traveled slightly more than 2 miles during the interval of 6 minutes, or at the rate of 20 miles an hour. The distribution of the wreckage and débris leaves unmistakable evidence of rotary winds and the presence of a whirl in the cloud at the points in the path where the greatest violence was shown and the greatest destruction occurred. This was particularly the case at the Sacred Heart Convent, at Thirty-sixth and Burt Streets, in Bemis Park, and at Twenty-fourth and Lake Streets. At other points along the path in the more open places the wreckage and débris lay in a general direction coincident with the path—that is, from the southwest to the northeast. A terrific grinding roaring noise that was distinctly heard for several blocks accompanied the storm.

The total number of persons killed in Omaha was 94. This includes those instantly killed and those whose death resulted from injuries received. The number of persons seriously and slightly injured will run into the hundreds. The greatest number of persons killed in any locality was in the vicinity of Twenty-fourth and Lake Streets, that section being the most thickly populated, and the houses there, being of poorer construction, were generally completely demolished. The number of animals killed was as follows: 33 horses, 4 cows, and 5 mules. The number of houses completely demolished was 600, and 1,129 were partially destroyed or badly damaged. The estimated property loss, including homes, furniture, personal property, wiring, poles, street cars, trees, fences, etc., is about $3,500,000.

The following meteorological conditions were noted in connection with the passage of the storm, it being borne in mind that the Omaha Weather Bureau station for which the data are given is southeast of and about 1¼ miles distant from the nearest point in the path of the tornado. The barometer, which had begun to fall on the 22d, continued to fall steadily during the day up to the moment of the passage of the storm, at which time the lowest pressure was recorded. The pressure then began to rise rapidly with marked fluctuations in its upward movement. At 7 a. m., the station pressure, not reduced to sea level, was 28.51 inches; at noon, 28.36; at 4 p. m., 28.17. The lowest reading, 27.93 inches, was recorded as the tornado passed, and at 7 p. m. the pressure had increased to 28.12. At 7 a. m. the temperature was 40° and continued rising until 4 p. m., when the maximum for the day, 68°, occurred. The sky was overcast with strato-cumulus clouds from the early morning until the middle of the afternoon, when for an hour or so it was only partly obscured. About 4.30 p. m. the sky again became overcast and grew more and more threatening and ominous in appearance until the terrible storm, approaching from the southwest, burst upon the city. At 5.10 p. m. distant thunder was heard, and rain began to fall and continued until 7.35 p. m., being heavy at intervals. From 5.40 to 5.50 p. m. small hail mingled with the rain. The prevailing wind for several hours preceding the storm was from the south, but for a period of 15 minutes before the storm struck it became very changeable, with increasing velocity, blowing from all directions. The general direction maintained during the passage of the storm was from the southwest. The extreme velocity of the wind recorded at the station during the storm was 34 miles an hour, occurring at 6.17 p. m.

As a further description of the meteorological elements accompanying the tornado, notes have been included which were made by Prof. A. R. Schmitt, a member of the faculty of Creighton University, which is located at Twenty-fifth and California Streets, or within eight blocks of the tornado path.

Prof. Schmitt says:

My attention was first called to the gathering of a storm at 4.30 p. m., when the cirrus sheet, which was spreading across the sky from west to east, obscured the sun. By 5 o'clock two-thirds of the sky was covered by the cirrus and a few scattered fractocumuli were scudding at a moderate altitude from southwest to northeast. At about 5.10 a light rain began to fall and after this there was considerable play of lightning among the clouds and an almost constant light rumble of thunder. There were, however, as far as I saw, no passages of lightning between clouds and earth at any time before the tornado had passed. At approximately 5.30 p. m. the clouds had lifted from the horizon everywhere, except for a very short stretch in the southwest. This last fact, the peculiar color of the sky—a muddy buff—and the time of day led me to suspect somewhat the approach of a tornado, but as the wind had shown no sign of veering, as I thought it should and the season was so early for a storm of this character, I abandoned the idea and returned to my desk. A quarter of an hour or so later the pronounced strengthening of the wind, the pelting of light hail at my windows, and the flickering of the electric light brought me out once more. And there was the funnel cloud coming down the hill southwest of us at about Fortieth Street. I looked at my watch—it was just 5.49. In front the funnel was sharply defined even to the very ground, and its circulation counter-clockwise, upward, and extremely violent was easily discernible. On either side, however, and in the rear, rolling clouds of dust and vapor hid the outlines of the funnel. I timed the forward progress of the funnel cloud after it had passed California Street and found it to be approximately 400 feet per 10 seconds. It was just 5.49 when I first saw the cloud at about Fortieth and Farnum Streets, and it was 5.55 when it crossed Twenty-fourth Street. It moved on much more deliberately than I had expected, the lower extremity dragging considerably behind the rest of the cloud. It was rather dark immediately in front of the funnel, but surprisingly light outside the path. The clouds above us hung very low and rushed by at great speed, but showed no gyratory motion. Immediately behind the storm the sky was clear up to the cirrus sheet. Above the funnel the cumulo nimbus was banked mountain high, much higher than I have ever seen it after the passage of a severe thunderstorm. Below long streamers of mist hung almost to the ground. At the same time the clouds over Council Bluffs ad a similar appearance.

NOTE.—A chart showing the path of the tornado through the city of Omaha is reproduced herewith.

TORNADO AT TERRE HAUTE, IND., MARCH 23, 1913.

A report by the official in charge at Terre Haute on this tornado follows:

On the evening of March 23, at 9.45 o'clock, a severe local storm passed through the south end of Terre Haute less than 2 miles south of the station. The tornado crossed the Wabash River and entered the city at Voorhees Street. From this point it swept across the city in a northeasterly direction, Twenty-fifth and Hulman Streets being the eastern limit in this city of the zone of destruction. It consumed less than two minutes in traversing the city, during which time about 330 houses were demolished or badly damaged, 250 persons injured, and 21 lives lost. The width of the area of greatest devastation was about 100 yards, but property was damaged on each side of this track for at least 500 yards. The day began with a temperature of 39°, later rising rapidly to the 70° mark by noon. The afternoon and evening were oppressive. Rain began in the early morning and was nearly continuous all day. At 9.20 p. m. the rain became heavy and fell at the rate of 0.10 inch in 5 minutes. It continued at this rate for 25 minutes. During this heavy fall of rain the lightning was most vivid and the thunder of the heavy rumbling kind. At 9.45, the time the tornado was crossing the city, the barograph trace went down and up 0.10 inch in a very few minutes. * * * I have talked with several persons who were caught in the tornado. They saw the funnel-shaped cloud touching the ground in places and house after house crumble as it passed over them. They say the roar was deafening, and I was told by several persons that it could be heard for a mile. Many freakish things resulted: chickens were defeathered;

the clothing was drawn off a bed through a fireplace and thence up the chimney; in one house the linoleum was raised off the floor; in another a baby was lifted out of its bed, carried a square, and laid down without injury; toothpicks were driven into the hard wood of a sideboard on which they were laid, and a splinter of wood was driven through a large phonograph horn.

Average temperatures and departures from the normal.

Districts.	Number of stations.	Average temperatures for the current month.	Departures for the current month.	Accumulated departures since Jan. 1.	Average departures since Jan. 1.
New England	12	37.9	+5.0	+13.7	+4.6
Middle Atlantic	15	45.8	+6.0	+16.9	+5.6
South Atlantic	10	57.3	+3 4	+14.6	+4.9
Florida Peninsula [1]	9	69.9	+3.2	+13.4	+4.5
East Gulf	11	57.3	+0.1	+ 6.6	+2.2
West Gulf	11	54.9	−3.0	− 3.1	−1.0
Ohio Valley and Tennessee	14	45.3	+1.3	+ 7.7	+2.6
Lower Lakes	11	35.8	+2.8	+ 8.4	+2.8
Upper Lakes	13	26.5	−1.1	− 2.0	−0.7
North Dakota [1]	9	16.9	−4 4	− 6.6	−2.2
Upper Mississippi Valley	14	34.9	−1.2	+ 1.1	+0.4
Missouri Valley	12	34.3	−1.8	+ 0.3	+0.1
Northern slope	9	26.5	−4.3	−11.5	−3.8
Middle slope	6	40.2	−2.3	− 7.2	−2.4
Southern slope [1]	8	48.4	−4.2	− 8.1	−2.7
Southern Plateau [1]	9	48.5	−4.3	−12.4	−4.1
Middle Plateau [1]	10	35.5	−2.8	− 7.6	−2.5
Northern Plateau [1]	11	34.8	−3.1	−12.5	−4.2
North Pacific	7	42.2	−2.1	− 4.9	−1.6
Middle Pacific	7	50.0	−1.3	− 4.1	−1.4
South Pacific	4	55.2	+0.1	+ 2.2	+0.7

[1] Regular Weather Bureau and selected cooperative stations.

Average precipitation and departure from the normal.

Districts.	Number of stations.	Average.		Departure.	
		Current month.	Percentage of normal.	Current month.	Accumulated since Jan. 1.
New England	11	4.76	127	+1.00	0.00
Middle Atlantic	15	4.19	111	+0.60	−1.40
South Atlantic	11	5.33	139	+1.50	−0.50
Florida Peninsula [1]	9	4.74	161	+1.80	+2.90
East Gulf	11	8.35	143	+2.50	+2.90
West Gulf	10	2.60	84	−0.50	+0.40
Ohio Valley and Tennessee	14	6.46	145	+2.00	+5.70
Lower Lakes	10	6.13	233	+3.50	+5.40
Upper Lakes	14	3.40	148	+1.10	+0.60
North Dakota [1]	9	0.88	90	−0.10	−0.50
Upper Mississippi Valley	15	3.71	154	+1.30	+1.50
Missouri Valley	12	2.24	115	+0.30	+0.50
Northern slope	9	1.28	119	+0.20	+0.40
Middle slope	6	0.81	54	−0.70	−0.20
Southern slope [1]	8	1.60	133	+0.40	−0.20
Southern Plateau [1]	9	0.24	44	−0.30	−0.10
Middle Plateau [1]	11	0.80	53	−0.70	−1.10
Northern Plateau [1]	11	1.31	93	−0.10	−0.60
North Pacific	7	2.80	57	−2.10	−4.60
Middle Pacific	7	1.85	46	−2.20	−6.60
South Pacific	4	0.58	22	−2.00	−1.50

[1] Regular Weather Bureau and selected cooperative stations.

Average relative humidity and departure from the normal.

Districts.	Average.	Departure from normal.	Districts.	Average.	Departure from normal.
New England	79	+4	Missouri Valley	73	+1
Middle Atlantic	72	0	Northern slope	72	+5
South Atlantic	76	+1	Middle slope	62	+2
Florida Peninsula	80	+3	Southern slope	54	−1
East Gulf	74	+1	Southern Plateau	45	+9
West Gulf	69	−3	Middle Plateau	57	−7
Ohio Valley and Tennessee	69	−2	Northern Plateau	70	−5
Lower Lakes	77	+1	North Pacific	81	0
Upper Lakes	80	+1	Middle Pacific	70	−4
North Dakota	82	+4	South Pacific	62	−9
Upper Mississippi Valley	76	+3			

Average cloudiness and departure from the normal.

Districts.	Average.	Departure from normal.	Districts.	Average.	Departure from normal.
New England	6.4	+0.7	Missouri Valley	5.6	−0.1
Middle Atlantic	6.1	+0.4	Northern slope	5.9	+0.5
South Atlantic	6.1	+1.2	Middle slope	4.6	0.0
Florida Peninsula	5.2	+1.4	Southern slope	3.9	−0.5
East Gulf	6.1	+1.1	Southern Plateau	2.9	−0.8
West Gulf	4.8	−0.3	Middle Plateau	4.7	−0.3
Ohio Valley and Tennessee	5.7	−0.3	Northern Plateau	7.4	+1.6
Lower Lakes	6.2	−0.4	North Pacific	7.1	+0.5
Upper Lakes	6.4	+0.4	Middle Pacific	4.4	−1.0
North Dakota	5.9	+0.3	South Pacific	3.5	−2.3
Upper Mississippi Valley	6.3	+0.6			

Maximum wind velocity.

Stations.	Date.	Velocity.	Direction.	Stations.	Date.	Velocity.	Direction.
Alpena, Mich	21	55	w.	Mount Weather, Va.	5	50	nw.
Block Island, R. I.	2	56	w.	Do	6	60	nw.
Do	27	58	s.	Do	22	68	nw.
Do	28	56	w.	Do	23	50	se.
Buffalo, N. Y.	2	76	sw.	Do	27	73	nw.
Do	3	52	sw.	Do	28	50	nw.
Do	6	54	w.	Do	31	67	w.
Do	9	60	sw.	Nantucket, Mass.	27	52	s.
Do	14	56	s.	Nashville, Tenn.	21	56	w.
Do	21	90	w.	New York, N. Y.	2	74	nw.
Do	22	52	w.	Do	6	68	nw.
Do	24	60	sw.	Do	7	56	nw.
Do	31	60	sw.	Do	17	55	nw.
Burlington, Vt.	24	52	s.	Do	21	50	s.
Canton, N. Y.	15	50	w.	Do	22	54	nw.
Do	21	68	sw.	Do	24	56	sw.
Do	22	56	sw.	Do	25	59	sw.
Do	24	54	sw.	Do	27	78	sw.
Chattanooga, Tenn.	13	54	s.	Do	28	56	nw.
Do	21	50	w.	Do	31	70	nw.
Chicago, Ill.	24	52	sw.	Norfolk, Va.	2	52	nw.
Cleveland, Ohio	2	50	sw.	Do	6	58	w.
Do	23	64	sw.	Do	14	50	sw.
Columbus, Ohio	25	54	n.	Do	15	50	sw.
Do	31	55	w.	Do	27	58	sw.
Concordia, Kans.	23	50	nw.	North Head, Wash.	1	52	s.
Dayton, Ohio	14	52	s.	Do	12	60	nw.
Do	21	58	sw.	Do	17	66	se.
Do	24	50	s.	Do	27	54	se.
Denver, Colo.	14	51	ne.	North Platte, Nebr.	14	54	nw.
Detroit, Mich.	21	86	w.	Oklahoma, Okla.	23	52	s.
Dodge, Kans.	23	52	sw.	Pensacola, Fla.	21	54	s.
Duluth, Minn.	1	54	nw.	Pierre, S. Dak.	14	55	nw.
El Paso, Tex.	12	53	sw.	Pittsburgh, Pa.	2	57	nw.
Do	25	51	w.	Do	21	52	sw.
Evansville, Ind.	14	54	s.	Point Reyes light, Cal.	10	76	nw.
Fort Wayne, Ind.	21	64	sw.	Do	11	73	nw.
Do	24	52	w.	Do	12	78	nw.
Do	30	56	sw.	Do	13	70	nw.
Fort Worth, Tex.	23	50	s.	Do	19	61	nw.
Grand Haven, Mich.	24	50	sw.	Do	20	57	nw.
Hannibal, Mo.	13	50	sw.	Do	23	63	nw.
Hatteras, N. C.	27	53	s.	Do	24	74	nw.
Helena, Mont.	17	52	sw.	Do	25	62	nw.
Indianapolis, Ind.	14	54	s.	Port Huron, Mich.	21	62	sw.
Do	21	60	sw.	Pueblo, Colo.	23	52	nw.
Do	24	52	s.	Richmond, Va.	27	54	s.
Jacksonville, Fla.	15	52	sw.	St. Paul, Minn.	1	51	nw.
Kansas City, Mo.	23	58	sw.	Scranton, Pa.	21	50	s.
La Salle, Ill.	24	50	sw.	Sioux City, Iowa.	1	53	nw.
Lexington, Ky.	25	52	w.	Southeast Farallon, Cal.	10	54	nw.
Louisville, Ky.	14	66	sw.	Do	11	62	nw.
Do	21	66	s.	Do	12	56	nw.
Do	24	56	s.	Do	24	50	nw.
Memphis, Tenn.	20	64	sw.	Do	25	50	nw.
Do	25	56	nw.	Syracuse, N. Y.	21	54	s.
Minneapolis, Minn.	14	60	ne.	Tatoosh Island, Wash.	27	56	s.
Modena, Utah	18	50	sw.	Do	29	56	sw.
Do	22	52	sw.	Terra Haute, Ind.	21	52	sw.
Mount Tamalpais, Cal.	10	64	nw.	Toledo, Ohio	15	54	sw.
Do	11	55	nw.	Do	20	50	sw.
Do	12	66	nw.	Do	21	84	sw.
Do	13	60	nw.	Do	24	66	s.
Do	14	54	nw.	Topeka, Kans.	23	51	sw.
Do	19	58	nw.	Valentine, Nebr.	14	56	nw.
Do	20	66	nw.	Wichita, Kans.	18	56	s.
Do	24	56	nw.	Do	23	60	s.
Do	25	61	nw.				
Mount Weather, Va.	2	66	nw.				