

Place	Date	Time	Width of path	Loss of life	Value of property destroyed	Character of storm	Remarks	Authority
Morrellville and Esterville and vicinity, Pa. Rock and Walworth Counties, Wis. Hall, N. Y.	21	P. m.	Yards			Heavy hail	Numerous windows broken; considerable damage to growing crops.	Official, U. S. Weather Bureau.
	21				\$10,000	do.	Tobacco and corn crops severely damaged.	Do.
	23		1,760		20,000	do.	Fruits badly injured; cabbage and peas totally ruined; other crops damaged; path 2½ miles long.	Do.
Nodaway County, Mo.	24	5-6 p. m.			70,000	Severe hail, wind, and rain.	10,000 acres of crops damaged; 2,000 total loss.	Do.
Iowa (western).	24	P. m.				Hail and wind.	Extensive crop losses.	Do.
Emporia, Kans. (near)	25	3 p. m.	12 mi.		50,000	Heavy hail.	Crops devastated over area 12 miles square; 2,500 panes of glass broken.	Do.
Delmar, N. Y., and vicinity.	27	2 p. m.	880		6,000	do.	Considerable damage to truck gardens and greenhouses; path 2¼ miles long.	Do.
Pigeon Falls, Wis.	27	3:30 p. m.	1-3 mi.		10,000	Hail and electrical.	Much damage to crops; large barn destroyed by lightning.	Do.
Iowa (northern).	27	P. m.				Hail and wind.	Many thousands of dollars damage to crops and buildings.	Do.
Port Huron, Mich. (near)	27				15,000	Electrical.	2 large barns and contents, including livestock, burned.	Do.
St. Paul and Minneapolis, Minn.	27					Severe wind.	A number of small buildings damaged; telephone service impaired; several persons injured.	Do.
Arcadia, Wis.	28	4 p. m.	880		9,000	High wind.	Damage chiefly to crops.	Do.
Caldwell, Kans., and vicinity.	28	4:40 p. m.				Small tornado.	Many trees torn up; autos damaged; several buildings unroofed; electric service demoralized.	The Wichita Eagle (Kans.).
Monrovia, Kans., to Kansas City, Mo.	28	4:45 p. m.			25,000	Tornado.	4 small houses wrecked, 16 others more or less damaged.	Official, U. S. Weather Bureau.
Libertyville, Iowa (near)	28	6 p. m.				do.	Some buildings wrecked.	Do.
Clinton, N. C. (8 miles south of)	28		3,520			Heavy hail.	Severe damage to crops; pigs and poultry killed; path 8 miles long.	Do.
Iowa (northern)	28	P. m.				Hail and wind.	Crops badly injured; buildings damaged.	Do.
Whitney County, Ind.	28	do.			18,500	Wind.	Character of damage not reported.	Do.
Chicago, Ill. (near)	28	7-7:30 p. m.		27		Wind squall.	Motor boat wrecked, causing loss of 27 lives.	Do.
Isidore, N. Mex.	30	8-11 p. m.	5 mi.			High wind.	Roofs blown off, trees uprooted; windows broken; windmills blown down.	Do.
Logan, N. Mex.	30	10 p. m.	5 mi.		10,000	Tornadoic wind and hail.	Crops, buildings, and windmills damaged.	Do.
South Dakota (southwestern).	30		2-8 mi.		80,000	Hail and wind.	Crops a total loss in many places; path 50 miles long.	Do.
Crawford County, Kans. (northwest).	31	6 p. m.	2-3 mi.			Heavy hail.	Considerable damage to property over an area several miles square.	Do.
Wuakomis, Okla.	31	7-7:30 p. m.	4 mi.		10,000	Hail.	Considerable damage to property other than crops.	Do.
Massachusetts (southeastern).	31	7:30 p. m.		1	100,000	Thunderstorm and tornadoic wind.	Buildings and trees blown down; communication cut off; much damage by tornadoic wind at Rehoboth.	Do.
Adams County, Wash.	31	P. m.				Wind and hail.	Standing wheat sustained a loss of 25 per cent.	Do.
St. John, Wash. (east of)	31	do.			9,000	do.	More than 350 acres of wheat damaged.	Do.

STORMS AND WEATHER WARNINGS

WASHINGTON FORECAST DISTRICT

The only storm warnings issued during the month were in connection with a disturbance of considerable intensity that moved northwestward from the vicinity of Bermuda and approached the New Jersey coast during the 2d, after which it diminished in intensity and moved northeastward, its center passing near Nantucket during the 3d. Northeast warnings were displayed in advance of this disturbance from Portsmouth, N. H., to Delaware Breakwater, and small-craft warnings south of Delaware Breakwater to Cape Hatteras. The highest wind velocity reported was 48 miles an hour from the northeast at Nantucket. No other station reported a verifying velocity.

Except for small-craft warnings from Cape Hatteras to Delaware Breakwater on the 4th, no storm or small-craft warnings were issued after the 2d.

Frost warnings were issued for the cranberry bogs of New Jersey and Massachusetts and for the interior of northern New England and the northern portion of eastern New York on the 4th. No frost was reported from any regular reporting station, however, the morning of the 5th.—C. L. Mitchell.

CHICAGO FORECAST DISTRICT

There was nothing unusual in the weather conditions in the Chicago forecast district during the month of July. The temperature averaged somewhat below the normal, and the rainfall, which was mainly in the form of thunderstorms, was rather irregularly distributed.

Warnings for frost on low ground were issued on July 31 for North Dakota and northwestern Minnesota for the ensuing night, and for the cranberry marshes of Wisconsin for the night following; that is, the night of August 1-2. No frosts occurred on the first night, but they appeared to be general in the cranberry marshes on the second.

Small-craft warnings were ordered for the Great Lakes on a few occasions; and any strong winds that occurred were in the form of local squalls.

The only casualty, as far as known, on the Lakes was the capsizing of the small excursion boat *Favorite* on the afternoon of July 28, close to the near-north shore of Chicago, in which 27 lives were lost. The evidence brought out at the inquiry was that the boat was top-heavy and, as the squall broke, all the passengers rushed to the side of the boat away from the wind and rain; and the boat, being out of balance, toppled over. The squall lasted only five minutes, from 2:24 p. m. to 2:29 p. m. (ninetieth meridian time), and attained a maximum velocity of 49 miles an hour at the station on the municipal pier maintained by the water department of the city of Chicago, about 1 mile from the place where the catastrophe occurred. The wind was light to moderate before and after the squall, the total wind movement being only 15 miles in that hour. Thunderstorms had been predicted not only for Chicago and vicinity, but also for Lake Michigan; but no warnings of any kind had been ordered. The wreck of the *Favorite* was the only casualty which occurred, although a vast number of other vessels were exposed to the squall.

A special wind and weather forecast was issued on July 23 for the route of the Chicago-Mackinac Island cruising race which had its start in Chicago on the after-