

1910, but a comparison of the stages of that month and those of August, 1864, show that, while the low stage in the August just passed was 0.2 foot lower than the low stage 46 years ago, August, 1910, had 4 days on which the water was higher than it was on the day it reached its highest point (7.6 feet) in August, 1864. August, 1894, had 5 days with the water above 8 feet. The lack of rain over the main portion of the watersheds of the 2 great branches of the stream above St. Louis is shown by a study of the weather charts for a long period of time to be attributable solely to what may be termed the eccentricities in the formation, movement, and general arrangement of the atmospheric pressure areas. The most pronounced of these areas form outside the limits of the United States, and the influences that caused the low water of August, 1910, 1894, and 1864 can not in any way be considered local or artificial.

MISCELLANEOUS.

There were several severe electric storms in the eastern half of Kansas; several buildings were struck by lightning and one man was killed.

Smoke from the forest fires in Idaho and western Montana was observed in Montana, Wyoming, and South Dakota. In Montana the atmosphere was smoky most of the month and smoke sufficiently dense to obscure the sun at times prevailed in the western portion of the State from the 20th to the 25th. In Wyoming it was observed during the last 10 days, and on the 24th the winds from the high pressure area drove it to the southern border of the State. South Dakota seems to have received an unusually large amount of the smoke; on the 22d and the 23d the sun was obscured for several hours, necessitating the use of artificial light in houses in some sections. The smoke was densest in the Black Hills district and over the northern counties east of the hills. In places cinders were in the air, the smoke affected the eyes and throats of people, and there was general discomfort from it. The sun presented a coppery light much of the time.

est amount previous to this year was that of July 5-6, 1908, when 5.13 inches fell in about the same period of time as that of the rainfall under discussion.

The heavy rain fell in 2 periods, with an interval of 1 hour and 50 minutes, during which the fall was not at an excessive rate. The tables below give the periods of excessive fall, with the accumulated depths during the excessive rate for consecutive periods of time. The second period is tabulated for each 50 minutes separately.

The rain caused a heavy flood in the Antelope Creek Valley, which runs through the central part of Lincoln, and in the Salt Creek bottoms, which lie on the western border of the city. The crest of the flood was reached in the Antelope Valley in the early morning, the water filling basements and cellars, tearing out pavements, blocking traffic, and washing mud and debris into low-lying houses. The Antelope Valley flood subsided quickly and by the middle of the afternoon most of the water had receded from the streets. In the Salt Creek bottoms the highest water was not reached until about 5 p. m. Property damage similar to that in the Antelope Valley resulted, and one life was lost, a man being drowned by falling off a raft and being drawn into a drainage sewer.

The precipitation was probably heaviest right at Lincoln. No records are kept elsewhere in the Salt Creek drainage area above Lincoln, but from the fact that the height of the flood waters in the Salt Creek Valley was less than that reached in the storm of July 5-6, 1908, when over 3 inches less fell in about the same period of time, it seems probable that the portion of the Salt Creek drainage basin covered by this rain was not as large as that of two years ago. The valley trends south and northeast from Lincoln and the area of greatest rainfall extended a little north of west and a little south of east from Lincoln. The following table gives the amounts of rain where the fall exceeded 3.00 inches for the storm:

	Inches.
Lincoln, Lancaster County.....	8.38
Seward, Seward County.....	6.80
Weepingwater, Cass County.....	6.79
Osceola, Polk County.....	6.50
Palmyra, Otoe County.....	5.84
Woodlawn, Lancaster County.....	5.14
York, York County.....	4.85
Fullerton, Nance County.....	4.80
Wahoo, Saunders County.....	4.65
Blair, Washington County.....	4.64
Bellevue, Sarpy County.....	4.20

The amount decreased rapidly in the territory south of Lincoln. At Beatrice, which is about 40 miles to the south of Lincoln, only 0.93 inch fell; at Tecumseh, 0.47; and at Plymouth, in the northeast corner of Jefferson County, 0.50 inch. Ashland, which is located at the junction of Salt Creek with the Platte River, had 2.49 inches.

HEAVY RAINFALL AND FLOOD AT LINCOLN, NEBR.

By C. C. GARRETT, Observer, Weather Bureau.

On the night of August 28-29, an unprecedentedly heavy rainfall occurred over Lincoln, Nebr., and its vicinity. It accompanied a violent thunderstorm, which came up about 8 p. m. of the 28th and lasted through most of the night. The rain began at 8:20 p. m. and ended at 6:20 a. m., but practically all of it fell in the period between 9:28 p. m. and 6:03 a. m. The total fall was 8.38 inches, which is an average of about 1 inch per hour during the time of heavy rainfall. The rain was by far the heaviest 24-hour fall on record at Lincoln. Since 1881 eleven rains have occurred during which the total precipitation for the 24 hours equaled or exceeded 3 inches. The great-

Tables showing excessive rainfall at Lincoln, Nebr.

AUGUST 28, 1910.

Total duration.		Total amt.	Excessive rate.		Am't before ex. began.	Accumulated depths.													
From--	To--		Began--	Ended--		5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.
8:20 p. m.	6:20 a. m., 29th.	8.38	9:28 p. m.	11:14 p. m.	T.	0.12	0.31	0.47	0.61	0.78	0.99	1.27	1.50	1.65	1.72	1.91	2.39	2.77	2.87

AUGUST 29, 1910.

8:20 p. m., 28th.	6:20 a. m.	8.38	1:03 a. m.	1:53 a. m.	3.29	0.05	0.06	0.09	0.12	0.26	0.48	0.56	0.61	0.69	0.83					
			1:53 a. m.	2:43 a. m.		0.92	1.11	1.29	1.46	1.69	1.93	2.08	2.14	2.19	2.34					
			2:43 a. m.	3:33 a. m.		2.49	2.66	2.75	2.82	2.88	2.98	3.06	3.13	3.18	3.24					
			3:33 a. m.	4:23 a. m.		3.28	3.34	3.45	3.49	3.57	3.66	3.72	3.81	3.89	4.00					
			4:23 a. m.	5:13 a. m.		4.04	4.06	4.06	4.12	4.22	4.28	4.29	4.31	4.47	4.50					
			5:13 a. m.	6:03 a. m.		4.60	4.68	4.77	4.81	4.84	4.87	4.90	4.96	5.02	5.08					