

normal, and the average from 4 stations in the Valley of the Big Black was 3.48 inches, the deficiency being about 1.3 inch. The precipitation was unevenly distributed over the Ouachita Valley, some localities reporting more than 1 inch excess and others more than 1 inch deficiency; the average from 20 stations was 4.31 inches, about the normal amount.

Louisiana coastal plain.—Moderate to heavy rains fell generally over this area, the average from 27 stations being 4.15 inches, about 0.5 inch below the normal. The greatest excess was 2.88 inches and the greatest deficiency was 2.62 inches.

Monthly precipitation and departures from the normal for the various States and parts of States are reported as follows: Colorado area, 0.55, -0.23; New Mexico area, 0.14, -0.37; Texas area, 1.26, -0.53; Kansas area, 0.54, -0.36; Oklahoma, 0.36, -1.01; Missouri area, 1.96, -0.76; Tennessee area, 3.85, -0.53; Arkansas, 3.57, -0.45; Mississippi area, 3.69, -1.17; Louisiana, 4.30, -0.45.

SNOWFALL.

Snow occurred generally over the district to the north of the 34th parallel. In the Tennessee and Missouri areas, and in northeastern Arkansas, the amounts were quite large, ranging generally from 5 to 8 inches, but the snow soon disappeared, and at the close of the month there was none on the ground. In Oklahoma and the Kansas and Texas areas, and the eastern portions of the Colorado and New Mexico areas, the amounts were generally small, ranging from a trace to 3 inches, except that there was 3 to 7 inches over the northeastern portion of the Kansas area. In the mountains of Colorado, the season's snowfall up to December 31 was much less than for the corresponding period last year, and as a whole, much less than the normal. In a few localities on the different watersheds, nearly the average amount of snow occurred, but the areas thus favored were too small to make up for the general and marked deficiency in the water stored for late irrigation. The snow is generally unpacked and owing to the absence of high winds, there has been but little drifting into the gulches. Over the New Mexico area the snowfall was much lighter than usual, and considerably less than in 1909. The warm weather left the mesas and lower mountains generally bare until the 26th and 27th, when snow occurred generally, but it was light, except in the higher mountain districts. The present outlook for water for irrigation is not very promising, because the light winds have been unfavorable for drifting into the canyons, and the warm weather has dissipated a large part of that which has fallen. The average snowfall, in inches, for the various States and areas, derived from such stations as reported snow, is as follows: Colorado area (30 stations), 9.5; New Mexico area (35 stations), 1.9; Texas area (6 stations), 0.2; Kansas area (52 stations), 1.2; Oklahoma (23 stations), 0.2; Missouri area (22 stations), 4.1; Tennessee area (10 stations), 2.0; Arkansas (34 stations), 1.3; Mississippi area (17 stations), 0.2.

RIVERS.

In Oklahoma all streams were at unusually low stages at the close of the month. The Canadian continued dry over a considerable portion of its bed and many of the small streams in the central and western portions of the State have been dry for six weeks to two months.

Only slight changes occurred in the Red River and low stages prevailed generally at the close of the month. No material changes occurred during the month in the Arkansas. At Little Rock the water fell to the unprecedented low stage of 0.9 foot below zero. The stage was below zero until the 29th, when a rise set in and on the 31st, the stage was 2.0 feet above zero. At Pine Bluff a stage of 6.6 feet was reached at the close of the month. Navigation was suspended, except that on the last two days of the month light draft boats came up the river as far as Robb Roy Bridge near Pine Bluff.

Low stages prevailed in the White River during the first and second decades, but there was a rise at Clarendon during the third decade and a stage of 12.6 feet was recorded on the 31st. The lower White was navigable during the greater part of the month.

With the exception of a rise of 8 feet at Camden on the last day of the month, the Ouachita was low and nearly stationary throughout the month.

Below St. Louis the Mississippi rose at Memphis until the 16th; Helena until the 17th; Arkansas City until the 19th; Vicksburg until the 21st; Natchez until the 25th; and at New Orleans until the 29th. The rises were slight and comparatively low stages prevailed generally at the close of the month.

NOTES.

New Mexico (Chas. E. Linney, Section Director).—The weather during the month was the driest of record, there being no precipitation at many stations in the east portion.

Tulia, Tex.—Dry weather prevailed and as a result prospects for wheat are poor.

Wichita, Kans. (Richard H. Sullivan, Local Forecaster).—The only precipitation of consequence during the month was 0.58 inch on the 27th. The year was the driest on record with 17.72 inches; the least amount previously recorded being 18.19 inches in 1893.

Frederick, Okla.—There is not much moisture in the ground and very little preparation has been made for spring planting.

Hobart, Okla.—Very little winter wheat has survived the drought and a large acreage will be plowed under and planted in cotton. Stock water has given out, except in a few sections and many wells are dry.

Blackburn, Okla.—Rain is badly needed; live stock is suffering in some localities.

Oklahoma (J. Pemberton Slaughter, Section Director).—The long continued drought has greatly damaged the wheat crop; the acreage has been reduced and the stand is probably the poorest in the history of the State.