and Whitewood, trace. *Utah*.—Thistle, 0.5; Grouse Creek, Loa, Promontory, and Singletree, trace. *Washington*.—Rosalia, 3; Ferry, trace. *Wisconsin*.—Barron, 10; Shell Lake, 3.5; Columbus, 3; Meadow Valley and Viroqua, 2.5; Bayfield, Beaver Dam, Black River Falls, Florence, Hillsboro, and Neillsville, 2; Hayward, 1.5; Medford (a), Reedsburg, 1; Watertown, 0.8; Koepenick, Milwaukee, and Oconomowoc, 0.5; La Crosse, 0.1; Medford (b), New Holstein, and Shawano, trace. *Wyoming*.—Fort Washakie, 18.9; Lander, 6.5; Fort Yellowstone, 4.7; Fort McKinney, 4.5; Evanston, 4.1; Big Horn Ranch and Cheyenne, 3.5; Camp Pilot Butte, trace.

#### HAIL.

Description of the more severe hailstorms reported for the month is given under "Local storms."

Hail was reported as follows: 1st, Alabama, Georgia, Iowa, Kansas, Louisiana, Mississippi, Pennsylvania, South Dakota, and Texas. 2d, Georgia, Idaho, Kansas, Louisiana, Minnesota, Nevada, Oregon, and South Dakota. 3d, Colorado, Illinois, Nevada, North Carolina, Oregon, South Carolina, Utah, and Wisconsin. 4th, Kansas, Maryland, Missouri, and Nebraska. 5th, Indiana, Iowa, Kansas, Kentucky, Maryland, Michigan, Missouri, Nevada, Ohio, Utah, West Virginia, and Wisconsin. 6th, Alabama, Arkansas, Georgia, Kansas, Louisiana, Maine, Mississippi, Tennessee, Texas, Utah, Vermont, and Virginia. 7th, Colorado, Iowa, and Texas.

8th, Alabama, California, Colorado, Mississippi, and Washington. 9th, Kansas and Texas. 10th, Iowa, Kansas, Minnesota, Nebraska, Oregon, South Dakota, Texas, and Wisconsin. 11th, Arizona, Iowa, Michigan, Nebraska, South Dakota, and Wisconsin. 12th, Arizona, Kentucky, Michigan, and Ohio. 13th, Arizona, Colorado, and Wisconsin. 14th, Indiana, Iowa, Michigan, Missouri, and Wisconsin. 15th, Alabama, Colorado, Ohio, Oregon, and Pennsylvania. 16th, California, Colorado, Montana, Nevada, and Oregon. 17th, California, Montana, Nevada, Ohio, and Oregon. 18th, California, North Dakota, South Dakota, Utah, and Wyoming.

19th, Missouri, North Carolina, and North Dakota. 20th, California, Kansas, Maryland, Missouri, Nevada, Ohio, Oregon, Pennsylvania, Washington, and West Virginia. 21st, Colorado, Illinois, Indiana, Kansas, Maryland, Minnesota, Missouri, Nebraska, Ohio, South Dakota, Utah, Virginia, West Virginia, and Wisconsin. 22d, Colorado, Iowa, Michigan, Minnesota, Nebraska, Pennsylvania, South Dakota, Washington, and Wisconsin. 23d, Indiana, Kentucky, Massachusetts, Michigan, New Jersey, New York, Ohio, Pennsylvania, Washington, and Wisconsin. 24th, Kansas, Minnesota, Nevada, and Oregon. 25th, Idaho, Iowa, Kansas, Missouri, and Oregon.

26th, Colorado, Illinois, Indiana, Iowa, Kentucky, Maine, Missouri, Nevada, Tennessee, and Texas. 27th, Alabama, Arkansas, Colorado, Massachusetts, Minnesota, Mississippi, North Carolina, Oklahoma, South Carolina, and Texas. 28th, Arkansas, Georgia, Indian Territory, Iowa, Louisiana, North Carolina, North Dakota, Oklahoma, and South Carolina. 29th, Indiana, Kansas, Michigan, Nebraska, South Carolina, and Wisconsin. 30th, Arkansas, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Missouri, Nebraska, Ohio, Oregon, and Pennsylvania. 31st, Alabama, Arkansas, Illinois, Indiana, Iowa, Louisiana, Mississippi, Missouri, New York, North Dakota, and Tennessee.

#### SLEET.

Sleet was reported as follows: 1st, Nebraska and Wisconsin. 3d, North Carolina and Pennsylvania. 4th, Minnesota, New Hampshire, Utah, and Wisconsin. 5th, Minnesota, Nevada, and Utah. 6th, Colorado and Kansas. 7th, Colorado. 13th, Colorado and Texas. 18th, Utah. 19th, North Dakota. 20th, Montana. 21st, Colorado, South Dakota, and Utah. 22d, Colorado, Kansas, Minnesota, North Dakota, and South Dakota. 23d, Nevada, Utah, and Wisconsin. 24th, Nevada. 25th, South Dakota and Utah. 28th, Colorado.

#### WINDS.

The prevailing winds in May, 1893, are shown on Chart II by arrows flying with the wind. In the Atlantic coast states the winds were generally from south to west; over the Florida Peninsula, the Gulf States, and the northern plateau region, from southeast to southwest; in the Ohio Valley and Ten-

nessee, over the middle plateau region, and along the Pacific coast, from southwest to northwest; in the upper lake region and the upper Mississippi and Missouri valleys, from northwest to northeast; on the southeast slope of the Rocky Mountains, from east to south; and on the northeast and middle-eastern slopes 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:

3d, 52, s., at Kittyhawk, N. C. 4th, 55, s., at Fort Canby, Wash.; 54, ne., at Eastport, Me.; 52, sw., at Woods Holl, Mass. 6th, 50, ne., at Little Rock, Ark. 9th, 50, se., at Dodge City, Kans. 10th, 50, w., at Cheyenne, Wyo. 11th, 56, w., at Red Wing, Minn.; 54, s., at Fort Canby, Wash. 13th, 51, w., at Santa Fe, N. Mex.; 51, e., at Tatoosh Island, Wash.; 52, nw., at Cleveland, Ohio. 18th, 88, w., at Pikes Peak, Colo.; 60, w., at Cheyenne, Wyo.; 56, se., at Huron, S. Dak.; 56, nw., at Denver, Colo.; 52, s., at Valentine, Nebr.; 50, se., at Saint Vincent, Minn.

19th, 72, s., at Saint Vincent, Minn.; 60, nw., at Bismarck, N. Dak.; 60, w., at Cheyenne, Wyo., and Kearney, Nebr.; 55, nw., at Colorado Springs, Colo.; 54, se., at Moorhead, Minn.; 52, sw., at Huron, S. Dak.; 50, w., at Pierre, S. Dak. 21st, 84, nw., at Sioux City, Iowa; 80, w., at Pikes Peak, Colo.; 54, ne., at Huron, S. Dak.; 50, w., at Fort Stanton, N. Mex. 22d, 72, n., at Kearney, Nebr.; 50, s., at Chicago, Ill. 23d, 89, w., at Pikes Peak, Colo.; 74, sw., at Detroit, Mich.; 60, sw., at Cleveland, Ohio; 56, sw., at Buffalo, N. Y.; 54, sw., at Port Huron, Mich.; 50, s., at Cairo, Ill. 24th, 52, nw., at Keeler, Cal. 25th, 50, sw., at Saint Louis, Mo. 29th, 51, nw., at Salt Lake City, Utah. 30th, 50, nw., at Amarillo, Tex.

LOCAL STORMS.

(75th meridian time is used at regular Weather Bureau stations.)

**1st.**—A violent thunder and rain storm visited Franklin, Tenn., at 10 a. m. At Greeneville, Tenn., many trees were blown down and several houses were unroofed by high wind. A severe thunder, rain, and hail storm was reported at Adairsville, Ga., about 4 p. m.

**2d.**—Exceptionally heavy rain fell at Mobile, Ala., in the morning; 1.18 inch of rain fell in 20 minutes. A house was struck by lightning at New London, Conn.

**3d.**—Severe storms prevailed over North Carolina and South Carolina. At Wilmington, N. C., a gale from the southwest began 2 p. m. and ended 11.45 p. m., causing considerable damage of a minor character. A tornado moving northeast struck Oxford, N. C., at 4.57 p. m., killing 1 person and wrecking buildings in a path about 75 feet in width; estimated value of property destroyed, \$16,000. Heavy rain fell before the storm struck, zigzag lightning was observed, but little thunder was heard, and no hail fell.

A storm which lasted 5 to 10 minutes passed near Greystone, N. C., about 5.15 p. m., attended by heavy rain, thunder, and lightning; 3 persons were injured, and trees and buildings were prostrated in a path 50 to 200 yards in width. A severe thunder and rain storm, with hail, moved northeast over Brookston, N. C., at 5.20 p. m., destroying buildings and uprooting trees. Destructive local storms were reported in Lexington, Newberry, and adjoining counties in South Carolina. Near Williston, Barnwell County, S. C., a destructive storm moved northeast in a path about 300 yards in width. At Springfield, Orangeburg County, S. C., one person was killed, and the loss to buildings was placed at \$13,000.

**4th.**—Violent gales and heavy rain prevailed over the middle Atlantic and New England states. Several vessels were reported wrecked on the New Jersey and New England coasts. Northern Kansas was visited by destructive storms in the afternoon. At Baileyville, Kans., buildings valued at \$10,000 to \$12,000 were destroyed.

**5th.**—Severe local storms occurred in the Ohio Valley and in Oklahoma. A heavy thunder and rain storm visited Parkersburg, W. Va., in the afternoon. A hailstorm passed north of Frankfort, Ohio. A tornado moved east over Wilmington, Ohio, about 3 p. m., causing considerable damage to

buildings, and injuring a number of persons. Three persons were reported killed by lightning at Liberty, Ind. A destructive tornado was reported west of Edmond, Oklahoma County, Okla., about 9 p. m.; 3 persons were reported killed, a number injured, and 30 to 40 houses demolished. A thunder and hail storm visited Independence, Kans.

**6th.**—Severe storms occurred over the Gulf States and Arkansas. At Lafayette, Ala., 2 persons were struck by lightning. During a rain and hail storm at Dallas, Tex., a building was struck and 4 persons were injured by lightning. An unusually severe hailstorm moved northeast over Llano, Tex. A destructive storm struck Gainesville, Tex., about 4 p. m. A number of buildings were unroofed during a thunderstorm at Ashdown, Ark. Crops and fruit were damaged by hail at Melbourne, Ark. A severe hailstorm visited Labette County, Kans.; sheep and poultry were killed, and great damage was caused to crops and gardens.

**10th.**—A wind and hail storm at night damaged buildings near Dunlap, Iowa. Severe storms were reported at Charter Oak, Williams, Iowa Falls, Coon Rapids, and Grundy Center, Iowa. At Council Bluffs, Iowa, one person was killed by lightning. Near Atlantic, Iowa, a barn was struck by lightning and burned. Damage to crops was caused by heavy rain at Mesquite, Tex.

**11th.**—Severe storms were reported in Texas, Illinois, and Wisconsin, and destructive gales prevailed in Ohio. At Abilene, Tex., a severe thunderstorm advanced from the southwest in the early morning; considerable damage was caused by heavy rain. An exceptionally heavy rainstorm visited El Paso, Tex., in the evening and at night. Destructive storms were reported in the afternoon at Hendrix and Clifton, Ill. At Hammond, Wis., several barns were struck by lightning and burned. Severe westerly gales prevailed over Wisconsin and the Dakotas in the afternoon.

**12th.**—Destructive local storms were reported in southeastern Lower Michigan. At Port Huron a house was struck by lightning. About 2 p. m. a storm moved eastward near Pinckney, Mich., injuring a number of persons and destroying property to the estimated value of \$15,000. At Rawsonville, Mich., some damage was caused by hail and rain.

**13th.**—High northeast winds and heavy rain prevailed over northern New England.

**14th.**—Thunder and hail storms caused some damage in southwestern Lower Michigan.

**15th.**—Heavy rain and thunder storms were reported near Lake Erie. At Erie, Pa., 3.68 inches of rain fell in 24 hours. At Cleveland, Ohio, a barn was struck by lightning and burned. At Colebrook, Ohio, rain began in the afternoon and continued until the afternoon of the 17th, the total rainfall for the period being 5.76 inches. At Wheeler, Ohio, heavy rain began in the afternoon and continued until the evening of the 18th, the total depth of rainfall being 10.65 inches; great damage was caused by flooding streams. About 7 p. m. 3 houses were unroofed and some damage was caused by heavy rain at Mobile, Ala.

**16th.**—Severe storms continued near Lake Erie; streams overflowed their banks, causing washouts and landslides on railroads. At Erie, Pa., rain ended in the morning. In that city the estimated damage to property was \$250,000. In Erie County the damage to property, including railroads, was placed at \$500,000. In many instances the water reached the second floors of houses in Erie.

**18th.**—High winds prevailed over the Dakotas and Colorado, causing considerable damage to crops and property. At Fort Buford, N. Dak., heavy rain began in the evening. At Grafton, N. Dak., a man was killed by lightning. At Rapid City, S. Dak., a westerly gale prevailed in the evening, with thunder and some hail. About Laporte, Colo., the destruction to property and crops was placed at \$20,000.

**19th.**—At Bismarck, N. Dak., heavy rain fell in the morning and light rain continued at intervals during the afternoon and evening, and considerable damage was caused by high wind. High wind continued over North Dakota until the morning of the 20th.

**20th.**—Violent storms occurred in the upper Ohio valley. At Pittsburg, Pa., a thunderstorm, with heavy rain and large hail, prevailed from 4 to 4.45 p. m.; considerable damage was caused by hail. In parts of western Pennsylvania, West Virginia, and southeastern Ohio great damage was caused by heavy rain and hail. Hailstorms were reported at Hastain, Mo., and Pauline, Kans.

**21st.**—Severe thunderstorms occurred in the Northwestern States. A severe hailstorm from the northwest visited Woodstock, Md., in the evening. A thunder, rain, and hail storm moved east-northeast over Dexter, Minn., destroying 2 houses and 7 barns. Destructive rain and hail storms were reported near Rolling Green, Minn., in the evening. A thunderstorm, with heavy rain and large hail, moved southeast over Canton, S. Dak., about midnight. At Huron, S. Dak., a thunder and rain storm, with an easterly gale, prevailed in the evening; a number of small buildings were blown down. Considerable damage was caused by wind and hail at Mitchell, S. Dak.

A thunder and hail storm moved southeast over Sioux Falls, S. Dak., at 7 p. m. Grain was slightly damaged by hail at Wentworth, S. Dak. At Sioux City, Iowa, a rain and thunder storm began at 10.10 p. m., and continued until the early morning of the 22d; the wind shifted suddenly to northwest and reached a velocity of 84 miles per hour, the highest velocity on record at that station; considerable damage was caused by high wind. Seven head of cattle were killed by lightning at Panama, Iowa. Damage was caused by hail at Arcadia, Nebr. A severe windstorm demolished buildings and killed stock at Ashton, Nebr. Destructive local storms were reported about Springview, Nebr.

**22d.**—Severe local storms occurred in Wisconsin, Minnesota, the Dakotas, Iowa, and Nebraska. A heavy rain, hail, and thunder storm moved northeast over Darlington, Wis., about 5 p. m. A destructive thunder, rain, and hail storm moving northeast was reported at Moscow, Wis., at 5.03 p. m.; at that point 3 persons were reported killed and the value of property destroyed was estimated at \$3,500. A thunderstorm, with large hail, was reported at Watertown, Wis. During a thunder and hail storm at Blooming Grove, Minn., several small buildings were demolished. About 1 a. m. a destructive storm from the southwest visited Grand Meadow, Minn.; stock was killed by lightning and many outbuildings were demolished by wind. Thunderstorms, with high winds, caused considerable damage in Minnesota.

Madison, S. Dak., was visited by a heavy rain and hail storm about 2 p. m.; the storm moved east-northeast in a path 300 feet in width, destroying frail buildings. A hailstorm moved eastward over Montrose, S. Dak., in the afternoon, causing damage of a minor character. Damage was caused by lightning and hail in Iowa. At Charles City, Iowa, a church was struck by lightning. At Williams, Iowa, stock was killed by lightning, and outbuildings were damaged by high winds. At Kearney, Nebr., heavy rain, preceded by hail, fell in the morning, and the wind reached a velocity of 72 miles per hour. Some damage was caused by wind and hail at Seibert, Colo.

**23d.**—Severe storms were general throughout the northeastern and north-central states. At New Haven, Conn., a house was struck by lightning and burned. Damage was caused by high wind and heavy rain throughout New York, western Pennsylvania, West Virginia, and western Maryland. A violent storm visited Louisville, Ky., at 4.12 a. m. The storm moved northeast, damaging a number of buildings. A very heavy thunder and rain storm moved southeast over

Newport, Ky., about 5 a. m. Damage of a minor character was caused by high wind throughout Kentucky.

Hailstorms damaged crops and high winds prevailed in Ohio. A heavy thunder and rain storm moved northeast over Beaver Dam, Ohio, at 6.30 a. m. The damage by wind and rain in Hancock County, Ohio, was placed at \$60,000. At Cleveland the wind reached a velocity of 60 miles per hour and an extreme velocity of 90 miles, with heavy rain; 3 persons were killed and property was destroyed to the estimated value of \$10,000. The storm was destructive at Lima, Findlay, and Tiffin, Ohio. At Sandusky, Ohio, the storm was the severest reported in a number of years. At Toledo, Ohio, the wind reached an extreme velocity of 62 miles per hour, causing damage to the extent of about \$4,000. The damage to property at Wauseon, Ohio, was placed at \$4,000.

Thunder, rain, and hail storms caused some damage in Indiana. Several buildings were destroyed in Elwood, Ind., by a storm which moved southeast at 2 a. m. A heavy thunder and rain storm moved northeast over Marion, Ind., at 4 a. m. At Detroit, Mich., the wind reached a velocity of 74 miles per hour at 12.45 p. m., causing considerable damage. Destructive winds prevailed generally over Lower Michigan. A thunder, rain, and hail storm moved northeast over Fairfield, Mich., at 7 a. m. A severe rain and thunder storm moved northeast over Pinckney, Mich., at 9.30 p. m., destroying property valued at \$6,000.

During a heavy thunder and rain storm at Port Huron, Mich., in the morning, the wind reached a velocity of 54 miles per hour from the southwest. In the afternoon property was damaged to the extent of about \$2,000, at Rollin, Mich. At Romulus, Mich., a severe storm moved northeast, killing 1 person, and destroying property to the value of about \$1,000. Heavy rain and high wind prevailed about Adrian, Mich. A thunder and rain storm in the evening caused some damage at Sedalia, Mo.

**25th.**—Severe storms occurred in Illinois, Missouri, and Kansas. About Springfield, Ill., small streams were flooded by heavy rain and washouts occurred on railroads. At Brunswick, Mo., a man was killed by lightning. A heavy rain, hail, and thunder storm moved east over Laddonia, Mo., at 4 p. m., killing 1 person and destroying property to the estimated value of \$30,000. A severe thunder, rain, and hail storm moved eastward over Martinsburg, Mo., at 5.10 p. m. A thunderstorm, with heavy rain and large hail, moved east north of Mexico, Mo., at 5 p. m., killing 1 person.

An exceptionally heavy rainstorm began at Palmyra, Mo., and continued until the morning of the 26th; much damage was caused to crops, and lowlands were flooded. A destructive hailstorm, with heavy rain, visited Audrain County, Mo., in the evening. A heavy rain and hail storm moved southeast over Rush Hill, Mo., at 5 p. m., killing 2 persons and destroying property valued at \$5,000. At Saint Louis, Mo., a heavy cloud was observed advancing rapidly from the southwest at 10.20 p. m. Heavy rain began at 11.30 p. m., and the wind reached a velocity of 50 miles per hour. The early morning of the 26th a thunder and rain storm of unusual severity passed over the city; several buildings were struck by lightning, and considerable damage was caused by heavy rain. Damage by hail and lightning was reported at Abilene, Kans. A violent thunder storm moved southeast over Garnett, Kans., at 5.30 p. m., killing 1 person and destroying property valued at \$1,000. At Leavenworth, Kans., heavy rain began in the afternoon and continued until the morning of the 26th. A severe hailstorm was reported at Manhattan, Kans.

**26th.**—Severe local storms were reported in the Ohio Valley and Tennessee. A thunderstorm, with high wind, visited Franklin, Ky., at 4.30 p. m. At Springfield, Ky., large trees were uprooted. A severe wind, rain, and hail

storm prevailed at Laconia, Ind., from 3 to 4 p. m., damaging fruit and grain. A destructive hailstorm was reported 6 miles north of Forestburg, Tex.

**27th.**—Several houses were struck by lightning at Roxbury, Mass. Damage was caused by heavy rain at Water Valley, Miss. Destructive thunder and hail storms were reported in North Carolina. A severe thunder and wind storm moved east over Sloan, N. C., at 3.30 p. m. A severe wind and hail storm was reported near Bainbridge, Ga. A thunderstorm, with heavy rain and hail, occurred in the afternoon and evening at Little Rock, Ark. At Macksville, Kans., 5 children were stunned by lightning. A heavy hailstorm was reported at Colorado, Mitchell County, Tex.

**28th.**—Severe wind and rain storms occurred in western Tennessee and Georgia. At Chattanooga, Tenn., a thunder and rain storm began at 8.28 p. m. and continued until the early morning of the 29th; heavy rain washed streets badly and interrupted street car traffic.

**29th.**—Severe storms occurred in the Carolinas, Georgia, Indiana, Lower Michigan, Iowa, South Dakota, and Utah. At Wilmington, N. C., the wind reached a velocity of 40 miles per hour from the northwest in the morning and showers continued until evening; a number of trees were blown down and two small boats were capsized near Wrightsville. The storm was exceptionally severe about Hollands Store, S. C. At that place 3 persons were reported killed and a number injured. Destructive rain, thunder, and hail storms were reported near Trenton and Simpsonville, S. C.

Severe local storms occurred in central and northern Georgia in the early morning, destroying considerable property and injuring a number of persons. At Atlanta, Ga., a severe thunderstorm began shortly after midnight and continued with heavy rain during the early morning of the 29th. A storm moved east in a path 150 yards in width near Box Spring, Ga., at 7 a. m. A destructive rain and hail storm was reported in the afternoon at Logansport, Ind. At Detroit, Mich., a house was struck by lightning. Stock was killed by lightning at Murray, Iowa. A hailstorm was reported 7 miles south of Pleasant Dale, Kans. Stock was reported killed by lightning at Gale, S. Dak. A violent gale of short duration caused considerable damage in Utah. At Salt Lake City, Utah, the wind reached a velocity of 51 miles per hour.

**30th.**—Local storms were reported in New York, Florida, Louisiana, Arkansas, Ohio, Indiana, Missouri, and Nebraska. At Lebanon Springs, N. Y., a barn was struck by lightning

and burned. During a heavy thunder and rain storm at Jupiter, Fla., in the afternoon, the wind reached a velocity of 36 miles per hour from the northeast. Hail destroyed corn and cotton about Farmerville, La. Crops were damaged by hail in Bienville Parish, La. A thunder and hail storm visited Ashdown, Ark., from 3 to 5 p. m.

A cloudburst, with some hail, was reported at Buckner, Ark., at 5.50 p. m. A severe hailstorm occurred near Dallas, Ark., at 3 p. m. A child was killed by lightning near Fort Smith, Ark. At Little Rock, Ark., a thunderstorm, with heavy rain, began 10.55 p. m. and ended the morning of the 31st. The storm was attended by high northwest winds which reached a maximum velocity of 42 miles per hour. Unusually heavy thunder and rain storms visited Hope, Ark., at 4.30 p. m. A violent storm began at Washington, Ark., at 4.45 p. m. and ended at 5.15 p. m., causing loss of life and stock, and destroying property and crops.

A heavy thunder and hail storm damaged corn about Cambridge, Ohio. A church was struck by lightning at Delphi, Ind. A house was struck by lightning at Lebanon, Mo. A severe wind and rain storm damaged fruit, trees, and vines about Glasgow, Mo. At Genoa, Nebr., a heavy rainstorm, with hail, began at 6 p. m., 30th, and ended the early morning of the 31st. Streams and lowlands were flooded.

**31st.**—Local storms were reported in New York, Mississippi, Arkansas, Tennessee, and Kentucky. Heavy rain and hail damaged fruit and vegetation about Addison, N. Y. A severe rain and hail storm visited Holly Springs, Miss. Loss of life and destruction of property were reported at Rosedale, Miss. A tornado moved northeast near University, Miss., in the evening. A funnel-shaped cloud was observed which divided in two parts, one part passing  $\frac{1}{4}$ -mile west and northwest of University, prostrating trees in a path about 200 yards in width. A destructive storm moved northeast near Douglas, Ark., about 2 p. m. At Poplar Grove, Ark., a tornado moved northeast in a path 250 yards in width at 2 p. m., killing 1 person. A thunderstorm, with heavy rain and hail, moved eastward over Forrest, Ark., at 3 p. m. Great damage was caused to property and crops about Lagrange, Ark., by a storm which moved northeast at 3 p. m. Exceptionally heavy rain flooded streams and lowlands about Nunnely and Jackson, Tenn. A thunderstorm, with high wind and heavy rain, caused considerable damage about Franklin, Ky. Several houses were unroofed by high wind at Paducah, Ky. Heavy rain damaged corn about Pauline, Kans.

## INLAND NAVIGATION.

### FLOODS.

The month opened with the Mississippi River high and rising throughout its course. The Ohio, Wabash, and Arkansas rivers were also rising. From Saint Paul, Minn., to Hannibal, Mo., the Mississippi River had risen one foot in two days. At Saint Louis, Mo., the stage of water was 30.4 feet, 0.4 foot above the danger-line, a rise of 3 feet in 2 days. At Cairo, Ill., the Mississippi River had risen 2.7 feet in 2 days (to 44.6 feet), 4.6 feet above the danger-line. The Ohio River had risen 4 feet at Pittsburg, Pa., 5 feet at Parkersburg, W. Va., and 7 feet at Cincinnati, Ohio, in 2 days. At Cincinnati the water reached the danger-line, 45 feet. The Ohio was rising rapidly at Louisville, Ky., and at Evansville, Ind., a rise of 9 feet in 3 days was reported. Destructive floods were reported in the valley of the Red River of the North. At Little Rock, Ark., the Arkansas River reached a stage of 24.3 feet, 1.3 foot above the danger-line, at 4 p. m. Floods were reported in the smaller streams of Ohio.

On the 2d the Mississippi River reached 13.7 feet at Saint

Paul, Minn., submerging low-lying parts of Saint Paul and Minneapolis. At Saint Louis, Mo., cellars on the river front were flooded, and in east Saint Louis a large warehouse was wrecked. The Ohio River reached a stage of 50.6 feet at 7 a. m. at Cincinnati, a rise of 5.4 feet in 24 hours. Low-lying ground was flooded, and landslides and washouts occurred on the railroads. At Louisville the river passed the danger-line. At Cairo, Ill., the Ohio was about 6 feet above the danger-line and rising rapidly. The Arkansas River reached 25.3 feet at Little Rock about 3 p. m., partially submerging plantations above and below the city. The Red River of the North continued to rise at Saint Vincent, Minn. Rivers and streams continued high in Ohio. Considerable damage was caused about Columbus, Ohio, by the overflow of the Scioto River.

On the 3d the Mississippi River reached 31.5 feet at Saint Louis, Mo., and in the evening began to slowly subside. At Cairo, Ill., the river reached 46.8 feet, 6.8 feet above the danger-line, and unprotected bottom lands in that section were submerged from the overflow from the Ohio and Mississippi