

INLAND NAVIGATION.

LOW WATER.

On the 3d navigation on the Mississippi River closed at La Crosse, Wis., on account of low water. On the 20th the river reached 7.0 feet on the gauge at Cairo, Ill. Navigation between Saint Louis, Mo., and Cairo was seriously impeded by low water; all New Orleans boats of the Anchor Line were laid up, and but 2 Natchez boats of the same line were running, and they were compelled to transfer freight to barges between Cairo and Saint Louis. Low water caused inconvenience to transfer boats between Cairo and Birds Point, Mo. The morning of the 20th the stage of the water at Memphis, Tenn., was 5.8 feet and falling.

On the 18th the Red River stood at 1.5 foot on the gauge at Shreveport, La., and was navigable only to the smallest steamers. On the 27th at 5 p. m. the river reached 0.2 foot at that point, the lowest stage of the year.

On the 18th the Tennessee River was very low at Chattanooga, Tenn., and navigation was closed to large boats. On the 22d navigation was closed at Florence, Ala., by low water. On the 28th the stage of water at Chattanooga was the lowest of the year, and only light draught, up-river boats were running.

At the close of the month the Iowa River at Amana, Iowa, was lower than noted for several years.

STAGE OF WATER IN RIVERS.

In the following table are shown the danger-points at the various river stations; the highest and lowest stages for the month, with the dates of occurrence, and the monthly ranges:

Heights of rivers above low-water mark, September, 1891 (in feet and tenths).

Stations.	Danger-point on gauge.	Highest water.		Lowest water.		Monthly range.
		Date.	Height.	Date.	Height.	
<i>Red River.</i>						
Shreveport, La.	29-9	I	5-5	27	0-4	5-1
<i>Arkansas River.</i>						
Fort Smith, Ark.	22-0	I	2-9	30	0-9	2-0
Little Rock, Ark.	23-0	I	4-4	30	3-0	1-4
<i>Missouri River.</i>						
Fort Buford, N. Dak.		I	7-3	30	5-3	2-0
Pierre, S. Dak.	14-0	I	1-6	29, 30	0-2	1-4
Sioux City, Iowa	18-7	I	7-1	25	4-2	2-9
Omaha, Nebr.	18-0	1, 2	8-1	27, 28, 30	6-4	1-7
Kansas City, Mo.	21-0	I	9-0	30	6-1	2-9
<i>Mississippi River.</i>						
Saint Paul, Minn.	14-0	29, 30	1-6	21	1-1	0-5
La Crosse, Wis.	13-0	1, 2	2-0	25-30	1-5	0-5
Dubuque, Iowa	16-0	1, 3, 4	1-6	24-30	1-0	0-6
Davenport, Iowa	15-0	3, 4	0-6	25-29	0-1	0-5
Keokuk, Iowa	14-0	1, 2	0-3	27, 28	0-5	0-8
Saint Louis, Mo.	30-0	I	10-1	30	4-6	5-5
Cairo, Ill.	40-0	4, 5	14-8	30	3-9	10-9
Memphis, Tenn.	33-0	I	11-9	30	3-5	8-4
Vicksburg, Miss.	41-0	I	17-5	30	3-8	13-7
New Orleans, La.	13-0	13	5-6	20	3-6	2-0
<i>Ohio River.</i>						
Parkersburgh, W. Va.	38-0	I	7-3	30	2-2	5-1
Cincinnati, Ohio	45-0	I	17-8	30	5-5	12-3
Louisville, Ky.	24-0	I	8-8	30	3-4	5-4
<i>Cumberland River.</i>						
Nashville, Tenn.	40-0	I	5-3	30	0-6	4-7
<i>Tennessee River.</i>						
Chattanooga, Tenn.	33-0	9	5-8	29, 30	1-9	3-9
<i>Monongahela River.</i>						
Pittsburg, Pa.	29-0	7	7-6	2	2-9	4-7
<i>Savannah River.</i>						
Augusta, Ga.	32-0	6	13-2	27	5-7	7-5
<i>Willamette River.</i>						
Portland, Oregon	15-0	22	3-7	27, 28	0-6	3-1
<i>Susquehanna River.</i>						
Harrisburg, Pa.	17-0	1, 8	4-8	28, 29, 30	1-9	2-9
<i>Alabama River.</i>						
Montgomery, Ala.	48-0	9, 13	3-2	27, 28, 30	0-6	2-6

ATMOSPHERIC ELECTRICITY.

AURORAS.

The more widely extended auroral displays reported were observed from New England to Minnesota on the 1st; from New England to Montana and southward to Maryland and southern Ohio on the 9th; in New England, New York, and Pennsylvania, the upper lake region, west Montana, and Washington on the 10th; and from the Atlantic to the Pacific coasts and southward in the central valleys to the 40th parallel on the 11th.

Auroras were reported as follows: 1st, New England, New York, Michigan, and Minnesota. 2d, New England, New York, Wisconsin, and Minnesota. 3d, New England, Illinois, Wisconsin, Iowa, Minnesota, and the Dakotas. 4th, New England and Michigan. 5th, Michigan and the Dakotas. 7th, New England, New York, and Michigan. 8th, New England, New York, Pennsylvania, New Jersey, Michigan, Wisconsin, Iowa, Minnesota, and Montana. 9th, New England, New York, Pennsylvania, New Jersey, Maryland, Ohio, Illinois, Michigan, Wisconsin, Iowa, the Dakotas, Nebraska, Wyoming, and Montana. 10th, New England, New York, Pennsylvania, Michigan, Wisconsin, Iowa, Minnesota, the Dakotas, and Washington. 11th, New England, New York, Pennsylvania, Ohio, Michigan, Illinois, Iowa, the Dakotas, Colorado, Wyoming, Montana, and Washington. 12th, New York, Michigan, Wisconsin, and Montana. 13th, New England. 17th, Ohio and Iowa. 18th, Ohio. 19th, Pennsylvania. 22d, New England. 23d, Wisconsin, Iowa, and Montana. 25th, Iowa. 26th, New England and Minnesota. 27th, New York, Minnesota, Wisconsin, Iowa, and the Dakotas. 28th, New England, New York, Maryland, Ohio, Illinois, Wisconsin, Minnesota, the Dakotas, and Montana. 29th, New England, New York, Michigan, Iowa, the Dakotas, and Montana. 30th, Pennsylvania.

At Sault de Ste. Marie, Mich., an aurora of a grayish tinge

extending from northeast to northwest and to altitude about 25° was observed at 10.15 p. m. of the 1st. Beams of light shot out from the east and west sides to altitude 50°.

On the 9th, at 7.30 p. m., an aurora, consisting of a low arch of diffused whitish light tinged at times with yellow and crimson and resting on a dark segment, was observed at Manchester, N. H. The arch was about 15° in width and extended from about 130° to 220° azimuth, and "merry dancers" shot up to altitude 45° to 50°. The display was most brilliant about 9.30 p. m., and disappeared 11.15 p. m. At Boston, Mass., the aurora was observed at 7.55 p. m., when it extended from northeast to northwest and about 15° above the horizon. Streamers shot upward at intervals, and the display ended at 9.20 p. m. At Concord, Mass., an aurora consisting of 3 distinct arches with long yellow streamers reaching altitude 80° was observed from 8 p. m. until after midnight. At New London, Conn., an aurora consisting of 2 arches with streamers was observed from 9 to 11 p. m. At Oswego, N. Y., an arch of white light extending from northwest to east and to altitude about 15°, with streamers of a greenish and, at times, of a rosy hue, commenced at 7.45 p. m., and continued during the night. At Buffalo, N. Y., a well-defined arch extending about 25° east and west of north, with luminous beams, was observed from 8.30 p. m. until after midnight. At Detroit, Mich., a diffused white light was observed in the northeast at 8 p. m., from which a single streamer about 6° in width rose slowly to the zenith; the display continued about 8 minutes. At Marquette, Mich., a diffused white light, with a greenish tinge, extending from northwest to northeast, was observed at 8.30 p. m., and disappeared at 10.30 p. m. At Medford, Wis., a display consisting of arches and streamers of great brilliancy was observed from 9 to 10 p. m. At Bismarck, N. Dak., an aurora consisting of an arch which extended from 170° to 250° azimuth and to altitude