

COTTON REGION REPORTS.

In the following table are given the means of the maximum and minimum temperatures, and the average rainfall for the cotton-belt districts during the month. For the purpose of comparison the means for the five preceding years are also given.

In the Galveston district the rainfall of August is largely in excess of the average, but in the other districts bordering on the Gulf, and in Arkansas and Memphis districts, no marked departures occur, though the precipitation is generally deficient. Deficiencies also occur in Savannah and Charleston districts, while nearly double the average amount of rain fell in the district of Wilmington.

The means of the maximum and minimum temperatures, as compared with the normals, show that with respect to temperature the average August conditions prevailed during the month:

Temperature and rainfall data for the cotton districts, August.

Districts.	Rainfall.			Temperature.						Extremes for Aug., 1887.	
	Average for August of five preceding years.	Average for August, 1887.	Departures.	Maximum.			Minimum.				
				Mean for Aug. of five preceding years.	Mean for Aug., 1887.	Departures.	Mean for Aug. of five preceding years.	Mean for Aug., 1887.	Departures.	Max.	Min.
	Inch.	Inch.	Inch.	°	°	°	°	°	°	°	°
New Orleans...	3.86	3.34	- 0.52	91.4	92.1	+ 0.7	71.2	71.1	- 0.1	0	60
Savannah	5.64	5.00	- 0.64	90.8	91.8	+ 1.0	71.5	71.0	- 0.5	102	54
Charleston	6.67	4.70	- 1.97	89.4	89.7	+ 0.3	69.1	70.5	+ 1.4	100	45
Atlanta	4.58	7.09	+ 2.51	88.0	87.3	- 0.7	67.7	68.3	+ 0.6	99	40
Wilmington	4.88	9.50	+ 4.62	88.0	86.7	- 1.3	67.6	67.8	+ 0.2	101	51
Memphis	2.89	2.05	- 0.84	88.7	91.2	+ 2.5	66.4	67.6	+ 1.2	106	40
Galveston	2.37	4.02	+ 1.65	93.8	94.4	+ 0.6	71.0	72.3	+ 1.3	103	52
Vicksburg	2.97	3.50	+ 0.53	90.5	91.7	+ 1.2	69.6	72.5	+ 2.9	91	58
Montgomery	3.59	2.60	- 0.99	90.4	89.9	- 0.5	68.5	70.1	+ 1.6	98	49
Augusta	3.95	5.47	+ 1.52	89.9	88.3	- 1.6	68.2	68.9	+ 0.7	101	53
Little Rock	2.37	2.13	- 0.24	91.1	91.3	+ 0.2	66.3	67.0	+ 0.7	104	37
Mobile	3.05	2.87	- 0.18	92.0	92.8	+ 0.8	69.6	67.7	+ 1.9	104	50

INLAND NAVIGATION.

STAGE OF WATER IN RIVERS AND HARBORS.

In the following table are shown the danger-points at the various river stations and the highest and lowest depths for August, 1887, with the dates of occurrence, and the monthly ranges:

Heights of rivers above low-water mark, August, 1887. [Expressed 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	1	6.1	31	0.1	6.0
<i>Arkansas River:</i>						
Fort Smith, Ark.....	22.0	45	2.0	15	0.7	1.3
Little Rock, Ark.....	23.0	1	2.3	16, 17	1.6	0.7
<i>Missouri River:</i>						
Omaha, Neb.....	18.0	4, 5, 6	9.9	29, 30, 31	7.9	2.0
Leavenworth, Kans.....	20.0	1	11.6	23, 31	8.9	0.7
<i>Mississippi River:</i>						
Saint Paul, Minn.....	14.5	3	2.5	14	1.9	0.6
La Crosse, Wis.....	24.0	16, 17, 18	3.2	7, 8, 9, 31	2.7	0.5
Dubuque, Iowa.....	16.0	22, 23	3.1	10	2.1	1.0
Davenport, Iowa.....	15.0	15	2.7	10	0.9	1.8
Keokuk, Iowa.....	14.0	16, 17	1.7	12	0.7	1.0
Saint Louis, Mo.....	32.0	1	9.8	30, 31	7.1	2.7
Cairo, Ill.....	40.0	11, 12	8.7	26, 27	4.8	3.9
Memphis, Tenn.....	34.0	1	8.2	29	5.2	3.0
Vicksburg, Miss.....	41.0	1	7.1	31	1.5	5.6
New Orleans, La.....	13.0	31	3.9	25	2.1	1.8
<i>Ohio River:</i>						
Pittsburg, Pa.....	22.0	2, 20	6.1	1	4.9	1.9
Cincinnati, Ohio.....	50.0	2, 4, 5	6.0	26, 31	4.1	1.2
Louisville, Ky.....	25.0	3	3.9	31	2.8	1.1
<i>Cumberland River:</i>						
Nashville, Tenn.....	40.0	6	2.0	25, 27 to 31	0.1	1.9
<i>Tennessee River:</i>						
Chattanooga, Tenn.....	33.0	6	10.6	3, 25, 26	3.3	7.3
<i>Monongahela River:</i>						
Pittsburg, Pa.....	29.0	2, 20	6.1	1	4.9	1.2
<i>Savannah River:</i>						
Augusta, Ga.....	32.0	10	33.9	28	8.0	25.9
<i>Sacramento River:</i>						
Red Bluff, Cal.....		1	0.6	31	0.4	0.2
Sacramento, Cal.....		1	8.1	26 to 31	7.4	0.7
<i>Willamette River:</i>						
Portland, Oregon.....		1	12.1	30, 31	5.8	6.3

Clinton, Clinton Co., Iowa: the Mississippi River was very low at the close of the month, it being only nineteen inches above low-water mark.

Cairo, Ill.: owing to the low stage of water in the Ohio River the steamer "Bald Eagle" was aground for forty-eight hours at a point seven miles north of this city on the 22d.

Fort Buford, Dak.: the Missouri River was very low and navigation difficult on the 17th. On the 22d boats were delayed on account of low water.

HIGH TIDES.

Atlantic City, N. J.: the tide was very high on the 20th and 25th; several pavilions and sections of the board walk along the beach were washed away.

Chicamicomico, N. C., 20th: Wash Woods, N. C., 25th, 28th.

FLOODS.

Wilkesbarre, Pa: three distinct thunder-storms met over this place at 1.35 p. m. on the 1st, viz., one from the north, one from the south, and one from the east; they were accompanied by heavy rain which caused a freshet in the creek north of station; houses, bridges, etc., along the creek were washed away.

Kitty Hawk, N. C.: the heavy rain which began during the night of the 2d ended at 10.30 a. m. of the 3d; the total rainfall amounted to 4.27 inches and seriously injured the crops in this vicinity.

Columbia, S. C.: the Congaree River overflowed on the 6th, causing serious injury to crops on adjacent bottom lands.

Augusta, Ga.: the freshet of the latter part of July in the Savannah River continued until August 11th, the water reaching its greatest height, 33.9 feet, on the 10th. On the 1st of the month the water had receded sufficiently to permit the resumption of business in the overflowed section of the city, but the subsequent rises caused further interruption of business. On the 9th the city was for the second time entirely surrounded by water. The river fell rapidly on the 11th.

Savannah, Ga.: the Savannah River was very high on the 9th and the plantations along its banks were flooded, resulting in great damage to the rice crop; the river continued very high on the 10th and 11th, flooding the lowlands opposite this city; on the 12th the freshet began to subside.

The Savannah, Ga., "Morning News" of the 12th contained the following, relative to the flood in that vicinity:

From a position at the Vernexebre Creek a desolate and dismal picture is presented. In front, for miles, as far as the eye can see, all is a vast sheet of turbid water. Here and there, at irregular intervals, are seen the waving bushes and reeds that denote where the division lines were, while the twisted and overthrown bridges that crossed the canals and the bare frames of the flood-gates add much to the distressing features of the scene. In different directions around are seen the huge, tall, brick chimneys looming up as if standing in the sea, and the buildings at the settlements all appear low on the water and as if partially immersed. The scene of desolation and ruin is complete. Not a single sign was left to tell of the crop on which so much money, time, and work had been expended. The flooded district at this point is about four miles wide, the water being six to seven feet deep on an average.

In the same issue of the above-named paper was given a de-

tailed statement of the farms inundated in the vicinity of Savannah, in which statement the total area of the submerged farms is estimated at more than 9,000 acres, about 60 per cent. of which was under cultivation.

Greenfield, Franklin Co., Mass.: the heavy rains on the 18th caused numerous washouts on the railroads in this county.

The following is from "The New York Tribune" of August 24th:

CHARLESTON, S. C., August 23.—Reports received this morning from the inundated rice fields of the South Santee indicate that the damage is not general. High tides have prevented the freshet from covering the large plantations of the southern district along the river, and the greater part of the crops is considered safe. On the North Santee colored planters on small farms have suffered disastrously, their crops being reported as totally destroyed.

Cleburne, Johnson Co., Tex.: the unusually heavy rainfall on the 30th caused freshets in East and West Buffalo creeks; many houses and fences were washed away, and several persons drowned.

The following is from the "Chicago Tribune" of the 31st:

FORT WORTH, TEX., August 30th.—North Texas is being visited by unprecedented rains for the month of August. It is a rare thing for more than enough rain to fall in August to lay the dust. Up to yesterday three heavy rains had fallen during the month, but they were not general. Yesterday afternoon it began to rain, and for twenty-four hours has kept it up almost continually. Rivers and streams have risen from five to twenty feet. The Trinity, Brazos, and Red Rivers are out of their banks for the first time in two years. The rain of yesterday and to-day has been general, and has averaged three inches throughout this section. One week ago, at Waco, prayer-meet-

ings were held to pray for a cessation of the long drought. To-night people on the lowland are moving out of their homes to keep from being drowned. Serious washouts are reported south of here on both the Missouri Pacific and the Santa Fé. The Santa Fé bridge across the Wichita, in the Indian Territory, is in danger from a large amount of driftwood in the river. The flood at Cleburne is most severe. A little creek called Buffalo Bayou was turned into a raging torrent in twelve hours, carrying away houses, farms, bridges, and everything in its course. One family, consisting of nine persons, was carried away and drowned before they could get out of their house. Great damage has been done in every direction. As far as heard from eleven people have been drowned.

The following is from the Saint Louis, Mo., "Globe-Democrat" of September 1, 1887:

FORT WORTH, TEX., August 31.—At noon to-day heavy rains began falling in this section and continued for several hours. The Trinity River was higher to-day than yesterday, and reports reach the city to-night of two serious washouts on the Fort Worth and Rio Grande Railroad. All trains north and south on the Missouri Pacific have been abandoned, except a local to Denison. No trains are running either north or south on the Gulf, Colorado, and Santa Fé, and no trains on the Houston and Texas Central between Fort Worth and Waxahachie. The Texas and Pacific is still in trouble near Eagle Ford. A north-bound Missouri Pacific train, due here Monday night, is isolated between two floods at a point between Itaska and Grand View, and there is no prospect of its relief until to-morrow night. The passengers have suffered considerably from hunger.

Tucson, Ariz., 31st: the heavy rains during the month in the surrounding mountains have caused numerous freshets in the Santa Cruz and Rillito rivers.

ATMOSPHERIC ELECTRICITY.

AURORAS.

Saint Vincent, Minn.: an aurora in the form of a whitish arch resting on a dark base was observed at 11 p. m. on the 15th; twenty minutes later a second arch appeared above the first, with a well-defined colored space between them. Numerous beams having a tremulous motion rose from the upper arch; these gradually grew larger and for about twenty-five minutes moved upward and downward, changing color from pale yellow to blue, and finally disappearing at 1.18 a. m. on the 16th.

Northfield, Vt.: an auroral display was observed from 9.00 to 10.15 p. m. on the 31st; it consisted of bright streamers extending upward about 20°, and azimuth 80°; the display was most brilliant at 9.30 p. m.

Eastport, Me.: an auroral arch was observed from 8.10 to 9.45 p. m. on the 14th; it extended from the northwest to northeast and to an altitude of about 130°; four beams reaching an altitude of about 5° were seen between 8.30 and 9.00 p. m.

Auroras were noted on other dates as follows:

1st, Cresco, Iowa. 9th, Vevay, Ind. 11th, Poplar River, Mont. 13th, Eastport and Orono, Me.; Nashua, N. H.; Egg Harbor City, N. J.; Northfield, Vt. 14th, Webster, Dak.; Eastport and Orono, Me.; Saint Vincent, Minn.; Poplar River, Mont.; Nashua, N. H. 15th, Forts Buford and Totten, Dak.; Saint Vincent, Minn. 16th, Poplar River, Mont.; Egg Harbor City, N. J. 20th, Boston, Mass. 23d, Vevay, Ind.; Duluth, Minn. 28th, Webster, Dak.; Eastport, Me.; Traverse City, Mich.; Manitowoc, Wis. 29th, Fort Totten, Dak.; Moorhead, Minn.; Poplar River, Mont. 31st, Pekin, Ill.

THUNDER-STORMS.

Thunder-storms are reported to have occurred in the various states and territories on the several dates as follows:

1st.—Ark., Colo., Conn., Dak., Fla., Ga., Ill., Ind. T., Kans., Ky., La., Md., Mass., Mich., Miss., Mont., Nebr., N. J., N. Y., N. C., Ohio, Oregon, Pa., S. C., Tenn., Tex., Va., W. Va., Wis., Wyo.

2d.—Ala., Ark., Conn., Dak., Fla., Ga., Ind., Ky., Mass., Mich., Minn., Miss., Mont., Nebr., N. H., N. J., N. Y., N. C., Pa., S. C., Tenn., Tex., Vt., Va., W. Va., Wis.

3d.—Ark., Dak., Fla., Ga., Ill., Ind. T., Iowa, Kans., La., Mass., Mich., Mo., Nebr., N. J., S. C., Tenn., Tex., Wis.

4th.—Ala., Ark., Colo., Dak., Del., D. C., Fla., Ga., Ill., Ind., Iowa, Kans., Mich., Minn., Mo., Nebr., N. Y., N. C., Ohio, Pa., Tenn., Tex., Vt., Va., Wyo.

5th.—Ala., Ark., Colo., Fla., Ga., Ill., Ind., Iowa, Kans., Ky., La., Mich., Miss., Nebr., N. J., N. Y., N. C., Ohio, Pa., Tenn., Tex., Vt., Va.

6th.—Ala., Cal., Conn., Dak., D. C., Fla., Ga., Ind. T., La., Me., Md., Mass., Mont., N. J., N. Y., N. C., Pa., S. C., Tenn., Tex., Utah, Vt., Va.

7th.—Ala., Ariz., Dak., Fla., Ga., Idaho, Ind. T., Miss., Mont., Nebr., N. C., Oregon, S. C., Tex., Wash.

8th.—Ala., Ariz., Cal., Dak., Fla., Ga., Iowa, Mich., Minn., Mont., Nebr., S. C., Wis.

9th.—Ariz., Ark., Colo., Dak., Fla., Iowa, La., Mich., Mont., Nebr., Oregon, Tex., Utah, Wis., Wyo.

10th.—Ariz., Ark., Colo., Dak., Fla., Ill., Iowa, Kans., Me., Mich., Minn., Mont., Nebr., N. H., Oregon, Pa., Tenn., Tex., Vt., Wis.

11th.—Ariz., Ark., Colo., Conn., D. C., Fla., Ill., Ind., Ind. T., Iowa, Kans., Ky., Me., Md., Mass., Mich., Mo., Nebr., N. H., N. J., N. Mex., N. Y., N. C., Oregon, Pa., R. I., S. C., Tex., Utah, Vt., Va., Wash., Wis., Wyo.

12th.—Ariz., Ark., Colo., Dak., D. C., Ill., Ind., Iowa, Kans., Ky., Me., Miss., Mont., Nebr., N. J., N. C., Ohio, Pa., Tenn., Tex., Utah, Va., Wash., Wyo.

13th.—Ariz., Ark., Cal., Colo., Dak., Fla., Ill., Ind., Iowa, Kans., Mo., Mont., N. C., Tenn., Tex., Utah, Va., Wyo.

14th.—Ariz., Ark., Colo., Dak., Fla., Ga., Ill., Ind., Ind. T., Iowa, Kans., Ky., Mich., Miss., Mo., Mont., Nebr., N. C., Pa., S. C., Tenn., Tex., Utah, Va., Wis., Wyo.

15th.—Ala., Ariz., Ark., Cal., Colo., Dak., Fla., Ga., Ill., Ind., Ind. T., Kans., Ky., Mo., Mont., Nebr., N. Mex., N. C., Ohio, Pa., S. C., Tenn., Tex., Va., W. Va., Wyo.

16th.—Ala., Ariz., Ark., Colo., Dak., Fla., Ga., Ill., Ind. T., Kans., Me., Miss., Mo., Nebr., N. H., N. Mex., N. C., Pa., S. C., Tenn., Tex., Vt., Va.

17th.—Ala., Ariz., Ark., Colo., Dak., D. C., Fla., Ga., Ill., Ind., Ind. T., Iowa, La., Mich., Minn., Nebr., N. Mex., N. C., S. C., Tenn., Tex., Va., W. Va., Wyo.

18th.—Ala., Ariz., Colo., Conn., Dak., Fla., Ga., Ill., Kans., La., Mass., Mich., Mont., Nebr., N. J., N. Y., N. C., Ohio, Pa., S. C., Tex., Va., Wis.