

of such stations reporting thunderstorms (T) and auroras (A) in each State and on each day of the month. It is not certain that all the meteorological stations are equally faithful in reporting thunderstorms and auroras, and it is therefore necessary for the student to guard against the assumption that the frequency of these phenomena varies with the number of the reports. Even if the number of reports be divided by the number of stations in each State, the percentages of frequency thus obtained are liable to a similar uncertainty, and therefore for the present such percentages are omitted.

In comparing the relative frequency of thunderstorms or auroras in different portions of the globe and at different seasons of the year it is customary, and, in fact, imperative, to ignore the number of stations and the number of reports as such and to consider only the number of days on which the phenomena occur. In such studies, therefore, the number of stations is of importance principally as an indication of the probability that all of the thunderstorms and auroras have been recorded. Even from this point of view, however, it is necessary to know not merely the number of stations, but their geographical distribution within each State as an assurance against overlooking any very local phenomena that might have occurred only in the regions where no observer was at hand. Owing to the want of space in Table XI, the publication of the necessary data here referred to will be delayed until the annual summary.

THUNDERSTORMS.

A mention of the more severe thunderstorms reported during the month is given under "Local storms." The dates on which reports of thunderstorms were most numerous were: 15th, 227; 2d, 189; 1st, 188; 10th, 169.

The States where thunderstorm reports were most numer-

ous were: Florida, Ohio, Missouri, Louisiana, Colorado, Pennsylvania, and North Carolina.

The States where the dates of thunderstorms were most frequent were: Florida, where they were recorded every day in the month, Georgia on thirty days, and Louisiana and Texas, where they occurred on twenty-nine days.

AURORAS.

The evenings on which bright moonlight must have interfered with observations of faint auroras are assumed to be the four days preceding and following the date of full moon, viz, from the 11th to the 19th, inclusive. On the remaining twenty-two days of the month 174 reports were received, or an average of 8 per day. The dates on which the reported number especially exceeded this average were the 19th, 87; 20th, 35 [see p. 328]. The States from which auroras were reported by a large percentage of observers were: Minnesota, North Dakota, Oregon, and Washington.

The States where the dates of auroras were most frequent were: Iowa, 5; Minnesota, 9; New Hampshire, 5; North Dakota, 6.

DAMAGE BY LIGHTNING.

The following statistics of the damage done by lightning in August, so far as reported by the observers of this Bureau, are furnished by Mr. Alexander McAdie:

During August, 1894, 78 lives were lost and 76 persons injured; 81 barns, with a minimum loss of \$129,800, were struck; 41 dwellings, 5 churches, 2 academies, and 2 mills or factories were struck; 22 horses and 15 cows, not in stables, were killed.

For purposes of comparison Mr. McAdie gives the following statement of the deaths due to lightning, so far as collected by the U. S. Weather Bureau, for the month of August during successive years, viz: 1890, 12; 1891, 34; 1892, 54; 1893, 18; 1894, 78.

INLAND NAVIGATION.

STAGE OF WATER IN RIVERS.

The following table shows the danger point and the highest and lowest stages for the month of August, 1894:

Heights of rivers above low-water mark, August, 1894.

Stations.	Danger-point gauge.	Highest water.		Lowest water.		Monthly range.
		Height.	Date.	Height.	Date.	
<i>Red River.</i>						
Shreveport, La.	29.2	1.1	5	3.4	16	2.3
<i>Arkansas River.</i>						
Fort Smith, Ark.	22.0	2.9	15	0.6	11	2.3
Little Rock, Ark.	23.0	4.8	14	3.0	31	1.8
<i>Missouri River.</i>						
Bismarck, N. Dak.	75.0					
Pierre, S. Dak.	13.0					
Sioux City, Iowa	18.7	10.9	1	7.8	27, 28	3.1
Omaha, Nebr.	18.0	10.9	1	8.2	31	2.7
Kansas City, Mo.	21.0	13.2	1	8.1	31	5.1
<i>Mississippi River.</i>						
St. Paul, Minn.	14.0	2.0	24	0.2	6	1.8
La Crosse, Wis.	10.0	1.2	1, 2	0.8	7-13	0.4
Dubuque, Iowa	16.0	1.2	1	0.4	16-20	0.8
Davenport, Iowa	15.0	0.5	1, 2	0.1	10, 11, 16-19, 21-31	0.4
<i>Ohio River.</i>						
Keokuk, Iowa	14.0	0.2	1	0.7	28-31	0.9
Hannibal, Mo.	17.0	1.0	1-3	0.2	30, 31	1.2
St. Louis, Mo.	30.0	8.8	1	3.6	31	5.2
Osage, Ill.	40.0	9.9	1	5.7	21, 22	4.2
Memphis, Tenn.	33.0	4.8	1	1.4	23, 24	3.4
Violsburg, Miss.	41.0	7.2	1	0.8	30, 31	6.4
New Orleans, La.	13.0	4.2	1, 2	3.1	21, 31	1.1
<i>Ohio River.</i>						
Parkersburg, W. Va.	38.0	1.2	2, 3	0.6	11, 18, 20-25, 28-31	0.6

Heights of rivers—Continued.

Stations.	Danger-point gauge.	Highest water.		Lowest water.		Monthly range.
		Height.	Date.	Height.	Date.	
<i>Ohio River—Continued.</i>						
Cincinnati, Ohio	45.0	5.1	19	3.5	31	1.6
Louisville, Ky.	24.0	3.5	14, 22, 23	2.8	2, 3, 7	0.9
<i>Cumberland River.</i>						
Nashville, Tenn.	40.0	2.6	2	0.7	18, 19, 23	1.9
<i>Tennessee River.</i>						
Chatanooga, Tenn.	33.0	4.6	17	1.8	14	2.8
Knoxville, Tenn.	29.0					
<i>Monongahela River.</i>						
Pittsburg, Pa.	22.0	6.2	8, 9	5.0	5	1.2
<i>Savannah River.</i>						
Augusta, Ga.	32.6	24.0	7	5.6	25	18.4
<i>Willamette River.</i>						
Portland, Oregon	15.0	12.2	1	5.2	26	7.0
<i>Swiftwater River.</i>						
Harrisburg, Pa.	17.0					
<i>Alabama River.</i>						
Montgomery, Ala.	48.0	16.0	25, 26	0.5	16	15.5
<i>James River.</i>						
Lynchburg, Va.	18.0	0.4	28	0.0	1, 2, 9-26, 31	0.5
<i>Sacramento River.</i>						
Red Bluff, Cal.	22.0	1.0	1-3	0.7	17-31	0.3
Sacramento, Cal.	25.0	9.6	1, 2	5.2	23-31	1.4
<i>Des Moines River.</i>						
Des Moines, Iowa	19.0	3.7	30, 31	3.3	1, 2, 5, 7, 10, 16	0.4

The above table shows that no floods occurred during the month in the rivers therein tabulated. In most cases the rivers were unusually low. A local flood occurred on the 22d and 23d at Bisbee, Ariz., causing about \$5,000 damage.