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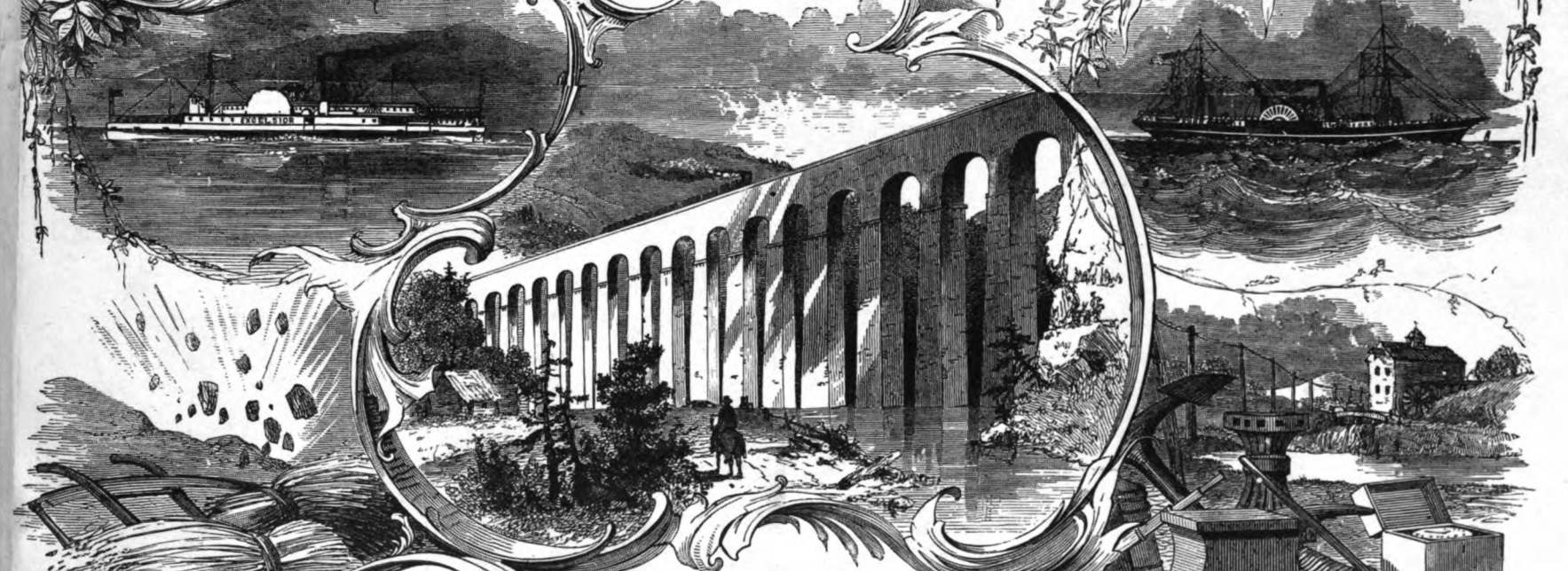
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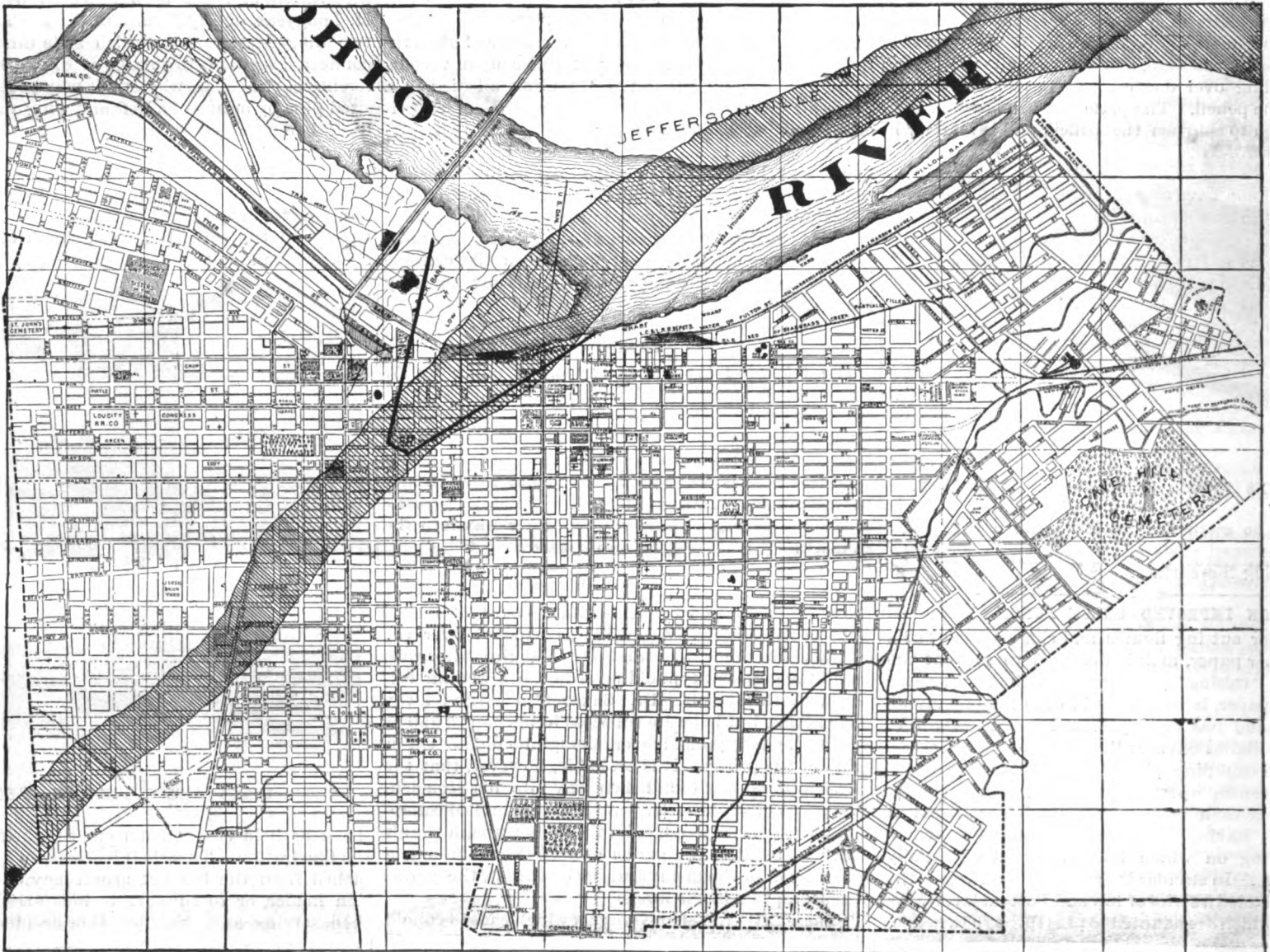
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THE CYCLONE OF MARCH 26, 27, AND 28.

Starting eastward from the neighborhood of the Great Salt Lake, in Utah, on March 26, a storm of rain, snow, and wind, of almost unprecedented magnitude, swept over the country, occupying three days in its

Kentucky and in the southern portion of Illinois and Indiana, where rain fell abundantly and the wind was very high. The Signal Service office reports that the storm traveled at a speed varying from thirty to sixty miles an hour. During the afternoon and night of

One of these tornadoes, by far the most violent of all that have been reported, passed through a portion of the city of Louisville, Ky., between 7:15 and 7:30 P. M., causing great destruction of property and loss of life, those who were killed outright numbering, un-



MAP OF LOUISVILLE, SHOWING PATH OF STORM. (The V-shaped figure near middle of map includes the district shown on the front page.)

passage, and stretching from the Rocky Mountains to the western base of the Alleghanies and the basin of the St. Lawrence. The northern limit of its force was in the States of Nebraska, Iowa, Minnesota, Wisconsin, and Illinois, where the snow-fall was heavy, but the storm was felt in its greatest severity in Tennessee and

March 27, when the storm had crossed the Mississippi River, there were developed a large number of severe and very destructive tornadoes, a good many of them in Tennessee and in southern Illinois and Indiana, but the greater portion, and those of the most violent character, were in the State of Kentucky.

doubtedly, over one hundred, while more than that number were wounded. Our illustrations, from drawings made by our own artist and photographs, bring vividly before the mind the extent of the ruin effected and the terrible power manifested by the tornado, all in a space of time not exceeding ten minutes, to which



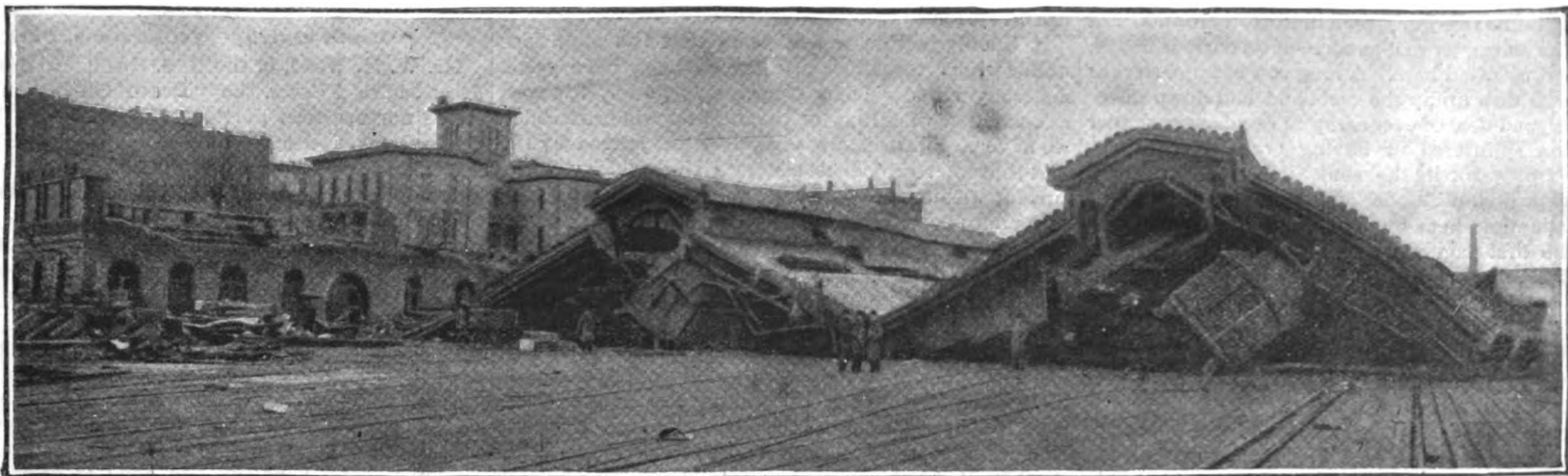
DESTRUCTION AT ST. JOHN'S EPISCOPAL CHURCH, FRONTING BAXTER PARK.—(From a Photograph by Elrod.)

period all accounts agree in limiting the time of its passage through the city.

The tornado entered the city from the southwest through the suburb of Parkland, around which the

illustrations. The site of the building is also indicated at A, in our first page picture. A number of organizations were holding meetings in the building at the time, and none had an opportunity to escape, so sud-

denly, Market, Jefferson, Walnut, Madison, and Chestnut. In the latter street the Third Presbyterian Church was completely demolished, its steeple being lifted bodily and carried diagonally across the street, where it was

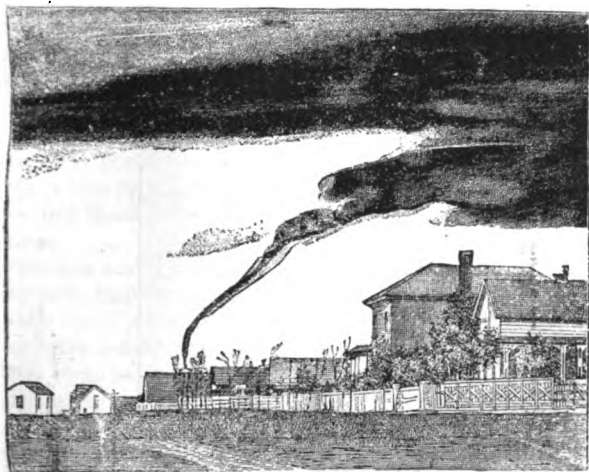


LOUISVILLE—WRECK OF THE UNION DEPOT.—(From a Photograph by Klauber.)

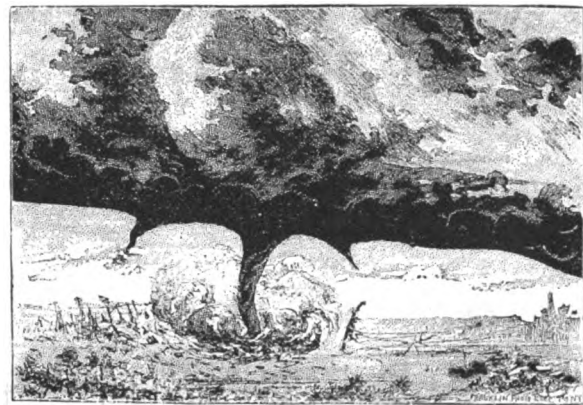
Ohio River bends to the southward, and thence passed diagonally in a northeast direction, cutting a path nearly two miles long, as indicated on the accompanying map, along which everything centrally in its line

den was the collapse of the structure. One who was present, but escaped from the ruins, after describing his apprehensions from the rising fury of the storm, says: "Then the windows blew in, the plaster commenced falling, the lights went out, and the floor began to sink; it sank slowly, and it seemed to be several

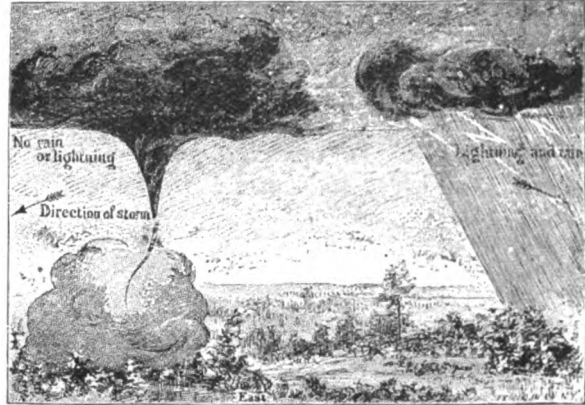
dropped upon and carried down a two-story grocery store. In a building adjoining the Louisville Hotel a number of lives were lost, several hours being required to dig out the dead and wounded from the ruins. In a few places fires started in the fallen buildings, and although these were quickly put out, so that there was



TORNADO CLOUD SEEN NEAR GARNETT, KANSAS, 1894.



TORNADO CLOUD SEEN AT HOWARD, DAKOTA, 1894.



TORNADO AT ERCILDOUN, PA., 1874.

was demolished, while structures fringing the course were unroofed and twisted or shattered so as to be left in a dangerous condition. The most complete destruction was at the Falls City Hall, a representation of the ruins there, consisting of a compact mass of rubbish, bricks, and mortar, forming the subject of one of our

seconds before it struck, with a jar, and joists, beams, plastering, and everything came falling down upon us." Of the total number of lives lost in the city, the great majority were killed at this point.

The streets wherein the greatest damage was done are Eleventh to Eighteenth, inclusive, Water, Main,

no large conflagration, there were several instances where those pinned down by the debris of demolished buildings were burned to death before they could be dug out.

The Rev. Stephen E. Barnwell, rector of St. John's Episcopal Church, and a young son, were mangled to



THE TORNADO AT LOUISVILLE—DEBRIS OF THE FALLS CITY HALL.—(From a Photograph by Elrod.)

death, the father evidently having been reading with his family when the crash came which shattered the rectory and the church next to it. The ruined condition of both buildings is shown in one of the photographic views, and also in the first page illustration, as they front on Baxter Park, seen in the foreground. The force of the storm, as well as some of its curious freaks, were well illustrated here. A long row of large trees at one side was torn up by the roots and laid down in order with a good deal of evenness and regularity, smaller trees being splintered or having branches torn off, while the iron work in the central fountain was torn out and deposited near one of the gates, yet a light frame musicstand near by was uninjured. In one portion of the first page view is also seen a tall chimney left standing, although all about it is in ruins.

In the wreck of a portion of the Union Depot, at the foot of Seventh Street, a number of people were injured, but it seems almost miraculous that none were killed. A train was about ready to leave, and many passengers were waiting, but as the noise of the approaching storm increased, they had generally gathered about the offices, where it finally proved that there was the least danger. The location of the depot is indicated at B in

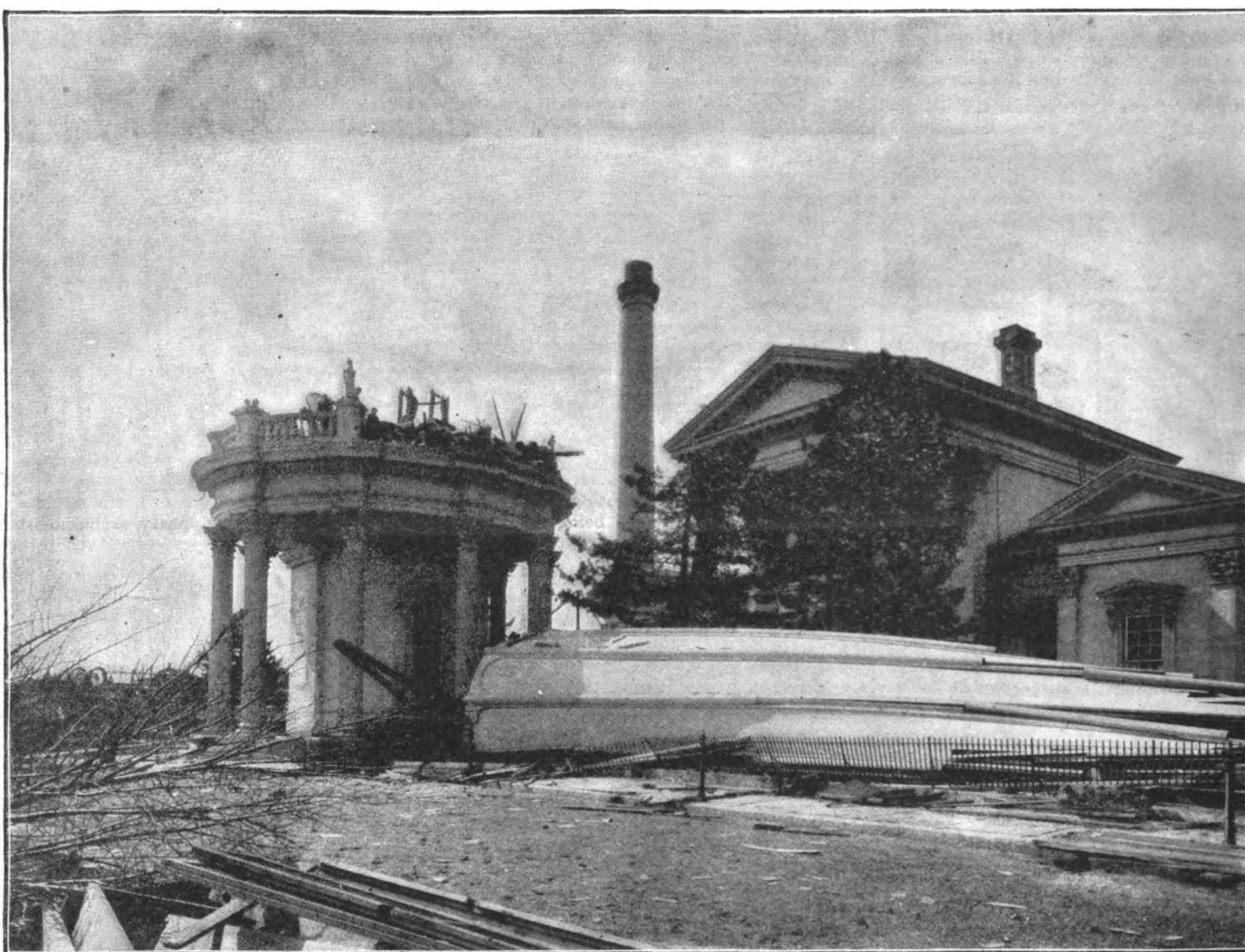
of devastation for many miles in the same line anywhere, but the special places where great damage was done were separated from each other in many cases by distances of fifty or a hundred miles, although all within and upon the southern edge of the great continental cyclone.

It is only within a few years that the conditions under which tornadoes are formed have been systematically noted. Their tremendous power, however, as compared with that of the highest winds of which we have accurate knowledge, may be judged by the fact that meteorologists estimate the velocity of the current within the whirling funnel-shaped cloud of a tornado to be many times that of the cyclone of which it is the accompaniment, and on the edges of which it hangs. The lower part of the cloud-funnel, as it approaches or strikes the earth, as it were with an immense flail, may be but a few yards wide, but with a base in the upper clouds which is miles in diameter, and extending to a height to which we can assign no limit, except as that is defined by the height of the ocean of air resting upon the earth's surface. Some of the different phases in which the tornado cloud presents itself are shown in the small views, in one case

Atlantic seaboard, we trust there is no ground, on this account, for the assumption recently advanced in the columns of a Western newspaper, that the dwellers upon the sea coast are the more likely to be the recipients of the next earthquake visitation.

"Death Gulch," Yellowstone Park.

Mr. W. H. Weed, of the U. S. Geological Survey, has described in *Science*, the "Death Gulch" in the extreme northeastern portion of Yellowstone Park, on Cache Creek, two miles above its confluence with Lamar River, five miles from the mail station of Soda Butte. In an opening bordering on Cache Creek occur evidences of former hot springs in geyser-like deposits, a hot spring cone half washed away, a mound of travertine, and a little tepid sulphurous water at the edge of the stream. Besides, there are copious gaseous emanations rising through the waters of the creek "mainly, no doubt, carbonic acid, although containing some sulphureted hydrogen." Above these is altered and crystalline travertine, besides a bank of sulphur and gravel cemented by travertine. In a lateral gully, the waters of its small stream, sour with sulphuric acid, flow in a channel cut through beds of dark gray vol-



THE DEMOLISHED STANDPIPE AT THE WATER WORKS.—(From a Photograph by Klauber).

our first page picture. One of the photographic views represents it as seen the day after, with one car of a train pinned down by the wreckage.

Grave apprehensions were felt for several days of the cutting off of the city's water supply, on account of the destruction of the stand-pipe at the pumping station, which forms the subject of one of the photographic views. The reservoir, however, held a five days' supply, which proved to be sufficient until temporary measures could be taken to furnish water while the tower was being rebuilt.

As to the total damage to property in the city, there are no trustworthy figures obtainable. It has been estimated that the losses to small householders and those of limited means generally would foot up to nearly half a million dollars, but losses from such a cause are not generally covered by insurance policies, and therefore the reports made fail to give sufficient facts on which to make a close approximation of the value of the property destroyed.

The little town of Jeffersonville, Ind., immediately across the river from Louisville, was somewhat damaged, but the visitation of the storm there was especially remarkable from the fact that a church in which a meeting was being held was unroofed without any attendant loss of life. In numerous other places, embracing some twenty counties in Kentucky and ten counties in Tennessee, as well as at various localities just on the north side of the Ohio River, there was great destruction of property, and in some cases considerable loss of life. There was no continued course

the cloud stretching toward the earth in the form of an elephant's trunk. In the case of the tornado cloud seen in Dakota, there was ample time to fully observe it, as it remained in sight over two hours. Several people were killed by this tornado, and much property destroyed.

The tornado at Ercildoun, Pa., in 1877, traversed the country for twenty miles, the width of its track varying from 150 to 300 feet, many people being injured, and much property destroyed. Observers who have witnessed tornadoes have described the cloud as "bounding over the ground like a ball," "lashing the earth in terrific fury with its huge tail," etc., and of one tornado cloud it is said that, "rising up like the uncoiling of a huge rope, it cut loose from the earth and passed over us with a horrible whizzing sound." The state of excitement or terror of the observer may well be deemed to have some effect influencing such descriptions, but they quite accord with what is now conceived to be the nature and operation of the forces producing the tornado cloud.

The United States, east of the Rocky Mountains, is conceded to be particularly subject to tornado storms, from the large extent it presents of comparatively level territory, unbroken by high mountains, to present barriers to its surface currents. Kansas, Missouri, and Iowa have had very many of these storms, which have also been numerous in the whole region north of the Ohio, and in northern Alabama, Georgia, and the Carolinas they have likewise been frequent. Although they have not been so numerous immediately upon the

canic tufa. The only springs now flowing are oozes of water, forming a creamy white deposit about the vents, which is largely an alum (alumina sulphate). The odor of sulphur is strong. The bears and other wild animals of the region are often killed by the gases. Dead bears were found in all stages, from skeletons to freshly killed, and with them were remains of an elk, squirrels, rock-hares, etc., and many dead butterflies and other insects.

Variegated Colors for Show Bottles.

Take equal volumes of chloroform, glycerine, a mixture of one volume stronger ether and three volumes carbon disulphide, water, cotton seed oil, and alcohol. Shake the chloroform with a little water, then separate the excess. To the chloroform thus saturated with water add a little Bengal red, shake well a few minutes, and filter. In the ether and carbon disulphide dissolve a little iodine. In the alcohol dissolve a little Bengal green or chlorophyll from fresh green leaves. Now pour these various colored fluids into a clear flint glass bottle or other similar container just large enough to hold them all, beginning with the chloroform and following with each in succession down to the alcohol. They should all be added carefully down the side of the container and without agitation, and, lastly, enough more alcohol should be added to completely fill the container after the insertion of the cork. This will give a bottle with six separate layers of colored fluids, and presents a very pretty sight.—*The New Idea*.