

or about 0.50 below normal; the greatest monthly amount, 2.01, occurred at Ely, while only traces fell at several stations in the south section.—*R. F. Young.*

New England.—The mean temperature was 38.4°, or 7.3° above normal; the highest was 69°, at Lowell, Mass., on the 11th, and the lowest, 12° below zero, at Flagstaff, Me., on the 4th. The average precipitation was 2.08, or 1.50 below normal; the greatest monthly amount, 4.27, occurred at Vineyard Haven, Mass., and the least, 0.30, at North Conway, N. H.—*J. W. Smith.*

New Jersey.—The mean temperature was 45.1°, or 7.9° above normal; the highest was 77°, at Asbury Park, Friesburg, and Vineland on the 19th, and the lowest, 16°, at Franklin Furnace on the 1st and 2d. The average precipitation was 3.33, or 0.64 below normal; the greatest monthly amount, 4.25, occurred at Staffordville, and the least, 2.56, at Atlantic City and Chester.—*E. W. McGann.*

New Mexico.—The mean temperature was 42.9°, or 1.5° below normal; the highest was 85°, at San Marcial on the 31st, and the lowest, zero, at Buckmans on the 14th. The average precipitation was about normal; the greatest monthly amount, 1.58, occurred at Gila, while none fell at Bluewater, Galisteo, and Raton.—*H. B. Hersey.*

New York.—The mean temperature was 40.6°, or 10.0° above normal; the highest was 73°, at Auburn and Avon on the 19th, and the lowest, 3° below zero, at North Lake on the 1st. The average precipitation was 2.35, or 0.44 below normal; the greatest monthly amount, 5.36, occurred at Bolivar, and the least, 0.61, at Garrattsville.—*R. G. Allen.*

North Carolina.—The mean temperature was 54.4°, or about 6.0° above normal; the highest was 91°, at Tarboro on the 21st, and the lowest, 15°, at Highlands on the 1st. The month was the warmest March on record. The average precipitation was 4.02, or 0.50 below normal; the greatest monthly amount, 11.30, occurred at Highlands, and the least, 1.52, at Wilmington.—*C. F. von Herrmann.*

North Dakota.—The mean temperature was 22.0°, or 1.7° above normal; the highest was 74°, at Berthold Agency on the 11th, and the lowest, 24° below zero, at Medora on the 26th. The average precipitation was 0.87, or 0.09 below normal; the greatest monthly amount, 2.16, occurred at Fort Yates, and the least, 0.16, at Woodbridge.—*B. H. Bronson.*

Ohio.—The mean temperature was 45.0°, or 8.0° above normal; the highest was 84°, at Pomeroy on the 22d, and the lowest, 5°, at Hillhouse on the 1st and at Bowling Green on the 3d. The average precipitation was 6.23, or 3.00 above normal; it was the wettest March in sixteen years; the greatest monthly amount, 11.07, occurred at Cedarville, and the least, 2.37, at Ashtabula.—*H. W. Richardson.*

Oklahoma.—The mean temperature was 48.8°; the highest was 85°, at Clifton and Kemp on the 16th, and the lowest, 7°, at Arapaho on the 27th. The average precipitation was 3.87; the greatest monthly amount, 12.25, occurred at Tahlequah, and the least, 0.13, at Hopeton.—*J. I. Widmeyer.*

Oregon.—The mean temperature was 39.9°, or 2.4° below normal; the highest was 74°, at Prineville, and the lowest, 4° below zero, at Silverlake. The average precipitation was 2.05, or 1.96 below normal; the greatest monthly amount, 8.61, occurred at Bay City, and the least, trace, at Burns and Riverside.—*B. S. Pague.*

Pennsylvania.—The mean temperature was 44.0°, or 9.3° above normal; the highest was 83°, at Hollidaysburg on the 19th, and the lowest, 4°, at Saegerstown on the 1st. The average precipitation was 4.31, or 1.07 above normal; the greatest monthly amount, 8.40, occurred at Abram-pian, and the least, 2.06, at Athens.—*T. F. Townsend.*

South Carolina.—The mean temperature was 59.1°, or 5.1° above normal; the highest was 92°, at Gillisonville on the 23d, and the lowest, 22°, at Greenville on the 1st, and at Walhalla on the 8th. The

average precipitation was 2.99, or 1.47 below normal; the greatest monthly amount, 5.38, occurred at Trenton, and the least, 1.36, at Allendale.—*J. W. Bauer.*

South Dakota.—The mean temperature was 30.3°, or about 2.0° above normal; the highest was 74°, at Alexandria, Armour, and Greenwood on the 8th, and the lowest, 24° below zero, at Ashcroft on the 28th. The average precipitation was 0.83, or 0.25 below normal; the greatest monthly amount, 2.78, occurred at Ashcroft, and the least, 0.12, at Farmingdale.—*S. W. Glenn.*

Texas.—The mean temperature for the State during the month, determined by comparison with 38 stations distributed throughout the State, was 0.5° above the normal. Nearly normal conditions prevailed along the east coast, and there was a slight deficiency over west Texas and in some other localities, while there was a general excess for the month over other portions of the State. The greatest excess was over central Texas, with the greatest, 3.1°, at Menardville. The highest was 101°, at Fort McIntosh on the 19th, and the lowest, 11°, at Amarillo on the 23d. The average precipitation for the State during the month, determined by comparison with 39 stations distributed throughout the State, was 0.01 below the normal. There was a general deficiency over the panhandle and portions of west and central Texas, the eastern portion of north Texas, and east Texas, with the greatest, 2.41, at Weatherford. Over other portions of the State there was a general excess. Along the coast and in the vicinity of Forestburg and Camp Eagle Pass the excess was more than 1 inch. The greatest local excess for the month was 1.95, at Brazoria. The greatest monthly amount, 4.74, occurred at Conroe, while none fell at Fort Stockton.—*I. M. Oline.*

Utah.—The mean temperature was 34.2°; the highest was 80°, at St. George on the 7th, and the lowest, 14° below zero, at Heber on the 23d. The average precipitation was 1.24; the greatest monthly amount, 3.41, occurred at Scipio, and the least, trace, at Giles, Pahreah, and Tropic.—*J. H. Smith.*

Virginia.—The mean temperature was 50.0°, or about 6.0° above normal; it was the warmest March on record; the highest was 85°, at Bedford City on the 19th and at Petersburg on the 20th, and the lowest, 15°, at Dale Enterprise on the 1st. The average precipitation was 3.77, or 0.38 below normal; the greatest monthly amount, 5.10, occurred at Warsaw, and the least, 2.23, at Buckingham.—*E. A. Evans.*

Washington.—The mean temperature was 40.8°, or about normal; the highest was 71°, at Centerville on the 6th, and the lowest, 1°, at Hunters on the 22d. The average precipitation was 2.05, or 1.50 below normal; the greatest monthly amount, 7.42, occurred at Clearwater, and the least, trace, at Fort Simcoe.—*G. N. Salisbury.*

West Virginia.—The mean temperature was 48.5°, or about 6.0° above normal; the highest was 86°, at Eastbank on the 19th, and the lowest, 9°, at Oldfields on the 1st. The average precipitation was 5.43, or considerably above normal; the greatest monthly amount, 10.05, occurred at Weston, and the least, 1.25, at Nuttallburg.—*N. E. Taylor.*

Wisconsin.—The mean temperature was 33.9°, or 4.9° above normal; the highest was 66°, at Prairie du Chien on the 11th, and the lowest, 13° below zero, at Butternut and Hayward on the 4th. The average precipitation was 2.35, or 0.54 above normal; the greatest monthly amount, 4.50, occurred at Beloit, and the least, 0.30, at Bayfield.—*W. M. Wilson.*

Wyoming.—The mean temperature was 26.2°, or 5.4° below normal; the highest was 67°, at Fort Laramie on the 26th, and the lowest, 23° below zero, at Four Bear on the 22d. The average precipitation was 0.96, or 0.52 below normal; the greatest monthly amount, 2.73, occurred at Lander, and the least, 0.05, at Otto.—*W. S. Palmer.*

RIVER AND FLOOD SERVICE.

By PARK MORRILL, Forecast Official, in charge of River and Flood Service.

The moderate stages of the rivers prevailing at the end of February continued during the first half of March. During this time the ice in the Missouri and upper Mississippi broke up well toward their headwaters. A slight rise followed in both these rivers and their combined effect produced a decided freshet wave in the Mississippi at St. Louis. From the 15th a great flood rose in the Ohio, coming largely from its northern tributaries. At Cincinnati the rise was continuous to a maximum height of 61.4 feet, which was reached on the 29th. This is the highest stage in March since the record began in 1858. Great destruction was wrought by the flood on the streams of Indiana and Ohio, as well as along the Ohio itself. The freshet from the upper Mississippi, joined to that from the Ohio, inaugurated a flood of considerable magnitude at Cairo. The rise commenced on the 13th and continued at

the end of the month, when a stage of 47.6 feet had been attained. Corresponding steady rises followed at Memphis, Vicksburg, and New Orleans.

Sharp but not very marked rises occurred near the middle of the month in the Arkansas and Red rivers. The freshets in the coastal rivers were slight and barely served to maintain navigable stages. Along streams where logging is carried on there is complaint of insufficient water to raft out the lumber.

The highest and lowest water, mean stage, and monthly range at 117 river stations are given in the accompanying table. Hydrographs for typical points on seven principal rivers are shown on the chart. The stations selected for charting are: Keokuk, St. Louis, Cairo, Memphis, and Vicksburg, on the Mississippi; Cincinnati, on the Ohio; Nashville,

