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LUTHER H. HODGES, *Secretary*
WEATHER BUREAU
F. W. REICHELDERFER, *Chief*

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Snowmelt Floods of March-April 1960

Missouri and Upper Mississippi Basins

HYDROLOGIC SERVICES DIVISION
RIVER SERVICES SECTION

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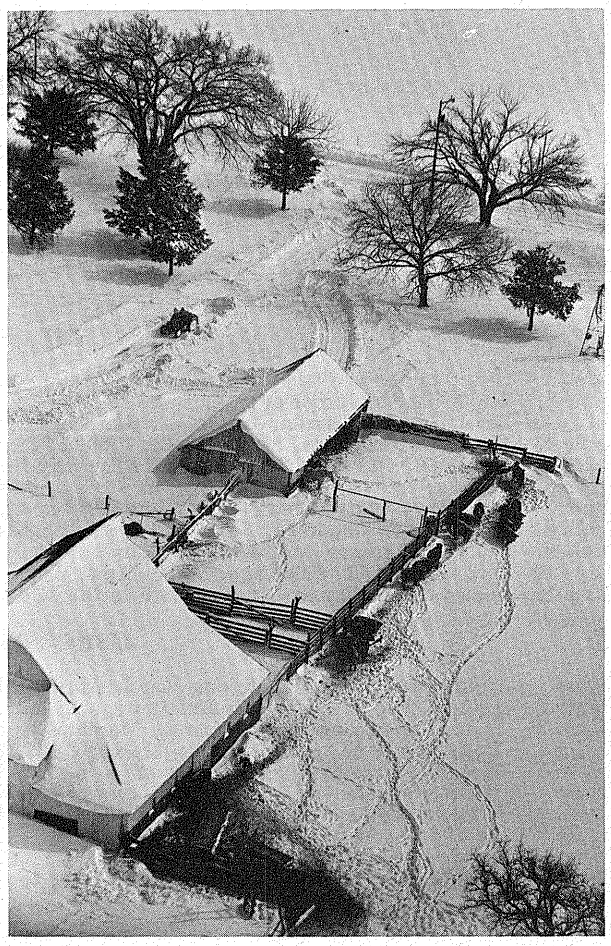

Scenes of snow blanket in the Middle Mississippi-Lower Missouri Drainage Basin.
(*Courtesy Topeka Capital-Journal*)

SNOWMELT FLOODS OF MARCH–APRIL 1960

MISSOURI AND UPPER MISSISSIPPI BASINS

1. INTRODUCTION

The purpose of this report is to compile and record the basic hydrometeorological data for the snowmelt floods of March–April 1960 in the Missouri and Upper Mississippi River basins.

The floods of March–April 1960 were unique in that they were produced by an extensive snowpack concentrated far south of the usual range of heavy snow accumulation. About 200,000 square miles of the Missouri basin below Yankton, S. Dak., and about 100,000 square miles of the Mississippi basin between the mouth of the Wisconsin River and the Ohio River were involved. These floods were essentially tributary in nature except for the Lower Missouri and portions of the Mississippi from Burlington, Iowa, to St. Louis, Mo. Figure 1 shows the general area and severity of flooding. By contrast, the northern area which generated the floods of April 1952 was practically devoid of heavy snow. Missouri River mainstem reservoirs, completed since 1952 above Yankton, S. Dak., stored the runoff from relatively light high plains snow cover, thus alleviating more serious conditions which could have developed along the Missouri River mainstem below Yankton. Missouri River tributary flooding in southeastern South Dakota exceeded the legendary flood of 1881, and the lower Platte at its confluence with the Elkhorn River had the appearance of a lake 4 miles wide. The lower Iowa and Skunk Rivers in eastern Iowa reached crests above all previous high water marks, and the mainstem of the Mississippi River had the greatest flood of record from Burlington, Iowa, to Quincy, Ill. More than 2.7 million acres of land were flooded, about two-thirds of which was on tributaries of the Missouri and Mississippi Rivers. The total damage was estimated at approximately $34.5 million. Rural areas sustained about 85 percent of this damage and seven lives were lost as a direct result of the flood. The fact that urban flood loss was only 15 percent of the total is significant. It reflects the characteristics of the flood, the accuracy of the long-range flood outlook, and the coordinated response by Municipal, State, and Federal agencies to an organized plan of action.

2. BASIC DATA PRESENTED

The basic hydrometeorological data presented in the following pages of this report have been compiled with the objective of making available information essential in the planning of land and water management programs. They are confined to the area in which the flood originated and where damages were experienced. In general, they complement streamflow data reported by the U.S. Geological Survey in its regular annual publications.

The general location map, figure 10 (inside back cover), shows the precipitation and river gage stations for which data have been presented or considered in this report.

Table 2 lists the 10 major floods of record at 15 key river stations. It serves as a ready reference to past floods.

Table 3 contains miscellaneous information on approximately 180 tributary and mainstem river gages throughout the area: Gage zero elevation, flood stage, drainage area, highest stage of record, period of record, crests and dates of the March-April 1960 flood, and agencies responsible for operation of the gages. In general this table supplements tables 2 and 9.

Table 4 presents meteorological data for the period March 20–31, 1960, all directly related to the snow cover breakup. It consists of 24-hourly precipitation, snow depth, water equivalent, and

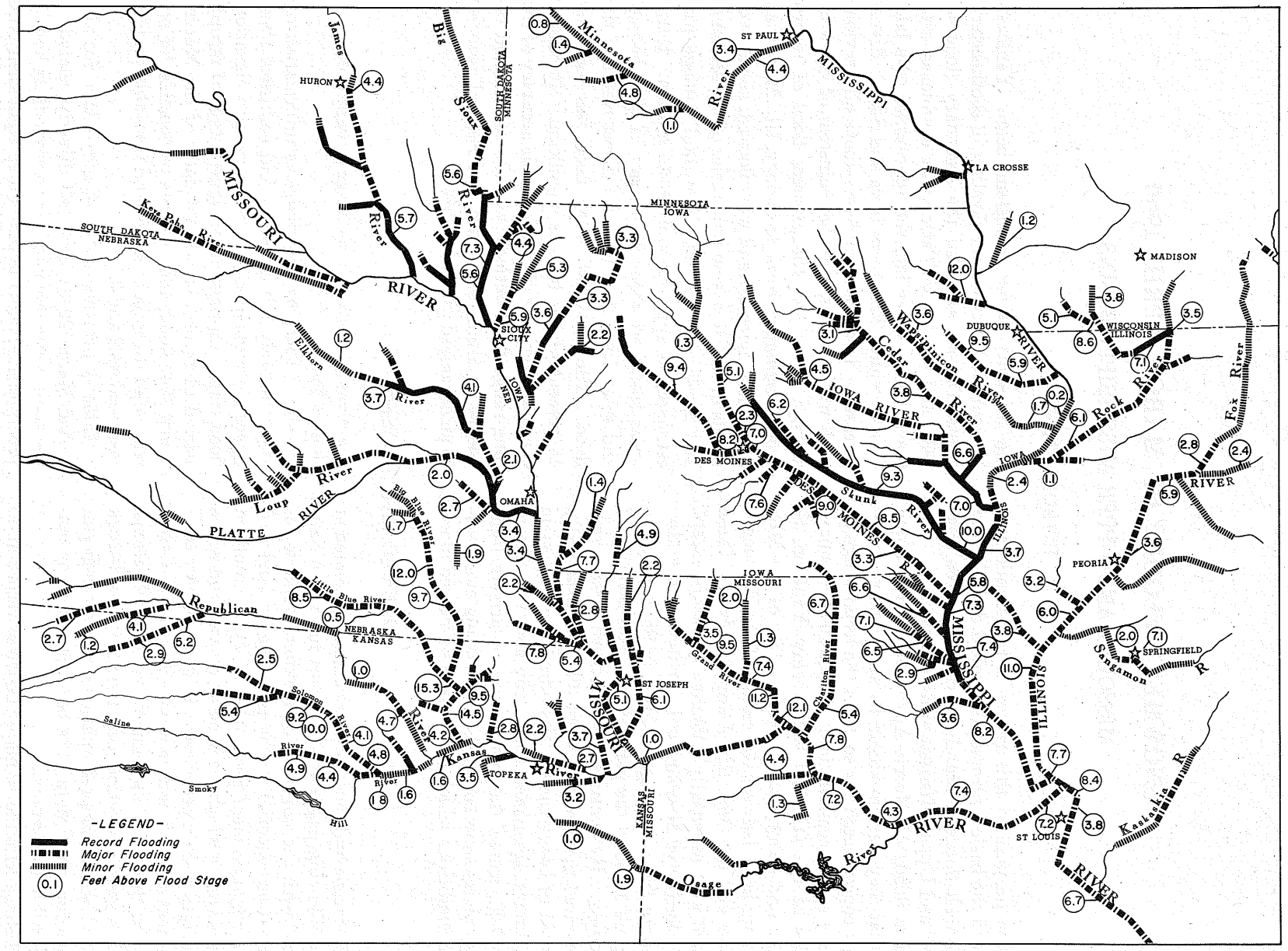

FIGURE 1.—Map showing flood conditions March–April 1960.

degree-day data. Synoptic observations of temperature, dew point, and wind speed and direction are included. The elevations of meteorological instruments above the ground surface are also shown. This table is supplemented by table 5, sunshine and solar radiation data.

Tables 6 and 7 summarize temperature and precipitation data by State divisions for the period November 1959 to March 1960. Daily maximum and minimum air temperatures, 24-hour and hourly precipitation, and other detailed hydroclimatic data are not included in this report but are available in regular monthly issues, or supplements, of *Climatological Data.*

Table 8 represents an array of precipitation data in periods applicable to further analysis of rates of melt and resulting runoff. It contains observed or adjusted water equivalent values. Snow surveys were made throughout the period March 8–25, 1960, by Corps of Engineers and Weather Bureau personnel and by regular Weather Bureau observers. In general these surveys were made about March 11, 18, and 25. Because of variability in the dates and hours of these surveys, slight adjustments were necessary to make data comparable for selected dates. Adjustments were based on observed snow depth, interim precipitation, if any, and the density ratio as computed for surrounding stations.

Table 9 contains daily river stages for approximately 180 stations in the area. Footnotes contain supplemental readings for better definition of stage graphs. They complement streamflow data reported by the U.S. Geological Survey.

Table 10 is a summary of flood damage statistics. Data presented have been coordinated with the Corps of Engineers, Office of Civilian Defense Mobilization, and various State and Federal agencies which participated in the united effort to protect life and reduce property losses. The files of these agencies contain detailed information from which this summary was compiled.

Table 11 furnishes comparative flood loss data for previous great floods in the general area.

In general, the illustrations in this report are graphical presentations of data shown in the above tables. Figure 1 is a map showing the general area of flooding and expresses to some extent the magnitude of overflow and supplements the verbal description. Figures 2–4 are related to the tabular presentation of meteorological data. Figures 5–7 show approximate water equivalent of the snow cover on the dates indicated and supplement table 8.

Rainfall during, and immediately following, the breakup period had a significant but rather indeterminate effect on the runoff. In some areas the rainfall was temporarily held in the snow; in others it resulted in immediate collapse of the snow blanket and contributed materially to the peak flows, while in a third category it fell after the snowmelt and merely extended the runoff period. Because of these complexities, rainfall during the periods March 26–31 and April 1–3 has been presented in figures 8 and 9.

Flood photographs, plates 1–9, are explained by individual captions.

3. BASIN DESCRIPTIONS

The Mississippi River system comprises 41 percent of the area of the contiguous United States, or 1,243,700 square miles. It is composed of six major divisions or drainage basins. Substantial portions of two of these, the Upper Mississippi Basin and the Missouri Basin were directly affected by the snowmelt floods of March–April 1960.

UPPER MISSISSIPPI BASIN

All of the 100,000 square miles of the basin below Dam 10, Guttenberg, Iowa, or about 53 percent of the total upper basin produced serious tributary and main stem flooding. This is the heart of the Corn Belt and the gently rolling prairies are farmed intensively. In this portion of the

TABLE 1.—*Grand divisions of the Mississippi basin*

Division	Area in square miles	Ratio to whole basin
Upper Mississippi Basin	188,000	0.151
Missouri Basin	529,400	.426
Ohio Basin	204,000	.164
Arkansas and White Basins	188,100	.151
Red Basin (of the South)	92,200	.074
Lower Mississippi Basin	42,000	.034
Total	1,243,700	1.000

Upper Mississippi Basin, the Illinois River is the largest tributary with a drainage area of over 28,000 square miles. Above Utica, Ill., the basin is rather steep with headwaters rising at about 1,000 feet above sea level in southern Wisconsin and near 800 feet in Indiana. Below Utica the Illinois River is a sluggish alluvial stream. The flood plain ranges in feet above mean sea level from 450 at La Salle, Ill., to about 425 at the mouth; a 25-foot fall in over 200 river miles, which is a remarkably flat gradient. Average annual precipitation in the Illinois Basin ranges from 32 inches in the northern part to near 40 inches in the south, with about two-thirds of it falling in the warm season, April through September. Temperature follows the midcontinent pattern with warm summers and cold winters with freezing of the northern tributaries and the upper Illinois Waterway.

The Rock River, draining approximately 10,800 square miles of southern Wisconsin and northern Illinois, is the next largest tributary on the east side of the Mississippi River in the area under study. The Illinois portion of this basin is an undulating prairie region about 700 feet above sea level. In Wisconsin, the terrain is moderately hilly with elevations ranging from 750 feet at the Illinois line to crests of 1,200 feet in the Kettle Hills. Average annual precipitation ranges from 32 inches in the headwaters to 34 inches near the mouth, about two-thirds of it falling in the April–September warm period. Winters are cold, with a foot of ice usually forming on creeks and rivers, but occasionally rain falls in December and January causing winter floods.

Principal tributaries on the western side of this portion of the Mississippi basin are the Des Moines River with a drainage area of over 14,500 square miles, the Iowa-Cedar Rivers with over 12,600, Skunk River with 4,350, Wapsipinicon about 2,540, and the Salt River with over 2,800 square miles of drainage area. The basins of these tributaries are generally long and narrow, oriented from northwest to southeast except for the Salt basin which is fan shaped.

The Des Moines River rises in the glacial moraine of southwestern Minnesota at an elevation of about 1,900 feet and joins the Mississippi just below Keokuk, Iowa, at an elevation of 475 feet. Above the confluence of the east and west forks near Humboldt, Iowa, the basin is a wide, uniformly flat plain and is poorly drained. Water ponds on the crop lands and there are numerous shallow lakes and marshes. Below Humboldt the land form changes to rolling prairie with well-defined drainage. Below Des Moines, Iowa, the upland areas are well dissected by numerous tributary valleys so that flat land is almost completely restricted to the flood plains of the streams. Annual precipitation ranges from 26 inches in the headwaters to 36 inches near the mouth, with about three-fourths of this falling in the April through September warm season. Winters are severe with a foot or more of ice cover usually forming on the streams and lakes.

The Iowa-Cedar and Wapsipinicon Rivers rise in the Drift Prairie section of northern Iowa and southern Minnesota at elevations of 1,200 to 1,300 feet above sea level. Drainage courses are shallow, 15 to 30 feet below the surrounding terrain which is nearly level with occasional lakes, ponds, and sloughs. Downstream the valleys become deeper with greater slope and have cut down to bedrock in places. The Wapsipinicon below Buena Vista, Iowa, meanders sluggishly through a valley 3 to 4 miles wide. Below Moscow, Iowa, on the Cedar River and below Iowa City on the Iowa River these streams flow through the broad flat bed of ancient Lake Calvin which merges into the flood plain of the Mississippi River below Muscatine, Iowa. Coralville Reservoir on the Iowa River upstream from Iowa City, with 475,000 acre-feet of flood-control storage, has almost eliminated flood damage in the Iowa City reach down to the confluence with the Cedar River. Average annual precipitation ranges from 30 inches in the north to near 36 inches in the extreme southern part of this tributary. Severe winters with a large accumulation of ice and snow contribute to the preponderance of March–April flooding in this area.

The Skunk River rises in central Iowa at generally 1,200 feet above sea level, with a slope of about 8 feet to the mile in the headwaters, and enters the Mississippi River below Burlington, Iowa, at elevation 520 feet. Below Ames the slope decreases from 3 feet per mile to near 1 foot per mile near the mouth. This leads to sluggish drainage and the wide flood plain was known as the "boggy bottoms" prior to extensive works of drainage, channel straightening, and leveeing. Annual precipitation ranges from 32 inches in

the headwaters to 36 inches at the mouth. The general climate is similar to that of adjacent basins.

The Salt River rises in the Till Plains of northeastern Missouri at elevations of 800 to 900 feet and flows into the Mississippi River just above Louisiana, Mo., at elevation 450 feet. The upper reaches are fairly flat, and extensive ditching has been done to improve the drainage above Shelbina, Mo. The lower 60 miles below Florida, Mo., has a fall of about 100 feet to the mouth. The lower 30 miles below New London, Mo., is a rather sluggish stream as the river meanders through a broad aluvium valley to join the Mississippi.

MISSOURI BASIN

About 200,000 square miles of the basin below Yankton, S. Dak., and eastward from the Colorado line, or the lower 38 percent (excluding the drainage in western Nebraska, Colorado, and Wyoming), was involved in tributary and main stem flooding. This is the heart of the Great Plains, with vast areas of winter wheat and grazing land in the semiarid West merging into the more humid Corn Belt adjacent to the Missouri River. Willow and cottonwood trees grow along the streams, but the plains are nearly treeless except near the Missouri River and the more humid lower basin.

The most northerly tributaries in this area rise in the poorly drained lake country of North and South Dakota, Minnesota, and Iowa. The James River has a drainage area of about 22,000 square miles, the Vermillion River under 2,200, Big Sioux about 9,800, Floyd over 900, and the Little Sioux River about 4,500 square miles. All have headwater elevations generally under 2,000 feet. The James River is remarkably flat, and at Ashton, S. Dak., reverse flow during floods is frequently noted. This is caused by floods in Snake Creek 6 miles downstream and in Turtle Creek 14 miles downstream from Ashton. Most years show periods with no flow and most recently there was no flow in the river at Ashton from August 14, 1958, through the entire 1958–59 water year (U.S. Geological Survey, *Water Supply Paper* 1629). Drainage patterns are better developed in the lower reaches of these streams as they traverse the predominantly rolling to hilly area along the Missouri River. Wide flat valleys lying 100 to 300 feet below the hills have been formed and merge into the rich Missouri River bottoms. Annual precipitation ranges from 18 inches in the north to 26 inches in the south, with about three-fourths of it normally falling in the warm April to September period. Winters are severe and a few inches of snow usually accumulates during the cold dry months of November through February.

The large Western tributaries rise in the Rocky Mountains, but the area included in this report lies generally at altitudes of below 4,000 feet in Kansas and Nebraska. About 30,000 square miles of the lower Platte River drainage contributed directly to this flood. The Elkhorn, Loup, and Niobrara Rivers all rise in the Sandhill region of Nebraska. Much of this hilly dune area does not contribute directly to surface runoff except immediately along the streams, but the ground water contribution is remarkably uniform throughout the year. Headwater slopes of over 20 feet per mile decrease to about 8 feet per mile through most of the valleys and to 4 feet per mile in the lower portions. The Kansas River system, draining 60,000 square miles, rises in the High Plains which are flat to gently rolling with broad shallow valleys. The upper Republican basin has an area of about 7,000 square miles which does not produce direct surface runoff. The general slope is about 12 feet per mile from the Colorado line eastward about halfway across Kansas, and decreases to about 5 feet per mile and less in the eastern part of the State. Through central and eastern Kansas the stream borders are decidedly hilly. The most rugged part of this basin lies west of Topeka to Abilene, Kans., particularly on the south side of the Kansas River. There are many east-facing escarpments ranging in height from 50 to 400 feet above the valley. North of the Kansas River the hills diminish in height but are still several hundred feet high with prominent east-facing escarpments. The tributary Blue River rises in southern Nebraska at elevations of about 2,000 feet. Its upper basin is nearly level to rolling with moderate slope, and the lower basin is decidedly hilly. Tuttle Creek Dam on the Blue River near Manhattan, Kans., with 1.9 million acre-feet of allocated flood-control storage, is nearing completion and temporarily stored a major portion of this flood. The climate of the Kansas Basin is the typical midcontinent type. Annual precipitation ranges from 16 inches in the semiarid western parts of Kansas and Ne-

braska to 32 inches in eastern Nebraska and 34 inches in eastern Kansas.

Streams in northern and northwestern Missouri and southwestern Iowa generally rise at elevations of about 1,400 feet and drain the Dissected Till Plains of this area. The basins vary from gently rolling plains near the mouths to rather rough hilly land near the headwaters. There are indications that the Missouri River flowed down the Grand River valley in preglacial times. More recently, in 1883, a change in the course of the Missouri River changed Brunswick, Mo., from a Missouri River port to a point 5 miles upstream on the Grand River. Annual precipitation ranges from 34 to 38 inches per year. Winters are usually short and mild with temperatures seldom going below zero. The Marais des Cygnes-Osage drainage starts in the eastern flank of the Flint Hills of Kansas. The headwaters are gently rolling to hilly with moderate slopes. The broad central valley is quite flat in eastern Kansas and western Missouri, approaching a slope of about a foot to the mile before entering the Lake of the Ozarks, formed by Bagnell Dam in Missouri. Tributaries of the lower Osage River rise in the Ozark highlands, an area of hilly to mountainous land. The Ozark region contains one of the greatest concentrations of large springs in the United States. Noteworthy are Bennett and Hahatonka Springs, contributing to the Niangua branch of the Osage River, and Boiling, Stone Mill, and Roubidoux Springs in the Gasconade basin. Annual precipitation ranges from 32 inches in the upper Marais des Cygnes to 42 inches in the Ozark highlands. The climate is continental in type but is seldom severe.

4. FLOOD HISTORY OF THE AREA

Historic floods of the area are those of 1785 and 1844 [1].* Records are legendary, or at best fragmentary. The overall magnitude of the 1785 flood is established by an unofficial record Mississippi River crest stage of about 42.0 feet at St. Louis. Little is known of the flood's origin or the comparative extent of flooding in the Missouri and Upper Mississippi Basins. Limited information on the flood of June 1844 indicates it was more severe in the Missouri Basin where highwater records of 42.2 feet (Kansas River) at Topeka, Kans., and 38.0 feet at Kansas City, Mo., and 42.5 feet (Mississippi River) at Cape Girardeau, Mo., have not been exceeded to date. The crest at St. Louis of 41.4 feet still stands as the highest officially documented stage. Early spring floods of 1868 apparently were very severe in the Upper Mississippi Basin as evidenced by a record crest of 20.9 feet at Davenport, Iowa. However, the flood of June 1880 was higher in the reach just below the mouth of the Wisconsin River. Another record spring flood occurred in 1881 in the upper Missouri. It still stands as the maximum of record at many points and there was no comparable event for the following 70 years. No doubt this flood was the result of snowmelt over a vast area extending into the Upper Mississippi Basin where a crest of 19.7 feet was experienced at St. Paul, Minn. Floods of 1903 are fairly well documented [1]. They were the result of precipitation totals ranging from 5 to 13 inches during May–June 1903 over a large area in central Kansas and eastern Nebraska to eastern Iowa and central Missouri. The year 1915 was extremely wet throughout the Midwest and resulted in the greatest annual total flow of record in the Missouri Basin. Crop losses were high due to prolonged flooding but no important record stages were established.

The last two decades, 1940–1960, experienced many periods of extremely high water. In 1943 records were established in the lower Osage in Missouri and in the Illinois River Basin [2]. Major flooding occurred from Omaha, Nebr., to the mouth of the Missouri and on the Des Moines River. At St. Louis the crest was the highest in 99 years. This crest was exceeded the following year, and again serious flooding was experienced throughout much of the Midwest. Floods of 1947 [3] were unusually numerous and widespread. They occurred in March and April in North Dakota and in April and June throughout the Lower Missouri and Upper Mississippi Basins. In the Grand River Basin in Iowa and Missouri, previous maximum stages were exceeded twice within a period of 3 weeks. Three great floods occurred at intervals of about 1 week in the Des Moines Basin, and the maximum record discharge

* See list of references at end of this chapter.

TABLE 2.—*Major floods in order of magnitude.*

MISSOURI RIVER
Sioux City, Iowa

Zero of gage - 1076.96 feet (1929 adj.)
Drainage area - 314,617 square miles
Flood stage - 16 feet
Period of record - 1878-1960

	Crest stage	Date
1	24.3	April 14, 1952
2	22.5	April 25, 1881
3	18.7	April 10, 1943
4	18.4	April 25, 1950
5	18.4	April 23, 1899
6	18.0	July 7-8, 1905
7	17.4	March 26, 1887
8	16.8	March 23, 1923
9	16.6	May 13, 1927
10	16.6(2)	March 20, 1910
	10.5(c)(X)	April 3, 1960

MISSOURI RIVER
Omaha, Nebraska

Zero of gage - 958.24 feet (1929 adj.)
Drainage area - 322,820 square miles
Flood stage - 19 feet
Period of record - 1872-1960

	Crest stage	Date
	30.2	April 18, 1952
	24.6	April 25, 1881
	22.8	April 9, 1881
	22.4	April 13, 1943
	21.2	April 27, 1950
	20.6	April 1867
	20.0	April 15, 1949
	19.9	May 15, 1927
	19.6	June 25-26, 1908
	19.5	May 18, 1920
	17.0(c)(X)	April 4, 1960

MISSOURI RIVER
St. Joseph, Missouri

Zero of gage - 788.19 feet (1929 adj.)
Drainage area - 424,340 square miles
Flood stage - 17 feet
Period of record - 1873-1960

Crest stage	Date
27.2	April 29, 1881
26.8	April 22-23, 1952
24.5(1)	June 1844
22.8	June 26, 1883
22.1	April 6, 1960
21.8	July 2-3, 1878
21.4	March 7, 1949
21.1	June 14-15, 1877
20.5	June 2, 1903
20.4	June 16, 1947

MISSOURI RIVER
Kansas City, Missouri

Zero of gage - 7.6.40 feet (1929 adj.)
Drainage area - 489,162 square miles
Flood stage - 22 feet
Period of record - 1873-1960

	Crest stage	Date
1	38.0(1)	June 16, 1844
2	36.2	July 14, 1951
3	35.0	June 2, 1903
4	30.6	April 24, 1952
5	30.3	June 15, 1908
6	29.1	June 19, 1943
7	29.0	July 21, 1915
8	27.8	April 30, 1881
9	27.6	April 24, 1944
10	27.0(2)	June 25, 1947
	23.0(3)(X)	April 4, 1960

GRAND RIVER
Chillicothe, Missouri

Zero of gage - 658.70 feet (1929 adj.)
Drainage area - 4,900 square miles
Flood stage - 24 feet
Period of record - 1915-1960

Crest stage	Date
33.8	June 6, 1947
33.6	July 1909
33.4	June 24, 1947
32.1	June 3, 1929
31.5	June 8, 1917
31.4	March 31, 1960
31.3	April 23, 1944
31.0	May 17, 1945
30.8	June 27, 1942
30.7(2)	April 6, 1947

MISSOURI RIVER
Boonville, Missouri

Zero of gage - 565.42 feet (1929 adj.)
Drainage area - 505,710 square miles
Flood stage - 21 feet
Period of record - 1873-1960

Crest stage	Date
32.8	July 17, 1951
32.7(1)	June 21, 1844
32.0	June 27, 1947
30.9	April 27, 1944
30.9	June 6, 1903
28.8	June 22, 1943
28.2	April 5, 1960
27.7	April 27, 1952
27.5	June 29, 1942
26.8	July 13, 1909

MISSOURI RIVER
Hermann, Missouri

Zero of gage - 481.50 feet (1929 adj.)
Drainage area - 528,200 square miles
Flood stage - 21 feet
Period of record - 1873-1960

	Crest stage	Date
1	35.5(1)	June 1844
2	33.0	July 19, 1951
3	31.2	June 29, 1947
4	31.1	May 21, 1943
5	30.8	April 28, 1944
6	29.6	June 28, 1942
7	29.5	June 7, 1903
8	29.2	July 23, 1958
9	28.7	June 7, 1935
10	28.4	April 7, 1960

MISSISSIPPI RIVER
Davenport, Iowa

Zero of gage - 532.00 feet (1929 adj.)
Drainage area - 88,449 square miles
Flood stage - 15 feet
Period of record - 1860-1960

Crest stage	Date
20.9	March 10, 1868
19.4	June 27, 1892
18.6	April 28, 1952
18.6	May 15-16, 1888
18.4	June 26, 1880
18.3	April 28-29, 1951
17.7	Oct. 25-27, 1881
17.1	April 23, 1922
17.1	April 9, 1920
17.0	April 24-26, 1870
15.3(4)(X)	April 3, 1960

SKUNK RIVER
Augusta, Iowa

Zero of gage - 521.69 feet (1912 adj.)
Drainage area - 4,303 square miles
Flood stage - 15 feet
Period of record - 1913-1960

Crest stage	Date
25.0	April 3, 1960
23.0	May 26, 1944
22.6	June 17, 1930
22.2	Feb. 19, 1951
20.9	Sept. 17, 1926
20.5	Aug. 6, 1943
20.1	June 22, 1946
19.9	June 19, 1950
19.8	April 24, 1944
19.6	June 9, 1947

DES MOINES RIVER
Des Moines, Iowa

Zero of gage - 773.84 feet (1929 adj.)
Drainage area - 6,245 square miles
Flood stage - 23 feet
Period of record - 1893-1960

	Crest stage	Date
1	30.2	June 24, 1954
2	27.3(a)	May 31, 1903
3	26.5	June 26, 1947
4	25.2	April 1, 1960
5	25.2(a)	July 10, 1902
6	24.5	May 23, 1944
7	23.8	March 31, 1951
8	23.7	April 10, 1951
9	23.4	June 17, 1944
10	23.4(a)	April 3-4, 1933

RACCOON RIVER
Van Meter, Iowa

Zero of gage - 841.16 feet (1929 adj.)
Drainage area - 3,410 square miles
Flood stage - 13 feet
Period of record - 1915-1960

Crest stage	Date
21.8	July 3, 1958
21.6	June 13, 1947
21.2	April 2, 1960
21.1	June 25, 1947
19.4	June 11, 1953
19.3	June 5, 1947
19.2	March 31, 1951
19.0	March 19, 1948
19.0	Sept. 20, 1926
18.3	May 21, 1944

DES MOINES RIVER
Ottumwa, Iowa

Zero of gage - 622.77 feet (1929 adj.)
Drainage area - 13,374 square miles
Flood stage - 9 feet
Period of record - 1917-1960

Crest stage	Date
20.2(5)	June 7, 1947
20.1	June 15, 1947
17.5	April 1, 1960
17.5	May 24, 1944
16.9	June 28, 1954
16.6	June 28, 1947
16.2(a)	August 1, 1915
15.5	June 29, 1935
15.2	April 4, 1951
14.8(2)	March 23, 1948

MISSISSIPPI RIVER
Keokuk, Iowa

Zero of gage - 477.41 feet (1929 adj.)
Drainage area - 119,000 square miles
Flood stage - 16 feet
Period of record - 1868-1960

	Crest stage	Date
1	21.8	April 3, 1960
2	21.0(1)	June 16, 1851
3	20.85	May 27, 1944
4	20.25	May 12, 1951
5	20.2	June 8 & 20, 1947
6	19.65	May 16-17, 1888
7	19.6	June 5, 1903
8	19.3	March 23, 1929
9	19.25	June 30, 1892
10	19.0(2)	April 24, 1952

MISSISSIPPI RIVER
Hannibal, Missouri

Zero of gage - 449.07 feet (1929 adj.)
Drainage area - 137,200 square miles
Flood stage - 16 feet
Period of record - 1878-1960

Crest stage	Date
24.1	June 10, 1947
23.4	April 4, 1960
22.6	May 13, 1951
22.5	May 28, 1944
22.5	June 8, 1903
22.1	April 27, 1929
21.7	April 25, 1952
21.7	May 17, 1888
21.6	March 24, 1948
21.6(1)	June 1851

MISSISSIPPI RIVER
St. Louis, Missouri

Zero of gage - 379.94 feet (1929 adj.)
Drainage area - 701,013 square miles
Flood stage - 30 feet
Period of record - 1861-1960

Crest stage	Date
41.4(1)(6)	June 27, 1844
40.3	July 22, 1951
40.3	July 2, 1947
39.1	April 30, 1944
38.9	May 24, 1943
38.0	June 10, 1903
37.2(1)	June 15, 1858
37.1(1)	1855
36.6	June 10, 1851
36.4(1)	1828
33.8(7)(X)	April 10, 1960

(1) From highwater mark
(2) Also in earlier year(s)
(X) Not among 10 greatest
(c) Crest controlled by upstream reservoirs
(3) Ranks 40th in period of record
(4) Ranks 15th in period of record
(a) Adjusted to present datum
(5) Flood of May 31, 1903, may have reached 23.0
(6) Flood of April 1786 may have reached 42.0
(7) Ranks 22nd in period of record

of the Nodaway River was exceeded on five separate occasions in 1947.

The floods of July 1951 [4, 5] were the greatest in more than a century in the Lower Missouri Basin. In the early spring of the following year, 1952, the most devastating flood of record struck the Upper Missouri Basin and the Red River of the North [6, 7]. References [4–7] cited here describe these floods in great detail and further description is not given in this report.

In addition to the above major floods over large areas, many severe and record-breaking floods occurred on major tributaries. Maximum stages were recorded in the Blue River Basin of Nebraska and Kansas in 1941 and 1950, and the flood of record in the Lower Elkhorn Basin occurred in 1944. The great flood of May–June 1935 in the Republican Basin was associated with rainfall of over 15 inches in northwestern Kansas and eastern Colorado. It resulted in the loss of 110 lives, the greatest single flood disaster in the Midwest [8]. A summary of maximum stages throughout the area is contained in table 3.

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Applicable to Previous Floods of the Area

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3. U.S. Army Corps of Engineers, *Storms and Floods of Spring of 1947 in Missouri, Iowa and Adjoining States*, 1955.
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5. U.S. Geological Survey, "Kansas–Missouri Floods of July 1951", *Water Supply Paper* 1139, July 1952.
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5. CAUSES AND DEVELOPMENT OF THE 1960 FLOODS

Weather during 1959 set the stage for the 1960 spring breakup over a wide belt extending from Lake Michigan westward, including southern Wisconsin, northern Illinois, southern Minnesota, all of Iowa, northern Missouri, northern and eastern Kansas, eastern Nebraska, and southern and eastern South Dakota. Most of this area received 120 percent or more of normal precipitation for the year. Dubuque, Iowa, with normal precipitation of 32.85 inches, had 54.36 in 1959. Omaha, Nebr., with a normal of 25.90 inches, recorded 39.47. Heavy rains in October produced unseasonal flooding. Snow covered most of the area during November, and below-zero temperatures in midmonth froze all navigation pools above Dam 22 on the Mississippi River. On the Missouri River, ice jams formed between Gavins Point Dam and Omaha, Nebr., on November 14–16, 2 to 3 weeks earlier than usual, and all tributaries were frozen. Many new subzero temperature records were set. Dubuque, Iowa, experienced the coldest November in 109 years of weather records. December ended the below-normal temperatures which had prevailed since September. In Iowa, December was warmer than November for the first time in 60 years. The last half of December had above-normal rainfall. This, with snowmelt, produced some flooding and left soils saturated at the end of the year.

Precipitation in January 1960, was generally more than double the normal and over three times the normal in some areas, such as the western Kansas-Nebraska border and from central Iowa eastward along the Illinois-Wisconsin line to Lake

TABLE 3.—*River gages—miscellaneous information.*

Basin	Stream	Location	Gage zero 1929 adj.	Flood stage (feet)	Drainage area (Sq. Mi.)	Highest Stages					Operated by
						Feet	Prior to 1960 Date	Based on record since--	March-April 1960 Feet	March-April 1960 Date & Time	
Niobrara	Niobrara R.	Spencer 5SE, Nebr.	1473.67	-	10,400	7.25(2)	3/29/59	1908(3)	8.6	3/27 5p	G
James	James R.	Ashton, S. Dak.	1244.4	15	11,000	19.59	4/23,24/52	1945	12.96(B)	4/4 4p	G
	"	Huron, S. Dak.	1223.44	11	16,800	16.5	3/22/22	1902(3)	15.42	4/6 10a	G,W
	"	Scotland 5NE, S. Dak.	1168.51	13	21,550	16.23	4/23/52	1928	18.66	4/6 10a	G
Vermillion	Vermillion R.	Wakonda 7SE, S. Dak.	1150.9	-	1,680	16.63	6/13/47	1945	16.94	4/1 8p	G
Big Sioux	Big Sioux R.	Dell Rapids 3SW, S. Dak.	1455.0	-	5,060	14.93	6/18/57	1948	14.84(B)	3/31 8a	G
	Skunk Cr.	Sioux Falls 4W, S. Dak.	1415.29	-	520	17.78	6/17/57	1948	13.64	3/30 3a	G
	Big Sioux R.	Sioux Falls 1SW, S. Dak.	1392.83	10	5,750	16.01	6/17/57	1943	15.56	3/30 5a	G
	Rock R.	Rock Valley 2W, Iowa	1216.00	11	1,600	15.99	6/8/53	1948	15.38	3/31 1p	G,C
	Big Sioux R.	Hawarden, Iowa	1147.27	15	8,810	20.5	6/20/57	1957(3)	22.3	4/2 2a	W
	" "	Akron, Iowa	1118.90	16	9,030	19.95	6/22/54	1927	21.56	4/1 7p	G,C,W
Missouri	Missouri R.	Sioux City, Iowa	1076.96	16	314,600	24.28	4/14/52	1878	10.52	4/3 7p	G,C,W
Floyd	Floyd R.	Alton, Iowa	1269.55	12	265	27.00	6/8/53	1953	17.27	3/28 5p	G,W
	"	Merrill, Iowa	1154.38	12	776	18.0	6/8/53	1907(3)	14.3	4/2 6a	W
	"	James, Iowa	1102.59	16	882	25.3	6/8/53	1934	21.93	3/29 5p	G,W
Little Sioux	Little Sioux R.	Spencer, Iowa	1294.56	10	990	20.1(H)	6/8/53	1936(3)	13.3	4/3 8a	G,W
	" "	Cherokee, Iowa	1150.00	17	2,182	22.7	6/11/53	1953(3)	20.3	3/29 8a	W
	" "	Correctionville, Iowa	1096.49	19	2,500	23.4	6/21/54	1918(3)	22.57	3/29 9p	G,C,W
	Maple R.	Ida Grove 2NE, Iowa	1207.76	10	364	16.61	6/18/54	1949	12.2	3/30 -	C
	"	Mapleton, Iowa	1085.86	20	669	22.1	6/12/50	1941	17.90	3/30 10a	G,C
	Odebolt Cr.	Ida Grove, Iowa			59	10.8	6/-/54		15.5	3/29 -	C
	W. Fork Ditch	Holly Springs, Iowa	1052.82	18	399	22.91	6/20/54	1939	22.43	3/30 6a	G,C,W
Soldier	Soldier R.	Pisgah, Iowa	1036.53	28	407	28.17	6/12/50	1940	12.46	3/28 -	G,W
Boyer	Boyer R.	Logan, Iowa	1009.38	20	871	21.5	6/16/57	1918(3)	14.62	3/29 9p	G,W
Missouri	Missouri R.	Omaha, Nebr.	958.23	19	322,820	30.20	4/18/52	1872	16.96	4/4 7p	G,C,W
Platte	Platte R.	Grand Island 5SE, Nebr.	1840.00		59,500	6.03(I)	3/4/49	1933	6.16(I)	3/27 10a	G
	Middle Loup R.	St. Paul, Nebr.	1776.61		7,720	12.69	6/23/47	1894(3)	9.08(I)	3/27 7p	G
	North Loup R.	St. Paul 3N, Nebr.	1759.39*		4,460	9.60(2)	6/22/47	1895(3)	8.35(I)	3/27 8p	G
	Loup R.	Columbus, Nebr.	1430.29*		15,230	12.0(H)	6/23/47	1894(3)	10.50	3/28 10p	G
	Platte R.	N. Bend 1S, Nebr.	1264.32*	6	81,435	8.17(I)	2/13/52	1949	8.04	3/29 12M	G,C
	Elkhorn R.	Neligh, Nebr.	1713.88	10	2,200	12.53	6/23/47	1930	11.2	3/29 10p	G,W
	"	Norfolk 1S, Nebr.	1505.09	10	2,790	13.63(I)	3/11/49	1896(3)	13.74	3/29 2p	W
	"	Pilger, Nebr.	1393.75	12	4,360	15.2(H)	5/12-13/44	1945	8.8	4/1 -	W
	"	West Point, Nebr.	1291.30	12	5,157	14.3	6/12/44	1941	16.09	3/31 3a	W
	"	Winslow, Nebr.	1196.29	14	5,600	19.8(H)	6/44	1946	18.9	4/1 9a	W
	Logan Cr.	Uehling 2SW, Nebr.	1210.73	16	1,030	17.65(H)	6/11/44	1941	15.2	4/2 3p	G,W
	Elkhorn R.	Waterloo, Nebr.	1109.73	12	6,900	16.4	6/12/44	1899(3)	14.11	4/2 4p	G,C,W
	Salt Cr.	Roca, Nebr.	1192.50	19	174	22.7	7/10/58	1951	20.85	3/27 11p	G,W
	"	Lincoln, Nebr.	1113.9	21	710	26.2	6/2/51	1949	18.75	3/27 11p	G,C
	Wahoo Cr.	Ithaca, Nebr.	1110.48	19	272	23.22	8/2/59	1949	21.68	3/29 9p	G,C,W
	Salt Cr.	Ashland 1E, Nebr.	1047.04	11	1,640	14.72	6/2/51	1947	13.85(B)	3/30 4a	G,W
	Platte R.	Louisville 1N, Nebr.	1007.10	9	90,000	10.35	6/17/57	1953	12.45(a)	3/30 4p	G,C,W
Missouri	Missouri R.	Nebraska City, Nebr.	903.94	18	414,420	27.66	4/18/52	1878(3)	21.43	4/5 2p	G,C,W
Nishnabotna	W. Nishnabotna R.	Randolph, Iowa	932.99*	19	1,326	24.8(I)	3/5/49	1948	19.18	3/30 1a	G
	E. Nishnabotna R.	Atlantic, Iowa	1125.27	-	382	23.1	7/2/58		11.6	3/29 -	C
	" "	Red Oak, Iowa	1010.45*	15	894	23.23	6/13/47	1918(3)	16.40	3/30 11a	G
	Nishnabotna R.	Hamburg, Iowa	889.98	18	2,811	26.4(4)	6/14/47	1947	25.7	3/31 -	G,C,W
Little Nemaha	Little Nemaha R.	Auburn 1E, Nebr.	889.87	22	801	27.65(H)	5/9/50	1949	24.2(H)	3/27 11p	G,C,W
Tarkio	Tarkio R.	Fairfax, Mo.	867.66	17	508	22.33(H)	7/7/29	1922	19.80	3/29 5a	G,W
Missouri	Missouri R.	Rulo, Nebr.	837.23	17	418,905	25.6	4/22/52	1886(3)	22.36	4/6 2p	G,C
Nemaha	Nemaha R.	Falls City 1S, Nebr.	861.24	20	1,340	28.8(H)	6/2/49	1944	27.75	3/28 7a	G,C,W

See footnotes at end of table.

TABLE 3.—*River gages*—Continued

Basin - Stream - Location			Gage zero 1929 adj.	Flood stage (feet)	Drainage area (Sq. Mi.)	Highest Stages					Operated by
						Prior to 1960			March-April 1960		
						Feet	Date	Based on record since--	Feet	Date & Time	
Nodaway	Nodaway R.	Clarinda 1E, Iowa	960.36	14	762	25.3	6/13/47	1918(3)	18.88	3/30 2a	G,W
	"	Burlington Jct. 2W, Mo.	896.17	18	1,240	19.7(I)	3/5/49	1922	16.1	3/28 10p	G,W
Missouri	Missouri R.	St. Joseph, Mo.	788.19	17	424,300	27.2	4/29/1881	1873	22.05	4/6 11p	G,C,W
Platte (Mo.)	One Hundred & Two R.	Maryville 1E, Mo.	964.12	14	515	17.6	1/14/60	1932(3)	16.15	3/30 1a	G,W
	Platte R.	Agency 4NE, Mo.	807.38	20	1,760	30.46	6/23/47	1924(3)	26.09	3/31 7a	G,W
Kansas	Republican R.	Hardy 1SW, Nebr.	1501.46	11	22,400	19.4	6/2/35	1932	11.47	3/28 7a	G,C,W
	"	Concordia 1N, Kans.	1333.62	10	23,540	19.0(H)	6/2/35	1931	10.92	3/28 12M	G,W
	"	Clay Center 1S, Kans.	1159.21	15	24,570	25.74(H)	6/3/35	1904(3)	19.69	3/28 7a	G,W
	Saline R.	Tescott, Kans.	1265.34	25	2,820	30.06	7/13/51	1919	29.40	3/29 8a	G,W
	N. Fk Solomon R.	Downs 3W, Kans.	1460.32	18	2,390	30.51	7/12/51	1945	20.50	3/27 7a	G,W
	S. Fk Solomon R.	Osborne, Kans.	1505.09	12	2,024	27.65	7/13/51	1946	17.39	3/27 5p	G,C,W
	Solomon R.	Beloit, Kans.	1339.01	20	5,430	39.3	7/13/51	1904(3)	29.17	3/28 12M	W
	"	Niles 1W, Kans.	1160.97	24	6,770	32.3	6/3/03	1897(3)	28.76	3/31 8p	G,W
	Smoky Hill R.	Enterprise, Kans.	1103.24	21	19,261	29.0	7/14/51	1934	22.60	4/2 10a	G,W
	Big Blue R.	Seward, Nebr.	1421.49	18	1,070	22.3	6/18/57	1954	19.70	3/30 6p	G,C,W
	" "	Crete 2S, Nebr.	1311.70	16	2,680	28.7	7/10/50	1945	28.0	3/31 1a	G,C,W
	" "	Beatrice, Nebr.	1219.90	16	3,822	28.3	6/4/51	1905(3)	25.66	3/31 11p	G,W
	" "	Barneston 1NW, Nebr.	1164.20	18	4,420	34.3	6/9/41	1932	27.60	3/28 1p	G,W
	Little Blue R.	Deweese 4SE, Nebr.	1632.67	6	1,145	15.0	6/17/57	1953	14.45	3/27 11p	G,W
	" "	Fairbury 1S, Nebr.	1282.19	10	2,320	17.15(H)	6/27/51	1908(3)	15.80	3/28 5p	G,W
	" "	Waterville 9NW, Kans.	1130.00	16	3,330	17.20(2)	7/4/59	1958	23.9	3/29 6p	G,W
	Black Vermillion R.	Frankfort 2SW, Kans.	1106.91	19	412	29.40	5/30/59	1953	28.52	3/28 3a	G,W
	Big Blue R.	Randolph, Kans.	1034.90	22	9,100	30.8	6/10/41	1918	36.48(B)	4/2 11p	G,W
	Kansas R.	Wamego, Kans.	950.82	19	55,240	30.6	7/13/51	1914	19.04	3/29 10p	G,W
	Vermillion R.	Wamego, Kans.	992.20	24	243	29.7(H)	7/13/51	1936(3)	26.8	3/28 6a	G
	Mill Cr.	Paxico, Kans.	765.00	19	316	34.7(H)	7/12/51	1953	22.54	3/27 3a	G
	Kansas R.	Topeka, Kans.	854.57	21	56,710	36.3	7/13/51	1904	21.0	3/30 12M	G,W
	Soldier Cr.	Topeka, Kans.	866.95	25	268	29.1(B)	7/12/51	1929(3)	17.23	3/28 8a	G,W
	Delaware R.	Valley Falls, Kans.	885.04	22	922	32.1	6/21/51	1922	24.73	3/28 3p	G,W
	Kansas R.	Lecompton, Kans.	821.84	17	58,420	30.2	7/13/51	1882(3)	19.7	3/29 2p	G,W
	Wakarusa R.	Lawrence, Kans.	799.24	23	458	31.6(H)	7/12/51	1929	26.25	3/27 8p	G
	Stranger Cr.	Tonganoxie, Kans.	796.95	23	406	29.46	8/1/58	1929	26.71	3/29 11a	G,W
	Kansas R.	Bonner Springs, Kans.	747.02	21	59,890	38.6	7/13/51	1917	18.0	3/30 2a	G,W
Missouri	Missouri R.	Kansas City, Mo.	716.40	22	489,162	36.2	7/14/51	1873	22.95	4/4 12M	G,C,W
Grand	Grand R.	Gallatin 1NE, Mo.	712.56	21	2,250	37.7	6/2/29	1918	30.45	3/31 5p	G,W
	E. Fk Big Cr.	Bethany 2N, Mo.	854.74	13	95	17.65	6/6/47	1934	16.54	3/30 6a	G
	Thompson R.	Davis City, Iowa	875.55*	19	701	20.14	6/14/47	1918(3)	16.63	3/30 6a	G
	Weldon R.	Mercer 4NW, Mo.	850.96	22	246	28.4(H)	8/6/59	1939	19.0	3/28 9p	G
	"	Mill Grove, Mo.	786.03	16	494	26.02	8/7/59	1929	17.95	3/29 10a	G
	Thompson R	Trenton 1W, Mo.	721.87	20	1,670	25.7	6/6/47	1910(3)	21.25	3/30 3a	G,W
	Grand R.	Chillicothe, Mo.	658.70	24	4,900	33.8	6/7/47	1915	31.4	3/31 10a	C,W
	"	Sumner 2SW, Mo.	630.87	26	6,880	39.5(H)	6/7-8/47	1923	37.20	4/1 5-7a	G,W
Chariton	Chariton R.	Novinger 1E, Mo.	737.65	20	1,370	28.5	6/7,13/47	1930(3)	26.65	4/2 6p	G,W
	"	Prairie Hill 3NW, Mo.	632.05	15	1,870	20.22(2)	8/1/58	1953	20.4	4/4 10p	G,W
Lamine	Lamine R.	Clifton City 1E, Mo.	621.91	19	598	32.5	6/29/51	1922	20.3	3/28 8p	G,W
	Blackwater R.	Blue Lick 1S, Mo.	593.79	25	1,120	41.25 (H)	11/18/28	1922(3)	29.4	3/30 1p	G,W
Missouri	Missouri R.	Boonville, Mo.	565.42	21	505,710	32.8	7/17/51	1873	28.15	4/5 7a	G,C,W
Osage	Marais des Cygnes R.	Melvern, Kans.	939.11*	-	363	30.8(H)	7/11/51	1939	17.58	3/28 2a	G
	" " "	Ottawa, Kans.	863.69	23	1,240	42.1	7/12/51	1902(3)	24.0	3/27 9p	W
	Pottawatomie Cr.	Garnett 4N, Kans.	873.23	26	334	32.3	7/11/51	1939	21.4	3/24 6a	G
	Marais des Cygnes R.	Trading Post, Kans.	761.61	24	2,880	38.12	7/14/51	1921(3)	25.85	3/31 12M	W
	Marmaton R.	Ft. Scott 2NE, Kans.	752.60	30	411	39.35(H)	8/14/28	1921(3)	17.5	3/22 7a	G,W
	Sac R.	Stockton 2E, Mo.	764.12	18	1,160	31.8	5/19/43	1921	10.9	3/23 11a	G,W

See footnotes at end of table.

TABLE 3.—*River gages*—Continued

Basin - Stream - Location			Gage zero 1929 adj.	Flood stage (feet)	Drainage area (Sq. Mi.)	Highest Stages					Operated by
						Prior to 1960		Based on record since--	March-April 1960		
						Feet	Date		Feet	Date & Time	
Osage (Cont.)	Osage R.	Osceola 1NE, Mo.	679.23	22	8,220	41.5	5/21/43	1910(3)	15.6	3/24 2a	G,W
	South Grand R.	Brownington 1N, Mo.	676.18	19	1,660	39.9	11/19/28	1921	18.0	3/30 8a	G,W
Missouri	Missouri R.	Hermann, Mo.	481.50	21	528,200	33.05	7/19/51	1873	28.44	4/7 1-4p	G,C,W
	"	St. Charles, Mo.	413.59	25	529,190	37.30	7/20/51	1868(3)	32.20	4/8 12M	C,W
Mississippi	Mississippi R.	La Crosse, Wis.	625.83	12	62,840	16.5	6/19/1880	1873	(D)		G,C,W
Root	Root R.	Houston 1W, Minn.	671.86		1,270	14.9(B)	3/11/36	1929	9.25	3/28 10a	
	S. Fk Root	Houston 2S, Minn.	680.41		275	12.07	4/3/56	1953	12.3	3/28 9a	G
	Root R. blo S. Fk	Houston 2NE, Minn.	660.00(1)	15	1,560	18.05	9/10-11/38	1936	14.0	3/28 7a	G,C,W
Upper Iowa	Upper Iowa R.	Decorah, Iowa	850.00	12	511	10.12	6/21/54	1951(2)	8.44	3/30 2a	G,W
Mississippi	Mississippi R.	(Prairie du Chien) McGregor, Iowa	604.84	18	67,500	21.5	6/22/1880	1878	11.06	3/30 8a	G,C,W
Wisconsin	Baraboo R.	Baraboo 4E, Wis.	786.8		650	21.35	4/5/59	1942(2)	16.7	3/31 10p	G
	Wisconsin R.	Muscoda 1N, Wis.	667.05	9	10,300	11.48	9/16/38	1908	5.0(I)	3/30 7a	G,C,W
	Kickapoo R.	La Farge, Wis.	782.00(1)	12	266	12.90(B)	3/8/50	1938	11.42	3/28 10a	G,W
	"	Steuben 1NW, Wis.	657.82(1)	8	690	13.66	7/22/51	1933	9.23	3/30 11p	G,C,W
Turkey	Turkey R.	Garber, Iowa	635.34	11	1,545	28.06	2/23/22	1913	22.96	3/30 5a	G,C
Mississippi	Mississippi R.	Dubuque, Iowa	584.94	17	81,600	22.70	4/25/52	1869(3)	13.9	3/31 7a	C,W
Maquoketa	Maquoketa R.	Manchester 2SE, Iowa	895.06(1)	7	305	21.36	6/13/47	1933	16.48	3/30 10a	G
	"	Maquoketa 2NE, Iowa	636.52(1)	13	1,553	24.70	6/27/44	1913	18.91	3/30 9p	G,C
Mississippi	Mississippi R.	Clinton, Iowa	566.29(1)	16	85,600	20.92	4/28/52	1873	15.3	4/2 7a	C,W
Wapsipinicon	Wapsipinicon R.	Independence, Iowa	882.85	12	1,048	18.74	6/14/47	1933	15.63	3/30 4p	G,W
	"	De Witt 3S, Iowa	599.73	10	2,330	12.07	6/27/44	1934	11.71	4/4 8p	G,W
Mississippi	Mississippi R.	Davenport, Iowa	542.00	15	88,449	20.9(B)	3/10/1868	1860	15.3	4/3 7a	C,W
Rock	Pecatonica R.	Darlington, Wis.	801.90(1)	11	274	20.71	7/16/50	1939	16.06	3/30 6a	G,C,W
	E. Br. Pecatonica R.	Blanchardville 2S, Wis.	796.8*	11	221	15.74	2/28/48	1939	14.81	3/30 12M	G,C,W
	Pecatonica R.	Martintown, Wis.	757.9	11	1,040	20.24	2/29/48	1939	19.55	4/1 4a	G,C,W
	"	Freeport, Ill.	743.18	13	1,330	17.0	3/16/29	1914	16.35	4/2 10p	G,C,W
	"	Shirland, Ill.	711.79	10(E)	2,540	16.72	1/8/46	1939	17.08	4/3 1a	G,W
	Rock R.	Rockton, Ill.	707.94	10(E)	6,290	14.6(B)	2/-/47	1903(3)	13.49	4/2 10p	G,C,W
	Kishwaukee R.	Perryville 2SW, Ill.	692.13	-	1,090	19.50	1/6/46	1939	19.05	3/31 8a	G,C,W
	Rock R.	Como 1E, Ill.	606.83	-	8,700	17.51(B)	2/7/38	1934	11.99	4/1 12M	G,W
	"	Joslin 2E, Ill.	564.06	10	9,520	16.23(B)	3/3/48	1939	16.08	4/3 4p	G,C,W
	Green R.	Geneseo 2N, Ill.	580.66	-	958	16.14	2/20/51	1936	15.14	3/30 1a	G,C
	Rock R.	Moline, Ill.	551.34(1)	13	10,771	14.9	3/11/29	1929	14.1	4/4 1a	C,W
Mississippi	Mississippi R.	Muscatine, Iowa	530.97	16	99,400	21.05	4/28/52	1878	18.38	4/3 p	C,W
Iowa	Iowa R.	Rowan 4NW, Iowa	1143.35	-	429	14.88	6/21/54	1940	12.11	3/30 2a	G
	"	Marshalltown, Iowa	853.10	13	1,564	17.74	6/4/18	1902(3)	17.51	3/31 6p	G,C,W
	"	Belle Plaine 3S, Iowa	749.82	12	2,245	17.07	6/14/47	1939			G,C
	"	Iowa City, Iowa	637.29	16	3,271	21.0(E)	6/8/18	1903	6.89	3/30	G,C,W
	English R.	Kalona 1S, Iowa	633.45	-	573	19.74	1/7/46	1939	19.89	3/31 11a	G,C
	Cedar R.	Charles City, Iowa		9	1,054	18.9(2)	4/7/51	1945(3)	8.5	3/29 7a	G,C,W
	"	Janesville, Iowa	868.46	6	1,661	16.2	5/7/45	1904	10.46	3/30 4p	G,C
	Lime Creek	Mason City, Iowa	1069.59	-	526	15.7	3/30/33	1932	6.22	3/31 9a	G
	Shell Rock R.	Shell Rock, Iowa	885.34	-	1,746	14.0	6/22/54	1953	11.54	3/30 2a	G
	Blackhawk Cr.	Hudson, Iowa	865.03	-	303	14.57	5/30/57	1952	16.93	3/31 3a	G
	Cedar R.	Waterloo, Iowa	824.09	15	5,190	18.8	4/19/51	1940	18.10	3/31 10a	G,C,W
	"	Cedar Rapids, Iowa	700.33	13	6,640	20.1	3/19/29	1902	16.75	4/2 3p	G,W
	"	Conesville 4NE, Iowa	581.95	9	7,785	15.35	6/18/47	1939	15.60	4/4 2p	G,C
	Iowa R.	Wapello, Iowa	548.51	10	12,499	16.85	6/17/47	1914	17.02	4/5 2a	G,C,W
Skunk	Skunk R. blo Squaw Cr.	Ames 2SE, Iowa	-	7	556	12.82	7/4/58	1952	13.20	3/30 10p	G
	Skunk R.	Oskaloosa 4N, Iowa	685.50	15	1,635	18.46	2/22/53	1945	20.56	4/3 6p	G,W
	N. Skunk R.	Sigourney 3S, Iowa	651.53	16	730	22.6	1/7/46	1945	25.33	3/31 7p	G,W
	Skunk R.	Augusta, Iowa	521.69(1)	15	4,303	23.04	5/26/44	1913	25.0	4/3 12M	G,C,W
Mississippi	Mississippi R.	Burlington, Iowa	511.00	15	114,000	18.1	4/29/51	1878	18.7	4/4 4p	C,W
	"	Keokuk, Iowa	477.41	16	119,000	20.85	5/27/44	1868	21.83	4/3 4p	G,C,W

See footnotes at end of table.

TABLE 3.—*River gages*—Concluded

Basin	Stream	Location	Gage zero 1929 adj.	Flood stage (feet)	Drainage area (Sq. Mi.)	Highest Stages					Operated by
						Prior to 1960			March-April 1960		
						Feet	Date	Based on record since--	Feet	Date & Time	
Des Moines	W. Fk Des Moines	Estherville, Iowa	-	-	1,372	15.53	6/8/53	1951	10.79	4/5 6a	G
	E. Fk Des Moines	Dakota City, Iowa	1038.71	-	1,308	24.02	6/21/54	1940	17.49	3/29 4p	G
	Des Moines R.	Fort Dodge, Iowa	969.38	10	4,190	19.28	6/21/54	1905	11.28	3/29 9p	G,W
	" "	Boone 2NW, Iowa	871.52(1	12	5,511	25.34	6/22/54	1920(3)	17.08	3/31 2:30p	G,C,W
	" "	Des Moines, Iowa	773.84	23	6,245	30.16	6/24/54	1902(3)	25.25	4/1 6p	G,W
	North Raccoon	Jefferson 2S, Iowa	967.09	10	1,619	22.3	6/23/47	1940	19.43	3/31 12M	G,C,W
	Middle Raccoon	Panora, Iowa	991.20	-	440	11.87	7/2/58	1958	9.68	3/31 7p	G
	South Raccoon	Redfield, Iowa	896.43	14	988	29.04	7/2/58	1940	15.31	3/30 2a	G
	Raccoon R.	Van Meter, Iowa	841.95	13	3,410	21.77	7/3/58	1915(3)	21.18	4/2 3a	G,C,W
	Des Moines R. blo Raccoon	Des Moines, Iowa (Scott St.)	773.84	13	9,879	21.6(H)	6/26/47	1940	20.0	4/2 2p	G,C
	North R.	Norwalk 1S, Iowa			340	19.44(2)	1/13/60	1940	21.0(B)	3/30 12M	G,C,W
	Middle R.	Indianola 5N, Iowa	773.34	15	506	26.4	6/13/47	1940	20.43	3/30 3a	G,C,W
	South R.	Ackworth 2E, Iowa	761.91	15	474	24.6	6/5/47	1940	22.6	3/30 9a	G,C,W
	Whitebreast Cr.	Knoxville 2W, Iowa	734.73	-	380	19.6	6/6/47	1945	19.02	3/30 5p	G,C,W
	Des Moines R.	Tracy 1E, Iowa	671.78	14	12,479	26.5	6/14/47	1920(3)	23.0	4/4 2a	G,C,W
	" "	Ottumwa, Iowa	622.77	9	13,374	20.2	6/7/47	1917	17.49	4/1 2a-1p	G,W
	" "	Keosauqua, Iowa	557.30	15	14,038	27.85	6/1/03	1903(3)	18.34	4/2 6a	G,C,W
	Fox R.	Wayland 1W, Mo.	501.52	15	400	21.53	6/29/33	1922	20.19	3/30 5p	G,C,W
Mississippi	Mississippi R.	Gregory Landing, Mo.	472.71(1)	15	119,000	21.1	5/28-29/44	1930	22.31	4/4 2a	C,W
Wyaconda	Wyaconda R.	Canton 2W, Mo.	515.41	17	393	30.0	6/30/33	1932	23.64	3/31 4p	G
Mississippi	Main Stem	Quincy, Ill.	458.22	17	135,000	23.9	6/10/47	1878	24.38	4/4 4:30p	C,W
Fabius	North Fabius	Monticello 1S, Mo.	540.73	17	452	30.8	6/30/33	1922	24.10	3/29 1p	G
	Middle Fabius	Monticello 3SW, Mo.	540.46	13	393	26.28	6/7/47	1945	19.51	3/31 2a	G
	South Fabius	Taylor 5SW, Mo.	482.91	10	620	19.5	6/8/47	1935	12.35	3/30 1p	G,C
Mississippi	Mississippi R.	Hannibal, Mo.	449.07	16	137,200	24.1	6/10/47	1878	23.4	4/4 7a	C,W
Salt	Salt R.	New London 2N, Mo.	477.03	19	2,480	29.92	8/2/58	1922	22.55	3/30 7p	G,W
Illinois	Illinois R.	Morris, Ill.	478.50	13	7,380	22.4	4/26/50	1916	15.39	3/31 7a	C,W
	"	La Salle, Ill.	430.00	20	11,835	31.0	5/22/43	1908	25.90	3/31 12M	C,W
	"	Peoria, Ill.	428.39	18	13,520	28.6	5/23/43	1867(3)	21.6	4/5 1p	C,W
	"	Havana, Ill.	424.28	14	17,560	27.3	5/25/43	1896	19.95	4/6 7a	C,W
	"	Beardstown, Ill.	419.89	14	23,445	29.7	5/26-27/43	1878	21.8	4/7 7a-7p	C,W
Mississippi	Mississippi R.	Grafton, Ill.	403.79	18	171,300	29.0	5/24/43	1879	25.7	4/10 7a	C,W
	"	St. Louis, Mo.	379.94	30	701,000	40.28	7/22/51	1861	33.78	4/10 2p	G,C,W

(1) 1912 adjustment
(2) Earlier record available at different site and datum shows higher stages
(3) Record not continuous
(4) Prior to completion of levees

(a) Flow not exceeded since 1892
(B) Backwater
(D) See table Daily River Stages, March 16-April 16, 1960
(E) Estimated
(H) Highwater mark
(I) Affected by ice jam

C - Corps of Engineers
G - Geological Survey
W - Weather Bureau

TABLE 4.—*Meteorological data, March 21–30, 1960.*

Date	Precipitation 24-hour amounts (inches)	Snow on ground 6 p.m. (inches)	Water equivalent of snow on ground (inches)	Temperature (°F)								Dew Point (°F)				Wind direction and speed (knots)				
				Time				Max.	Min.	Degree days above 32(°F)		Time				Time				Avg.
				00	06	12	18			24-hr.	Accum.	00	06	12	18	00	06	12	18	
AKRON, COLO., FAA																W 30		T 5		
Mar. 20	.0	T		40	34	48	50	60	32	14	30	30	27	36	43	WNW13	W10	NW9	E9	10
21	.0	T		35	36	59	66	67	32	18	48	33	31	40	37	SSW8	WSW8	WSW8	WSW6	8
22	.0	T		44	33	45	60	61	32	15	63	33	31	39	44	WNW13	NNW5	C	S16	8
23	.0	0		44	37	50	50	54	36	13	76	38	30	38	34	W11	WNW10	C	ESE15	9
24	.0	0		39	33	47	47	51	31	9	85	35	27	39	32	SSE8	C	ESE13	SSE18	10
25	.0	0		37	36	60	65	66	35	19	105	31	33	42	36	SSW16	WNW8	N6	WSW8	10
26	.0	0		49	44	68	74	75	40	26	130	40	35	42	36	SW14	SW12	SW8	S8	10
27	.0	0		57	43	71	71	76	39	26	156	35	34	34	33	WSW16	W11	WSW7	ESE13	12
28	.0			52	43	67	65	72	40	24	180	39	37	35	40	SSE12	SW9	SE7	SW5	8
29	.0			50	41	51	55	56	37	15	195	36	26	30	15	NW15	NW37	NNW31	NNW24	27
30	.0			39	31	63	67	70	30	18	213	22	23	18	25	NNW8	SW9	WSW11	S12	10
31	.14			44	43	61	38	65	34	18	213	28	27	28	36	SSE6	NNW6	N23	NNW23	15
LIMON, COLO., WB																W 37		T 5		
Mar. 20	.0	-		-	-	-	-	60	30	13	26	-	-	-	-	-	-	-	-	
21	.0	-		34	29	57	58	65	27	14	40	32	27	43	47	C	NNW2	NE3	NE2	2
22	.0	-		44	35	56	57	62	32	15	55	36	32	40	43	WNW11	NW5	ESE4	SSE10	8
23	.0	-		44	33	51	53	59	32	14	69	32	31	41	46	WNW5	NW4	NNE5	ESE5	5
24	.0	-		36	31	53	56	54	27	9	78	34	27	40	33	SSE10	N4	NE5	SSE12	8
25	.0	-		35	34	62	63	67	27	15	93	31	33	39	35	SSE9	NW4	N5	C	4
26	.0	-		49	32	67	70	73	29	19	112	35	29	38	35	SSE6	NW3	SW3	S6	4
27	.0	-		46	42	71	70	74	39	25	137	37	34	50	32	NW6	NW6	NE2	SE14	7
28	.0	-		50	35	64	63	69	32	19	156	40	33	30	32	ESE6	NNE3	S9	WSW14	8
29	.0	-		44	38	49	53	55	33	12	168	35	22	28	21	NNW12	NW16	NNW28	NNW28	21
30	.0	-		35	26	62	64	66	23	13	181	23	24	33	25	WNW3	C	SSE2	SSE8	3
31	.13	-		44	45	55	35	55	32	12	193	29	30	30	34	SW4	C	NNW16	NNW23	11
BELLEVILLE, ILL., AFB																W -		T -		
Mar. 20	.0	3		30	28	34	33	35	25	0	0	23	22	22	22	W7	WNW9	WNW14	WNW10	10
21	.0	T		25	20	35	36	37	20	0	0	17	15	20	20	WNW11	NW6	W10	SSW8	9
22	.0	T		34	36	36	32	39	23	0	0	21	30	19	20	WSW12	NNW12	NNW15	N8	12
23	.0	T		23	20	38	46	48	19	2	2	18	16	22	26	C	C	SW10	NNW8	4
24	.0	T		33	31	42	28	42	21	1	3	27	26	28	16	NNW8	NW5	N20	NNW12	9
25	.0	T		21	21	31	38	38	20	0	3	10	12	17	23	NNE6	E8	SSE8	S9	8
26	.0			37	33	47	50	52	33	11	14	26	27	32	31	W7	NW6	NE6	SSE6	6
27	.0			40	40	70	70	76	38	25	39	32	33	46	46	S6	SSW8	SSW18	S13	11
28	.0			59	52	74	72	77	52	33	92	53	50	56	54	SSE8	S6	SSW5	SSE9	7
29	.38			59	58	73	73	76	56	34	126	53	56	59	61	SSE9	S13	S16	S16	14
30	.56			56	53	46	48	56	42	17	143	54	50	43	40	SE7	W10	W18	WNW16	13
31	.0			43	43	48	50	53	42	16	159	39	38	40	43	NW14	NNW6	SW7	E11	9
CAIRO, ILL., WBO																W 99		T 5		
Mar. 20	.0	0		33	31	38	44	46	31	7	7		27	28		W6	W6	W9	N14	9
21	.0	0		33	26	33	42	42	25	2	9		16	17		NW11	NW9	W6	SW12	10
22	.0	0		36	34	44	43	46	28	5	14		28	24		SW15	W8	N14	N13	12
23	.0	0		29	24	40	53	53	24	7	21		20	23		NE10	E5	SW10	SW10	9
24	.0	0		41	35	44	46	53	26	8	29/		27	26		N7	N11	W3	N18	10
25	T	0		27	23	33	45	45	22	2	31		12	18		N15	NE10	SE6	S7	9
26	.0	0		42	36	48	57	58	35	15	46		30	30		SW12	W4	N10	E3	7
27	.0	0		46	42	70	71	75	40	26	72		27	40		S5	SE6	SW13	S13	9
28	.0	0		61	54	73	76	76	53	33	105		48	54		S10	S5	SW8	S10	8
29	.17	0		63	58	76	72	78	58	36	141		57	61		S11	SE8	S15	SE14	12
30	.14	0		60	54	49	48	58	47	21	162		50	43		S8	SW16	W14	W12	12
31	.0	0		47	46	51	61	61	46	22	184		41	42		W12	NW3	W4	E5	6
CHICAGO, ILL., WBAS																W 48		T 5		
Mar. 20	T	1		27	22	33	30	34	22	0	0	24	20	26	16	SW4	WNW5	N15	NNW16	10
21	.0	1		22	15	27	29	34	15	0	0	13	8	15	16	NW12	NW10	W14	SW15	13
22	.0	1		34	22	25	26	34	20	0	0	29	10	12	15	W25	NNW28	NW16	N7	19
23	T	T		21	17	29	29	32	17	0	0	15	15	18	24	W5	SSW7	SW17	WNW20	12
24	T	T		26	26	24	23	28	17	0	0	22	22	9	5	W10	W16	NW27	NW18	18
25	.07	T		17	15	25	24	27	15	0	0	8	10	8	21	W7	WSW4	SSW14	SSE10	9
26	T	2	.1	25	15	29	35	38	15	0	0	22	12	20	26	WSW7	NW6	WSW13	WSW11	9
27	.0	T		34	39	53	52	56	34	13	13	29	29	41	42	SSW12	SSW13	SW19	SW13	17
28	T	T		43	39	39	40	45	37	9	22	39	38	36	40	SW5	NNE7	ENE7	ENE7	6
29	.05	0		45	47	69	69	73	45	27	49	43	45	58	56	ESE9	SSE11	S20	S14	14
30	.07	0		61	57	57	37	61	33	15	64	59	54	53	33	S13	E7	NW6	N21	12
31	.0	0		33	32	34	36	38	32	3	67	30	28	29	30	NNE19	NNE16	N9	ENE8	14
MOLINE, ILL., WBAS																W 25		T 5		
Mar. 20	T	11	3.3	23	18	29	29	31	15	0	0	20	15	23	12	W8	W8	NNW10	NNW15	10
21	.0	10	3.2	15	5	27	32	36	2	0	0	10	1	13	21	WNW7	W6	SW11	WSW20	11
22	.0	10	3.2	36	22	26	24	36	10	0	0	31	11	14	13	WNW15	NW12	NW11	WNW8	12
23	.0	10	3.2	10	9	31	31	31	6	0	0	7	7	21	25	C	C	WSW15	WNW10	6
24	T	9	3.2	23	27	22	20	27	9	0	0	19	23	7	8	WSW8	W14	NNW18	WNW13	13
25	.06	9	3.0	9	3	20	22	22	1	0	0	4	- 1	15	16	SW4	C	S14	SSE3	5
26	.0	9	3.0	22	21	34	36	37	14	0	0	19	17	27	29	WNW4	WSW6	SW11	SSW8	7
27	.0	5	2.7	37	42	46	43	47	34	9	9	30	34	41	39	S8	SSW15	SW14	WSW6	11
28	T	T		34	38	38	38	40	34	5	14	34	32	35	37	C	E7	E9	ESE12	7
29	.37	T		40	46	61	58	65	37	19	33	40	45	55	55	ESE9	SSE10	SSE10	E8	9
30	.03	0		49	42	43	40	49	38	12	45	47	42	42	37	E4	NW5	NNW13	NW10	8
31	.0	0		39	36	44	47	48	35	10	55	34	31	37	39	NW8	C	C	ESE10	4

See footnotes at end of table.

TABLE 4.—Continued

Date	Precipitation 24-hour amounts (inches)	Snow on ground 6 p.m. (inches)	Water equivalent of snow on ground (inches)	Temperature (°F)								Dew Point (°F)				Wind direction and speed (knots)				
				Time				Max.	Min.	Degree days above 32(°F)		Time				Time				Avg.
				00	06	12	18			24-hr.	Accum.	00	06	12	18	00	06	12	18	
PEORIA, ILL., WBAS																W 25		T 5		
Mar. 20	.04	5	1.2	23	18	25	28	30	15	0	0	21	16	22	26	WNW10	WNW8	WNW10	NW9	9
21	.0	5	1.2	15	9	26	31	31	9	0	0	11	7	10	17	NW8	NW7	W14	SW18	12
22	.0	4	1.2	31	24	26	26	34	13	0	0	25	13	14	16	W20	NW11	NNW14	NNW6	13
23	.0	3	1.1	14	11	28	30	33	10	0	0	12	10	20	24	S3	S4	SSW15	WNW20	10
24	T	3	1.0	26	26	23	21	27	9	0	0	22	21	10	9	W10	W13	NNW20	NW12	14
25	.02	3	1.0	11	7	21	25	26	5	0	0	6	4	16	18	N7	S3	S16	S11	9
26	.0	3	1.0	26	17	30	33	35	17	0	0	21	14	23	27	W8	WNW8	SSW8	S10	8
27	.0	2	.9	34	36	45	49	51	33	10	10	29	32	39	42	S10	S11	SSW14	SSW5	10
28	.0	T		38	34	46	45	51	33	10	20	37	34	45	44	NNW4	NE7	ENE8	ENE9	7
29	.36	T		48	52	61	67	70	48	27	47	48	50	58	58	SE7	S12	S19	SSE9	12
30	1.72	0		57	50	45	41	57	38	16	63	53	50	45	40	N4	C	NW12	NNW17	8
31	.0	0		38	36	45	47	50	36	11	74	36	34	38	41	NW10	NW5	S2	ESE10	7
QUINCY, ILL., FAA																W 29		T 4		
Mar. 20	.0	20	-	23	19	32	28	36	15	0	0	19	15	24	25	WNW8	WNW10	NW15	NW14	12
21	.0	18	-	15	9	27	31	33	9	0	0	9	6	19	22	NW8	NW7	SW10	SW18	11
22	.0	16	-	32	25	28	26	34	15	0	0	26	18	19	21	W20	NNW20	NNW14	NNW10	16
23	.0	15	-	15	12	32	32	37	11	0	0	12	10	24	25	NNE2	S7	SSW12	NW11	8
24	.0	12	-	25	21	23	21	28	9	0	0	23	20	13	11	WNW8	WNW9	NNW18	NNW12	12
25	.0	10	-	9	13	24	29	30	8	0	0	1	7	15	23	NNE7	ESE4	SSE14	SW9	8
26	.0	10	-	30	32	39	40	42	21	5	5	24	18	26	29	W7	NW9	SW7	SE9	8
27	.0	3	-	40	43	49	56	60	40	21	26	30	36	41	46	SSE12	SSW12	SSW18	SSW12	14
28	.0	T		47	44	66	60	71	44	26	52	45	44	53	53	S7	S8	SSW11	E10	9
29	T	T		55	55	70	66	74	51	33	85	50	51	58	55	SE12	SSE13	SSE17	SE9	13
30	.54			55	44	39	39	55	39	21	106	53	44	39	39	NE10	WNW15	NW20	NW18	16
31	T			39	37	47	50	54	37	14	120	38	35	40	44	NW13	WNW6	SW10	ESE15	11
RANTOUL, ILL., AFB																W -		T -		
Mar. 20	.06	8	-	22	18	27	29	29	18	0	0	19	17	24	28	W11	W12	W12	NNE3	10
21	.0	8	-	19	10	25	26	29	10	0	0	16	7	16	20	NW10	WNW7	W8	SW18	11
22	T	7	-	28	24	24	23	33	16	0	0	25	12	20	18	W27	NW17	NNW15	N8	17
23	.0	5	-	16	7	26	33	33	6	0	0	13	4	23	29	C	C	SSW16	W12	7
24	T	5	-	24	23	24	19	28	11	0	0	22	21	18	14	W8	W14	NW24	NNW12	14
25	.02	5	-	11	4	24	25	28	4	0	0	6	- 1	14	23	NNW5	W2	S8	S13	7
26	.0	4	-	27	21	30	33	35	20	0	0	24	17	25	31	W5	NW8	W5	SW5	6
27	.0	1	-	32	36	46	51	54	32	11	11	26	28	38	46	S10	S17	SSW19	S10	14
28	.0	T		51	37	57	57	60	36	16	27	38	36	51	55	WSW10	C	C	ENE7	4
29	.0			44	44	68	66	70	44	25	52	44	44	60	69	C	SSE8	S20	SSE13	10
30	.12			60	52	54	47	61	37	17	69	59	51	54	46	S20	SW10	S9	W10	12
31	T			37	34	39	42	43	34	6	75	36	32	36	37	N12	NNW9	Ne	E8	8
ROCKFORD, ILL., WBAS																W 33		T 5		
Mar. 20	T	8	1.7	22	23	30	26	31	16	0	0	18	20	18	23	C	NNW3	N12	NNW6	5
21	.0	6	1.6	16	11	30	29	38	10	0	0	6	4	17	22	NW4	NW3	W6	WSW28	10
22	.0	6	1.6	37	20	22	25	37	13	0	0	19	10	9	14	NNW22	NNW13	NNW16	NNW8	15
23	.0	5	1.5	13	12	27	28	30	10	0	0	9	9	17	24	S3	SSE4	WSW12	W10	7
24	.01	5	1.4	25	27	21	21	27	11	0	0	23	20	8	8	WNW12	WNW6	NNW11	NNW8	9
25	.09	5	1.4	11	5	22	20	23	5	0	0	5	1	11	16	SE2	SSE3	S12	SSE8	6
26	T	7	1.5	20	7	29	32	35	5	0	0	17	7	24	26	WNW6	S1	W10	SSW10	7
27	T	4	1.1	32	39	45	43	49	31	8	8	27	32	39	40	SSW10	SSW14	SW14	WSW11	12
28	T	1	-	39	36	39	35	39	34	5	13	39	36	36	35	WNW5	ENE10	ENE12	ESE10	9
29	.52	T		39	40	60	60	66	39	21	34	39	40	55	56	ESE10	SE4	S16	SE9	10
30	.99	T		57	48	48	38	57	37	15	49	54	47	47	36	W8	E10	NNE9	N8	9
31	.0			38	32	41	44	46	32	7	56	32	27	31	36	N7	NNE11	ESE3	ESE7	7
SPRINGFIELD, ILL., WBAS																W 49		T 6		
Mar. 20	T	8	2.3	21	16	29	30	33	16	0	0	18	14	25	24	WNW9	W8	WNW19	NW17	13
21	.0	8	2.3	22	10	27	30	32	7	0	0	13	7	15	17	NNW12	WNW6	W15	SW18	13
22	.0	7	2.3	32	28	29	27	35	15	0	0	25	16	17	17	W25	NNW19	N15	N7	16
23	.0	6	2.1	15	13	32	34	36	10	0	0	12	10	24	26	WSW2	SSW11	SSW14	WNW14	10
24	.0	6	2.0	21	18	25	22	30	11	0	0	18	16	16	10	W10	W11	N25	N11	14
25	T	6	1.8	11	11	24	28	29	7	0	0	5	7	15	22	NE6	SSW2	S19	SSW17	11
26	.0	6	2.2	29	25	33	38	38	23	0	0	25	21	27	29	NW7	NW5	W9	SSE8	7
27	.0	3	1.5	38	40	49	55	60	37	17	17	30	32	40	47	S20	SSW17	SSW19	SSW9	16
28	.0	T		47	43	63	68	71	43	25	42	43	43	57	58	SSW13	SW3	W4	SE10	8
29	1.50	0		60	56	69	72	75	54	33	75	53	53	60	61	S15	S16	S22	S17	18
30	1.16	0		55	54	45	43	56	41	17	92	53	52	42	40	SSW14	S4	W21	NW17	14
31	T	0		41	40	48	49	51	40	14	106	38	36	41	43	NNW19	NNW6	NW6	SSE12	11
VANDALIA, ILL., FAA																W 20		T 5		
Mar. 20	T	3	-	21	21	31	31	33	18	0	0	17	18	24	21	WNW7	WNW6	WNW18	NNW13	11
21	T	3	-	25	14	30	30	33	13	0	0	18	8	19	21	NW17	WNW14	WSW13	SW10	14
22	.0	3	-	30	32	31	27	35	12	0	0	19	32	18	19	SW12	NNW18	NNW15	N7	13
23	.0	3	-	12	9	35	37	40	7	0	0	9	6	24	29	C	C	SSW11	WSW4	4
24	.0	2	-	25	22	32	23	34	13	0	0	21	20	26	15	NW5	W5	NW21	N10	10
25	T	2	-	13	15	30	31	34	12	0	0	7	9	17	24	N5	NE4	S5	SSE6	5
26	.0	1	-	33	30	39	39	47	30	7	7	27	26	19	32	SW4	NW5	C	SE6	4
27	.0			35	35	62	63	71	34	21	28	30	29	47	50	SSE7	S7	SSW16	S12	10
28	.0			53	48	72	69	75	46	29	57	49	46	58	57	SSW6	SSW5	S7	S7	6
29	.10			57	54	70	71	77	53	32	89	52	52	60	60	SE8	S10	S15	SSE17	12
30	.72			55	53	46	42	56	40	16	105	54	52	44	40	NNW7	SSW8	W12	WNW18	11
31	T			41	40	47	48	49	40	13	118	39	38	40	43	NW15	NW10	C	SSE8	8

See footnotes at end of table.

TABLE 4.—Continued

Date	Precipitation 24-hour amounts (inches)	Snow on ground 6 p.m. (inches)	Water equivalent of snow on ground (inches)	Temperature (°F)								Dew Point (°F)				Wind direction and speed (knots)				
				Time				Max.	Min.	Degree days above 32(°F)		Time				Time				Avg.
				00	06	12	18			24-hr.	Accum.	00	06	12	18	00	06	12	18	
BURLINGTON, IOWA, WBAS															W 33			T 5		
Mar. 20	.0	10	2.6	23	17	29	26	32	14	0	0	18	14	23	14	NW10	NW12	NW18	NNW15	14
21	.0	9	2.5	15	5	29	32	34	4	0	0	9	0	14	24	NW8	NW4	WSW12	WSW18	10
22	.0	8	2.4	34	22	26	25	35	12	0	0	29	13	17	14	NW17	N20	NNW15	NNW12	16
23	.0	8	2.2	12	12	32	32	34	8	0	0	8	8	19	26	W2	SSW7	W19	NW12	8
24	T	7	2.0	23	25	21	20	27	8	0	0	20	19	8	11	WNW10	WNW10	NNW20	NW12	13
25	.07	6	1.8	12	10	21	27	27	5	0	0	4	5	13	19	N9	WSW5	S11	SW7	8
26	.0	6	1.8	27	15	36	38	42	11	0	0	22	12	26	28	W7	C	SW10	S9	6
27	.0	4	1.3	39	40	47	50	53	37	13	13	30	34	42	43	SSW14	SSW17	WSW17	SW1	12
28	.0	1	-	37	34	41	48	49	34	10	23	37	34	39	43	C	ENE7	E8	ESE10	6
29	.79	T		46	51	65	62	69	46	26	49	45	48	57	56	SE12	S10	SSE20	ESE8	12
30	.01			52	42	39	38	52	38	13	62	50	41	37	37	ENE8	NNW18	NNW23	NNW17	16
31	.0			38	35	47	49	53	35	12	74	35	33	39	40	NNW13	W4	S8	SE12	9
CEDAR RAPIDS, IOWA, FAA															W 20			T 5		
Mar. 20	.0	14	-	18	20	28	25	29	10	0	0	17	19	23	17	WNW10	WNW10	NW10	NW13	11
21	.0	14	-	10	2	25	34	34	1	0	0	8	2	18	30	WNW7	W5	S9	SW18	10
22	.0	13	-	32	17	21	22	32	9	0	0	28	11	14	18	NW22	NNW18	NNW10	WNW5	14
23	.0	13	-	12	4	27	30	33	3	0	0	11	4	23	27	C	S5	W15	W13	8
24	T	12	-	16	21	18	18	28	5	0	0	16	16	10	10	W8	NW20	NNW20	NW9	14
25	.18	11	-	6	4	15	19	20	- 1	0	0	2	2	15	17	NW5	C	S10	SSE5	5
26	.0	13	-	14	23	29	35	36	8	0	0	13	21	28	32	W4	S4	SW5	SSE5	4
27	T	11	-	35	41	44	40	45	32	7	7	31	39	41	39	SSE10	S12	S15	SW4	10
28	.0	6	-	32	29	34	34	37	29	1	8	32	29	34	34	NNW6	NE3	E10	E13	8
29	.17	1	-	36	39	44	44	50	34	10	18	36	38	44	44	ESE12	SSE6	SE4	ESE8	8
30	T	T		38	37	38	38	41	35	6	24	38	37	38	38	C	NNW12	NNW15	NW12	10
31	.0	T		35	32	42	44	48	30	7	31	34	32	37	40	NW6	NW7	SE6	ESE12	8
DES MOINES, IOWA, WBAS															W 69			T 20		
Mar. 20	.0	12	2.7	20	21	26	27	30	15	0	0	18	18	16	16	NNW10	WNW10	WNW12	NW11	11
21	.0	12	2.7	15	9	30	35	37	7	0	0	13	6	21	27	NW8	W6	SW12	WSW13	10
22	.0	11	2.7	34	17	20	24	34	15	0	0	31	10	10	18	NW13	NNW15	NNW9	WNW7	11
23	.0	11	2.8	15	16	30	32	34	12	0	0	13	12	25	26	S6	S8	NW14	NW14	10
24	.01	10	3.0	24	21	18	19	27	12	0	0	20	17	4	8	W8	N17	NW15	NW9	12
25	.05	10	3.0	13	16	20	29	30	12	0	0	7	13	12	22	NW4	SSE15	S15	WSW6	10
26	.0	10	3.0	26	20	38	40	45	19	0	0	23	20	28	31	WNW5	W4	S6	SSE12	7
27	.0	6	2.6	40	45	44	46	51	36	12	12	34	39	40	42	S15	SSW15	SW18	WSW8	14
28	.0	3	1.5	36	30	39	42	44	29	5	17	36	30	37	39	C	C	ESE10	ESE12	6
29	.12	1	-	42	46	59	52	60	37	17	34	42	44	53	52	ESE8	ESE6	SSE9	C	6
30	T	T		40	36	37	38	41	34	6	40	40	34	33	33	NW18	NNW18	NNW18	NNW15	17
31	T			35	33	45	49	53	30	10	50	29	30	35	41	NNW8	SE4	SE11	E15	10
DUBUQUE, IOWA, WBAS															W 31			T 5		
Mar. 20	.12	18	3.5	25	24	29	27	33	17	0	0		22	18	11		N10	N8	N10	
21	.0	17	3.5	17	4	27	30	36	2	0	0		- 3	16	24		SSW7	SW22	SW35	
22	.0	14	3.2	30	19	27	22	30	11	0	0		6	7	12		N13	N13	WNW8	
23	.0	13	3.2	11	11	25	29	33	4	0	0		8	17	21		SSW13	WSW20	WNW13	
24	.0	13	3.2	24	19	21	19	26	8	0	0		10	11	4		NNW21	NNW20	NW15	
25	.06	13	3.1	9	4	16	18	18	4	0	0		- 1	10	13		SSW5	S13	S12	
26	.0	14	3.2	13	16	30	33	35	11	0	0		14	24	28		SW11	SW10	SSW18	
27	T	10	3.0	31	38	43	39	45	31	6	6		33	37	37		SSW23	SW20	SW16	
28	T	6	2.9	37	34	36	35	40	32	4	10		33	36	34		NE6	E9	E9	
29	.65	4	1.5	40	40	48	53	55	35	13	23		38	45	51		S17	S9	NW9	
30	T	1	-	44	44	39	38	45	35	8	31		44	37	33		N12	N18	N16	
31	.0	T			31	41	38	43	30	5	36		26	32	35		NNE4	WSW5	SSE7	
LAMONI, IOWA, FAA															W 26			T 5		
Mar. 20	.0	15	-	17	16	26	25	30	12	0	0	15	14	20	15	NW8	NNW10	NNW15	NNW12	11
21	.0	14	-	12	7	29	33	35	6	0	0	8	4	18	24	NW7	WNW6	SSW18	WSW18	12
22	.0	12	-	33	18	22	23	34	11	0	0	31	12	14	17	NW16	N18	N14	N6	14
23	.0	11	-	12	13	30	32	33	9	0	0	8	10	24	26	SSE6	S10	WNW12	NW14	10
24	.0	11	-	20	19	19	18	25	7	0	0	18	17	9	8	NNW8	NW12	NNE18	NW6	8
25	.0	10	-	9	14	22	30	32	9	0	0	7	10	14	24	NNE4	SSE14	S15	WSW10	11
26	.0	9	-	32	18	38	36	39	15	0	0	27	16	30	30	NW8	SSW5	S11	SSE12	9
27	.0	8	-	37	39	43	49	51	37	12	12	32	37	40	42	S16	SSW16	SSW15	W5	13
28	.0	5	-	40	34	48	52	54	33	12	24	40	34	44	48	NE6	ESE9	SE10	SE12	9
29	.45	2	-	49	46	50	50	58	37	16	40	43	46	50	49	SSE12	SE15	SE10	NW10	12
30	.05			39	35	37	38	41	33	5	45	38	34	32	33	NNW15	NNW19	NNW15	NW15	16
31	.0			33	31	47	53	58	30	12	57	30	29	41	42	NNE6	SE6	SSE15	ESE17	11
MASON CITY, IOWA, FAA															W 46			T 5		
Mar. 20	T	6	-	22	15	27	25	30	8	0	0	17	11	15	13	NW14	NW15	NNW14	NNW18	15
21	.0	5	-	8	8	30	37	37	6	0	0	4	4	23	32	WNW10	WSW6	WSW18	WSW20	11
22	.0	4	-	26	13	20	23	26	9	0	0	14	5	12	14	NNW22	NNW18	NNW17	NNW8	16
23	.0	3	-	11	18	32	32	34	9	0	0	6	13	25	23	SSW7	SSE11	NW22	NW15	14
24	T	3	-	27	12	18	19	29	6	0	0	21	3	7	7	WNW15	NNW20	N18	NW12	16
25	.01	3	-	6	13	17	22	24	6	0	0	- 1	7	12	18	WNW6	S11	S12	SW6	9
26	.0	3	-	21	23	35	36	37	21	0	0	18	21	31	31	W8	WSW12	SSW8	S14	10
27	.0	2	-	37	42	46	47	50	36	11	11	31	35	39	41	S20	SW22	SW15	W10	17
28	T			36	33	38	37	39	31	3	14	33	30	35	35	NNW11	WNW6	WSW16	SE16	12
29	T			39	40	47	48	51	39	13	27	39	40	46	45	SW17	SSE15	SSE14	SW6	13
30	.0			41	35	39	38	41	30	4	31	40	33	33	31	NNW22	NNW24	N24	N11	20
31	.0			30	28	41	43	48	25	5	36	27	25	34	38	NNW9	E10	WSW10	ESE10	10

See footnotes at end of table.

TABLE 4.—Continued

Date	Precipitation 24-hour amounts (inches)	Snow on ground 6 p.m. (inches)	Water equivalent of snow on ground (inches)	Temperature (°F)								Dew Point (°F)				Wind direction and speed (knots)				
				Time				Max.	Min.	Degree days above 32(°F)		Time				Time				Avg.
				00	06	12	18			24-hr.	Accum.	00	06	12	18	00	06	12	18	
									OTTUMWA, IOWA, FAA							W 61		T 5		
Mar. 20	.0	21	-	22	19	27	23	29	14	0	0	20	17	21	16	WNW14	WNW15	NW18	NW17	16
21	.0	20	-	14	9	31	35	36	9	0	0	8	6	19	25	NW11	WNW9	SW18	SW15	13
22	.0	19	-	34	17	21	20	34	13	0	0	32	13	15	15	WNW18	NNW17	NW19	NNW9	16
23	.0	18	-	13	12	31	32	33	10	0	0	10	10	23	26	SW5	S13	WNW13	WNW14	11
24	.0	17	-	24	25	19	17	25	6	0	0	21	22	13	11	W12	NW30	NNW16	NW12	18
25	T	16	-	9	13	23	28	28	7	0	0	6	10	15	22	N8	S9	S16	SW10	11
26	.0	15	-	24	18	39	38	42	15	0	0	20	18	29	31	WNW11	SW5	S7	SSE15	9
27	.0	13	-	37	45	46	49	52	37	13	13	30	40	41	43	S21	SW18	SSW20	WSW11	18
28	.0	6	-	40	32	39	37	43	31	5	18	40	31	35	35	WNW7	NE9	E12	ENE10	9
29	.14	3	-	43	48	57	55	58	40	17	35	42	46	53	52	ESE11	SSE17	SE8	E9	11
30	.10	1	-	40	37	36	38	40	35	6	41	39	37	35	35	W12	NW20	NW20	NW13	16
31	T		-	36	34	48	50	54	34	12	53	33	31	24	42	WNW8	W5	SE11	ESE15	10
									SIOUX CITY, IOWA, WBAS							W 24		T 19		
Mar. 20	.0	17	3.9	21	12	24	27	30	11	0	0	18	11	19	18	N6	NNW8	NW10	NNW10	8
21	T	17	3.5	13	6	36	36	37	2	0	0	12	5	34	35	W4	SE8	SW15	SW6	8
22	.0	14	3.3	28	13	19	22	28	12	0	0	19	8	10	16	N15	N10	N10	SW4	10
23	.0	13	3.3	14	20	32	32	34	14	0	0	11	16	28	28	SSE10	C	NNW18	NW9	9
24	T	11	3.2	25	18	17	18	29	14	0	0	23	7	7	9	W9	N20	N10	SE5	11
25	.10	12	3.3	16	17	26	34	37	15	0	0	10	13	24	30	SSE8	SSE13	SW18	NW9	12
26	.0	11	3.0	22	18	34	36	43	17	0	0	21	17	32	35	W2	SE6	SE12	SE14	8
27	.0	8	2.6	41	42	43	42	46	32	7	7	39	38	38	37	SSE10	SSW14	SW8	WNW6	10
28	.0	5	2.0	33	32	38	41	44	31	6	13	31	32	38	41	NE5	ESE10	SE10	ESE12	9
29	.40	2	1.9	44	40	37	36	44	36	8	21	43	40	37	36	SE13	ESE7	WNW16	NW23	15
30	.0	T		36	34	35	37	39	33	4	25	34	30	32	33	NNW17	NNW16	NW15	SE5	13
31	.01	T		33	30	34	41	42	30	4	29	31	29	32	38	SE10	SSE14	SE10	ENE7	10
									SPENCER, IOWA, WB							W 33		T 5		
Mar. 20	.0			22	15	26	28	30	6	0	0	20	9	18	20	NNW9	NNW9	NNW12	WNW10	10
21	.0	6	1.1	6	4	32	37	38	0	0	0	2	0	27	32	W4	SW5	SW18	W15	10
22	.0			22	10	17	25	26	8	0	0	20	5	11	15	N26	NNW21	NNW13	C	15
23	.0			16	19	31	33	34	14	0	0	13	14	24	25	S9	WSW11	NNW24	WNW10	14
24	.0			25	11	16	18	25	7	0	0	22	7	10	10	W12	WNW21	NNW18	NNW6	14
25	.05	4	-	13	15	19	31	31	11	0	0	4	11	14	26	S5	S7	SW15	WNW9	9
26	.0			23	23	39	38	43	20	0	0	21	22	31	31	W8	W9	SSE8	SSE10	9
27	.0			38	39	47	45	52	32	10	10	36	37	43	42	S12	SSW17	WSW10	N11	12
28	.0			33	31	45	39	46	30	6	16	31	29	41	37	NNE13	ENE5	SE23	ESE17	14
29	.38			40	41	48	41	49	34	10	26	39	40	47	40	SE19	SE9	SSE3	NNW18	12
30	T			35	32	34	32	35	30	1	27	33	30	30	28	NNW26	NNW19	N20	N7	18
31	.0			31	31	40	42	44	30	5	32	28	29	35	37	ESE6	SSE6	ESE13	E15	10
									WATERLOO, IOWA, WBAS							W 20		T 35		
Mar. 20	T	9	1.9	17	17	29	24	30	9	0	0	14	15	15	16	WNW5	WNW9	N15	NW13	10
21	.0	7	1.9	9	3	27	35	37	3	0	0	7	3	21	32	C	C	SSW15	WSW20	9
22	.0	6	1.9	30	14	20	22	30	11	0	0	26	7	13	15	NW18	NNW17	NNW17	NW5	14
23	.0	5	1.8	13	15	30	34	35	7	0	0	10	12	24	24	S3	S3	NW12	WNW7	6
24	.0	5	1.7	27	15	19	19	28	5	0	0	21	11	9	8	W10	NNW23	NNW19	NW8	15
25	.03	5	1.6	6	12	18	22	24	3	0	0	0	6	12	15	C	C	SSE16	SSW3	4
26	.0	5	1.6	21	26	30	37	39	17	0	0	20	23	23	30	C	WSW8	C	SSE10	4
27	.0	3	.6	39	44	46	40	47	34	9	9	32	39	38	36	S10	SW18	SW12	W12	13
28	.0	1	-	34	30	36	33	36	29	1	10	34	30	35	33	C	ESE4	ESE15	ESE12	8
29	.69	T		36	40	48	40	51	36	12	22	36	40	47	40	SE15	SE7	SE5	NNE4	8
30	T			42	42	41	39	44	34	7	29	42	38	38	33	NW13	NNW19	NNW21	N14	17
31	.0			34	28	46	43	50	27	7	36	31	26	41	38	NW6	C	S10	ESE12	7
									CHANUTE, KANSAS, FAA							W 51		T 5		
Mar. 20	T			28	29	37	36	44	27	4	5	24	25	28	25	NW9	C	NNW8	NNW9	6
21	.0			28	22	41	51	52	21	5	10	21	20	25	36	NNE10	NNE4	SSW10	SSW14	10
22	.0			39	35	41	36	43	25	2	12	33	33	29	26	SSW10	N16	NNE18	NNE14	14
23	.0			25	23	48	41	59	22	9	21	20	21	32	31	NE10	C	SW10	NW15	9
24	.0			34	28	45	37	47	25	4	25	29	26	31	23	N10	NNE10	NNE15	NNE20	14
25	.0			25	32	46	56	60	21	9	34	17	15	31	44	ENE15	NE11	SSW17	W9	13
26	.0			39	34	61	65	68	33	19	53	37	33	46	48	NNE4	ENE7	SSE12	S15	9
27	.0			53	53	64	70	72	49	29	82	45	49	54	51	S16	SSW20	SSW20	S18	18
28	.0			55	50	74	75	80	48	32	114	50	48	55	50	SSE9	SSE14	SSE22	SSE20	16
29	.24			61	59	74	53	76	42	27	141	52	55	47	51	SSE16	SSE17	SSW25	WNW20	18
30	T			42	41	50	59	61	39	18	159	37	37	41	39	NW25	NW16	NW18	NNW8	17
31	.17			44	39	73	74	79	38	27	186	38	36	36	44	ESE10	ESE14	SE25	SE17	16
									CONCORDIA, KANSAS, WBO							W 58		T 51		
Mar. 20	T	15	-	31	30	35	34	37	26	0	0	24	25	23	23	NW2	E5	NE7	N7	5
21	.0	13	-	27	22	33	37	38	21	0	0	21	17	29	34	E2	SW6	SW12	SW8	7
22	.0	11	-	37	32	24	31	36	21	0	0	31	21	16	15	W4	NE9	N11	N5	7
23	.0	10	-	22	22	34	35	40	20	0	0	13	17	28	29	S5	S4	N10	N10	7
24	.0	7	-	30	25	30	27	32	18	0	0	27	3	18	14	NW3	NW5	NE13	E7	7
25	.0	6	-	18	18	30	42	43	16	0	0	9	12	25	32	SE5	SE8	SW9	NW4	6
26	.0	4	-	34	29	42	59	59	29	12	12	30	29	41	46	C	SE7	SE9	S13	7
27	.0	T		51	45	58	72	72	43	26	38	44	40	51	54	SW17	S8	SW13	S8	12
28	.01	T		51	42	59	75	75	42	27	65	48	44	53	54	E4	SE5	SE13	S17	10
29	.01			62	55	58	48	60	43	20	85	52	50	47	37	SE9	SW6	NW20	NW24	15
30	.0			43	39	46	63	63	35	17	102	34	29	32	34	NW17	NW10	NW11	W2	10
31	.17			48	39	59	74	75	39	25	127	40	34	40	48	SE9	E7	SE18	SE13	9

See footnotes at end of table.

TABLE 4.—Continued

Date	Precipitation 24-hour amounts (inches)	Snow on ground 6 p.m. (inches)	Water equivalent of snow on ground (inches)	Temperature (°F) Time 00	06	12	18	Max.	Min.	Degree days above 32(°F) 24-hr.	Accum.	Dew Point (°F) Time 00	06	12	18	Wind direction and speed (knots) Time 00	06	12	18	Avg.
DODGE CITY, KANSAS, WBAS																W 58		T 6		
Mar. 20	.0	T		35	36	49	41	52	30	9	19	31	31	40	38	SSW10	WSW18	N15	NE15	14
21	.0	T		30	31	40	66	66	28	15	34	29	31	37	42	ESE9	SW9	SSW22	S12	13
22	.0			48	34	38	40	48	29	7	41	37	33	28	26	S15	NNE25	NNE20	NE11	18
23	.0			29	31	50	35	52	29	9	50	26	25	39	31	SSE9	SSW16	NNE18	NNE22	16
24	.0			29	28	42	43	47	27	5	55	26	26	25	28	NNE13	NNE10	ENE15	E15	13
25	.0			31	28	53	65	68	27	16	71	28	26	40	39	ESE14	S10	SSW17	N5	12
26	.0			46	43	66	72	76	41	27	98	42	39	40	35	SE12	SW9	S22	S18	15
27	.0			49	45	67	82	82	44	31	129	45	43	44	39	SSW17	S17	S16	SE12	16
28	.02			56	51	72	73	83	50	35	164	49	40	41	44	SSE12	SSW10	S19	SSE18	15
29	.22			54	51	43	53	55	41	16	180	49	42	42	33	SSE18	NW22	NW39	NNW22	25
30	.0			41	36	60	67	70	35	21	201	32	28	29	30	NW15	W15	SW10	SSW14	14
31	.43			50	47	66	69	80	42	29	230	36	32	37	39	SSE17	SSE16	S16	NW23	18
EMPORIA, KANSAS, FAA																W 45		T 5		
Mar. 20	T	9	-	25	28	37	32	38	23	0	0	21	25	23	21	W3	WNW5	C	NNW7	4
21	.0	4	-	25	19	35	40	43	18	0	0	16	13	24	33	N6	W5	SW12	SW8	8
22	.0	2	-	41	32	29	29	42	20	0	0	34	29	22	19	WSW6	NNE17	NNE20	N9	13
23	.0	1	-	20	18	46	35	46	17	0	0	15	14	32	29	ENE5	C	WSW8	NNE14	7
24	.0	T		30	27	36	30	37	22	0	0	26	24	32	18	N8	NNW5	NE15	NNE14	10
25	.0	T		22	22	44	53	56	21	7	7	14	14	28	40	NE8	ESE10	SSW11	W12	10
26	.0	T		36	32	60	64	67	32	18	25	34	30	48	44	SSW5	ESE6	SSW16	S16	11
27	.0	0		49	48	66	71	75	45	28	53	42	43	45	49	SSW12	SSW10	SSW15	SSW17	14
28	.0			52	50	73	74	78	49	32	85	48	49	52	49	S12	SE14	S19	SSE15	15
29	.66			63	59	69	45	73	41	25	110	49	52	54	43	SE20	S20	S12	NNW20	18
30	T			41	39	49	57	60	38	17	127	35	35	41	34	NNW25	NW16	NW16	NNW7	16
31	.44			41	36	70	74	75	36	24	151	39	34	42	48	SE8	ESE10	SE28	SSE25	18
GARDEN CITY, KANSAS, FAA																W 69		T 5		
Mar. 20	.0	0		34	35	54	51	44	32	13	27	29	34	39	41	SW10	W15	N10	NE16	13
21	.0			30	33	54	69	59	29	19	46	30	33	45	42	E11	SE10	SSW18	SSW8	12
22	.0			46	35	41	51	69	31	9	55	38	35	30	34	SE10	NE20	NE15	ENE8	14
23	.0			52	30	49	36	48	30	8	63	29	26	39	33	SSW8	SW12	NE22	NE12	14
24	.0			31	28	45	46	51	28	7	70	28	27	29	27	NE9	NE10	E10	ESE15	11
25	.0			31	31	58	66	48	29	17	87	29	31	39	41	SE11	S13	SSW16	NE12	13
26	.0			45	39	70	72	68	36	26	113	43	35	34	33	ESE10	SSW8	SSW20	S15	13
27	.0			50	45	66	78	76	43	30	143	44	44	40	35	S10	SSW15	ENE5	C	8
28	.0			55	47	74	69	78	44	32	175	46	37	34	36	S10	SE12	SSW15	S12	12
29	.20			55	47	42	58	83	43	19	194	46	41	41	28	S10	WNW20	NNW30	N20	20
30	.0			40	35	63	70	59	31	21	215	29	27	22	29	NW18	NNW14	SW12	SSW12	14
31	T			52	45	68	59	72	38	27	242	36	34	38	41	S15	S8	ESE7	NNW40	18
GOODLAND, KANSAS, WBAS																W 31		T 5		
Mar. 20	T	T		39	36	47	50	52	35	12	25	32	31	37	39	W13	NW12	NNW9	NE8	10
21	T	T		35	36	60	61	69	34	20	45	35	36	43	48	SSW6	SW14	SW9	NW7	9
22	.0	T		41	32	37	50	51	31	9	54	37	32	29	35	W8	NE15	E4	SSW10	9
23	.0			37	38	45	48	51	31	9	63	36	31	37	33	WSW16	WNW10	NNE10	ESE12	12
24	.0			32	32	44	37	48	28	6	69	30	30	22	33	SSW7	NE7	ESE14	SE17	11
25	.0			32	32	56	64	66	30	16	85	31	30	37	34	S18	SW11	NE10	SE6	11
26	.0			44	40	71	74	77	40	27	112	38	37	34	33	S13	WSW11	S14	SW12	12
27	.0			54	44	74	73	78	43	29	141	35	35	31	35	SW18	WNW9	NNE11	SE10	12
28	T			48	40	70	75	77	36	25	166	42	39	29	24	SSE6	WNW7	WSW14	SW15	13
29	.03			52	47	49	54	57	33	13	179	40	33	30	18	N15	NNW30	NNW40	N30	29
30	.0			35	33	63	69	71	30	19	198	24	25	23	19	WNW8	W11	SW19	SSW11	12
31	.05			50	41	56	49	57	36	15	213	29	30	34	41	S18	WNW8	NNE13	N30	17
HILL CITY, KANSAS, FAA																W 24		T 5		
Mar. 20	.0	5	-	33	33	38	32	43	25	2	10	29	29	32	27	C	WSW6	N10	ENE5	5
21	.0	4	-	25	30	39	58	59	24	10	20	24	29	37	47	C	SSW6	SSW11	SSW4	5
22	.0	1	-	41	32	35	33	46	27	5	25	37	29	23	22	C	NNE17	NNE14	ESE8	10
23	.0			27	34	36	37	41	27	2	27	21	30	34	30	S8	WNW9	N14	ENE10	8
24	.0			28	30	31	29	38	24	0	27	25	27	28	22	C	C	ENE15	E13	7
25	T			27	30	53	57	61	26	12	39	23	27	39	37	SSE13	SSE10	W8	ENE10	10
26	.0			39	31	71	74	79	30	23	62	33	28	39	39	C	C	SW15	SSW21	9
27	.0			54	52	70	74	77	45	29	91	41	43	48	49	SW10	C	WSW4	SSE9	6
28	T			52	44	68	72	85	43	32	123	47	44	47	42	ENE8	E10	S14	S19	13
29	T			57	46	48	55	58	40	17	140	46	42	37	31	S18	WNW12	NNW35	NNW20	21
30	.0			42	35	60	68	72	32	20	160	30	27	43	31	NW12	WNW7	WSW8	S10	9
31	2.12			51	48	61	64	71	39	23	183	34	35	37	44	SSE11	SSE11	SE15	WNW25	16
RUSSELL, KANSAS, FAA																W 29		T 5		
Mar. 20	.0	12	-	30	29	34	33	34	25	0	0	27	27	29	29	SW8	SSW9	E10	NE7	8
21	.0	10	-	24	18	35	42	42	17	0	0	24	18	33	38	C	SSW4	SW19	SSW12	9
22	.0	7	-	39	31	29	31	39	21	0	0	35	30	25	22	SW10	NE20	NE15	E4	12
23	.0	6	-	21	28	35	34	37	21	0	0	18	25	31	31	SSW8	SW15	NE14	NE10	12
24	.0	4	-	31	25	32	28	35	20	0	0	29	24	30	22	NE6	C	ENE15	NE10	8
25	.0	3	-	20	20	44	48	56	19	6	6	17	17	38	41	SE8	SSE8	WSW9	NE7	8
26	.0	2	-	37	34	62	67	71	33	22	28	35	33	50	50	SSE6	ESE8	SW13	SW15	10
27	.0			52	47	63	71	76	45	29	57	46	45	53	55	SSW18	SSW15	SW15	S10	14
28	.19			57	51	70	68	78	51	33	90	49	50	52	44	SSE16	S12	SSW15	SW16	15
29	.07			56	51	50	45	56	41	17	107	53	49	44	43	SSE16	WSW10	N25	N22	18
30				41	34	57	61	65	33	17	124	37	31	32	43	NW15	NW10	NW10	S8	11
31	T			50	44	64	71	74	42	26	150	40	37	43	51	S13	S16	SSE15	SSE18	16

See footnotes at end of table.

TABLE 4.—Continued

Date	Precipitation 24-hour amounts (inches)	Snow on ground 6 p.m. (inches)	Water equivalent of snow on ground (inches)	Temperature (°F)								Dew Point (°F)				Wind direction and speed (knots)				
				Time				Max.	Min.	Degree days above 32(°F)		Time				Time				Avg.
				00	06	12	18			24-hr.	Accum.	00	06	12	18	00	06	12	18	
									SALINA, KANSAS, FAA							W 23		T 5		
Mar. 20	T	8	-	29	30	35	35	39	24	0	0	25	27	27	27	SSW8	ESE6	ESE10	NNE7	8
21	.0	6	-	24	18	34	38	41	16	0	0	21	18	27	33	C	S7	S15	SE6	7
22	.0	2	-	37	31	30	32	37	19	0	0	34	29	20	22	SSW14	NNE12	N15	NNE7	12
23	.0	2	-	19	20	38	35	41	16	0	0	16	16	30	30	SE7	SSE10	NNW9	N12	10
24	.0	2	-	31	26	38	29	39	19	0	0	28	25	30	18	WNW4	N4	NNE15	NE15	10
25	.0	1	-	19	23	37	52	54	18	4	4	16	18	30	42	ENE6	ESE5	S15	NNE8	8
26	.0	1	-	33	33	58	63	67	31	17	21	31	31	49	50	SSE5	ENE7	SSE18	S18	12
27	.0			52	47	65	71	74	45	28	49	47	45	53	54	S20	S15	SSW20	S12	17
28	.03			57	51	69	73	80	51	34	83	52	50	54	52	SSE12	SSE10	SSE22	SSE22	16
29	.18			58	55	57	48	60	44	20	.03	53	52	55	42	SSE10	SSE15	WNW11	NW21	14
30	.0			44	37	53	63	65	35	18	121	38	32	38	39	WNW14	WNW13	WNW10	C	9
31	.25			47	43	69	74	78	42	28	149	37	34	41	52	ESE11	ESE10	SE18	SE15	13
									TOPEKA, KANSAS, WBAS							W 72		T 5		
Mar. 20	.0	8	2.2	25	25	34	33	37	21	0	0	21	20	19	18	W8	W5	NW9	NNW10	8
21	.0	7	2.1	23	13	33	40	40	12	0	0	17	10	21	28	NW5	WSW5	S12	SSW10	8
22	.0	5	1.9	29	33	27	29	34	17	0	0	26	28	18	19	C	N20	N15	N8	11
23	.0	4	1.5	18	12	35	36	39	12	0	0	13	9	22	28	SSE4	C	W12	N12	7
24	.0	2	0.5	30	29	33	26	35	18	0	0	27	26	25	14	W6	WSW6	N17	NNE14	11
25	.0	1	-	20	20	30	44	45	18	0	0	10	11	21	30	ENE8	ESE9	SSE12	W8	9
26	.0	T		31	24	48	62	65	24	13	13	28	23	38	46	SW6	C	S14	S13	8
27	.0			52	47	63	72	75	45	28	41	42	44	49	52	S10	SSW20	SSW16	S14	15
28	.0			55	50	72	74	77	48	31	72	48	47	55	51	S4	ESE9	S21	SSE25	15
29	.42			64	60	66	44	68	41	23	95	48	50	54	41	SSE22	S23	SSW6	NW24	19
30	.03			41	39	43	51	54	36	13	108	35	34	34	38	NW24	NW18	WNW17	NW8	17
31	.05			36	34	60	71	73	33	21	129	34	32	43	41	E6	E11	ESE21	ESE21	16
									WICHITA, KANSAS, WBAS							W 32		T 5		
Mar. 20	T	T		31	32	40	41	47	30	7	15	26	27	25	28	WSW2	SSW3	SSE8	NNE13	6
21	.0			30	27	39	53	54	27	9	24	23	19	21	40	NE3	C	SSW11	SSW10	6
22	.0			46	39	39	37	46	27	5	29	37	35	26	23	SSW10	NNE18	N18	NNE14	15
23	.0			27	25	49	43	55	24	8	37	23	21	34	32	ESE4	SSW4	WSW5	NNE17	8
24	.0			33	30	46	40	49	27	6	43	28	26	24	26	NNE14	N3	NE15	ENE15	12
25	.0			27	26	42	58	60	25	11	54	19	19	31	40	ENE9	ESE6	SSW14	SW4	8
26	.0			44	36	54	63	64	36	18	72	40	36	47	44	SSW7	ESE6	SSW13	S17	11
27	.0			51	49	63	69	73	48	29	101	46	46	51	51	SSW16	SSW15	S17	S18	16
28	.04			57	55	72	76	81	53	35	136	50	50	51	49	S11	SSE17	S23	S24	19
29	.09			59	57	64	49	65	46	24	160	53	55	54	44	SSW7	SSE14	WNW17	NNW27	16
30	.0			46	39	56	67	68	38	21	181	39	32	26	31	NNW21	NNW15	NW17	NW5	14
31	.24			48	47	71	77	81	42	30	211	36	36	39	45	SSE8	SE11	S28	W8	14
									ALEXANDRIA, MINN., FAA							W 28		T 5		
Mar. 20	.0	6	-	15	6	27	23	30	4	0	0	13	3	12	14	NNW7	NNW4	NNW13	WNW9	8
21	.0	5	-	8	18	34	28	36	6	0	0	5	12	30	19	SW8	SW17	NW18	NW27	18
22	.0	5	-	8	0	15	20	26	- 1	0	0	1	- 6	8	13	NNW20	NNW14	NW5	S10	12
23	T	5	-	18	20	25	31	33	7	0	0	13	15	17	29	S13	WNW13	NNW24	WNW23	18
24	.0	5	-	8	0	12	15	18	0	0	0	1	- 5	2	- 1	NNW23	NNW15	NNW12	NNW8	14
25	.12	5	-	10	13	20	26	30	10	0	0	5	8	15	21	S8	SSE13	SSW12	SW9	10
26	.0	5	-	28	19	38	39	40	16	0	0	24	17	31	30	NW14	C	SSE14	SSE17	11
27	.0	3	-	34	33	42	35	43	24	2	2	32	32	34	30	SSW15	WNW4	NNW16	NNW16	13
28	T	1	-	27	26	38	36	42	25	2	4	24	23	34	35	NNE8	E11	ESE18	ESE19	14
29	.11	T		39	38	41	37	43	32	6	10	39	38	41	37	SE17	SSE4	NNW8	NNW17	12
30		T		32	29	32	36	37	26	0	10	32	26	27	28	NNW16	N16	NNW12	NNW4	12
31	T	T		28	28	36	37	41	26	2	12	27	25	26	31	ESE4	ESE16	ESE15	ESE14	12
									MINNEAPOLIS, MINN., WBAS							W 21		T 43		
Mar. 20	.0	1		25	21	29	28	30	17	0	0	19	12	13	9	NW8	NNW7	NNW12	NNW13	10
21	.0	T		19	17	34	38	41	16	0	0	11	13	27	33	S3	SW8	SW17	WNW20	12
22	.0	T		21	12	20	25	27	11	0	0	8	1	7	10	N8	NNW16	NNW8	W3	9
23	T	T		22	22	31	32	35	22	0	0	14	16	21	21	S6	SW13	NW20	W15	14
24	.0	T		24	9	18	19	24	9	0	0	12	2	2	2	NW21	NNW13	NNW15	NW9	14
25	.07	T		13	15	21	22	23	12	0	0	3	6	12	16	SW4	SSE6	S12	SW5	7
26	T	1		23	18	36	41	43	15	0	0	19	17	26	33	S5	C	SSW10	S10	6
27	.0	T		39	40	53	50	58	34	14	14	36	38	43	39	SSW14	NW9	NW8	NNW7	10
28	.0	0		34	31	48	50	53	30	10	24	31	29	40	41	N4	E3	SE15	SE12	8
29	.41	0		41	44	58	51	59	41	18	42	38	42	52	48	SE18	SSE9	S10	NW8	11
30	.01	0		42	36	40	45	49	33	9	51	36	30	28	26	N14	N12	N17	N8	13
31	.0	0		34	28	34	40	42	27	3	54	24	19	25	28	E7	E12	E7	ESE10	9
									REDWOOD FALLS, MINN., FAA							W 26		T 5		
Mar. 20	.0	7	-	30	29	36	30	28	8	0	0	25	22	19	30	WNW11	WNW8	WNW15	NNW10	11
21	.0	7	-	25	17	32	38	39	5	0	0	14	10	15	18	NNW16	NW4	WSW10	WSW8	10
22	.0	4	-	32	33	37	36	24	6	0	0	28	28	20	19	SW15	NNW15	N14	N8	13
23	.0	4	-	23	18	50	50	31	16	0	0	18	16	26	22	NE2	S5	SW10	WNW8	6
24	.0	3	-	32	31	45	33	19	5	0	0	26	26	27	14	NNW9	NNW10	NNW15	N14	12
25	T	3	-	22	20	36	40	30	12	0	0	12	10	18	20	NNE6	ENE8	S10	S10	8
26	.0	3	-	38	32	49	57	42	19	0	0	23	27	29	28	SSW11	NW8	NNE5	ESE7	8
27	.0	2	-	44	40	69	69	45	29	5	5	33	29	48	51	SSE10	S8	SSW14	SSW12	11
28	T	1	-	55	51	71	70	52	26	7	12	50	51	55	54	S8	SSW8	S11	S15	10
29	.11	T		59	58	71	70	48	33	9	21	53	56	59	58	S12	SSE10	S15	SSE15	13
30	.0	T		50	50	43	42	35	28	0	21	50	48	40	38	S9	WNW16	W15	WNW15	14
31	T	T		43	41	48	58	45	26	4	25	39	39	42	45	NW12	NNW6	SSE8	ESE13	10

See footnotes at end of table.

TABLE 4.—Continued

Date	Precipitation 24-hour amounts (inches)	Snow on ground 6 p.m. (inches)	Water equivalent of snow on ground (inches)	Temperature (°F)								Dew Point (°F)				Wind direction and speed (knots)				
				Time				Max.	Min.	Degree days above 32(°F)		Time				Time				Avg.
				00	06	12	18			24-hr.	Accum.	00	06	12	18	00	06	12	18	
ROCHESTER, MINN., WBAS																W 63		T 4		
Mar. 20	T	4	0.7	23	22	26	25	29	11	0	0	19	15	13	10	NW8	NW11	NNW14	NNW15	12
21	.0	4	0.7	12	12	31	38	39	8	0	0	8	8	21	32	W4	SW6	SW15	W17	10
22	.0	1		24	13	19	24	26	12	0	0	12	4	9	11	NNW20	NNW17	NNW16	NNW7	15
23	T	1		15	20	29	30	33	13	0	0	12	14	22	20	SSE6	SSW10	WNW16	WNW15	12
24	T	1		30	11	17	19	30	10	0	0	22	3	3	9	NW28	NNW17	NNW19	NW12	19
25	.04	1		10	12	17	19	19	8	0	0	4	7	13	13	SW2	S7	S20	SW6	9
26	.0	2	0.2	16	25	37	36	40	16	0	0	13	22	26	31	S3	WSW8	SE5	S12	7
27	.0	T		37	41	49	53	55	37	14	14	32	36	41	45	SSW20	SW10	SW12	W4	12
28	.0			37	28	47	48	53	27	13	27	35	27	41	40	NW3	C	SSE17	SE17	9
29	.16			39	45	56	51	62	39	19	46	38	43	52	49	SE15	SSE10	SSW18	S6	12
30	T			43	37	38	39	43	29	4	50	41	36	33	29	NNW18	NW15	N16	N12	15
31	.0			30	24	32	39	41	23	0	50	24	20	27	30	NE6	ENE6	SE12	ESE11	9
ST. CLOUD, MINN., WBAS																W 36		T 6		
Mar. 20	.0	3	1.4	19	11	26	27	30	11	0	0		8	10	11		WNW7	NW14	NW8	
21	.0	2	1.1	14	20	34	35	38	12	0	0		12	27	20		SSW10	W15	WNW22	
22	.0	1		15	7	16	23	26	5	0	0		- 3	4	7		NW15	NNW8	C	
23	.02	1		18	20	28	30	32	14	0	0		14	18	24		WSW11	WNW18	W15	
24	.0	1		14	5	13	16	19	3	0	0		- 4	- 5	2		WNW16	NW11	W9	
25	.06	1		11	13	20	22	28	9	0	0		6	13	15		SSE7	S10	SW9	
26	.0	1		28	21	36	39	41	15	0	0		18	25	30		W5	S10	SE13	
27	.0	T		35	30	47	43	50	29	8	8		30	36	33		S6	W9	NNW7	
28	.0			30	28	42	39	43	24	2	10		26	33	35		ENE8	ENE16	E15	
29	.34			40	40	49	41	53	36	13	23		39	45	41		E6	SSW3	NW18	
30	.0			36	33	36	42	44	28	4	27		30	28	27		NW14	NNW12	N8	
31	.0			30	24	33	40	42	23	1	28		21	25	30		ENE6	ENE11	E9	
BUTLER, MO., FAA																W 29		T 5		
Mar. 20	.0	9	-	25	24	35	33	37	18	0	0	21	20	23	27	WNW6	W6	WNW7	NW8	7
21	.0	5	-	20	14	34	41	41	12	0	0	16	11	23	32	NW5	WSW5	SW10	SSW8	7
22	.0	4	-	36	32	31	30	37	19	0	0	33	31	27	24	SSW11	N12	NNE16	NNE11	12
23	.0	4	-	21	15	41	37	46	15	0	0	17	12	33	35	NE5	ENE5	WSW8	NNE10	7
24	.0	2	-	31	29	36	28	37	22	0	0	28	28	33	21	NW5	NNW4	N15	NNE13	9
25	.0	1		22	22	39	49	49	21	3	3	16	18	28	42	NE9	E11	SSE10	C	8
26	.0	T		34	29	54	63	66	29	16	19	32	28	45	51	C	E5	SSE6	S12	6
27	.0			53	52	62	69	71	50	29	48	47	49	56	55	S11	SSE20	SSW24	SSW17	18
28	.0			55	49	71	73	76	48	30	78	51	48	59	56	S8	SSE7	SSW16	S10	10
29	.02			62	58	73	67	77	41	27	105	54	53	59	55	SSE12	SSE18	S15	SW23	17
30	.45			41	40	43	47	50	35	11	116	40	38	38	41	NW16	WNW16	WNW17	NW9	14
31	T			35	32	60	69	73	32	21	137	35	31	51	49	ENE5	E6	E14	ESE21	12
COLUMBIA, MO., WBAS																W 48		T 5		
Mar. 20	.0	7	1.7	31	22	29	30	32	20	0	0	24	20	21	22	WNW10	WNW8	W15	NW12	11
21	.0	6	1.3	20	15	32	35	36	15	0	0	13	11	19	22	NW8	NW6	SW12	WSW13	10
22	.0	5	1.2	30	31	33	32	36	22	0	0	23	29	17	17	SW8	NNW15	NNE13	NNE7	11
23	.0	5	1.2	22	17	39	35	42	16	0	0	13	13	22	27	ENE6	SSE8	SW9	NNW10	8
24	.0	3	0.7	31	27	34	27	35	19	0	0	27	25	16	10	NW8	W7	N20	N11	12
25	T	2	0.4	19	17	30	36	36	17	0	0	9	10	20	24	NE7	E10	SE12	S6	9
26	.0	2	0.3	30	28	44	53	54	28	9	9	27	25	32	32	NW8	SW4	SSE6	SE10	7
27	.0	T		47	47	63	72	74	46	28	37	31	39	51	51	SSE9	S11	SW14	SSW12	12
28	.0	0		57	50	70	74	77	50	32	69	49	47	56	49	S10	SSE8	S10	SSE8	9
29	T	0		62	57	70	74	78	46	30	99	52	53	56	43	SSE14	SE15	S17	SSW10	14
30	.12	0		46	43	40	44	46	40	11	110	44	42	36	38	WNW18	W14	NW23	NW10	16
31	T	0		41	39	56	60	64	39	20	130	39	35	41	43	NW10	ESE5	ESE11	E15	10
FARMINGTON, MO., FAA																W 56		T 5		
Mar. 20	.0	7	-	30	29	36	33	38	23	0	0	25	22	19	31	WNW11	WNW8	WNW15	NNW11	11
21	.0	5	-	25	17	32	38	40	16	0	0	14	10	15	18	NNW16	NW4	WSW10	WSW8	10
22	.0	3	-	32	33	37	36	40	22	0	0	28	28	20	19	SW15	NNW15	N14	N8	13
23	.0	2	-	23	18	40	50	53	17	3	3	18	16	24	22	NE2	S5	SSW10	WNW8	6
24	.0			32	31	45	33	47	21	2	5	26	26	27	14	NW9	NNW10	NNW15	N14	12
25	.0			22	20	36	40	43	18	0	5	12	10	18	20	NNE6	ENE8	S10	S10	8
26	.0			38	32	49	57	60	30	13	18	23	27	29	28	SSW11	NW8	NNE5	ESE7	8
27	.0			44	40	69	69	73	37	23	41	33	29	48	51	S10	S8	SSW14	SSW12	11
28	.0			55	51	71	70	76	49	31	72	50	51	55	54	S8	SSW8	S11	S15	10
29	.18			59	58	71	70	74	50	30	102	53	56	59	58	S12	SSE10	S15	SSE15	13
30	.28			50	50	43	42	52	40	14	116	50	48	40	38	S9	WNW16	W15	WNW15	14
31	.0			43	41	48	58	64	40	20	136	39	39	42	45	NW12	NNW6	SSE8	ESE13	10
JOPLIN, MO., FAA																W 49		T 32		
Mar. 20	.0	0		29	27	36	38	41	27	2	9	22	24	22	19	NW2	C	C	NNW7	2
21	.0			28	22	43	49	49	22	4	13	21	17	14	25	NNW7	NNE2	SW8	SSW10	7
22	.0			45	39	43	42	47	27	5	18	25	30	28	26	SSW13	C	NNE20	NNE13	12
23	.0			27	25	53	50	61	23	10	28	21	19	30	32	NE7	E3	SSW15	N12	9
24	.0			35	29	47	42	48	27	6	34	29	25	30	24	NNE10	C	NE8	NNE15	8
25	.0			27	24	55	52	58	24	9	43	19	17	31	40	NE11	NE6	SSW13	SSW13	11
26	.0			43	36	65	69	71	35	21	64	38	35	43	41	SSW7	C	SSE5	WSW6	4
27	.0			57	54	68	71	74	51	31	95	42	47	52	49	S10	SSW10	SSW15	SSW10	11
28	.0			58	51	74	75	79	51	33	128	49	47	51	50	S5	SSE5	S15	S10	9
29	.23			64	63	75	60	78	44	29	157	50	55	47	49	SSE7	SSE22	S35	SW12	19
30	.05			44	41	46	58	58	41	18	175	40	39	38	38	WNW20	WNW18	WNW15	WNW8	15
31	T			42	41	75	74	79	39	27	202	38	35	32	36	E3	SE7	SSE19	SSE20	12

See footnotes at end of table.

TABLE 4.—Continued

Date	Precipitation 24-hour amounts (inches)	Snow on ground 6 p.m. (inches)	Water equivalent of snow on ground (inches)	Temperature (°F) Time 00	06	12	18	Max.	Min.	Degree days above 32(°F) 24-hr.	Accum.	Dew Point (°F) Time 00	06	12	18	Wind direction and speed (knots) Time 00	06	12	18	Avg.
KANSAS CITY, MO., WBAS																W 90		T 39		
Mar. 20	.0	10	2.3	29	27	34	34	37	24	0	0	22	20	21	19	SW3	NW7	WNW9	NNW11	8
21	.0	7	1.9	26	20	34	39	40	19	0	0	18	15	22	23	N3	NE2	SSW14	SSW12	8
22	.0	5	1.7	35	34	31	33	36	26	0	0	28	29	17	18	SW5	N11	NNW11	N7	8
23	.0	4	1.6	26	21	40	38	42	21	0	0	17	17	20	26	NE3	S2	WSW10	N10	6
24	.0	3	1.4	33	31	31	29	35	22	0	0	27	25	11	12	NNW5	W5	N11	N12	8
25	.0	1		22	20	32	43	43	20	0	0	9	10	18	28	ENE10	E7	S11	SW8	9
26	.0	T		34	29	52	63	63	28	14	14	29	27	32	43	SW3	NNW3	SE5	SSE8	5
27	.0	T		55	48	59	72	73	48	29	43	43	44	49	52	SSW9	S17	SSW23	S14	16
28	.0			61	52	71	75	77	52	33	76	49	47	53	51	S7	E5	SSE14	S11	9
29	.12			67	62	70	57	77	41	27	103	48	52	54	49	S14	SSE16	SSE15	WNW9	13
30	.53			41	40	42	46	46	38	10	113	37	36	35	33	NW17	NW15	WNW12	NW9	13
31	T			38	36	56	70	71	35	21	134	32	32	35	34	ENE6	E5	E17	E12	10
KIRKSVILLE, MO., FAA																W 85		T 5		
Mar. 20	.0	4	-	26	20	30	27	33	15	0	0	19	15	20	17	NW16	NW15	NW15	NNW14	15
21	.0	3	-	15	7	30	32	34	6	0	0	8	3	17	24	NNW10	NNW10	SW16	SW19	14
22	.0	3	-	32	23	26	27	34	12	0	0	27	14	15	16	NNW14	N18	N12	N8	13
23	.0	3	-	13	12	33	33	34	8	0	0	10	7	21	27	NNE5	SSE11	W15	NW15	12
24	.0	2	-	25	20	22	21	27	13	0	0	22	16	9	8	NW11	NW8	N20	NNE9	12
25	T	2	-	13	16	22	30	32	10	0	0	6	9	14	23	NNE7	E10	SSE10	WSW12	10
26	.0	2	-	31	22	38	39	41	19	0	0	26	19	30	30	W9	NW5	S9	SE10	8
27	.0	2	-	36	43	49	58	60	35	16	16	29	37	44	49	S15	SW15	SW21	SW16	17
28	.0			42	35	64	64	69	33	19	35	41	34	54	53	ENE4	E3	S12	SE15	8
29	T			56	51	62	57	70	43	25	60	48	48	56	53	ESE18	E14	SSE11	E8	13
30	T			43	40	37	41	43	36	8	68	43	40	36	36	WNW13	N15	NNW20	NNW19	17
31				37	35	49	53	58	35	15	83	35	35	40	43	NNW11	SE5	SE12	E18	12
MALDEN, MO., FAA																W 30		T 5		
Mar. 20	.0	0		30	31	42	42	47	29	6	11	26	25	24	19	W4	W4	WNW8	NW10	6
21	.0			31	28	36	43	45	27	4	15	21	20	28	25	NNW10	NNW5	C	SSW7	5
22	.0			35	34	47	43	49	30	8	23	27	26	31	25	SW10	WSW4	N17	NNE15	12
23	.0			30	23	45	51	54	23	6	29	23	19	26	30	NE11	C	SW4	S8	6
24	.0			37	35	47	46	55	34	13	42	32	28	31	33	N5	N5	NNE4	NE17	8
25	.0			28	23	34	43	43	23	1	43	14	13	19	22	NE15	NE5	C	SE4	6
26	.0			37	32	49	55	58	32	13	56	25	29	33	33	SW6	C	ENE10	SE4	5
27	.0			40	37	67	67	73	36	23	79	33	32	41	54	C	C	S8W15	SSW13	7
28	.0			53	45	75	71	76	45	29	108	51	45	58	56	SSW4	C	SSW4	S12	5
29	.40			60	55	73	73	75	55	33	141	55	54	61	63	S8	SSE6	SSW15	SSE18	12
30	.0			57	51	52	50	57	48	21	162	54	45	41	41	SSE15	WSW18	WSW12	WNW10	14
31	.0			48	47	60	60	65	47	24	186	42	43	47	47	NW4	C	C	SE7	3
ST. JOSEPH, MO., WBAS																W 76		T 5		
Mar. 20	.0	11	-	24	22	31	31	33	18	0	0	21	18	23	22	NW7	C	NNW13	NNW12	8
21	.0	9	-	18	11	34	37	39	8	0	0	16	11	24	28	C	C	SSW14	SSW13	7
22	.0	8	-	27	28	26	28	34	18	0	0	27	25	18	20	N6	N19	N16	NNW7	12
23	.0	7	-	18	16	35	35	38	14	0	0	16	13	25	29	C	S10	WNW13	N10	8
24	.0	6	-	28	25	26	24	31	17	0	0	25	22	13	12	N5	C	NNE21	NNE14	10
25	.0	5	-	20	19	28	37	37	17	0	0	9	10	18	29	E6	SE9	SSE13	WSW5	8
26	.0	4	-	28	23	44	47	50	20	3	3	27	22	35	37	S5	C	S8	SE10	6
27	.0	1		46	43	54	67	68	41	23	26	42	41	48	53	S12	SSW16	SSW21	SSW11	14
28	.0			41	35	69	72	75	34	23	49	41	35	56	55	C	ESE8	SSE20	SSE15	11
29	.93			62	59	64	42	70	38	22	71	50	52	56	41	S18	S15	SSE7	NNW28	17
30	.05			38	38	41	42	44	33	7	78	36	36	36	34	NNW28	NNW20	NW20	N10	19
31	.05			33	31	55	62	65	31	16	94	30	30	42	42	E5	ESE8	ESE18	ESE20	13
ST. LOUIS, MO., WBAS																W 20		T 6		
Mar. 20	.0	4	0.7	31	26	31	32	35	24	0	0	31	22	21	21	WNW13	WNW11	WNW17	WNW11	13
21	.0	3	0.7	24	17	31	37	38	16	0	0	15	12	14	23	WNW10	W4	WSW12	WSW9	9
22	.0	2	0.3	35	35	36	33	37	25	0	0	27	27	27	21	W11	NNW12	NNW9	NNE8	10
23	.0	1		25	22	40	41	46	21	2	2	17	18	24	25	ENE4	S4	SW10	NW12	8
24	.0	T		32	28	36	28	36	20	0	2	27	25	26	13	NW9	W5	NW18	NW9	10
25	T			20	20	31	37	37	19	0	2	11	11	13	27	ENE3	ESE7	SSE12	S10	8
26	.0			34	31	42	53	55	31	11	13	25	28	30	32	NW10	W6	S4	SSE12	8
27	.0			45	41	71	74	78	40	27	40	33	32	48	51	SSE10	SSE7	SW17	SSW8	10
28	.0			61	55	75	72	77	55	34	74	53	51	54	54	S12	SSW5	SSE6	SE15	10
29	.57			63	57	74	73	78	56	35	109	53	53	56	57	SSE9	SSE13	SSE19	S19	14
30	.51			56	48	43	41	56	41	17	126	54	44	42	39	SE5	WNW20	WNW22	WNW18	16
31	T			42	41	45	53	53	41	15	141	40	39	41	43	WNW15	NNW5	W3	ESE13	9
SPRINGFIELD, MO, WBAS																W 59		T 5		
Mar. 20	.0	2	0.6	27	23	34	35	37	21	0	0	20	19	28	25	WNW10	W8	WNW14	WNW11	11
21	.0	2	0.6	24	17	35	45	47	16	0	0	16	12	23	25	NNW10	W5	SSW5	S9	7
22	.0	T		39	37	40	40	44	26	3	3	24	30	28	17	SW10	NW7	NNE13	N10	10
23	.0	T		26	25	48	54	59	22	9	12	16	17	26	29	NE8	SSE14	SW11	NW9	10
24	.0	T		32	29	42	40	47	25	4	16	26	26	25	25	N8	NNW6	NNW14	N15	11
25	.0	T		25	22	43	52	57	22	8	24	12	13	25	39	NE13	E7	SE13	SW14	12
26	.0			40	37	56	69	70	36	21	45	35	36	43	36	SSW8	NNW6	C	S10	6
27	.0			49	43	67	71	74	43	27	72	37	39	50	49	SSE12	SSE9	SSE20	S14	14
28	.0			54	49	70	75	79	49	32	104	48	48	52	47	SSE9	SSE10	SE14	S15	12
29	.02			60	56	72	69	78	43	29	133	53	54	52	38	SSE17	SE17	SSE25	SW30	22
30	.10			44	39	41	50	50	38	12	145	43	38	37	38	W20	W22	WNW11	WNW10	16
31	.0			38	30	63	70	73	28	19	164	36	30	37	35	NNW3	SE8	ESE17	SE21	12

See footnotes at end of table.

TABLE 4.—Continued

Date	Precipitation 24-hour amounts (inches)	Snow on ground 6 p.m. (inches)	Water equivalent of snow on ground (inches)	Temperature (°F)								Dew Point (°F)				Wind direction and speed (knots)				
				Time				Max.	Min.	Degree days above 32(°F)		Time				Time				Avg.
				00	06	12	18			24-hr.	Accum.	00	06	12	18	00	06	12	18	
VICHY, MO., FAA															W 59			T 5		
Mar. 20	.0	8	-	27	27	36	32	36	22	0	0	20	24	23	21	NW8	WNW10	WNW14	NNW14	12
21	.0	8	-	23	14	32	36	40	14	0	0	11	11	11	18	NNW8	WNW5	WNW8	WSW10	8
22	.0	4	-	33	31	34	30	39	20	0	0	20	30	22	18	WSW12	NNW10	N5	NNE7	8
23	.0	3	-	20	18	38	40	49	15	0	0	13	14	25	26	E5	S10	SW10	NNW10	9
24	.0	2	-	30	29	38	28	39	19	0	0	27	27	22	15	N9	WNW6	N14	NE10	10
25	.0	T		20	19	32	37	42	16	0	0	15	12	17	27	NE8	ESE10	SSE10	SSE8	9
26	.0			37	26	45	53	57	25	9	9	29	24	33	33	NW8	C	C	SSE8	4
27	.0			48	43	69	70	73	43	26	35	35	38	47	52	S12	SSW11	WSW17	SW12	13
28	.0			56	51	71	71	75	51	31	66	50	51	53	51	SSW9	SSW10	SSW11	SSE10	10
29	.19			60	54	69	68	76	53	32	98	53	54	54	58	SSE8	S8	SSW20	SSE12	12
30	.38			56	40	40	42	56	39	16	114	45	40	40	39	SW10	WNW19	WNW19	WNW12	15
31	.0			42	40	55	65	70	39	22	136	39	36	39	35	NW8	C	ESE6	S10	6
WEST PLAINS, MO., WB															W 30			T 5		
Mar. 20	.0	1		28	24	38	36	40	23	0	0	24	19	24	19	WNW5	W4	WNW12	WNW10	8
21	.0	T		27	17	37	45	46	15	0	0	19	12	16	17	NNW4	W4	NW4	SW4	4
22	.0	T		29	38	47	44	49	29	7	7	23	25	32	16	SW5	NW6	NNE10	N5	6
23	.0			30	23	47	58	60	20	8	15	17	20	25	25	N53	C	WSW5	WNW4	3
24	.0			38	31	51	46	54	30	10	25	25	26	23	23	NNW3	N5	NNW5	NNE9	6
25	.0			30	22	39	44	49	21	3	28	22	14	15	27	NNE6	ESE5	SE10	SSE7	7
26	.0			34	39	65	66	70	30	18	46	28	37	38	37	SW3	C	SSW3	SSE5	3
27	.0			42	34	70	70	73	33	21	67	35	32	48	52	SE2	C	SSW5	S8	6
28	.0			56	57	72	71	75	51	31	98	52	55	57	52	SE3	S6	SSE9	SE9	7
29	.01			59	54	70	73	79	49	32	130	54	54	57	51	S6	SSE5	SSW12	SSE10	8
30	T			55	43	45	47	55	36	14	144	45	37	39	39	WSW11	W10	WNW20	WNW9	12
31	.0			38	29	62	68	71	29	18	162	34	28	37	39	WSW5	C	ENE5	SSE14	6
BURWELL, NEBR., WB															W 34			T 4		
Mar. 20	T	8	-	32	27	33	33	37	27	0	0	27	24	27	25	C	N6	N5	NE2	3
21	.0	6	-	27	24	41	46	52	24	6	6	23	20	37	38	NE4	NE1	SW4	C	2
22	.0	5	-	39	19	26	31	39	17	0	0	34	13	20	19	NE8	NNE10	NE2	SE9	7
23	.0	4	-	24	22	35	36	37	19	0	0	16	14	26	29	SE6	NW12	NNW13	C	8
24	.0	4	-	19	17	20	23	27	17	0	0	14	12	11	12	N2	NE4	ENE10	SSE6	6
25	.0	2	-	21	19	46	47	54	19	5	5	12	14	33	34	SE2	NW6	NW5	SE8	5
26	.0	1		31	28	45	57	57	28	11	16	25	22	40	46	SE5	SE6	SSE9	SE3	6
27	.0	T		53	37	68	61	70	37	22	38	39	31	40	40	SW22	SSE11	NW5	E8	12
28	T	T		45	32	43	48	51	32	10	48	45	32	41	47	ESE4	SE2	SE3	ESE8	4
29	.06			46	43	43	41	46	34	8	56	44	42	39	36	ESE7	NW6	NNW22	NNW17	13
30	.0			34	27	48	57	61	26	12	68	30	23	27	35	NW12	N10	NNW4	SE8	8
31	.25			38	35	44	43	51	34	11	79	32	29	37	37	SE4	ESE3	ESE10	N13	8
CHADRON, NEBR., FAA															W 46			T 5		
Mar. 20	.0	0		40	34	44	51	52	31	10	28	33	32	38	38	WNW15	C	ENE8	NE10	8
21	.0			32	28	63	69	73	28	18	46	30	28	38	37	SE3	C	WNW9	N14	6
22	T			41	35	47	70	70	34	20	66	39	33	37	41	ENE12	E4	S9	SW6	8
23	.0			44	34	40	49	53	32	10	76	34	32	33	32	SSW8	ENE10	NE5	NE13	9
24	.0			33	31	34	40	44	29	4	80	30	26	27	33	E3	NNE17	SE10	S13	11
25	.0			37	39	59	64	69	35	20	100	32	35	32	36	SSE7	SW9	NNW6	NNE12	8
26	.0			47	33	69	75	78	31	22	122	37	31	26	30	WSW5	SSW5	WSW12	W15	9
27	.0			56	46	54	73	74	45	28	150	34	34	38	36	SW13	SSW15	ENE5	SE15	12
28	.0			57	50	71	66	73	48	28	178	42	44	34	37	C	S12	WSW11	SW13	9
29	.01			48	43	53	55	57	30	12	190	35	33	22	22	SSW13	WNW22	WNW25	NW20	18
30	.0			32	31	60	67	71	29	18	208	24	25	27	25	SW5	W3	WNW7	W15	8
31	.06			58	45	48	40	58	34	14	222	30	29	40	38	S12	SW6	N21	N18	14
GRAND ISLAND, NEBR., WBAS															W 47			T 4		
Mar. 20	T	7	1.6	30	29	33	32	35	28	0	0	25	25	25	24	C	E5	NNE7	NE2	4
21	.0	7	1.6	30	30	35	36	37	28	1	1	26	28	33	34	SSW6	SSW7	WSW17	WSW11	10
22	.0	5	1.6	36	23	24	29	36	18	0	0	32	17	13	18	NNE15	N7	NNE8	SSE8	9
23	.0	5	1.5	24	21	34	34	36	20	0	0	17	18	30	29	SSW15	W5	N10	N5	9
24	T	5	1.5	29	32	23	22	32	17	0	0	26	27	8	14	WSW7	N19	NE15	ESE7	12
25	.0	5	1.5	19	19	35	44	44	17	0	0	13	16	29	36	SSE8	S15	WSW12	C	9
26	.0	4	1.2	30	33	42	47	50	29	8	8	27	28	36	42	S3	S8	S10	S11	8
27	.0	T		48	45	62	61	72	37	23	31	39	38	50	48	SSW19	SW16	WSW11	NE9	14
28	T			37	37	48	65	65	34	18	49	34	34	47	55	ENE7	ESE9	SSE9	SSE14	10
29	T			59	48	47	43	60	38	17	66	52	45	39	35	SSE18	ESE3	NNW20	NNW24	16
30	.0			38	31	50	59	61	30	14	80	32	27	31	32	NNW18	NNW6	NW9	SE7	10
31	.30			43	38	51	50	56	37	15	95	37	35	39	41	SE12	SE11	ESE15	NE18	14
IMPERIAL, NEBR., FAA															W 33			T 5		
Mar. 20	.0	0		39	37	43	41	46	30	7	16	33	32	37	37	WNW16	NW13	NNW7	NNE6	10
21	T			31	31	46	57	63	29	15	31	31	31	42	50	SSE5	SW7	SSE5	SW5	6
22	T			40	31	34	46	46	29	9	40	36	30	32	38	NNE16	NNE10	C	S14	10
23	.0			38	36	37	44	44	32	7	47	36	31	32	35	WSW13	NNW9	N9	ENE7	10
24	.0			32	30	33	31	40	28	4	51	32	30	33	27	S6	NE4	E16	SE17	11
25	.0			32	30	50	60	61	28	14	65	31	29	38	37	S18	SE8	NNW9	SE7	10
26	.0			45	39	68	74	78	33	25	90	39	37	48	44	S9	SW4	N7	SSE7	7
27	.0			52	45	70	74	77	41	28	118	40	35	38	32	SSW10	WSW7	NNW14	NNE4	9
28	T			51	45	50	65	69	43	23	141	47	45	48	47	E11	ESE8	SSW6	E14	10
29	T			52	46	47	54	57	34	20	161	42	36	30	24	WNW17	WNW24	NW26	NW28	22
30	.0			36	32	63	67	73	30	20	181	30	27	29	36	WSW9	WSW7	SSW12	W4	8
31	.01			49	40	56	49	60	36	16	197	34	35	39	39	SSW7	N5	N13	NNW13	10

See footnotes at end of table.

TABLE 4.—Continued

Date	Precipitation 24-hour amounts (inches)	Snow on ground 6 p.m. (inches)	Water equivalent of snow on ground (inches)	Temperature (°F)								Dew Point (°F)				Wind direction and speed (knots)				
				Time				Max.	Min.	Degree days above 32(°F)		Time				Time				Avg.
				00	06	12	18			24-hr.	Accum.	00	06	12	18	00	06	12	18	
								LINCOLN, NEBR., AFB								W 55		T 5		
								*	*											
Mar. 20	.0	13	-	27	27	29	32	33	23	0	0	23	21	21	20	C	N3	N8	N5	4
21	.0	11	-	17	15	36	36	38	18	0	0	14	12	30	33	C	C	SW15	WSW16	8
22	.0	8	-	35	20	23	28	34	16	0	0	32	12	14	19	N10	NNE18	NNE10	N2	10
23	.0	8	-	19	20	36	33	35	20	0	0	12	15	27	27	S4	W4	N10	N7	6
24	.0	8	-	34	32	21	21	32	18	0	0	20	27	10	8	W3	N16	NNE12	NE3	9
25	T	8	-	20	19	36	38	41	17	0	0	12	9	25	33	SSE5	S8	WSW12	W8	8
26	.0	7	-	29	24	42	46	49	27	6	6	26	22	35	42	C	S2	S8	S10	5
27	.0	2	-	45	41	48	59	62	37	18	24	43	33	45	32	S10	SSW9	SW11	N4	9
28	.0	T		38	34	56	69	72	33	21	45	35	34	49	53	C	C	SE4	SSE12	4
29	.46			60	51	45	40	62	38	18	63	51	48	43	35	S7	SE4	NNW18	NNW24	13
30	.0			38	35	40	44	48	33	8	71	36	33	33	38	NNW25	N15	NNW15	E7	16
31	.0			35	32	53	56	60	32	14	85	31	29	45	44	ESE4	SE8	S12	E13	9
								NORFOLK, NEBR., WBAS								W 51		T 5		
Mar. 20	.0	18	5.0	23	26	27	29	30	13	0	0		20	16	16		NNW7	NNW9	NNW6	
21	.0	17	4.9	13	24	37	38	39	13	0	0		19	32	32		SSW9	SW18	SW6	
22	.0	16	4.9	34	14	18	23	34	12	0	0		7	9	17		NNW18	NW9	SSE8	
23	.0	16	4.9	19	21	32	33	34	19	0	0		17	26	24		C	NNW20	NW11	
24	T	15	4.8	22	21	15	18	28	14	0	0		11	3	6		N18	NE12	SE6	
25	T	15	4.7	17	18	34	35	40	17	0	0		11	29	28		N18	SW12	NNW6	
26	.0	13	4.5	26	21	41	42	42	20	0	0		19	30	36		ESE4	SSE13	S4	
27	.0	9	3.9	40	40	47	45	53	33	9	9		35	36	35		WSW7	SW9	NW7	
28	.0	4	2.9	33	32	37	40	46	29	6	15		31	37	40		ESE11	ESE12	ESE9	
29	.38	3	2.0	45	41	38	35	48	34	9	24		41	35	33		SE12	NW20	NNW30	
30	.0	2	1.7	35	32	36	40	43	31	5	29	30	29	30	33	NNW28	NNW15	NW14	SE5	
31	.22	2	1.6	31	31	40	39	43	30	5	34		29	33	33		ESE9	ESE8	NNE8	
								NORTH PLATTE, NEBR., WBAS								W 32		T 7		
Mar. 20	.0	2	0.3	34	32	38	36	43	29	4	4	31	29	33	33	SE8	WNW6	N9	ESE7	8
21	.0	T		33	30	37	53	53	29	9	13	32	29	35	43	SSW9	SW10	SW10	W3	8
22	T	T		39	28	35	42	43	26	3	16	35	24	24	29	NNE20	NNE8	S5	SSE15	12
23	.0	T		33	37	40	48	50	27	7	23	29	34	32	26	S6	NNE18	N9	NNE9	11
24	.0			33	29	31	34	35	26	0	23	32	29	19	21	SSE7	NNE1	E12	SSE18	10
25	T	T		29	30	49	60	64	28	14	37	26	29	35	35	SSE12	SSW14	NW9	SSW10	11
26	.0			42	34	58	75	77	31	22	59	35	32	39	39	ENE5	SE10	SSW10	S10	9
27	.0			54	39	73	76	79	33	24	83	39	35	34	36	SSW13	C	N13	E10	9
28	.01			45	39	45	60	60	37	17	100	39	37	44	46	ESE15	ESE13	C	SSE7	9
29	.03			52	49	36	53	55	29	10	110	45	40	35	26	NW15	NNW25	NNW29	NNW25	24
30	.0			30	31	56	70	71	27	17	127	26	27	22	22	NW9	WNW4	SSW10	S10	8
31	.03			42	41	53	44	56	34	13	140	36	36	37	39	ESE10	SE8	SE15	NNE17	13
								OMAHA, NEBR., WBAS								W 68		T 5		
Mar. 20	.0	20	4.2	23	20	27	31	34	19	0	0	18	15	19	19	NNW5	NNW7	N13	NW12	9
21	T	19	4.2	20	15	38	35	39	13	0	0	17	13	30	33	WNW2	S5	SSW14	WSW5	7
22	.0	18	4.2	34	18	22	26	34	15	0	0	33	11	9	16	N13	N23	N13	N10	15
23	.0	17	4.2	20	21	34	34	36	18	0	0	15	14	26	27	SSE9	SW10	N12	N14	11
24	.0	17	4.2	26	25	21	22	27	18	0	0	23	21	5	8	NW7	N21	NNE17	N8	13
25	T	17	4.2	18	17	26	40	41	17	0	0	8	10	16	32	SSE9	SSE17	SW10	WNW7	11
26	.0	16	4.1	29	24	39	42	44	23	2	2	26	23	29	35	W4	SSE8	SSE11	SSE17	10
27	.0	13	4.1	43	44	45	54	57	36	15	17	39	38	43	45	S11	SSE14	S15	WNW7	12
28	.0	8	3.3	36	35	45	53	57	32	13	30	34	35	43	49	N7	E5	SE18	SE15	11
29	.31	T		53	48	51	38	54	37	14	44	48	46	50	35	SSE13	SSE4	SSE4	NW18	10
30	T	T		37	35	36	37	39	30	3	47	34	31	31	30	NNW25	NNW19	NNW18	NNE7	17
31	T	T		32	31	42	53	55	30	11	58	30	29	34	43	SE6	SE12	SE15	ESE6	10
								SCOTTSBLUFF, NEBR., WBAS								W 50		T 5		
Mar. 20	.0	0		40	32	57	62	63	31	15	34	29	27	33	32	NNW13	NW10	NNW14	N15	13
21	.0			33	28	58	70	72	26	17	51	32	27	32	18	E9	NW5	WNW8	NNW12	9
22	.0			42	32	49	69	70	29	18	69	38	31	38	19	E9	SSE9	ESE9	WNW15	11
23	.0			41	33	51	56	59	31	13	82	27	26	26	29	NNW12	NW6	SE7	SE11	9
24	.0			35	28	33	40	43	27	3	85	32	26	31	32	E10	C	SE16	ESE21	12
25	.0			31	31	58	65	69	27	16	101	29	29	27	29	ENE11	NW8	W7	N11	9
26	.0			42	32	70	75	77	28	21	122	31	30	22	23	E8	NE4	WNW18	WNW20	13
27	.0			45	43	69	71	76	38	25	147	24	28	28	26	NNE8	NW12	WNW8	SSE14	11
28	.0			52	43	66	64	72	40	24	171	38	40	38	28	ESE16	ESE10	W7	WNW11	11
29	.0			49	40	49	55	56	32	12	183	28	29	15	13	WNW17	NW38	NW29	NNW22	27
30	.0			33	30	62	66	70	28	17	200	15	16	29	20	NNW3	SSE5	WNW18	WNW18	11
31	.06			54	40	50	40	52	33	11	211	25	23	35	37	WNW6	NW5	NNW21	N17	12
								SIDNEY, NEBR., FAA								W 26		T 5		
Mar. 20	.0	0		38	35	55	50	60	30	13	32	32	31	47	45	W6	WNW7	NW11	SE10	9
21	.0			31	32	62	68	70	29	18	50	29	29	54	51	SW4	WNW10	SW10	NNW6	8
22	T			45	32	41	59	60	30	13	63	41	30	38	50	NNE8	C	SW10	S11	7
23	.0			42	39	49	52	56	32	12	75	30	32	40	36	W11	N6	N5	ESE11	8
24	.0			36	30	39	34	42	28	3	78	32	29	32	32	S5	C	ESE15	SSE18	10
25	.0			35	36	60	66	67	32	18	96	31	31	33	34	SSW15	WNW8	NW3	NNE5	8
26	.0			43	34	70	75	77	33	23	119	37	30	28	28	C	WSW6	WSW10	SW11	7
27	T			50	46	72	66	75	40	26	145	29	28	29	36	W9	W10	NNW10	SE8	9
28	.01			50	43	68	67	72	38	23	168	40	41	32	31	SE10	C	W8	C	5
29	T			50	39	49	53	55	31	11	179	34	32	20	13	NW12	NW15	NW30	NNW15	18
30	.0			36	34	63	67	69	28	17	196	18	24	24	23	W2	WSW8	WSW12	WSW12	9
31	.04			53	45	55	39	59	34	15	211	31	26	31	37	W5	N9	N19	NNW15	12

See footnotes at end of table.

TABLE 4.—Continued

Date	Precipitation 24-hour amounts (inches)	Snow on ground 6 p.m. (inches)	Water equivalent of snow on ground (inches)	Temperature (°F)								Dew Point (°F)				Wind direction and speed (knots)				
				Time				Max.	Min.	Degree days above 32(°F)		Time				Time				Avg.
				00	06	12	18			24-hr.	Accum.	00	06	12	18	00	06	12	18	
								VALENTINE, NEBR., WBAS								W 30		T 5		
Mar. 20	.0	3	-	31	30	36	38	38	27	1	1	29	29	26	31	E2	E4	S3	S6	4
21	.0	2	-	28	27	48	57	62	25	12	13	26	25	39	46	S5	W5	W8	NW8	7
22	.0	T		31	21	29	47	47	19	1	14	31	19	20	34	NE17	NE8	S8	S18	13
23	.0	T		33	35	37	43	43	30	4	18	31	31	29	32	W9	N12	N12	N5	10
24	.0	T		34	22	24	32	35	18	0	18	31	20	13	16	W5	E17	E11	S17	13
25	.0	T		32	32	49	52	55	31	11	29	30	32	36	35	SW15	W10	N12	NE9	12
26	.0			39	34	66	76	78	32	23	52	35	31	43	35	SW7	S4	SW10	W13	9
27	.0			48	47	68	63	70	40	23	75	38	34	36	41	W9	W12	NE14	E15	13
28	.0			41	35	47	63	65	34	18	93	39	34	45	47	SE11	S7	S12	S17	12
29	.09			49	46	41	50	55	29	10	103	44	42	36	33	SW7	N30	N26	N23	22
30	.0			30	28	55	66	68	26	15	118	29	26	33	35	NW4	W6	S13	S14	9
31	.21			48	40	40	40	50	32	9	127	44	34	35	33	E4	W5	N15	NE17	10
								ABERDEEN, S. DAK., FAA								W 35		T 16		
Mar. 20	.0	7	-	18	5	20	26	29	4	0	0	13	- 2	13	16	NNW5	NNW4	NW5	SW7	6
21	T	6	-	16	15	34	34	41	13	0	0	11	10	26	30	S10	S12	SW9	N20	12
22	.0	5	-	13	4	13	20	22	2	0	0	5	- 1	7	14	N16	N8	E4	SSE18	12
23	T	4	-	18	29	30	36	38	16	0	0	13	23	23	28	SW10	NW23	W18	W12	16
24	.01	3	-	16	4	10	16	17	2	0	0	11	- 3	6	9	N18	N12	NW3	SSE9	10
25	.02	3	-	16	18	30	38	38	16	0	0	12	14	21	31	SSE12	S12	W11	WSW11	12
26	.0	1		30	26	40	40	41	26	2	2	24	22	33	34	SW4	ESE7	SSE15	S15	10
27	.0	1		35	33	37	35	39	29	2	4	32	31	33	30	SSE12	C	N15	NE12	10
28	T	1		29	29	39	41	42	28	3	7	27	25	30	40	NE11	ESE5	ESE15	SE14	11
29	.02			39	35	38	37	39	33	4	11	38	34	36	33	SE10	NW10	NW20	NNW20	15
30	.0			33	29	33	38	38	29	2	13	28	25	29	33	NNW17	N16	E3	E12	12
31	T			30	29	41	40	41	29	3	16	19	26	35	33	SE10	ENE5	S8	NNE3	6
								HURON, S. DAK., WBAS								W 41		T 6		
Mar. 20	.0	9	2.9	22	6	20	25	26	4	0	0	20	4	17	20	NW9	NW4	NW6	NW4	6
21	T	9	2.8	17	16	36	37	39	15	0	0	14	13	32	35	S9	SSE10	SSW6	NNW13	10
22	.0	7	2.7	18	8	12	20	20	6	0	0	14	4	6	15	N15	NNW8	NNE2	SSE14	10
23	T	6	2.9	19	30	31	33	34	18	0	0	15	28	26	30	S13	NW17	N12	WSW10	13
24	.02	6	3.7	26	9	12	14	26	6	0	0	23	4	4	4	NNE22	N15	NW5	SE11	13
25	.02	6	3.5	16	18	26	33	34	16	0	0	13	14	23	31	SSE17	SSE16	W10	WNW3	12
26	.0	5	2.7	26	24	37	38	40	22	0	0	24	24	34	35	SW9	SE10	SSE15	SSE16	12
27	.0	3	2.1	34	34	42	36	42	31	5	5	34	34	39	34	SSE17	SSE7	NW12	NNE12	12
28	T	1		31	31	34	39	40	30	3	8	31	31	33	39	ENE10	SSE18	ESE12	SE20	15
29	T	T		39	36	36	37	39	34	5	13	38	34	36	34	SSE12	WNW9	NW17	NNW14	13
30	.0	T		34	32	34	39	39	30	3	16	31	29	29	34	NNW14	N9	NNE5	ESE8	9
31	.02			31	31	35	36	38	31	3	19	30	30	32	35	SE15	SE10	SE16	N7	12
								MOBRIDGE, S. DAK., WB								W 32		T 4		
Mar. 20	.0	0		30	26	32	34	36	25	0	0	24	22	27	29	SE1	E3	SSW4	SE6	4
21	.0			28	28	46	39	52	17	3	3	26	26	37	32	SW10	SE3	E2	NNE23	10
22	.0			18	10	20	25	26	8	0	3	9	0	11	18	N13	NNE7	SE14	SSE21	14
23	.0			25	30	37	45	47	24	4	7	19	27	27	21	SW1	NNW12	NNW10	NW17	10
24	.01			24	9	18	17	24	6	0	7	20	4	4	6	NNE18	N11	SE8	ESE15	13
25	.0			18	20	44	45	49	17	1	8	10	15	32	31	SE14	NW7	WNW17	NNW4	10
26	.0			32	31	49	56	62	30	14	22	28	27	38	46	SE3	SE3	SSE11	ESE4	5
27	.0			44	44	53	37	54	31	11	33	41	36	40	32	ESE3	NW15	NW16	NE13	12
28	T			31	30	36	37	40	30	3	36	29	27	33	35	ESE12	ESE7	SE14	SE13	12
29	T			37	39	42	41	44	25	3	39	36	36	34	32	SE3	NW15	NNW34	NNW21	18
30	.0			25	24	37	44	48	23	4	43	24	21	30	33	SW1	C	E18	SE11	8
31	.0			34	30	35	46	47	29	6	49	30	28	30	32	SE7	ESE3	NE6	NNE15	8
								PIERRE, S. DAK., FAA								W 66		T 5		
Mar. 20	.0	7	-	29	27	32	31	36	25	0	0	26	24	27	29	ESE7	E9	SSE5	S7	7
21	.0	5	-	26	21	43	38	49	21	3	3	25	20	36	34	S3	SW4	SW6	NNE15	7
22	.0	4	-	22	9	19	26	27	8	0	0	17	5	14	22	NE13	NE15	SSE10	SE15	13
23	.0	4	-	20	30	36	41	43	18	0	0	18	27	31	32	NNW7	N19	N5	WSW7	10
24	T	3	-	30	11	17	20	30	9	0	0	27	8	10	15	NNE15	NE13	ESE8	SE15	13
25	.0	3	-	20	16	37	46	48	15	0	0	17	14	25	34	SE18	NW8	W7	WNW3	9
26	.0	2	-	29	28	48	48	53	26	8	8	27	27	40	44	E3	SE5	SSE8	ESE4	5
27	.0	1		39	42	54	37	57	32	13	21	38	35	42	36	SE3	NW16	NW10	ENE15	11
28	.0			32	31	36	37	39	29	2	23	32	31	35	37	SE14	SE18	SE22	ESE15	17
29	.0			37	37	43	42	45	30	6	29	37	37	37	34	SE11	NNW17	NNW30	NNW18	19
30	.0			31	28	39	43	51	27	7	36	28	26	33	37	NW3	W5	ESE15	E20	11
31	.09			35	32	36	36	38	31	3	39	32	31	34	34	ESE20	E12	N15	NNE22	17
								RAPID CITY, S. DAK., WBAS								W 32		T 5		
Mar. 20	.0	T		38	35	43	46	49	33	9	22	31	32	37	39	N13	N14	NNW6	ESE7	10
21	.0	T		34	36	61	59	70	27	17	39	32	25	36	41	SE4	WNW7	SE3	N18	8
22	.01	T		35	30	34	56	62	27	13	52	33	29	30	42	ENE15	SE11	SE15	E9	12
23	.0			45	34	43	47	50	32	9	61	36	32	29	29	N21	NNE15	NW8	N11	14
24	T			36	26	25	40	40	23	0	61	28	20	22	30	NNW10	ENE8	SE16	SSE21	14
25	.0			33	37	51	56	58	32	13	74	29	30	34	36	E6	C	NE12	N6	6
26	.0			39	33	72	74	79	33	24	98	32	30	36	23	SSE8	NE3	SE6	W7	6
27	.0			54	50	63	66	73	43	26	125	27	33	27	33	WNW5	NW12	SSE6	SE15	10
28	T			44	44	67	67	75	41	26	150	40	40	40	27	SE13	SE10	SSE10	SW13	12
29	.0			55	40	49	53	55	36	14	164	35	32	19	18	NW20	NNW29	NW32	NNW22	26
30	.0			38	33	55	61	67	30	17	181	28	24	25	26	W4	SE8	SE8	E12	8
31	.11			43	40	42	43	47	33	8	189	33	33	38	39	WNW4	NNW17	NNW24	NW14	15

See footnotes at end of table.

TABLE 4.—Continued

Date	Precipitation 24-hour amounts (inches)	Snow on ground 6 p.m. (inches)	Water equivalent of snow on ground (inches)	Temperature (°F)								Dew Point (°F)				Wind direction and speed (knots)				
				Time				Max.	Min.	Degree days above 32(°F)		Time				Time				Avg.
				00	06	12	18			24-hr.	Accum.	00	06	12	18	00	06	12	18	
								SIOUX FALLS, S. DAK., WBAS								W 55		T 5		
Mar. 20	.0	9	2.6	21	11	24	27	30	6	0	0	16	7	13	17	NW6	N5	WNW6	NW7	6
21	.0	8	2.4	11	13	32	38	40	6	0	0	4	6	25	31	SW5	SSW7	SW13	WNW5	8
22	.0	8	2.4	20	9	14	23	26	6	0	0	10	- 1	4	11	N18	NNW10	N6	SSW6	10
23	.0	8	2.4	16	24	30	32	34	16	0	0	9	19	22	23	SSE12	NW16	NNW18	W10	14
24	T	7	1.9	28	10	13	17	28	8	0	0	24	2	4	1	WNW12	N16	N10	ENE3	10
25	.05	7	2.0	16	16	25	33	34	13	0	0	3	10	20	22	SSE8	S18	WSW13	NW10	12
26	.0	7	2.0	26	24	41	39	42	21	0	0	22	20	29	30	SSW5	S4	SSE13	S7	7
27	.0	4	1.6	37	39	44	39	46	30	6	6	34	33	36	33	SSE8	S4	NNW6	NNE5	6
28	.0	3	1.3	31	30	43	43	52	29	9	15	28	28	37	40	NE11	E12	ESE12	ESE15	12
29	.27	T		44	43	39	37	52	34	11	26	43	39	37	33	SSE5	SE5	NNW10	NNW16	9
30	.0			35	31	32	33	35	29	0	26	30	27	26	29	NNW18	N16	NNW11	ENE6	13
31	T			30	30	39	42	43	28	4	30	26	27	30	33	ESE10	SE12	SE13	NNE10	11
								WATERTOWN, S. DAK., FAA								W 30		T 5		
Mar. 20	.0	7	-	15	1	26	24	30	- 1	0	0	12	- 6	18	16	NW5	C	NW7	NNW5	4
21	.0	7	-	8	10	38	34	40	7	0	0	4	5	31	29	SW5	S5	W11	NNE14	9
22	.0	4	-	11	2	16	21	22	1	0	0	6	- 6	10	12	NNE16	NNE5	NNE5	S8	8
23	T	4	-	16	23	28	31	34	16	0	0	9	19	21	25	SSW7	WNW8	NNW17	WNW10	10
24	T	3	-	16	1	13	12	18	- 2	0	0	11	- 8	6	1	NNE12	NNE8	N8	C	7
25	.01	3	-	15	16	28	33	34	13	0	0	7	11	22	28	SSW8	SSW11	WNW12	W10	10
26	.0	3	-	23	24	37	37	41	19	0	0	19	21	30	32	W8	S7	S20	S16	13
27	.0	2	-	33	31	40	31	45	26	4	4	31	30	35	28	S15	SE6	NNE12	NNE12	11
28	T	1		26	28	42	39	42	26	2	6	24	26	36	38	ENE8	SE15	ESE9	SE13	11
29	.16	T		37	38	35	34	41	31	4	10	37	37	35	32	SSE10	S8	N10	N21	12
30	.0	T		32	27	29	29	35	24	0	10	27	25	25	26	N12	NE10	NNE8	ESE5	9
31	.02	T		27	28	41	39	41	27	2	12	25	25	33	34	SE9	SSE9	SSE13	E5	9
								EAU CLAIRE, WIS., FAA								W 26		T 6		
Mar. 20	T	2	-	28	20	26	25	29	15	0	0	26	8	7	5	NNW5	N10	NNW12	NNW10	9
21	.0	1		15	18	30	37	38	15	0	0	9	9	18	30	SW4	WSW7	SW17	WNW22	12
22	.0	1		22	10	18	24	26	9	0	0	6	- 2	3	12	NNW15	NNW16	NNW13	N7	13
23	.0	T		20	22	28	32	34	19	0	0	12	12	15	16	SSE6	S8	WNW16	WNW12	10
24	T	T		25	9	17	18	25	9	0	0	15	- 1	2	1	NNW15	NNW14	NNW13	NW10	13
25	.05	T		12	11	18	20	22	6	0	0	0	3	14	13	WSW5	S4	SSW9	SW8	6
26	T	2	-	13	20	34	42	43	13	0	0	10	17	23	28	SSW4	SSW4	WSW10	SSW12	8
27	.0	T		39	37	54	50	58	32	13	13	31	34	40	40	SSW12	SSW8	SSW10	NNW10	10
28	T	T		32	29	45	42	50	27	7	20	29	26	35	32	N4	NNE7	SE13	ESE12	9
29	.09			35	40	60	57	65	33	17	37	34	39	49	51	SSE12	SE10	SSE8	SSE8	10
30	.01			47	37	37	35	48	24	4	41	47	34	30	23	WNW4	N15	NNE15	NNE13	12
31	.0			25	23	29	37	39	22	0	41	19	18	21	26	N5	NE8	E8	E6	7
								GRANTSBURG, WIS., FAA								W 24		T 5		
Mar. 20	.0	7	-	26	10	24	27	28	6	0	0	22	6	15	14	N9	NW6	N15	N9	10
21	.0	7	-	7	16	31	37	39	4	0	0	3	11	23	22	WSW3	S6	SW20	NW18	12
22	.0	7	-	16	6	17	25	27	5	0	0	5	- 3	5	8	N18	N10	NNE11	SSW7	12
23	.03	7	-	19	20	27	29	32	14	0	0	10	14	21	18	S7	SSW8	NW14	WSW15	11
24	.0	7	-	14	5	15	17	19	1	0	0	3	- 1	4	1	NNW15	WNW8	NW8	W9	10
25	.03	7	-	5	7	20	21	23	2	0	0	- 1	1	14	14	SW6	SSE4	SSW15	SW10	9
26	.01	7	-	20	13	34	39	41	12	0	0	16	10	22	31	S6	SW3	W8	S7	6
27	.0	6	-	34	34	45	43	51	26	6	6	31	33	37	35	SW10	SSW4	W6	NNE7	7
28	.0	3	-	27	29	39	40	43	25	2	8	27	29	33	33	NNW6	ENE8	E12	ESE9	9
29	.31	T		35	41	55	45	57	35	14	22	35	40	48	42	SE10	SSE7	ESE7	NNE6	8
30	.01			38	35	38	40	44	23	2	24	38	31	27	27	N12	N10	NE12	NNE8	10
31	.0			25	23	34	40	43	21	0	24	21	20	24	27	NE5	NE8	NNE7	NE11	8
								GREEN BAY, WIS., WBAS								W 47		T 5		
Mar. 20	T	2	0.2	22	18	26	23	29	13	0	0	20	13	15	18	NE10	N9	NNW15	NE11	11
21	.01	2	0.2	13	6	25	33	36	6	0	0	6	3	15	27	NW7	NW9	SW20	WSW21	14
22	.0	2	0.2	22	14	22	26	28	12	0	0	15	7	13	14	NW28	NNW17	N19	N10	18
23	T	2	0.2	12	14	26	27	30	8	0	0	5	10	19	22	NE6	SE4	SW22	WNW18	12
24	.02	2	0.2	23	16	19	18	24	2	0	0	18	10	5	3	WNW9	NW18	NNW21	NNW16	16
25	.01	2	0.2	3	3	20	19	22	0	0	0	- 1	- 2	7	16	W7	SSW8	SW22	SSW20	14
26	.0	2	0.2	10	9	28	30	32	6	0	0	7	5	21	28	WSW6	SW7	WSW11	SSW18	10
27	.0	1		31	33	45	42	48	30	7	7	26	30	39	38	SW23	SW18	SW16	SSW5	15
28	T	T		33	28	30	31	34	28	0	7	31	27	27	30	NE8	NE11	NE15	ENE7	10
29	.70	T		32	36	49	49	57	32	13	20	32	36	47	47	ENE7	SSE21	SSE9	SSE5	10
30	.27			45	37	36	33	46	26	4	24	45	37	34	30	SW10	ENE10	N17	NE6	11
31	.0			26	26	29	30	33	25	0	24	23	23	25	27	NNE15	N11	N4	NE7	9
								LA CROSSE, WIS., WBAS								W 39		T 6		
Mar. 20	.05	2	0.4	28	27	28	26	30	17	0	0	22	24	14	11	C	NNW13	N17	N16	12
21	.0	1		17	15	32	39	40	15	0	0	9	9	17	32	C	S8	SSW17	W14	10
22	.0	T		27	16	22	28	29	15	0	0	11	3	5	13	NNW20	NNW21	NNW14	N8	16
23	T	T		20	22	30	34	35	20	0	0	13	14	18	21	C	S10	W13	NW16	10
24	T	T		31	14	19	22	31	13	0	0	22	2	2	4	W16	NNW21	NNW23	NNW12	18
25	.08	T		13	13	19	21	22	12	0	0	4	5	14	16	C	S7	SSW13	SSW10	8
26	.0	2	0.1	13	19	37	40	43	12	0	0	9	16	25	30	S6	SSE4	S8	S11	7
27	.0	T		35	42	53	52	55	35	13	13	27	34	41	42	S20	S13	S12	W5	12
28	.0			36	31	49	41	52	28	8	21	34	29	36	36	C	C	SE9	SE16	6
29	.32			37	42	59	54	61	37	17	38	35	41	50	51	SE9	S6	S13	SE4	8
30	.02	0		50	40	37	38	50	28	7	45	48	39	33	30	N8	NNW21	N18	N16	16
31	.0			28	27	32	42	42	25	2	47	21	20	24	27	NNW7	NNE6	ESE4	E7	6

See footnotes at end of table.

TABLE 4.—Concluded

Date	Precipitation 24-hour amounts (inches)	Snow on ground 6 p.m. (inches)	Water equivalent of snow on ground (inches)	Temperature (°F)								Dew Point (°F)				Wind direction and speed (knots)				
				Time				Max.	Min.	Degree days above 32(°F)		Time				Time				Avg.
				00	06	12	18			24-hr.	Accum.	00	06	12	18	00	06	12	18	
										LONE ROCK, WIS., FAA						W 67		T 5		
Mar. 20	.02	4	-	25	25	28	26	35	18	0	0	20	19	20	11	WNW10	NNE9	NW10	NW12	10
21	.0	4	-	18	3	30	35	40	0	0	0	16	- 3	25	27	WNW6	SW7	SW18	WSW20	13
22	.0	3	-	30	19	23	26	30	6	0	0	21	5	12	13	WNW17	NNW14	NNW15	WNW7	13
23	T	3	-	10	15	26	31	34	7	0	0	6	12	18	22	E4	E2	SW17	W14	9
24	T	3	-	28	20	21	20	30	2	0	0	22	9	11	7	WSW14	WNW19	WNW17	WNW10	15
25	.06	3	-	4	5	23	20	25	0	0	0	- 2	0	12	14	C	ENE5	SSW15	S10	8
26	.0	4	-	0	8	35	35	42	- 7	0	0	0	8	28	28	C	ENE2	WSW13	SSW10	6
27	.0	2	-	35	33	51	40	52	31	10	10	28	30	41	35	SSW11	SSW4	SW21	SW11	12
28	T	T		38	35	41	37	44	33	7	17	36	33	35	35	SW5	E9	E12	E14	10
29	.29			35	40	61	55	63	34	17	34	35	40	52	52	E14	E10	SSE10	ESE12	12
30	T			50	45	40	40	50	35	11	45	49	45	37	33	NNW5	NE7	NNW10	NNW11	8
31	.0			35	31	40	42	47	28	6	51	27	25	30	33	NNW6	NNE6	E5	E9	6
										MADISON, WIS., WBAS						W 38		T 28		
Mar. 20	T	3	0.6	23	21	29	25	30	14	0	0	18	20	16	12	NE3	NNW3	NNE11	N10	7
21	.0	3	0.6	14	7	26	31	39	5	0	0	5	2	13	26	N4	WNW3	WSW19	SW15	10
22	.0	3	0.6	27	14	22	24	27	9	0	0	12	7	11	12	NNW25	NNW12	WNW15	NW6	14
23	.0	2	0.3	9	16	25	30	32	6	0	0	7	12	19	21	C	S10	SW11	WNW17	9
24	.01	2	0.3	22	19	21	20	27	2	0	0	18	15	8	5	SW9	NNW20	NW19	NNW12	15
25	.08	2	0.3	5	1	20	17	22	- 4	0	0	0	- 1	11	15	C	C	SSW17	S18	9
26	.0	4	0.4	3	- 3	26	33	34	- 9	0	0	3	- 4	25	29	C	C	WSW8	SSW12	5
27	T	2	0.3	32	39	46	39	48	31	8	8	28	34	41	37	SSW15	SW13	SW10	WSW11	12
28	T	T		36	31	36	34	38	30	2	10	36	31	32	33	WSW5	NE5	E8	ESE12	8
29	1.07	T		35	38	53	55	60	34	15	25	34	38	50	46	ESE8	ESE6	SSW8	SE4	6
30	.30			49	41	42	38	51	34	11	36	40	40	42	35	SE10	NW8	N12	NNW14	11
31	.0			35	29	34	38	40	29	3	39	31	25	29	34	N14	NE7	NE4	ENE7	8
										MILWAUKEE, WIS., WBAS						W 20		T 5		
Mar. 20	.02	8	3.0	20	27	28	25	30	18	0	0	17	24	16	17	C	NNE16	NNE17	NNW15	12
21	.0	7	2.8	19	9	23	27	35	8	0	0	9	3	12	20	NW10	WNW7	SW14	WSW32	16
22	.0	7	2.8	27	16	22	23	27	11	0	0	14	8	11	12	NW30	NW25	NNW24	NNW10	22
23	T	6	2.8	12	13	24	26	26	10	0	0	8	9	17	20	SW5	SW11	SW18	W15	12
24	.05	6	2.8	19	27	24	22	28	14	0	0	16	20	8	3	SW13	NW18	NNW30	NW17	20
25	.06	6	2.8	14	1	20	18	21	0	0	0	1	5	10	17	WNW8	WSW4	SW17	SSW7	9
26	.0	7	2.8	14	1	24	27	29	1	0	0	13	1	19	24	WSW8	WSW4	WSW18	SW10	10
27	T	6	2.7	28	38	43	43	46	27	5	5	25	31	36	37	SSW15	SW23	WSW18	WSW24	20
28	T	1		41	36	37	34	41	34	6	11	36	31	32	33	W11	NNE15	NE17	ENE12	14
29	.94	1		36	36	55	49	62	35	17	28	35	36	51	46	ESE13	SE5	S13	SE9	10
30	1.63	T		50	46	36	33	52	30	9	37	50	46	35	32	W18	SE10	N28	N22	20
31	.0	T		31	29	32	31	33	29	0	37	28	25	27	27	N21	N15	NE14	NE10	15
										PARK FALLS, WIS., WB						W 58		T 5		
Mar. 20	.0	13	-	24	13	21	18	24	6	0	0	20	9	5	4	NNW3	NNW3	NNW4	NNW6	4
21	T	13	-	6	8	25	35	35	5	0	0	- 2	0	18	30	SW3	SW4	SW17	WNW18	10
22	.0	13	-	16	5	16	19	23	4	0	0	-	0	5	9	-	NW7	N9	NW5	-
23	.04	13	-	12	12	25	27	28	11	0	0	5	5	17	13	SE4	SE3	WNW7	NW7	5
24	.07	14	-	16	9	13	14	16	4	0	0	10	3	7	4	NNW9	WNW7	WNW12	WNW5	8
25	T	14	-	4	- 2	18	19	20	- 4	0	0	- 8	- 8	0	7	SW3	SW2	SSE9	SW7	5
26	.0	13	-	13	15	30	36	37	12	0	0	6	11	19	25	WSW4	SW3	W4	SSW4	4
27	.0	11	-	31	37	49	42	53	32	11	11	26	32	40	30	SSW12	SW14	WSW6	NNE4	9
28	.0	10	-	32	24	40	42	46	24	3	14	26	19	30	33	NNE3	NE2	SE5	ESE5	4
29	.28	6	-	33	39	45	52	55	33	12	26	33	38	44	47	SSE4	SSE2	SE2	SE4	3
30	.0	6	-	42	32	29	26	42	19	0	26	41	30	24	21	N2	NNW8	N9	NE4	6
31	.0	5	-	20	20	32	39	40	19	0	26	14	13	24	31	NNE9	NNE3	NE4	ENE4	5
										WAUSAU, WIS., FAA						W 29		T 4		
Mar. 20	.0	2	-	26	19	25	22	26	12	0	0	16	11	9	11	C	NNW4	WNW11	NW11	6
21	.0	2	-	12	10	28	35	36	8	0	0	6	2	17	31	W4	C	SW12	WSW18	8
22	.0	1		19	10	20	24	26	10	0	0	9	3	7	8	NW20	NNW12	NW13	NNW6	13
23	.0	1		14	15	26	28	29	13	0	0	7	6	20	16	C	ESE6	WSW10	W12	7
24	.0	1		22	11	17	17	23	7	0	0	20	3	2	- 4	WNW5	WNW16	WNW13	WNW12	12
25	.0	1		7	1	19	18	21	0	0	0	- 2	- 3	3	12	C	C	S10	S10	5
26	.0	1		13	13	30	34	35	10	0	0	11	10	24	29	SW5	SSW12	WSW6	S6	5
27	.0	T		33	35	50	48	56	30	11	11	27	30	42	40	S15	S8	SW12	W4	10
28	.0			36	33	37	32	41	29	3	14	33	30	33	29	N1	ENE5	ENE10	E15	8
29	.0			32	36	44	44	50	32	9	23	32	36	44	44	E11	ESE8	ESE8	NNE3	8
30	.0			42	41	35	34	42	23	1	24	42	39	30	25	N3	NW8	NW13	NNW8	8
31	.0			23	23	33	36	38	22	0	24	18	19	25	28	N8	N7	C	SE5	5

T Height of thermometers above ground (feet)
W Height of anemometer above ground (feet)
AFB Air Force Base
FAA Federal Aviation Agency
WBAS Weather Bureau Airport Station
WBO Weather Bureau Office
WB Weather Bureau Second-Order Station
(Knots) Nautical miles; to convert to miles per hour multiply by 1.1516
* Lincoln, Nebr., maximum and minimum temperatures at WBO, 77 feet above ground

TABLE 5.—*Sunshine, in percent of possible, and solar radiation in langleys.*

Date	Cairo, Ill.		Chicago, Ill.(L)		Moline, Ill.		Peoria, Ill.		Springfield, Ill.		Burlington, Ia.	
	Sunshine (percent of possible)	Solar Radiation (Langleys)	Sunshine (percent of possible)	Solar Radiation (Langleys)	Sunshine (percent of possible)	Solar Radiation (Langleys)	Sunshine (percent of possible)	Solar Radiation (Langleys)	Sunshine (percent of possible)	Solar Radiation (Langleys)	Sunshine (percent of possible)	Solar Radiation (Langleys)
Mar. 20	80		28	450	39		18		57		81	
21	100		44	499	97		100		100		100	
22	97		100	587	98		100		100		100	
23	100		15	300	31		36		37		39	
24	61		42	557	95		79		65		85	
25	60		67	252	0		0		12		5	
26	100		100	560	62		97		95		100	
27	90		88	435	95		100		100		91	
28	94		45	292	0		56		94		57	
29	60		83	415	56		57		73		78	
30	0		24	71	0		0		0		0	
31	55		2	226	30		33		16		80	

Date	Des Moines, Ia.(A)		Sioux City, Ia.		Concordia, Kans.		Dodge City, Kans.		Topeka, Kans.		Wichita, Kans.	
	Sunshine (percent of possible)	Solar Radiation (Langleys)	Sunshine (percent of possible)	Solar Radiation (Langleys)	Sunshine (percent of possible)	Solar Radiation (Langleys)	Sunshine (percent of possible)	Solar Radiation (Langleys)	Sunshine (percent of possible)	Solar Radiation (Langleys)	Sunshine (percent of possible)	Solar Radiation (Langleys)
Mar. 20	100	526	100		0		87	583	48		60	
21	100	514	100		63		66	429	96		92	
22	100	534	100		100		94	607	86		88	
23	81	359	45		52		56	436	59		89	
24	83	548	97		87		75	497	20		62	
25	0	172	43		89		100	622	37		74	
26	64	435	98		85		100	592	80		71	
27	95	272	100		100		100	594	78		74	
28	41	192	40		62		80	490	87		80	
29	24	134	0		20		38	192	7		51	
30	0	161	18		92		100	580	37		81	
31	61	343	11		67		80	550	91		87	

Date	Minneapolis, Minn.		St. Cloud, Minn.		Columbia, Mo.(M)		Kansas City, Mo.		St. Louis, Mo.		Springfield, Mo.	
	Sunshine (percent of possible)	Solar Radiation (Langleys)	Sunshine (percent of possible)	Solar Radiation (Langleys)	Sunshine (percent of possible)	Solar Radiation (Langleys)	Sunshine (percent of possible)	Solar Radiation (Langleys)	Sunshine (percent of possible)	Solar Radiation (Langleys)	Sunshine (percent of possible)	Solar Radiation (Langleys)
Mar. 20	98		593		97	618	66		80		89	
21	33		322		100	619	96		100		100	
22	100		589		100	636	100		97		97	
23	38		439		99	605	92		84		98	
24	99		611		95	614	81		94		94	
25	0		366		24	224	28		15		93	
26	88		541		94	605	95		74		96	
27	69		433		100	562	68		100		100	
28	56		347		96	559	91		92		99	
29	39		178		52	376	62		71		93	
30	56		314		0	37	0		0		12	
31	63		438		69	550	83		27		97	

Date	North Platte, Nebr.		Omaha, Nebr.(N)		Valentine, Nebr.		Huron, S. Dak.		Rapid City, S. Dak.		Green Bay, Wis.	
	Sunshine (percent of possible)	Solar Radiation (Langleys)	Sunshine (percent of possible)	Solar Radiation (Langleys)	Sunshine (percent of possible)	Solar Radiation (Langleys)	Sunshine (percent of possible)	Solar Radiation (Langleys)	Sunshine (percent of possible)	Solar Radiation (Langleys)	Sunshine (percent of possible)	Solar Radiation (Langleys)
Mar. 20	12		94	588	3		99		88	509	85	
21	54		68	543	100		93		100	547	9	
22	86		100	616	73		100		48	439	100	
23	44		37	-	54		63		88	472	9	
24	16		71	599	50		86		3	190	94	
25	80		25	440	98		60		80	433	12	
26	99		86	559	100		82		96	568	32	
27	100		56	443	98		53		93	526	57	
28	26		30	464	51		0		43	428	10	
29	29		0	100	45		0		85	555	32	
30	79		4	258	75		52		60	435	0	
31	3		39	425	21		0		0	202	0	

Date	Madison, Wis.		Milwaukee, Wis.
	Sunshine (percent of possible)	Solar Radiation (Langleys)	Sunshine (percent of possible)
Mar. 20	68	528	89
21	22	409	28
22	100	624	99
23	11	325	7
24	69	-	86
25	0	308	19
26	26	414	18
27	76	-	80
28	21	278	0
29	48	404	55
30	0	91	0
31	1	277	0

(L) Solar Radiation measured at Argonne Laboratory, Lemont, Ill.
(A) " " " " Iowa State University, Ames, Iowa
(M) " " " " Missouri University, Columbia, Mo.
(N) " " " " North Omaha observation station 8 mi. NW of WBAS

Michigan. Dubuque, Iowa, with 6.04 inches, had more than four times normal precipitation. Only extreme northern Iowa and southern Minnesota had below-normal precipitation. Temperatures averaged near normal with departures of 2° above in the east to 2° below in the west. The U.S. Geological Survey reported excessive streamflow for the entire area, and ground water levels at key wells in Nebraska, Iowa, and Illinois were at, or near, record highs for January. Unusual flooding from a combination of rain and ice jams occurred in Illinois, Iowa, Missouri, and Wisconsin. Rec-

ord high stages for January were experienced on the 102 and Nodaway Rivers in Missouri; on all major tributaries to the Des Moines River below Des Moines and the lower reaches of the Iowa, Cedar, and Skunk Rivers in Iowa; on the Rock River and tributaries in Illinois and Wisconsin, and on the Illinois River tributaries in these States. Ice jams in the Fox River near Dayton, Ill., resulted in a crest of 36.4 on January 25, exceeding the previous 46-year record by 4.4 feet.

Precipitation in February exceeded normal in the same general area as during January and blanketed the central and southern parts with 6 to 12 inches of snow. Temperature averages ranged from 2° above normal in the northeast to 10° below in the western part. Rivers and streams were frozen as subzero cold again occurred over the area.

March precipitation was below normal over most of Iowa and as low as one-half of normal in southeastern Minnesota and western Wisconsin. Normal amounts were recorded in a small area of southeastern Wisconsin, in a small part of the lower Des Moines-Mississippi-Illinois Basins, and generally along the Missouri River from its mouth to Yankton, S. Dak. Eastern Nebraska and east-central Kansas received precipitation in amounts up to 150 percent of normal. Temperatures ranged from 10° to 16° below normal over the entire area with record-breaking cold temperatures during the first week of the month. A record-breaking 75-day period with continuous snow cover was established at Omaha, Nebr., and Des Moines, Iowa. The season's accumulated snow cover reached its peak by the third week in March with 2- and 3-foot depths of compact snow over eastern Nebraska, northern Kansas, Missouri, and all of Iowa except along the northern border. The only area with less than a foot of snow cover was north of a line from Madison, Wis., through Mason City, Iowa, to Watertown, S. Dak. Intermittent rains averaging about one-half inch occurred over most of the area of heavy snow cover during the period March 26–31. Additional rains averaging about 1 inch were experienced over the Middle Missouri Basin during the period April 1–3. In isolated sections these ranged up to 2.50 inches. Details of this precipitation are shown in tables 7 and 8 and figures 8 and 9. The rains of March 26–31, and associated high dew points, materially increased the rate of melt and added to the total volume of runoff.

MISSOURI BASIN

The Missouri River has been effectively divided since 1952 by great dams and reservoirs into the controlled upper river above Yankton, S. Dak., and a partly contained river below that point. About half the Missouri drainage basin lies above Gavins Point Dam near Yankton, S. Dak., and it was this upper basin that generated the tremendous floods of 1952 (see U.S. Weather Bureau, *Technical Paper* No. 23).

This report is primarily concerned with the flooding that developed in the basin below Yankton. However, it is to be noted that the spring breakup began on March 20–21 across Montana and Wyoming in the western part of the upper basin. As the warming temperatures moved slowly eastward, ice-jam flooding of short duration developed along the Milk, Yellowstone, Knife, Heart, Grand, Moreau, Cheyenne, Bad, and White Rivers as temperatures reached 70° F. over the area by the 26th. This potential part of the developing flood was held in the main stem reservoirs, reducing peak stages downstream by an estimated 8 to 9 feet in the Yankton-Sioux City-Omaha reach and by 3 to 4 feet as far downstream as Hermann, Mo.

Snow surveys during March by the Corps of Engineers, Weather Bureau, and Weather Bureau cooperative observers indicated the accumulation of snow ranged from a few inches at the Colorado line to 3-foot depths over a broad band extending across northern Kansas, eastern Nebraska, southeastern South Dakota, all of Iowa, and northern Missouri. Water equivalent of this snow measured from 1 to 2 inches in western Kansas and adjacent Nebraska northward into South Dakota. This rapidly increased to 4 inches or more of equivalent water for the snowpack in eastern Nebraska and adjacent areas of Missouri and Iowa. The results of these measurements are found in table 4 and are the basis for maps shown in figures 5 to 7.

Early March, when the ice breakup normally begins, was extremely cold and rivers and creeks built up heavier ice covers and new snowfall was bonded to the initial ice cover. A warming trend began March 19 on the southwestern and western fringes of the area which spread slowly northward and eastward to embrace the whole basin by March 25. This was a favorable period for ripening the snow and releasing snowmelt runoff with diurnal

TABLE 6.—*Summary of monthly average temperatures (°F.) and their departures from normal, by State divisions, November 1959 through March 1960.*

State and Division	November		December		January		February		March		Average November-March	
	Observed	Departure	Observed	Departure	Observed	Departure	Observed	Departure	Observed	Departure	Observed	Departure
Illinois												
Northwest	31.0	-7.8	33.7	+6.6	24.7	+0.7	22.5	-4.3	22.2	-14.1	26.8	-3.8
Northeast	32.6	-6.8	34.9	+7.0	26.8	+1.4	25.0	-2.5	24.8	-11.6	28.8	-2.5
West	33.8	-7.4	35.8	+5.6	27.3	-0.3	24.8	-6.1	25.0	-14.7	29.3	-4.6
Central	34.3	-6.8	35.9	+5.1	28.0	-0.4	25.8	-5.2	25.1	-14.5	29.8	-4.0
West Southwest	37.1	-5.9	38.2	+5.1	31.3	+0.2	28.5	-5.6	27.6	-14.8	32.5	-4.2
Iowa												
Northwest	25.5	-8.8	30.6	+8.5	16.6	-0.5	17.4	-3.8	18.3	-13.6	21.7	-3.6
North Central	25.7	-8.8	30.7	+8.9	19.1	+2.0	19.7	-1.2	19.2	-12.5	22.9	-2.3
Northeast	26.7	-8.7	31.2	+8.3	20.4	+1.9	20.7	-1.5	20.0	-12.4	23.8	-2.5
West Central	29.1	-7.8	32.9	+7.6	18.3	-2.2	18.1	-6.7	19.9	-14.9	23.7	-4.8
Central	28.7	-8.2	32.8	+8.0	19.8	-0.7	19.5	-5.0	20.2	-14.4	25.2	-4.1
East Central	30.1	-7.9	33.5	+7.2	23.1	+0.6	21.4	-4.4	21.6	-14.3	25.9	-3.8
Southwest	33.0	-6.0	34.7	+7.0	21.4	-1.9	20.0	-7.9	22.3	-15.0	26.3	-4.8
South Central	32.5	-6.7	34.2	+6.5	22.6	-1.4	20.8	-7.0	22.6	-14.9	26.5	-4.7
Southeast	32.7	-7.2	35.0	+6.4	24.9	0.0	22.4	-5.9	23.4	-14.7	27.7	-4.3
Kansas												
Northwest	36.4	-4.3	35.4	+3.3	24.7	-4.7	21.6	-11.8	32.4	- 8.0	30.1	-5.1
North Central	37.1	-4.8	36.8	+4.9	24.0	-4.8	23.5	- 9.7	28.7	-12.9	30.0	-5.5
Northeast	36.6	-6.2	37.3	+4.8	26.8	-2.5	25.3	- 8.5	26.9	-15.2	31.0	-5.5
West Central	38.0	-3.1	36.3	+3.6	26.7	-3.6	23.7	-10.5	33.4	- 7.3	31.6	-4.2
Central	38.3	-4.6	38.4	+5.2	28.0	-2.4	25.8	- 9.1	30.5	-12.2	32.2	-4.6
East Central	38.8	-5.4	39.4	+5.1	30.4	-1.0	28.2	- 7.6	30.5	-13.4	33.5	-4.5
Minnesota												
Southwest	23.9	-8.4	28.6	+8.9	13.2	-1.1	14.8	-3.6	16.5	-13.1	19.4	-3.5
South Central	25.2	-7.9	30.0	+10.0	17.3	+2.3	18.6	-0.2	19.2	-10.8	22.1	-1.3
Southeast	24.8	-8.6	29.4	+9.3	18.4	+3.1	19.3	+0.8	19.9	- 9.8	22.4	-1.0
Missouri												
Northwest Prairie	36.4	-5.6	37.2	+5.7	27.9	-0.1	26.0	-6.1	26.8	-14.1	30.9	-4.0
Northeast Prairie	36.9	-6.0	38.2	+5.5	30.4	+0.3	28.2	-5.4	27.9	-14.1	32.3	-3.9
West Central Plains	38.9	-5.7	39.4	+3.9	32.8	+0.1	30.9	-5.5	31.4	-12.8	34.7	-4.0
Nebraska												
North Central	29.9	-6.3	33.0	+6.3	20.7	-2.1	17.7	-8.5	26.3	- 7.7	25.5	-3.7
Northeast	29.9	-7.0	32.7	+6.9	16.7	-4.6	16.4	-8.6	20.7	-14.4	23.3	-5.5
Central	32.7	-5.1	33.9	+6.0	19.5	-5.1	19.5	-9.0	26.1	-11.0	26.3	-4.8
East Central	32.9	-6.1	34.7	+6.6	19.3	-4.5	18.7	-9.1	22.6	-14.9	25.6	-5.6
Southwest	34.0	-4.8	34.6	+4.4	22.1	-5.3	20.3	-11.2	30.0	- 8.5	28.2	-5.1
South Central	35.3	-4.4	35.5	+5.7	21.4	-5.3	21.6	-9.5	28.4	-11.0	28.4	-4.9
Southeast	35.0	-5.2	36.0	+6.4	22.0	-3.5	21.8	-8.1	25.4	-13.7	28.0	-4.8
North Dakota												
South Central	22.7	-6.7	26.0	+8.3	11.2	+0.3	13.2	-2.0	19.0	- 6.6	18.4	-1.3
Southeast	21.9	-6.8	26.1	+10.5	10.3	+1.5	11.7	-1.4	16.3	- 9.2	17.3	-1.1
South Dakota												
North Central	23.8	-6.3	28.2	+9.2	12.7	0.0	13.4	-3.2	18.5	- 9.5	19.3	-2.2
Northeast	22.9	-8.2	27.3	+9.2	12.0	+0.3	12.7	-3.6	16.1	-12.5	18.2	-3.0
Central	26.4	-7.9	30.4	+7.6	16.8	-1.1	14.1	-7.5	20.5	-10.7	21.6	-3.9
East Central	23.6	-8.4	28.1	+8.6	12.4	-1.8	13.5	-5.0	16.4	-13.3	18.8	-4.0
Southeast	27.3	-8.1	31.2	+7.7	16.3	-2.5	15.7	-7.1	19.6	-13.5	22.0	-4.7
Wisconsin												
West Central	25.6	-7.4	29.5	+9.6	19.7	+4.5	20.8	+2.6	22.0	- 7.0	23.5	+0.5
Central	25.0	-8.5	28.7	+7.9	20.3	+3.5	21.0	+2.3	20.8	- 8.2	23.2	-0.6
Southwest	27.2	-8.3	31.1	+8.1	21.9	+2.6	22.0	-0.4	21.5	-10.7	24.7	-1.7
South Central	28.6	-8.0	31.5	+7.3	22.9	+2.1	21.9	-1.0	21.4	-11.4	25.3	-2.2
Southeast	29.9	-7.2	32.5	+7.3	24.3	+2.2	23.5	-0.7	22.4	-10.4	26.5	-1.8

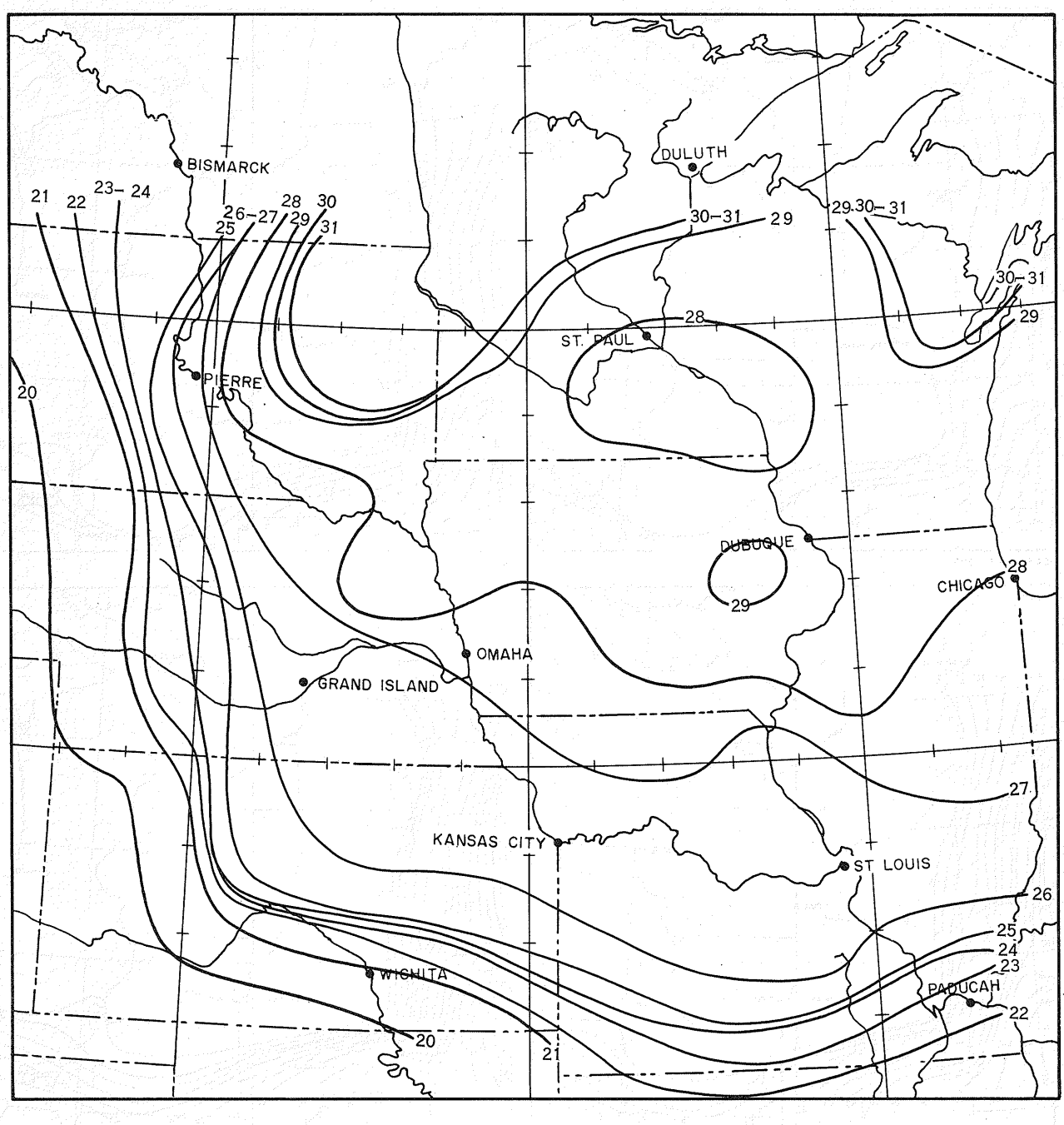

FIGURE 2.—Date of 20-degree-day accumulation.

variation, freezing and drying up again at night. See figure 4 on the total degree-day accumulation during the period March 20–31, 1960. The date of the 20-degree-day accumulation is shown in figure 2. Maximum temperatures reached the 70's in some areas (see table 4).

Moderate flooding on tributaries of the Republican River above Harlan County Reservior crested 1 to 5 feet above flood stage March 20 to 23. In the adjacent Platte basin, minor flooding of small creeks and streams also occurred on the 23d, but these did not contribute enough runoff to affect the Platte River which was free of flooding downstream to the confluence of the Loup.

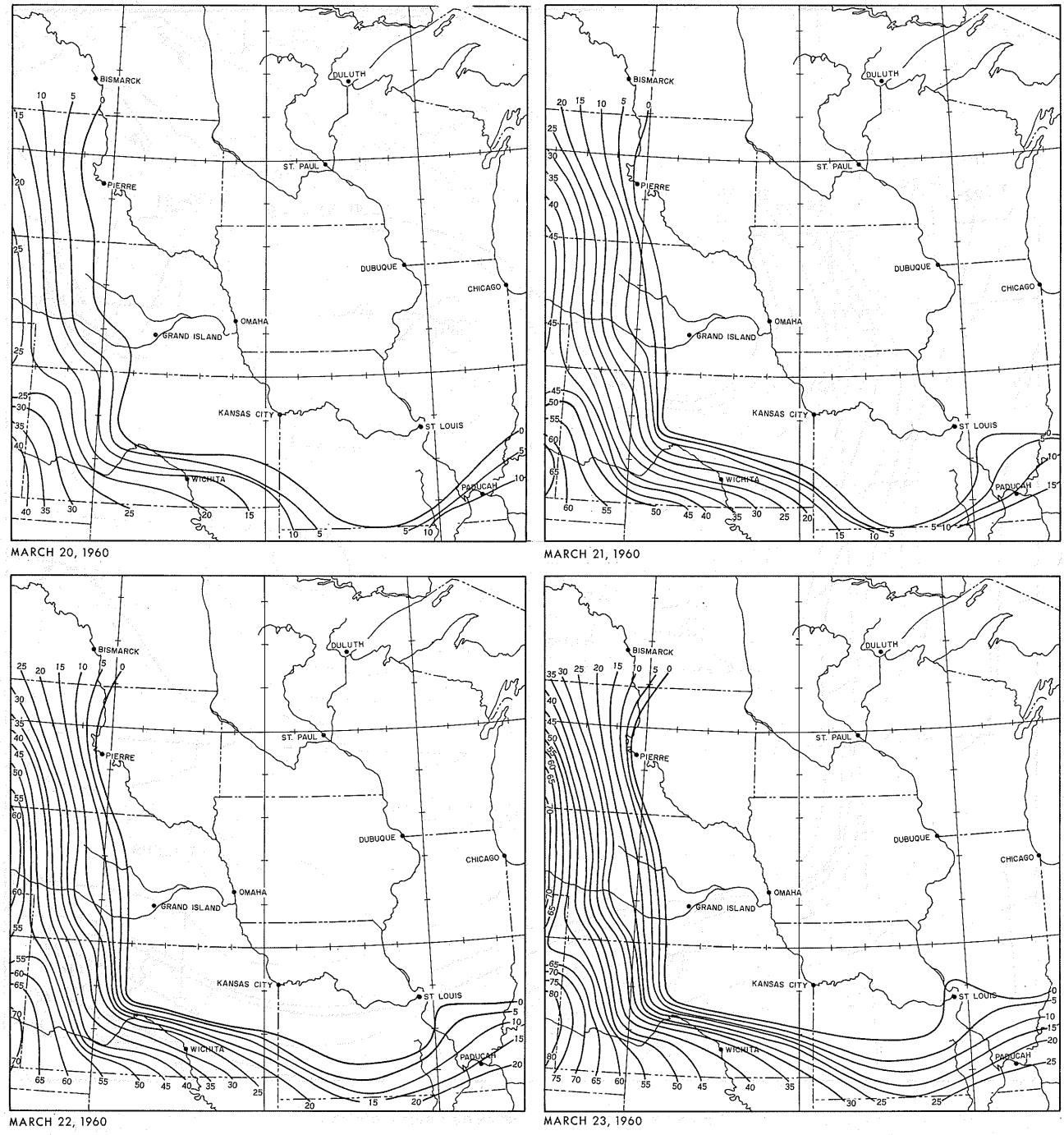

FIGURE 4.—Daily degree-day accumulation, March 20–31, 1960.

Flooding began March 24 on tributaries of the Loup as the runoff from melting snow broke the winter ice and moved it downstream with progressive ice jams. General flooding throughout the Loup basin by March 26 was initiated by the ice jams and supported by rapid runoff from the snowpack in the lower Loup Valley which had 4 and 5 inches of water equivalence. Flood crests were reached by March 27 and 28 on the lower Loup River, and as they reached the Platte River, more heavy local runoff was added to inundate nearly the entire flood plain from the junction to

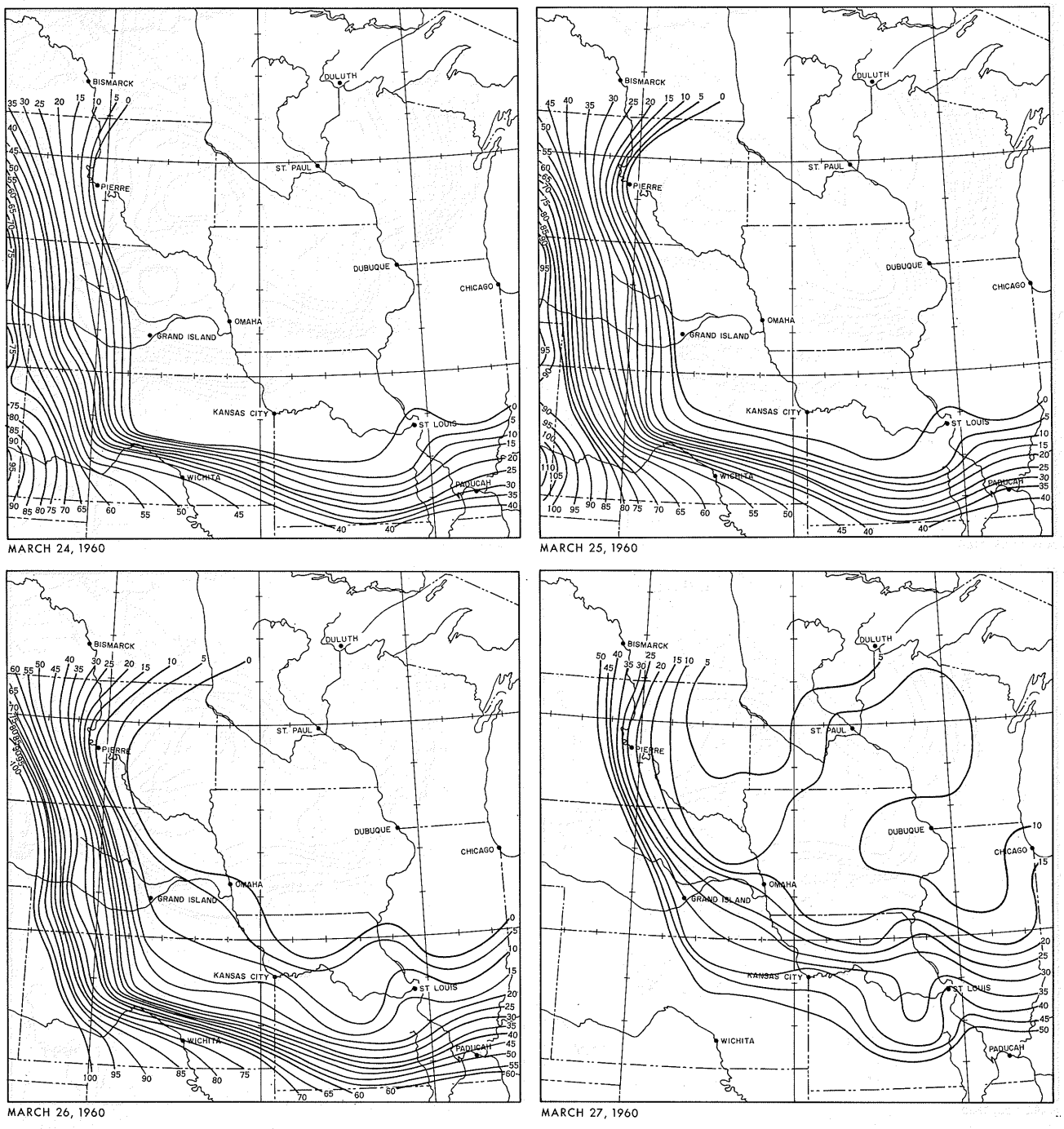

FIGURE 4.—Daily degree-day accumulation—Continued

the mouth of the Platte. The Platte River was nearly 4 miles wide above Ashland, Nebr. Near Mercer, about 3 miles below Fremont, Nebr., the Platte River flood crossed the divide into the Elkhorn drainage, causing flooding from above Waterloo, Nebr., to the mouth of the Elkhorn.

A sharp rise in temperatures beginning March 27, with nighttime minimums well above freezing and daytime temperatures in the 70° to 80° range, gave impetus to the melting of the snowpack and brought creeks and rivers out of their banks overnight. Headwaters of Salt Creek above Lincoln,

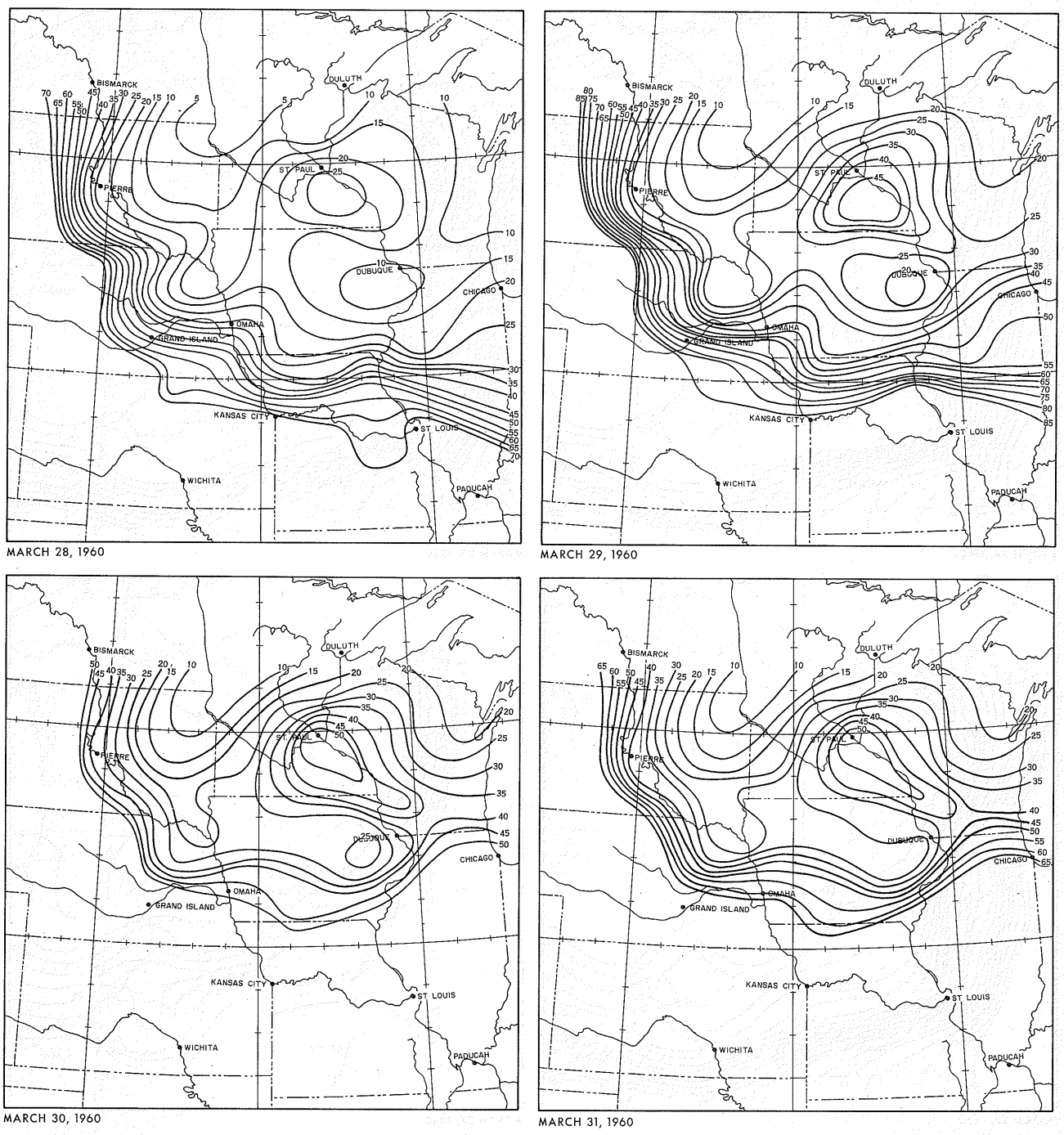

FIGURE 4.—Daily degree-day accumulation—Concluded

Nebr., and Wahoo Creek, with 5 to 6 inches of snow water, crested March 27 and 28, 2 to 3 feet out of banks. Flooding on the Elkhorn began March 28 from ice jams which backed up the rapid melt of from 3 to 5 inches of snow water and produced severe flooding at Norfolk and West Point, Nebr., with river stages about 4 feet above flood stage at these points.

Typical of ice jam flooding, the minor overflows on the Niobrara and Ponca Creek and smaller tributaries were of short duration, lasting about 2 days from March 25 to 27. About this time the

area north of the Missouri River in eastern South Dakota and southwestern Minnesota started contributing to the runoff. Eastward from the Missouri River in South Dakota through southwestern Minnesota and northwestern Iowa the snowpack held from 2 to 4 inches of water and melted rapidly from March 26 to 31. Initial flooding started with ice jams on the tributaries and after the first crests of March 28 to 31, strong secondary rises, associated with 1- to 2-inch rains on April 1 and 2, prolonged the flooding. The James, Vermillion, and Big Sioux began flooding from March 27 to 29 and produced new record high crests of 6 to 7 feet above flood stage on the Vermillion River in South Dakota on April 1, and from March 30 to April 2 along the Big Sioux. Crests on the sluggish James River occurred April 4–6. The Floyd and Little Sioux Rivers in northwestern Iowa began flooding March 27 with ice jams forming as heavy ice cover moved downstream. This rise lasted about 5 days and was followed by a lower second crest on the Floyd produced by the rains on April 1 and 2. At James, Iowa, on the Floyd River, the crest on March 29 was about 6 feet over flood stage, and the second crest was about 5 feet above flood stage on April 2.

Three to seven inches of snow water equivalent measured at points across northern Missouri, southern Iowa, eastern Kansas and Nebraska, caused moderate to severe flooding with the rapid melting of the snow. Fortunately no significant rain fell during the early part of the snowmelt runoff period; however, 1 to 2 inches of rain did fall from the last 3 days of March to the first 3 days of April. Virtually every important stream across northern Missouri and adjacent Kansas, Nebraska, and Iowa was in flood. The Chariton River was from 5 to 7 feet out of banks; the Grand River and tributaries from 2 to 12 feet out; the Platte (of Missouri), Nodaway, Tarkio, Nishnabotna, and Nemaha were generally 5 to 7 feet out of banks; and the Big and Little Blue Rivers in Kansas and Nebraska crested 12 feet above flood stage at Crete, Nebr., on March 31, and 8 feet over flood at Deweese, Nebr., on the 27th.

The Missouri River rose above flood stage from the mouth of the Platte River in Nebraska on downstream by March 29 and continued in flood for about 2 weeks. Heavy flows of ice broke levees across the Missouri from the Platte and gorged at a number of places as the ice moved downstream. Crests from Nebraska City to the mouth of the Kansas River were 3 to 5 feet above flood stage on April 5 and 6. Temporary storage of heavy runoff from the Blue River at the partially completed Tuttle Creek Reservior held the Kansas River to minor overflow below Manhattan, Kans. At Kansas City, Mo., below the mouth of the Kansas River, a crest only 1 foot above flood stage was reached on April 4. Below the mouth of the Grand River, the Missouri reached stages 7 to 8 feet above flood from April 5 to 7.

UPPER MISSISSIPPI BASIN

Above Dam 10 at Guttenberg, Iowa, the Mississippi River Basin lay quiescent with but three-fourths of the normal winter precipitation to disgorge in the spring breakup. Early snow cover in November reduced the normal frost penetration and favored infiltration. Flooding produced by ice jams along the Minnesota River and its tributaries did little damage. The tributaries in Wisconsin generally crested well below flood stage except for minor flooding of the Kickapoo. The Mississippi Basin between Dam 10 and the mouth of the Missouri River retained the heavy accumulations of dense snow cover during the extreme cold of February and March. All streams were frozen and soils were well saturated from heavy rains that had produced unusual January flooding on all the tributaries in Iowa and Illinois before the extreme cold set in. Snow surveys in March by the Corps of Engineers, Weather Bureau, and local Weather Bureau cooperative observers showed snow with a water equivalent of 3 to 4 inches in the headwaters of the Illinois, Pecatonica-Rock, Turkey, Maquoketa, Wapsipinicon, and Cedar Rivers. Across the Iowa, Skunk, Raccoon, and Des Moines basins 4 to 5 inches of water equivalence was measured. The details of water equivalence of snow cover are shown in figures 5 to 7. An abrupt change to above-freezing temperatures began on March 26, and by March 29 readings over the whole basin were generally in the 60° range. This had an almost explosive effect on the snowpack. Normally the snowmelt runoff progresses from south to north with diurnal pauses as the melt refreezes at night. This reduces the rate of contribution to downstream points. Not so this time. Headwater crests of the 29th through 31st of March were supported by continuous snowmelt, thus producing record stages on tributaries.

The flood in the upper portions of the Iowa River crested at a near record stage at Marshalltown, Iowa, on March 31 but was contained in Coralville Reservoir. The lower Iowa-Cedar Rivers were at their highest stage of record, 7 feet above flood stage. The Skunk River was 6 to 10 feet over flood stage from Ames, Iowa, to its mouth cresting generally 2 feet above all previous peak stages. In northeastern Iowa the Wapsipinicon River was 3 feet above flood stage, the Maquoketa 6 to 10, and the Turkey 12 feet. In central Iowa the Des Moines and Raccoon Rivers above Des Moines, Iowa, were from 2 to 10 feet above flood stage, and the North, Middle, South, and Whitebreast—tributaries of the Des Moines—were from 5 to 8 feet over bankfull. The Fox and other upper Illinois River tributaries were 3 to 6 feet out of their banks, and the Pecatonica and Rock Rivers in Wisconsin and Illinois were 4 to 8 feet over flood stage. The upper Salt, Fabius, and Fox Rivers of northeastern Missouri were 3 to 6 feet over flood. All of this occurred by the end of March, within 5 days of the beginning of snowmelt. The effect of these floods was felt immediately on the Mississippi. Flood stage was reached simultaneously in the reach from below Muscatine, Iowa, to Alton, Ill., on March 31. Broken ice flows damaged dams, bridges, and shore installations. The massive Keokuk Dam was threatened seriously, and seven of its sections were severely damaged by these ice flows. Below Gregory Landing, Mo., an important levee break at Meyer, Ill., on April 4 resulted in earlier and lower crests downstream. At Quincy, Ill., this reduction in crest stage is estimated to have been 1.5 feet. The highest stages in over 100 years were reached at Keokuk, Iowa, on April 3, and at Burlington, Iowa, Gregory Landing, Mo., and Quincy, Ill., on April 4. Stages were below flood level by April 10 on the mainstem and tributaries above Gregory Landing.

The upper Illinois and tributaries reached their crests by March 31. Lake Peoria and the marshes above Peoria, Ill., delayed and reduced the upstream-crest of 6 feet over flood stage at La Salle, Ill., on March 31 to a crest 3.5 feet over flood stage at Peoria on April 5. Tributaries below Peoria generally crested at moderate stages, 3 to 7 feet above flood, on April 1 and were back within the banks as the main stem flood moved into the reach below Peoria. Crests of 6 to 8 feet above flood stage were experienced from Havana to Beardstown, Ill., April 6 to 8.

Crests of about 8 feet above flood stage were reached at Grafton and Alton, Ill., on the Mississippi on April 10. The combined rise of the upper Mississippi and Missouri produced a crest 3.8 feet above flood stage at St. Louis, Mo., on April 10, the highest stage since May 1952. Farther downstream the flood crested about 6 feet above flood stage at Chester, Ill., and Cape Girardeau, Mo. A rise had also occurred in the Ohio River during the same period and, in combination with the Mississippi, it crested 7.5 feet above flood stage at Cairo, Ill., on April 13–14.

TABLE 7.—*Summary of monthly total precipitation (inches) and its departure from normal, by State divisions, November 1959 through March 1960.*

State and Division	November		December		January		February		March		Accumulated, November-March	
	Observed	Departure	Observed	Departure	Observed	Departure	Observed	Departure	Observed	Departure	Observed	Departure
Illinois												
Northwest	1.82	- .34	2.57	+ .81	3.88	+2.12	1.82	+ .71	1.52	-1.01	11.61	+2.29
Northeast	2.49	+ .38	2.32	+ .35	3.52	+1.67	2.54	+1.01	1.39	-1.38	12.26	+2.03
West	.70	-1.56	1.87	+ .02	2.01	+ .14	1.87	+ .25	2.23	- .77	8.68	-1.92
Central	1.57	- .76	2.15	+ .14	1.80	- .25	2.38	+ .53	2.72	- .26	10.62	- .60
West Southwest	2.20	- .39	1.81	- .07	1.52	- .62	1.75	- .41	3.15	.00	10.43	-1.49
Iowa												
Northwest	1.70	+ .61	1.46	+ .64	.54	- .18	.36	- .62	1.30	- .35	5.36	+ .10
North Central	1.97	+ .35	1.16	+ .10	.52	- .58	.58	- .45	1.15	- .84	5.38	-1.42
Northeast	2.65	+ .92	1.76	+ .54	2.47	+1.28	.85	- .24	1.36	- .88	9.09	+1.62
West Central	1.86	+ .55	1.82	+1.00	1.59	+ .63	1.14	+ .06	1.59	- .22	8.00	+2.02
Central	2.66	+ .88	1.39	+ .22	2.74	+1.55	1.10	- .04	1.59	- .57	9.48	+2.04
East Central	2.43	+ .40	2.30	+ .76	4.26	+2.82	1.80	+ .58	1.51	- .89	12.30	+3.67
Southwest	.75	- .75	1.85	+ .96	2.62	+1.69	1.57	+ .48	1.70	- .30	8.49	+2.08
South Central	.77	-1.15	2.08	+ .81	3.12	+1.84	1.64	+ .55	2.14	- .05	9.75	+2.00
Southeast	.79	-1.22	2.23	+ .66	2.97	+1.45	1.85	+ .59	1.95	- .57	9.79	+2.70
Kansas												
Northwest	.02	- .72	.40	- .07	1.72	+1.30	2.48	+1.95	1.03	- .16	5.65	+2.30
North Central	.03	-1.00	.44	- .27	1.72	+1.12	1.62	+ .80	1.59	+ .25	5.40	+ .90
Northeast	.11	-1.39	1.11	- .15	1.74	+ .74	1.94	+ .93	1.95	- .03	6.85	+ .10
West Central	.02	- .68	.27	- .21	1.41	+ .95	2.16	+1.64	.99	- .11	4.85	-1.59
Central	.08	-1.04	.75	- .08	1.52	+ .84	2.13	+1.22	1.56	+ .15	6.04	+1.09
East Central	.13	-1.63	1.40	+ .01	1.25	+ .10	2.45	+1.27	2.10	- .15	7.33	- .40
Minnesota												
Southwest	.94	- .09	1.66	+1.02	.56	+ .02	.13	- .66	1.29	- .26	4.58	+ .02
South Central	.95	- .51	1.57	+ .59	.47	- .42	.28	- .67	.94	- .87	4.21	-1.88
Southeast	1.48	- .21	1.70	+ .72	.51	- .51	.38	- .56	.80	-1.05	4.87	-1.61
Missouri												
Northwest Prairie	.20	-1.69	2.06	+ .56	1.39	+ .56	1.61	+ .20	2.37	- .11	7.63	- .48
Northeast Prairie	1.21	-1.21	2.25	+ .44	1.59	- .34	1.56	- .28	2.23	- .80	8.84	-2.19
West Central Plains	.97	-1.40	1.70	- .09	1.39	- .41	1.92	- .02	2.03	- .62	8.01	-2.54
Nebraska												
North Central	.61	+ .02	.21	- .31	.64	+ .12	1.30	+ .65	1.06	- .18	3.82	+ .30
Northeast	1.31	+ .33	.89	+ .10	1.49	+ .65	.77	- .19	2.01	+ .46	6.47	+1.35
Central	.09	- .60	.15	- .41	1.75	+1.26	1.43	+ .85	1.22	+ .10	4.64	+1.20
East Central	.55	- .57	.93	+ .08	1.65	+ .82	1.49	+ .53	1.99	+ .59	6.61	+1.45
Southwest	.10	- .49	.30	- .17	1.27	+ .81	2.01	+1.51	.85	- .32	4.53	+1.34
South Central	.01	- .85	.09	- .51	1.85	+1.33	1.54	+ .86	1.25	+ .11	4.74	+ .94
Southeast	.28	-1.02	.96	+ .01	2.15	+1.35	1.72	+ .71	2.06	+ .45	7.17	+1.50
North Dakota												
South Central	.90	+ .40	.28	- .04	.31	- .13	.10	- .37	.51	- .32	2.10	- .46
Southeast	.58	- .03	.35	- .12	.50	- .03	.30	- .25	.34	- .58	2.07	-1.01
South Dakota												
North Central	.50	+ .05	.21	- .11	.41	- .07	.34	- .15	.55	- .37	2.01	- .65
Northeast	.59	- .11	.74	+ .21	.61	+ .03	.39	- .24	.59	- .49	2.92	- .60
Central	.54	+ .07	.27	- .12	.41	- .04	1.00	+ .46	.53	- .62	2.75	- .25
East Central	.82	+ .10	.81	+ .28	.63	+ .11	.42	- .15	.98	- .23	3.66	+ .11
Southeast	1.72	+ .94	1.14	+ .57	.75	+ .21	.57	- .23	1.54	+ .09	5.72	+1.58
Wisconsin												
West Central	1.40	- .35	1.73	+ .65	.57	- .48	.34	- .63	.43	-1.42	4.47	-2.23
Central	1.76	- .34	2.34	+1.16	1.20	- .03	.61	- .54	.25	-1.47	6.16	-1.22
Southwest	2.27	+ .31	1.94	+ .67	1.58	+ .36	.70	- .41	.86	-1.17	7.35	- .24
South Central	2.24	+ .10	2.40	+ .93	2.43	+ .90	1.08	- .15	1.33	- .60	9.48	+1.18
Southeast	2.43	+ .26	2.49	+ .74	3.46	+1.67	2.10	+ .78	2.31	- .28	12.79	+3.17

TABLE 8.—*Precipitation summary, November 1, 1959 to March 31, 1960, by stations.*

Basin, Reach and Station	Precipitation by periods									Snow depth and water equivalent of snow on ground (inches), observed or adjusted (a)							
	1959		1960		Total	March 1960				Mar. 11		Mar. 18		Mar. 25		Mar. 31	
	Nov.	Dec.	Jan.	Feb.	Nov.-Feb.	1-11	12-18	19-25	26-31	SD	WE	SD	WE	SD	WE	SD	WE
MISSOURI RIVER																	
Fort Randall-Sioux City, local																	
Armour, S. Dak.	.68	.99	.69	.92	3.28	.62	.70	T	.23	14	3.9	15	3.0	8	2.4	T	
Pickstown, S. Dak.	1.14	1.00	.68	1.29	4.11	.63	.60	.00	.17	8	1.6	14	2.6	3	1.1	0	
Stickney, S. Dak.	1.72	*	V2.08	1.03	4.83	.64	.47	.02	.09		2.8		2.0		2.0		
Tyndall, S. Dak.	1.70	.91	.92	.43	3.96	.72	.60	T	.36	22	4.6	17	3.4	22	3.0	1	
Vermillion 2N, S. Dak.	2.02	1.44	.29	.10	3.85	.45	.34	T	.30	12	4.3	15	3.0	8	2.4	T	
Wagner, S. Dak.	1.66	1.45	.81	1.03	4.95	1.20	1.13	T	.53	9	1.8	10	2.0	T	0.2	T	
Yankton 2ESE, S. Dak.	3.36	1.36	.36	.21	5.29	.49	.29	.06	.65		4.0		2.6		2.6		
Bloomfield, Nebr.	2.42	1.55	1.60	.79	6.36	1.05	.77	.07	.34	17	4.3	20	4.0	15	4.0	3	
Coleridge, Nebr.	3.21	2.19	.94	.55	6.89	*	V1.35	.00	(.25)		4.3		4.6		3.6		
Creighton, Nebr.	1.08	.97	1.17	.49	3.71	.80	.36	T	.36		4.2		3.0		3.0		
Hartington, Nebr.	3.68	1.16	.79	.40	6.03	1.00	.86	.02	.41		4.8		4.1		3.9		
Newcastle, Nebr.	2.34	1.77	.83	.42	5.36	.91	.57	.12	.34	23	4.2	24	4.8	19	3.8		
Niobrara, Nebr.	.86	.97	.61	.26	2.70	.86	.55	T	.25	11	4.0	18	3.2	3	1.5	0	
Walnut 1SE, Nebr.	1.33	.82	.56	1.04	3.75	.86	.57	.00	(.44)		2.6		3.0		1.7		
Hinton 4W, Iowa	2.46	1.66	.82	.40	5.34	.64	.57	.06	.41		2.0		3.0		2.7		
Sioux City 8N, Iowa	1.51	1.41	1.02	.23	4.17	.36	.34	.02	.40	11	2.1	14	3.1	9	2.7	0	
Sioux City 4N, Iowa	1.44	1.45	1.13	.36	4.38	.52	.45	.10	.40		2.5		3.6		3.0		
PONCA CREEK																	
Bonesteel, S. Dak.	.65	-	.50	1.41	-	.42	.68	T	.05	9	1.8	21	4.0	13	3.2	T	
Gregory, S. Dak.	1.60	.64	.85	1.63	4.72	.63	.61	T	.11		1.0		1.2		0.4		
Butte, Nebr.	1.44	.88	.47	1.33	4.12	.65	.55	T	.17	12	2.2	12	2.5	5	2.0	0	
Lynch, Nebr.	1.42	.80	.66	1.36	4.24	1.01	.44	.02	.24	12	2.5	12	2.5	2	1.0	T	
NIOBRARA RIVER																	
Agate, Nebr.	(.10)	.00	.70	.74	1.54	.42	T	.00	.00								
Ainsworth, Nebr.	.74	.12	.65	1.48	2.99	.30	.43	.00	.38	5	1.0	4	0.7	0		0	
Antioch, Nebr.	.30	.08	.15	.88	1.41	.30	.29	.00	.10								
Ellsworth 24NNE, Nebr.	.34	.16	.61	1.54	2.65	.70	.69	T	.10	4		5		0		0	
Gordon, Nebr.	.22	.01	.51	.69	1.43	.07	.17	.00	.00	1		1		0		0	
Harrison 9W, Nebr.	.59	*	V .30	.34	1.23	.04	.04	.00	.00								
Hay Springs, Nebr.	.43	.09	1.03	1.10	2.65	.14	.16	.00	.21								
Hay Springs 12S, Nebr.	.04	.24	.81	.50	1.59	.42	.40	.00	T								
Merriman, Nebr.	.61	T	.51	1.52	2.64	.20	.27	.00	.00								
Nenzel 20S, Nebr.	.45	T	.40	1.57	2.42	.21	.33	T	.05	4		4		0		0	
Rushville, Nebr.	.06	.11	.65	.95	1.77	.10	.15	.00	T								
Spencer 5SE, Nebr.	1.14	.30	.40	1.15	2.99	.56	.50	.01	.30	12	2.2	13	2.6	4	2.0	0	
Springview, Nebr.	.95	.12	.40	1.03	2.50	.30	.39	T	.52	5	1.0	8	1.6	T	0.2	0	
Valentine Lakes Game Ref., Nebr.	.27	.02	.21	1.05	1.55	.00	.17	.00	.30	2	0.4	4	0.6	0	.0	0	
Valentine WB Airport, Nebr.	.35	.04	.04	1.19	1.62	.05	.29	T	.30	3	0.4	7	1.3	T	0.2	T	
Mission 14SSE, S. Dak.	.35	T	.13	1.58	2.06	.10	.20	.00	.20	10	2.6	17	3.4	2	1.0	0	
Wewela, S. Dak.	.43	.09	.11	1.21	1.84	.33	.21	.00	.18	2	0.5	2	0.6	0	.0	0	
Kirtley, Wyo.	.37	T	.39	.66	1.42	.16	T	T	.02								
Lusk, Wyo.	.23	.01	.22	.58	1.04	.17	.20	.00	.03								
JAMES RIVER																	
Aberdeen FAA AP, S. Dak.	.88	.73	1.01	.52	3.14	.52	.22	.03	.02	9	1.5	9	1.8	3	1.5	0	
Alexandria, S. Dak.	.80	.66	.29	.30	2.05	.60	.23	.03	.16	8	1.2	8	2.0	2	0.8	0	
Andover 7N, S. Dak.	.68	.58	.58	.33	2.17	.36	.10	.00	.00	7	1.2	6	1.2	2	0.7	0	
Ashton, S. Dak.	.49	.50	.44	.48	1.91	.63	.22	.00	.00	13	2.2	12	2.4	3	1.5	0	
Bridgewater, S. Dak.	1.97	1.11	.59	.24	3.91	.51	.46	T	.16	11	1.7	13	2.6	5	1.5	0	
Britton, S. Dak.	.30	.23	.16	.12	.81	.16	.08	.00	T	4	0.7	3	0.6	0	.0	0	
Carthage, S. Dak.	.80	1.15	.18	.33	2.46	.49	.09	.02	.09	9	1.3	10	2.0	5	2.0	0	
Clark, S. Dak.	.54	.87	.99	.67	3.07	.63	.28	.02	.11	16	2.6	17	2.5	8	2.4	1	
Columbia 8N, S. Dak.	.69	.65	.81	.38	2.53	.54	.00	T	.02	15	2.6	8	1.6	5	1.5	T	
Conde 3ESE, S. Dak.	.42	.51	.56	.51	2.00	.28	.15	T	T	9	1.5	7	1.4	3	1.1	0	
Faulkton 1NW, S. Dak.	.35	.37	.79	.23	1.74	.81	.27	.00	.00	13	2.2	12	2.4	7	2.0	T	
Forestburg 3NE, S. Dak.	1.22	1.19	.70	.51	3.62	.56	.64	.00	.15	10	1.7	12	2.3	7	2.3	T	
Huron WB Airport, S. Dak.	.92	1.08	.55	.76	3.31	.39	.22	.04	.02	10	1.7	11	3.2	6	3.5	0	
Ipswich, S. Dak.	.54	.41	.69	.18	1.82	.65	.19	T	.02	13	2.2	8	1.6	2	1.0	T	
Iroquois, S. Dak.	.70	.70	.29	.59	2.28	.26	.14	T	.08	6	1.0	6	1.6	2	1.0	T	
La Delle 7NE, S. Dak.	.59	.84	.50	.28	2.21	.24	.05	T	T	12	2.0		2.0		2.2		
Leola, S. Dak.	.65	.42	.31	.38	1.76	.33	.09	.03	.04	9	1.5	8	1.6	4	1.4	T	
Mellette, S. Dak.	.28	.39	.64	.37	1.68	.42	.10	T	.02	9	1.5	8	1.6	3	1.2	T	
Menno, S. Dak.	2.06	1.20	.76	.23	4.25	.58	.58	.05	.23	12	2.4	15	3.0	5	1.8	0	
Miller, S. Dak.	.65	.69	.86	.88	3.08	.53	.14	T	.00	12	2.0	10	2.0	4	1.6	0	
Mitchell 2SE, S. Dak.	.92	.68	.90	.75	3.25	.94	.51	.02	.28	6	0.9	5	1.2	2	0.8	T	
Onaka, S. Dak.	.39	.37	.31	.29	1.36	.32	.14	.01	T	8	1.4	8	1.6	6	1.5	2	
Parkston 5E, S. Dak.	1.15	1.08	.89	.42	3.54	.51	.52	T	.29	12	2.2	16	3.2	8	2.4	T	
Raymond 3NE, S. Dak.	.36	1.15	.55	.49	2.55	.32	.19	T	.02		2.0		2.0		2.0		
Redfield, S. Dak.	.26	.29	.58	.56	1.69	.42	.11	.00	.00	9	1.8	7	1.4	3	1.5	0	
Rockham 2NNE, S. Dak.	.18	.26	.64	.62	1.70	.69	.10	.05	T	10	1.7	11	2.2	7	2.0	1	
Roscoe, S. Dak.	.63	.14	.53	.35	1.65	.28	.08	.05	T	15	2.5	12	2.4	4	2.0	T	
Tulare 3W, S. Dak.	.11	.40	.21	.68	1.40	1.12	.03	T	T	12	2.0	10	2.0	5	1.8	1	
Wessington, S. Dak.	.41	.61	.60	.84	2.46	.36	.25	T	T	10	1.7	8	1.6	2	1.0	0	
Wessington Springs, S. Dak.	1.18	.84	.43	1.02	3.47	.42	.39	.03	.01	11	1.9	12	2.4	7	2.3	T	
Wetonka, S. Dak.	-	-	-	.15	-	.79	.72	.02	.01	6	1.0	9	1.8	3	1.5	0	
Wolsey, S. Dak.	.73	1.00	.80	.77	3.30	.40	.15	T	T	10	1.7	10	2.0	6	1.5	T	
VERMILLION RIVER																	
Bridgewater, S. Dak.	1.97	1.11	.59	.24	3.91	.51	.46	T	.16	11	1.7	13	2.6	5	1.5	0	
Canistota 2N, S. Dak.	1.48	1.02	.79	.24	3.53	.84	.35	.05	.24	15	2.3	15	3.0	10	3.0	2	
Centerville, S. Dak.	3.91	1.86	.69	.30	6.76	.90	.39	.06	.33	16	2.9	16	3.2	6	1.8	T	
De Smet, S. Dak.	.97	.93	.62	.45	2.97	.82	.40	.00	.35	13	2.0	14	2.8	4	1.8	T	
Marion, S. Dak.	2.45	1.54	1.22	.18	5.39	.73	.45	.08	.36	8	1.6		2.8		1.8		
Salem, S. Dak.	2.18	1.04	1.07	.18	4.47	.95	.56	T	.20	16	2.4	19	3.8	6	1.8	0	
Vermillion 2N, S. Dak.	2.02	1.44	.29	.10	3.85	.45	.34	T	.30	12	4.3	15	3.0	8	2.4	T	
BIG SIOUX RIVER																	
Alcester, S. Dak.	1.49	1.18	.37	.19	3.23	.48	.41	.09	.29		2.0		3.2		2.0		
Arlington, S. Dak.	.65	.85	.44	.10	2.04	.56	.21	T	.00	9	1.3	3	1.2	1	0.4	0	
Brookings 1NE, S. Dak.	.60	.62	.32	.04	1.58	.54	.09	.02	.19	10	1.5	10	1.5	T	T	0	
Bryant 1 NE, S. Dak.	.71	.74	.32	.52	2.29	.94	.20	.00	.34	13	2.0	12	2.4	4	1.5	0	

See footnotes at end of table.

TABLE 8.—Continued

Basin, Reach and Station	Precipitation by periods									Snow depth and water equivalent of snow on ground (inches), observed or adjusted (a)							
	1959		1960		Total	March 1960				Mar. 11		Mar. 18		Mar. 25		Mar. 31	
	Nov.	Dec.	Jan.	Feb.	Nov.-Feb.	1-11	12-18	19-25	26-31	SD	WE	SD	WE	SD	WE	SD	WE
BIG SIOUX RIVER (Cont.)																	
Canton, S. Dak.	1.25	1.39	.92	.42	3.98	.83	.40	.06	.36	15	2.7	14	2.2	3	1.0	0	
Castlewood, S. Dak.	.75	.85	.35	.30	2.25	.43	.11	.02	.40	6	0.9	4	0.8	2	0.7	T	
Clear Lake, S. Dak.	1.10	1.56	.72	T	3.38	.69	.12	.00	.30	9	1.3	8	1.6	5	1.0	1	
De Smet, S. Dak.	.97	.93	.62	.45	2.97	.82	.40	.00	.35	13	2.0	14	2.8	4	1.8	T	
Flandreau, S. Dak.	1.10	.72	.53	.08	2.42	.46	.10	T	.51	6	0.9	5	1.0	2	1.0	T	
Garretson, S. Dak.	1.18	1.15	.65	.09	3.07	.77	.18	.02	.72		2.1		2.3		2.4		
Sioux Falls WBAP, S. Dak.	1.89	.88	1.65	.22	4.64	1.16	.42	.05	.27	16	2.3	12	2.6	7	2.0	0	
Watertown FAA AP, S. Dak.	1.14	.56	.68	.26	2.64	.57	.11	.01	.18	9	1.3	9	1.8	3	1.2	T	
Waubay Natl Wildlife, S. Dak.	.51	.53	.67	.46	2.17	.32	.06	.00	.05	10	1.5	10	2.0	7	1.8	T	
Webster, S. Dak.	.71	.65	.81	.49	2.66	.46	.17	.02	.03		1.5		2.0		1.3		
Wentworth, S. Dak.	1.40	.90	.72	.07	3.09	.52	.29	.00	.37	9	1.4	10	1.8	2	1.0	0	
Akron, Iowa	2.18	1.39	.41	.21	4.19	.64	.27	.06	.25	15	2.8	16	3.5	4	2.0	T	
Hawarden, Iowa	2.10	1.38	.48	.24	4.20	.66	.47	.00	.46	9	1.6	9	2.9	3	1.0	0	
Inwood 2W, Iowa	2.10	1.42	.51	.12	4.15	.76	.32	.07	.53	13	2.3	14	2.5	7	2.0	0	
Rock Rapids, Iowa	1.13	.93	.35	.15	2.56	.70	.19	T	.47	13	2.1	8	1.8	4	1.0	0	
Sibley, Iowa	1.36	1.38	.84	.18	3.76	.59	.13	.03	.22	14	2.1	11	2.0	8	2.0	0	
Sioux Center 2NW, Iowa	2.14	1.20	.20	.17	3.71	.39	.31	.00	.27	11	2.1	8	2.8	3	1.0	0	
Pipestone, Minn.	.65	.54	.70	.12	2.01	.72	.11	.04	.41	16	2.4	13	2.5	9	2.3	T	
FLOYD RIVER																	
Alton, Iowa	2.76	1.31	.75	.27	5.09	.96	.35	.13	.17	9	2.0	7	2.1	3	1.8	0	
Granville 2E, Iowa	1.35	.92	(.07)	.37	(2.71)	.97	.37	.08	.10		2.0		2.0		1.8		
James 1NE, Iowa	1.99	1.31	.83	.64	4.77	.58	.36	.08	-	8	2.1	12	2.8	13	2.7	1	0.2
Le Mars 2N, Iowa	1.81	1.38	.81	.24	4.24	.40	.51	.02	.17		2.0		2.4		2.2		
Merrill 5W, Iowa	1.72	1.02	.20	.21	3.15	.34	.23	.12	.36		2.0		2.4		2.3		
Sanborn, Iowa	1.88	1.60	.48	.30	4.26	1.20	.20	.06	.40		2.2		2.0		1.8		
Sheldon, Iowa	1.89	1.32	.31	.32	3.84	.80	.26	.07	.22	11	2.2	9	2.3	6	1.8	0	
LITTLE SIOUX RIVER																	
Castana 4E, Iowa	1.77	2.40	1.71	.90	6.78	.52	.35	T	.23	18	3.4	21	4.6	13	3.5	0	
Cherokee 3N, Iowa	1.44	1.68	.31	.58	4.01	.38	.15	.08	.25	6	1.4	6	1.5	4	1.2	0	
Correctionville, Iowa										11	2.2	14	3.2	11	2.8	T	
Holstein, Iowa	1.99	1.64	1.73	.86	6.22	.55	.33	.05	.11	18	3.4	19	4.2	7	2.1	0	
Ida Grove, Iowa	1.34	2.07	1.50	.78	5.69	.76	.22	.07	.14	10	3.4	7	3.0	3	1.0	0	
Kennebec, Iowa										15	3.0	20	3.8	14	3.5	0	
Lake Park, Iowa	1.44	1.36	.57	.42	3.79	.87	.07	.02	.33	10	1.5	7	1.4	5	1.1	0	
Mapleton 4NNW, Iowa	1.44	1.89	1.32	.97	5.62	.94	.43	T	.12	15	2.9	15	3.4	12	3.4	1	
Milford 4NW, Iowa	1.42	1.46	.52	.42	3.82	1.05	.14	.06	.42	14	2.1	11	2.2	9	1.8	0	
Moville, Iowa	1.55	1.19	(1.09)	.31	(4.14)	.30	.20	.07	.05		2.8		3.0		3.0		
Peterson 1W, Iowa	1.85	2.48	.93	.54	5.80	1.08	.21	.06	.25	13	2.0	10	9.0	2	0.8	0	
Primghar, Iowa	1.53	1.50	.57	.21	3.81	.78	.03	T	.39		2.0		1.9		1.2		
Sioux Rapids, Iowa	1.72	1.50	.66	.38	4.26	.37	.19	.04	.00	7	1.4	6	1.5	2	0.6	0	
Spencer 1N, Iowa	1.77	1.75	.73	.49	4.74	.82	.15	.05	.38	16	2.4	10	2.0	4	0.9	0	
Lakefield, Minn.	1.32	1.75	.70	.22	3.99	.77	.00	.00	.40		1.8		2.0		2.5		
Worthington, Minn.	(.70)	1.89	.44	.20	(3.23)	.68	.07	.04	.45	14	2.1	12	2.4	10	2.5	T	
MISSOURI RIVER Sioux City-Omaha, local																	
Blair, Nebr.	.84	1.61	1.83	1.46	5.74	.98	.70	T	.36	19	3.4	21	5.5	17	4.4	T	
Homer, Nebr.	1.26	1.60	1.30	.52	4.68	.50	.34	.05	.41		4.0		4.0		3.5		
Omaha West, Nebr.	.63	1.25	1.43	1.74	5.05	1.07	.92	.00	.33	20	4.3	24	5.0	17	4.2		
Rosalie 1NE, Nebr.	.87	*	V3.04	1.27	5.18	.58	.91	.00	(.42)		5.0		5.5		5.1		
Spiker 4NW, Nebr.	-	-	1.29	1.01	-	.56	.40	.06	.19		4.0		5.5		5.2		
Tekamah, Nebr.	1.77	1.20	1.18	1.15	5.30	.92	.87	.02	.21	24	4.6	27	6.8	14	4.2	1	
Thurston 7E, Nebr.	1.15	1.24	1.26	.97	4.62	1.13	.79	.16	.38	21	4.2	24	4.8	15	4.5	2	
Walthill, Nebr.	.89	1.01	1.41	.78	4.09	.75	.62	.08	.41	22	4.6	24	4.8	17	4.8	T	
Winnebago, Nebr.	1.04	1.25	1.01	.83	4.13	.49	.70	.04	.34		4.4		4.5		4.3		
Boyer 2SSE, Iowa	1.22	2.60	.78	.54	5.14	.35	.09	.11	-		4.2		5.0		3.5		
Castana 4E, Iowa	1.77	2.40	1.71	.90	6.78	.52	.35	T	.23	18	3.4	21	4.6	13	3.5	0	
Council Bluffs 6NE, Iowa	1.22	1.34	1.59	1.63	5.78	.75	.53	.02	.26	20	4.0	22	5.8	13	3.4	0	
Council Bluffs 5NE, Iowa	.76	1.32	1.51	1.46	5.05	.75	.53	.02	.26	20	4.0	22	5.8	13	3.4	0	
Denison 1S, Iowa	2.53	2.47	1.29	1.28	7.57	.93	.45	.00	.38	22	4.2	20	4.8	13	3.4	T	
Larrabee, Iowa	1.41	1.27	.52	.43	3.63	.87	.26	.09	.25		1.7		1.5		1.2		
Logan, Iowa	.88	2.64	1.65	1.04	6.21	.62	.40	.02	.37	25	4.7	22	5.5	5	1.5	T	
Missouri Valley, Iowa	1.81	1.68	1.08	1.04	5.61	.37	.24	.02	.40		4.0		5.5		3.8		
Onawa, Iowa	2.67	1.33	1.71	.98	6.69	.94	.50	.02	.24	26	5.0	25	5.0	21	5.0	T	
Pisgah, Iowa	1.39	1.70	.93	.82	4.84	.81	.58	T	.30	21	4.5	22	5.5	16	4.0	T	
Sioux City 8N	1.51	1.41	1.02	.23	4.17	.36	.34	.02	.40	11	2.1	14	3.0	9	2.7	0	
Sioux City WB AP, Iowa	2.21	1.54	1.57	.85	6.17	.99	.66	.11	.41	19	3.3	20	3.8	12	3.3	T	
Sioux City 4N, Iowa	1.44	1.45	1.13	.36	4.38	.52	.45	.10	.40		2.8		3.4		3.0		
Soldier, Iowa	1.28	1.91	1.31	1.08	5.58	.87	.58	.02	.23		4.0		4.5		3.5		
Woodbine 3NE, Iowa	.89	2.22	.75	(.41)	(4.27)	.76	.04	.11	.30		4.5		4.4		3.4		
NORTH PLATTE RIVER State Line-North Platte																	
Alliance, Nebr.	.16	.14	.29	.67	1.26	.23	.28	.00	.04	T		T		0		0	
Arthur, Nebr.	.03	T	.31	1.51	1.85	.14	.25	.00	.03		0.2		0.4		0.0		
Box Butte Exp. Farm, Nebr.	.05	T	.30	.42	.77	.43	.44	.00	.00	T	0.0	2	0.4		0.0		
Bridgeport, Nebr.	.05	-	.39	.51	-	.11	.09	.00	.05		0.0		0.0		0.0		
Crescent Lake Game Ref., Nebr.	.14	.05	.45	.99	1.63	.07	.19	.00	T	1	0.0	T	0.0	0	0.0	0	
Dalton, Nebr.	.14	.26	1.17	1.10	2.67	.41	.09	.00	.00	8		3		0		0	
Ellsworth, Nebr.	.14	.29	.16	.81	1.40	.08	.18	.00	.00								
Harrisburg 10NW, Nebr.	.02	T	.43	.43	.88	.14	.05	.06	.07	T		0		0		0	
Kingsley Dam, Nebr.	.06	.02	1.32	1.93	3.33	.48	.54	.00	.09	2		2		0		0	
Lyman, Nebr.	.07	T	.54	.47	1.08	.12	.13	.00	.00	0		0		0		0	
Mitchell 5E, Nebr.	.11	.01	.38	.39	.89	.10	.03	T	.00	0		0		0		0	
North Platte WB AP, Nebr.	.15	.23	1.12	1.28	2.78	.47	.38	T	.07	4	0.5	6	0.9	T		0	
North Platte Exp. Farm, Nebr.	T	.32	1.09	1.52	2.93	.34	.35	T	.04								
Oshkosh, Nebr.	.36	.05	.74	1.12	2.27	.28	.12	.00	.35	1		1		0		0	
Paxton, Nebr.	.21	.01	1.16	1.70	3.08	.55	.41	T	.00	3		4		T		0	
Scottsbluff WB AP, Nebr.	.12	.24	.26	.50	1.12	.20	.09	T	.06	0		0		0		0	
SOUTH PLATTE RIVER State Line-North Platte																	
Big Springs, Nebr.	.12	.05	(.68)	1.07	(1.92)	.37	.35	.00	.00	2		2		0		0	
Hershey, Nebr.	.37	.06	1.25	1.38	3.06	.62	-	-	(.03)								

See footnotes at end of table.

TABLE 8.—Continued

Basin, Reach and Station	Precipitation by periods									Snow depth and water equivalent of snow on ground (inches), observed or adjusted (a)							
	1959		1960		Total	March 1960				Mar. 11		Mar. 18		Mar. 25		Mar. 31	
	Nov.	Dec.	Jan.	Feb.	Nov.-Feb.	1-11	12-18	19-25	26-31	SD	WE	SD	WE	SD	WE	SD	WE
SOUTH PLATTE RIVER (Cont.)																	
State Line-North Platte																	
Kimball, Nebr.	.12	.21	.74	.76	1.83	.50	.13	.04	.03	T		0		0		0	
Lodgepole, Nebr.	T	.07	.77	.92	1.76	.38	.30	.00	.30								
Ogallala, Nebr.	.13	.10	1.21	1.92	3.36	.54	.47	.00	.08	8	1.2	7	1.1	1	0.2	0	
Paxton, Nebr.	.21	.01	1.16	1.70	3.08	.55	.41	T	.00	3	0.7	4	0.6	T	T	0	
Potter 1W, Nebr.	.05	T	.71	.82	1.58	.53	.09	T	.10					0		0	
Sidney, Nebr.	T	.01	.60	.54	1.15	.50	.11	.00	.04								
Sidney FAA AP, Nebr.	.07	.01	.83	.77	1.68	.32	.05	T	.05	0		0		0		0	
PLATTE RIVER																	
North Platte-Mouth																	
Ashland 3NE, Nebr.	.34	.60	1.57	1.30	3.81	.52	.16	T	0		4.0		5.0		4.0		
Central City, Nebr.	.04	.40	1.30	.95	2.69	.75	.52	T	.11	25	3.8	30	4.5	21	4.0	0	
Columbus, Nebr.	1.11	.44	1.60	.59	3.74	.66	.53	.00	.03		4.8		3.9		3.8		
David City, Nebr.	.21	.84	2.48	1.68	5.21	.91	.72	.02	.48	25	6.5	25	6.2	19	5.7	T	
Elm Creek, Nebr.	.00	*	V .85	1.12	1.97	.22	.55	.00	(.05)		3.4		4.4		0.9		
Eustis 3WNW, Nebr.	T	.03	1.70	1.69	3.42	.19	.34	.00	.18		2.1		1.5		0.0		
Fremont, Nebr.	.50	1.01	2.17	1.53	5.21	1.80	1.40	.05	.40		3.5		4.7		4.7		
Gibbon, Nebr.	.18	*	V1.84	2.02	4.04	.53	.72	.00	(.05)		1.8		2.6		1.0		
Gothenburg, Nebr.	T	.32	1.24	1.96	3.52	.49	.58	.00	.03	6	1.4	6	1.8	T	T	0	
Grand Island WB AP, Nebr.	.56	.62	1.65	1.14	3.97	.67	.47	T	.30	9	1.3	12	1.7	5	1.5	0	
Gretna 3NE, Nebr.	.59	.97	1.32	1.58	4.46	.49	.46	.01	.53		3.7		4.9		4.4		
Johnson No. 2 Pwr Pl, Nebr.	T	T	1.62	1.24	2.86	.45	.82	.00	.10		3.4		4.0		0.0		
Kearney, Nebr.	T	.04	1.91	2.04	3.99	.48	.93	.02	.02		2.0		3.8		0.6		
Lexington 7ESE, Nebr.	T	.03	1.88	1.42	3.33	.20	.34	.00	.02	15	3.8	20	4.0	T	T	0	
Miller, Nebr.	T	T	2.00	(.86)	(2.86)	.54	1.08	.00	T		3.5		3.5		0.0		
Osceola 9W, Nebr.	.20	.73	2.28	1.26	4.47	.45	.33	T	.13	12	3.9	16	5.0	8	3.9	0	
Polk, Nebr.	T	1.08	D2.73	D1.20	5.01	-	-	-	-		2.2	17	4.2		3.8		
Schuyler, Nebr.	.50	.72	2.12	1.42	4.76	.78	.57	.04	.39	22	4.6	25	4.5	15	4.5	T	
Tarnov, Nebr.	.19	*	V1.23	.35	1.77	.36	.30	.00	(.30)		4.6		4.1		4.0		
LOUP RIVER																	
Albion, Nebr.	.09	.55	1.74	1.12	3.50	.81	.84	T	.23		3.8		3.8		3.0		
Anselmo, Nebr.	.05	T	1.05	.88	1.98	.36	.31	.00	.23	10	2.3	5	1.0	0		0	
Arcadia, Nebr.	.07	.11	2.09	1.47	3.74	.59	.73	T	.05	10	2.3	11	2.5	5	1.5	0	
Arnold, Nebr.	T	.10	.80	1.09	1.99	.57	.75	.00	.14		1.3		1.1		0.0		
Ashton, Nebr.	.00	.34	1.65	1.27	3.26	.46	.59	.00	(.07)		3.1		4.2		3.1		
Bartlett 7NNE, Nebr.	.20	.06	-	.56	-	.16	.27	.00	.25		3.4		3.2		2.0		
Brewster, Nebr.	.82	.25	.68	.81	2.56	.17	.30	.00	.06		1.0		0.8		0.0		
Broken Bow 2W, Nebr.	T	T	1.55	.98	2.53	.43	.32	T	.00	5	1.2	9	1.6	T	T	0	
Burwell, Nebr.	.04	.14	.84	.99	2.01	.26	.75	T	.31	5	1.2	11	1.8	2	0.7	0	
Columbus, Nebr.	1.11	.44	1.60	.59	3.74	.66	.53	.00	.03		4.6		4.5		3.9		
Comstock, Nebr.	.14	.09	2.28	1.09	3.70	.40	.32	.00	.02	2	0.5	2	0.8	0	0.0	0	
Elgin 9WSW, Nebr.	.35	1.05	2.93	1.25	5.58	.90	1.10	.00	.29	14	3.4	18	4.2	6	1.8	0	
Ericson 6WNW, Nebr.	.16	.20	1.78	1.06	3.20	.43	.50	.00	.25	15	3.6	18	3.8	12	3.0	2	
Fullerton, Nebr.	.06	.33	1.71	.90	3.00	.67	.73	.00	.19	16	3.5	19	3.8	7	2.7	0	
Genoa, Nebr.	.18	.40	.86	.73	2.17	.66	.61	0	.26	22	4.8		4.5	16	3.8	0	
Greeley, Nebr.	.17	.18	1.65	1.00	3.00	.37	1.01	.00	.14		3.0		4.1		3.3		
Halsey 2W, Nebr.	.25	.13	1.24	1.73	3.35	.55	.58	T	.10	3	0.7	2	0.6	0	0.0	0	
Loup City, Nebr.	.00	.12	2.65	1.60	4.37	.65	.79	.00	.10		3.5		4.1		2.7		
Loup City 7NNE, Nebr.	.21	.15	2.38	1.35	4.09	.70	.90	T	.02	17	3.9	22	4.4	10	3.0	3	
Mullen, Nebr.	.06	.00	.91	1.70	2.67	.36	.37	.00	.11	3	0.7		0.2	0	0.0	0	
North Loup, Nebr.	.11	.17	2.30	1.52	4.10	.57	.86	.00	.10		3.5		4.1		3.0		
Ord, Nebr.	.12	.19	2.31	1.33	3.95	.65	.65	.00	.15	13	3.1	14	3.5	5	1.5	0	
Ord 9S, Nebr.	.06	.15	2.31	1.17	3.69	.73	.75	T	.14	17	3.9	22	4.4	12	3.4	T	
Purdum, Nebr.	.41	.06	1.30	1.65	3.42	.40	.82	T	T	2	0.5	4	0.9	0		0	
Ravenna 1WSW, Nebr.	T	.02	1.26	1.57	2.85	.46	.55	T	.00		2.5		3.5		2.0		
St. Paul, Nebr.	.02	.02	1.36	1.04	2.44	.52	.73	.01	.02	12	2.5	12	4.0	8	2.4	0	
Spalding, Nebr.	.16	.51	1.90	1.02	3.59	.50	.54	.00	.47		3.4		3.9		3.3		
Stapleton 5SSE, Nebr.	T	.30	.89	1.88	3.07	.50	.52	T	.12	5	1.1	4	4.9	T	T	0	
Taylor, Nebr.	.04	.30	1.65	1.22	3.21	.30	.63	.00	T	2	0.5	7	1.4	1	0.2	0	
Thedford, Nebr.	.41	*	V1.65	1.38	3.44	.45	.53	.00	.26		0.7		0.5		0.0		
Tryon, Nebr.	.32	T	.73	1.34	2.39	.30	.48	.05	.10	2	0.4	1	0.4	0	0.0	0	
Whitman 4E, Nebr.	.00	.00	.16	.79	.95	-	.20	.00	.33		0.2		0.1		0.0		
Whitman 24N, Nebr.	.09	.10	.32	.73	1.24	.19	.09	.00	.00		0.2		0.1		0.0		
ELKHORN RIVER																	
Amelia, Nebr.	.80	.30	.31	.86	2.27	.34	.34	.00	(.25)		2.0		2.0		1.6		
Atkinson, Nebr.	1.41	.42	.72	.91	3.46	.51	.59	.00	.48	8	1.4	6	1.3	T	T	0	
Beemer 5N, Nebr.	.79	.75	1.59	.89	4.02	.76	.68	.05	.50		4.8		5.2		4.8		
Chambers, Nebr.	1.00	.33	.52	.77	2.62	.47	.24	T	.35	11	2.2	15	2.7	8	2.0	0	
Clarkson, Nebr.	.47	.41	(1.64)	(.40)	(3.02)	.74	.51	.00	.55		4.8		5.2		4.5		
Concord Exp. Farm, Nebr.	1.57	.87	1.35	.80	4.59	1.19	1.15	T	.44		4.5		4.8		4.0		
Creston, Nebr.	.25	.06	.88	.45	1.64	.48	.43	.00	.32		4.3		5.0		4.7		
Dodge, Nebr.	D .98	.73	1.97	.89	4.57	.98	1.03	.00	.44		4.8	24	5.2		4.6		
Emerson, Nebr.	1.16	1.16	1.20	.62	4.14	.90	.66	.03	.40		4.8		4.5		3.8		
Ewing, Nebr.	1.23	.41	.80	.71	3.15	.79	.48	T	.36	17	2.6	16	3.2	8	2.0	T	
Ewing 12S, Nebr.	.35	.23	1.28	.73	2.59	.45	.58	.00	.21		3.4		3.2		2.0		
Laurel, Nebr.	2.36	1.31	.94	.50	5.11	.47	.43	.01	.24	12	3.6	19	4.8	10	3.2	0	
Lyons, Nebr.	1.64	.99	1.71	.99	5.33	.93	.62	.01	.49	27	5.1	28	7.0	20	5.2	8	
Madison, Nebr.	.53	1.09	1.88	.66	4.16	.62	.71	T	.39	16	4.2	24	5.5	16	4.8	2	
Meadow Grove, Nebr.	.53	.42	1.67	.75	3.37	.85	.76	.02	.41	19	4.6	25	5.5	14	4.1	0	
Neligh No. 2, Nebr.	.85	.66	1.83	.93	4.27	.86	.53	T	.44	16	4.2	19	5.0	11	4.5	1	
Norfolk, Nebr.	1.01	.44	1.75	1.00	4.20	1.08	.93	.02	.38		4.9		5.4		4.7		
Norfolk WB AP, Nebr.	.60	.46	1.74	1.02	3.82	1.07	1.01	T	.60	18	4.9	27	5.4	15	4.7	2	1.6
Oakdale, Nebr.	.69	.80	1.69	.79	3.97	.87	.60	T	.23	17	4.4	17	5.3	10	3.6	T	
O'Neill, Nebr.	1.41	1.15	.58	(1.03)	(4.17)	.67	.59	.00	.45		1.4		2.3		1.2		
Osmond, Nebr.	3.60	.92	1.43	.78	6.73	1.07	.72	.00	.32	21	4.6	21	5.0	11	3.6	5	
Pender, Nebr.	.78	.64	1.05	(.22)	(2.69)	1.00	.82	.00	.49		4.8		5.0		3.9		
Pierce, Nebr.	1.02	.57	.98	.52	3.09	.72	.55	.00	(.29)		4.8		5.4		4.5		
Pilger, Nebr.	1.17	.54	2.40	.70	4.81	1.30	1.33	.38	.51	21	4.5	30	6.5	13	3.8	T	
Scribner, Nebr.	1.11	1.13	2.11	1.13	5.48	.94	.68	.03	.49		4.0		5.3		4.5		
Stanton, Nebr.	.80	.58	1.97	.86	4.21	.81	.71	.00	.30		4.5		5.6		4.4		
Wakefield, Nebr.	1.40	1.00	1.26	.50	4.16	.89	.54	T	.46	18	4.5	20	4.8	11	3.9	5	
Waterloo, Nebr.	2.53	.79	1.53	1.61	6.46	1.05	.60	.00	.33		3.7		4.4		4.2		
Wayne, Nebr.	1.10	.68	1.55	.76	4.09	.90	.74	.02	.31	15	4.5	18	5.0	12	3.8	2	
Westpoint, Nebr.	.76	.88	2.63	1.20	5.47	.89	.84	T	.50		5.1		5.3		4.8		
Winside, Nebr.	1.26	.76	1.61	1.10	4.73	1.04	.70	.07	.40	20	4.4	28	6.3	16	4.9	2	

See footnotes at end of table.

TABLE 8.—Continued

Basin, Reach and Station	Precipitation by periods									Snow depth and water equivalent of snow on ground (inches), observed or adjusted (a)							
	1959		1960		Total	March 1960				Mar. 11		Mar. 18		Mar. 25		Mar. 31	
	Nov.	Dec.	Jan.	Feb.	Nov.-Feb.	1-11	12-18	19-25	26-31	SD	WE	SD	WE	SD	WE	SD	WE
SALT CREEK																	
Emerald, Nebr.	.28	.53	1.31	1.67	3.79	.70	.54	.00	.42	14	2.7	18	3.8	11	3.8	0	
Hallam 3W, Nebr.	.02	.20	(.60)	(1.20)	(2.02)	.63	.90	.00	.35								
Hickman, Nebr.	.08	1.08	1.87	2.46	5.49	.72	.79	.00	.40		3.8		6.0		2.8		
Kramer, Nebr.	.08	.78	1.76	2.62	5.24	.56	.88	.00	.35	15	3.0	19	5.0	7	3.0	0	
Lincoln Agro. Farm, Nebr.	.33	1.08	1.46	2.30	5.17	1.00	1.00	T	.43	13	3.1	19	3.9	11	3.8	0	
Lincoln College View, Nebr.	.17	.50	(.46)	1.13	(2.26)	.46	.53	T	.43		3.1		3.9		3.8		
Lincoln WB City, Nebr.	.40	.88	1.48	2.10	4.86	.79	.78	T	.46	15	3.0	16	3.4	8	3.0	0	
Malcolm, Nebr.	.52	.65	1.67	2.08	4.92	.81	.85	T	.76	20	3.9	22	3.9	9	3.0	T	
Malmo 1E, Nebr.	.35	.45	.75	.84	2.39	.61	.49	.00	.43		4.5		5.0		5.0		
Martell 2NNW, Nebr.	.12	.91	1.35	1.67	4.05	.79	.78	T	.37								
Panama 2NW, Nebr.	.10	1.93	1.30	1.57	4.90	.69	.70	.00	.47								
Princeton 2N, Nebr.	.04	.31	.97	1.65	2.97	1.11	1.01	.00	.36								
Raymond, Nebr.	.57	.65	1.67	1.67	4.56	1.12	.83	T	.50	18	3.8	27	5.4	10	3.0	0	
Roca, Nebr.	.42	.85	1.80	1.90	4.97	1.01	.98	.00	.40	14	3.5	17	5.0	6	3.0	0	
Sprague, Nebr.	.22	.95	1.55	2.15	4.88	.50	.41	.00	.60	13	3.0	16	5.0	5	2.0	0	
Wahoo, Nebr.	1.09	.85	1.82	1.45	5.21	.94	.63	T	.40	14	3.5	19	4.0	10	3.8	T	
MISSOURI RIVER Omaha-Nebraska City Local																	
Nebraska City 1WNW, Nebr.	.31	1.39	2.43	1.61	5.74	.83	.88	T	.71	14	3.1	17	4.8	11	3.8	0	
Plattsmouth, Nebr.	.34	.36	1.78	2.24	4.72	1.07	.90	.00	.35		4.1		5.2		4.2		
Waterloo, Nebr.	2.53	.79	1.53	1.61	6.46	1.05	.60	.00	.33		3.7		4.4		4.1		
Weeping Water, Nebr.	.26	1.25	2.00	2.92	6.33	.96	1.00	T	.36	23	4.6	28	5.3	14	4.3	T	
Weeping Water 6NW, Nebr.	.25	1.26	1.19	1.70	4.40	.47	.28	.00	.30		4.6		5.3		4.3		
Glenwood, Iowa	1.14	1.72	1.89	1.59	6.34	.84	.52	.02	.09		4.1		5.0		4.2		
Glenwood 6SE, Iowa	.53	1.59	2.65	1.88	6.65	.82	.65	.00	.61		3.9		5.0		4.2		
Mineola 4SW, Iowa	.32	.92	1.30	1.47	4.01	.68	(.06)	.00	.16		4.4		5.3		4.2		
Tabor 7NW, Iowa	.45	1.14	(1.51)	1.38	(4.48)	1.25	(.51)	.36	.33		3.9		5.0		4.8		
MISSOURI RIVER Nebraska City-Rulo Local																	
Auburn, Nebr.	.51	1.71	3.15	1.72	7.09	1.09	.97	.00	.55	17	3.4	20	4.2	9	3.2	0	
Bennet, Nebr.	-	2.23	1.85	2.67	-	.95	.97	.00	.68		4.0		5.0		3.0		
Nehawka 4S, Nebr.	.33	1.29	1.88	2.21	5.71	1.27	1.47	.00	.35		3.3		4.8		4.1		
Syracuse, Nebr.	.28	1.02	1.93	2.05	5.28	.88	.84	T	.48	12	3.0	18	4.0	9	3.2	0	
Bartlett 3E, Iowa	.39	1.39	1.81	1.50	5.09	.92	.82	T	.40		3.0		4.5		4.4		
NISHNABOTNA RIVER																	
Atlantic 1NE, Iowa	.72	1.76	1.93	2.26	6.67	.55	.36	T	.44	16	2.5	14	4.2	12	4.2	0	
Audubon, Iowa	1.64	1.69	1.82	1.68	6.83	.85	.49	.02	.79	21	4.2		4.2		4.1	0	
Carson, Iowa	.46	1.95	1.22	1.34	4.97	.81	.38	.00	.50		3.5		5.2		4.1		
Emerson 4ENE, Iowa	.68	1.72	1.63	1.32	5.35	.40	.36	.02	.60	22	4.0	19	4.5	15	4.5	T	
Emerson 2N, Iowa	.38	1.29	1.73	(1.00)	(4.40)	.28	.15	.00	.82		4.0		4.5		4.5		
Exira 7SE, Iowa	1.85	2.38	1.38	1.18	6.79	.76	.37	.00	.40		2.8		4.1		4.0		
Hamburg 1N, Iowa	.64	1.68	2.11	1.23	5.66	.89	.46	.00	.55		3.0		4.2		4.0		
Harlan, Iowa	1.20	1.88	1.67	1.51	6.26	.89	.39	.03	.50	23	4.8	21	4.2	16	4.2	T	
Irvin, Iowa	1.66	1.51	.78	.82	4.77	.35	.10	.30	.38		4.3		4.4		3.8		
Malvern 4W, Iowa	.43	1.19	2.20	(1.60)	(5.42)	.60	.47	.00	.42		4.1		5.2		4.2		
Malvern 4WSW, Iowa	.37	1.18	1.41	.71	3.67	(.43)	-	.00	.50		4.0		5.1		4.2		
Oakland 2E, Iowa	.86	2.09	1.38	1.73	6.06	.57	.39	.00	.58	14	2.8	14	5.0	11	3.8	T	
Red Oak, Iowa	.70	2.10	2.34	1.88	7.02	.89	.63	T	.55	16	2.9	19	4.8	13	4.6	0	
Shenandoah, Iowa	.52	1.69	2.90	1.56	6.67	.93	.53	T	.29	14	2.6	11	3.6	4	3.0		
Sidney 1NNW, Iowa	.22	1.48	2.06	1.11	4.87	.37	.60	.00	.91		2.8		4.5		4.0		
Thurman 4S, Iowa	.51	1.28	2.56	2.30	6.65	.95	.96	.00	.55		2.9		4.6		4.0		
MISSOURI RIVER Rulo-St. Joseph Local																	
Norwich SCS Exp. Farm, Iowa	.61	1.52	D3.95	D1.39	7.47	.93	.73	.04	.15	15	2.7	19	5.0	12	4.6	0	
Hiawatha, Kansas	.59	1.80	2.32	2.32	7.03	.76	.86	.09	1.28	18	3.6	17	3.4	10	2.8	0	
Highland 1W, Kansas	.17	1.63	1.60	1.60	5.00	1.10	.71	.02	.12	15	3.0	15	3.0	5	1.8	0	
Troy, Kansas	.04	1.65	1.71	1.11	4.51	.98	.97	T	.34	12	2.1	13	2.6	1	0.3	0	
Fairfax, Mo.	.20	1.03	3.12	-	-	1.13	.45	.00	.21		2.8		3.6		2.8		
Oregon, Mo.	.15	2.71	1.48	1.22	5.56	1.89	.27	.00	.91	13	2.9	23	4.0	8	2.4	0	
St. Joseph WB AP, Mo.	.05	.99	1.83	1.35	4.22	1.11	.84	T	1.03	15	2.6	16	3.2	5	1.5	0	
Skidmore, Mo.	.18	2.14	2.61	1.09	6.02	.77	.52	.00	.42		2.5		3.4		2.8		
Tarkio, Mo.	.47	1.96	2.83	1.26	6.52	1.23	.74	T	.27	18	3.2	18	4.0	5	2.0	T	
BIG NEMAHA RIVER																	
Dawson, Nebr.	-	1.02	2.63	1.24	-	.93	.90	.00	.49		2.7		3.0		2.2		
Falls City, Nebr.	.53	1.65	2.75	2.09	7.02	1.13	.67	.00	.15	13	2.7	18	3.7	11	2.6	0	
Firth, Nebr.	.12	2.19	1.88	(1.41)	(5.60)	1.12	1.14	.00	.28		4.4		5.0		2.8		
Pawnee City, Nebr.	.12	1.13	3.15	1.76	6.16	.94	.60	.01	.44	17	2.7	22	4.2	8	2.4	0	
Pawnee City 5SE, Nebr.	.07	.97	3.60	1.50	6.14	.83	.65	.00	.26		2.7		4.2		2.4		
Sterling, Nebr.	.09	.84	1.97	1.77	4.67	.97	.83	T	.27	22	4.4	34	7.5	8	2.8	0	
Table Rock 5N, Nebr.	.22	1.92	3.00	1.47	6.61	1.00	.96	T	.28	17	2.7	15	3.7	8	2.8	T	
Tecumseh, Nebr.	.27	1.24	2.63	1.85	5.99	1.00	1.39	.00	.64	18	3.6	23	5.0	7	2.5	0	
Virginia 1ENE, Nebr.	T	1.15	2.63	1.54	5.32	.90	1.10	.00	.07		2.8		4.0		1.8		
Centralia, Kansas	.18	.82	2.03	2.28	5.31	.93	.75	.00	T	23	4.6	20	5.0	4	1.7	0	
Sabetha Lake, Kansas	.05	.93	2.46	1.00	4.44	.59	.85	T	T	13	3.0	16	4.1	9	2.4	0	
NODAWAY RIVER																	
Clarinda, Iowa	.76	2.19	3.36	1.23	7.54	.80	.46	.00	.25	18	3.0	16	4.5	10	4.1		
Corning 1W, Iowa	.72	1.99	3.34	1.25	7.30	.69	.75	T	.21	18	3.3	24	4.8	10	3.9	0	
Cumberland 3NW, Iowa	.62	1.94	1.83	1.90	6.29	.55	.25	T	.26		2.7		4.0		4.0		
Greenfield 1WNW, Iowa	1.61	1.68	2.35	2.60	8.24	1.04	.60	.21	.07		3.7		5.0		4.0		
Wallin 2WNW, Iowa	.59	2.12	1.23	1.61	5.55	.37	.34	.00	.41		2.6		4.8		4.1		
Burlington Junction, Mo.	.33	2.20	2.94	1.05	6.52	.82	.36	.00	.23	14	2.5		3.7		2.9		
MISSOURI RIVER St. Joseph-Kansas City Local																	
Amity, Mo.	.31	2.72	2.08	1.36	6.47	1.14	1.19	T	.61	17	2.9	24	4.3	12	3.6	T	
Gower 2N, Mo.	.04	.90	1.73	(1.10)	(3.77)	(.27)	-	.00	.47		2.5		4.0		1.9		
Kansas City WB AP, Mo.	.19	1.78	1.43	2.62	6.02	1.15	1.30	.01	.65	13	2.4	16	3.2	1	0.3	0	
St. Joseph WB AP, Mo.	.05	.99	1.83	1.35	4.22	1.11	.84	T	1.03	15	2.6	16	3.2	5	1.5	0	
Atchison, Kansas	.15	1.50	1.81	1.57	5.03	.77	1.16	T	.75	16	3.1	18	3.6	4	1.2	0	
Leavenworth, Kansas	.11	1.81	2.04	2.94	6.90	1.02	1.44	T	.17	12	2.5	15	3.0	1	0.3	0	

See footnotes at end of table.

TABLE 8.—Continued

Basin, Reach and Station	Precipitation by periods									Snow depth and water equivalent of snow on ground (inches), observed or adjusted (a)							
	1959		1960		Total	March 1960				Mar. 11		Mar. 18		Mar. 25		Mar. 31	
	Nov.	Dec.	Jan.	Feb.	Nov.-Feb.	1-11	12-18	19-25	26-31	SD	WE	SD	WE	SD	WE	SD	WE
PLATTE RIVER (MO.)																	
Conception, Mo.	.10	1.97	2.29	(2.48)	(6.84)	1.90	.93	.00	.57	20	3.4	19	3.4	9	3.0	T	
King City, Mo.	.14	2.71	1.89	.85	5.59	1.35	.82	.01	.70	14	2.4	20	3.6	10	3.0	0	
Maryville 2E, Mo.	.05	2.08	1.71	.40	4.24	.86	.73	T	.33		3.0		3.5		3.0		
Maryville 7NNW, Mo.	.08	2.62	2.30	.74	5.74	.56	.31	.00	.13		3.0		3.5		3.0		
Bedford, Iowa	.37	2.61	4.42	.79	8.19	1.17	.74	.02	.03	20	3.6	24	4.8	12	3.6	0	
Blockton 2S, Iowa	.32	2.62	2.04	.57	5.55	.75	.23	.02	.58	14	3.0	16	4.0	9	3.2	0	
Creston 2SW, Iowa	.64	1.77	3.15	(1.10)	(6.66)	-	-	-	-		3.3		4.5		4.1		
Lenox, Iowa	.60	2.35	2.69	.82	6.46	.69	.32	.00	.31		3.5		4.0		4.1		
REPUBLICAN RIVER Above Harlan County																	
Alma, Nebr.	T	T	1.66	1.32	2.98	.28	.52	T	.04		2.0		2.4		0.3		
Beaver City	T	T	2.56	2.23	4.79	.29	.60	.00	.08	6	1.3	8	1.6	T	T	0	
Benkelman, Nebr.	.05	.30	.95	2.00	3.30	.27	.46	.00	.00	0	0.0	1	0.2	0		0	
Bertrand, Nebr.	.02	.02	1.35	1.22	2.61	.29	.82	.00	.10	15	3.5	22	4.4	2	0.7		
Blue Hill 3SW, Nebr.	.02	.19	1.80	1.65	3.66	.30	.67	.00	.02	12	2.4	17	3.0	10	3.0		
Cambridge, Nebr.	T	.00	2.05	1.89	3.94	.62	.00	.06	.00	9	2.0	12	2.1	7	1.8	0	
Culbertson, Nebr.	.10	.80	1.33	2.57	4.80	.43	.70	T	T	5	1.0	7	1.5	0	0.0	0	
Curtis, Nebr.	T	.39	1.03	2.56	3.98	.32	.51	.00	.06	2	0.4	4	0.8	T	T	0	
Edison, Nebr.	.02	.15	1.52	1.22	2.91	.27	1.07	.00	.26		2.0		2.0		0.4		
Elwood 9SSW, Nebr.	T	T	1.16	1.42	2.58	.37	.55	T	.14	1	0.2	4	0.8	0		0	
Enders Dam, Nebr.	.21	.10	1.70	2.09	4.10	.23	.44	T	.00	2	0.4	2	0.5	0		0	
Haigler, Nebr.	T	T	1.68	2.13	3.81	.29	.26	.00	.00	T	0.0	T	0.8	0	0.0	0	
Hayes Center, Nebr.	.05	.20	1.10	2.33	3.68	.25	.25	.00	.08	3	0.7	6	1.2	0		0	
Imperial, Nebr.	.20	.15	1.65	1.98	3.98	.15	.60	.00	.00	4	0.9	2	0.7	0		0	
Imperial FAA AP, Nebr.	.18	.11	1.21	1.12	2.62	.10	.33	T	.01		0.9		0.7				
Lamar, Nebr.	.19	.00	.63	.91	1.73	.15	.59	.00	.07	8	1.8	14	2.1	1	0.3	0	
Madrid, Nebr.	.10	.34	1.61	2.19	4.24	.29	.83	.00	T	0		0		0		0	
McCook, Nebr.	.12	.54	1.49	2.63	4.78	.40	.62	.00	.05	4	0.9	4	1.0	0		0	
Medicine Creek Dam, Nebr.	T	.00	1.38	1.39	2.77	.29	.28	.00	.06	3	0.7	4	1.0	T		0	
Moorefield, Nebr.	T	.01	1.63	2.21	3.85	.46	.85	.00	.05	7	1.4	12	2.5	0		0	
Palisade, Nebr.	.10	.43	1.36	2.36	4.25	.38	.64	.00	.02	4	0.7	5	0.9	0	0.0	0	
Ragan, Nebr.	T	.06	.89	1.03	1.98	.40	.82	T	T	6	1.2	12	2.5	1	0.3	0	
Saint Ann 2S, Nebr.	T	.69	2.01	3.26	5.96	.30	.97	T	.11		0.8		1.1		0.0		
Stockville, Nebr.	T	.30	1.25	1.97	3.52	.26	.50	.00	.04	4	1.0	5	1.2	T		T	
Stratton, Nebr.	.05	.98	1.83	2.47	5.23	.26	.61	.00	.05		0.3		0.6		0.0		
Trenton Dam, Nebr.	.08	.93	.61	2.19	3.81	.27	.45	T	.00	3	0.8	3	0.9	T		T	
Wallace 1ENE, Nebr.	.10	.15	1.32	1.51	3.08	.72	.12	T	.02	6	1.2	9	2.0	1	0.3	0	
Wauneta, Nebr.	.07	.22	1.91	1.95	4.15	.27	.62	.00	T	2	0.5		0.6	0		0	
Wellfleet, Nebr.	T	.32	1.43	2.40	4.15	.29	.34	.00	.31		0.8		2.0		0.3		
Wilsonville, Nebr.	T	T	2.08	2.08	4.16	.27	.65	.00	.04		1.2		1.5		0.2		
Achilles, Kansas	.02	.47	1.95	2.91	5.35	.26	.50	T	.02	4	0.8	5	0.9	0		0	
Atwood, Kansas	T	.94	2.18	3.40	6.52	.33	.57	T	.06	5	1.0	5	0.9	0		0	
Bird City 10S, Kansas	T	.36	1.50	2.53	4.37	.29	.39	.00	.00		0.4		0.5		0.0		
Brewster, Kansas	.00	.25	1.47	1.70	3.42	.17	.32	.00	.00		0.4		0.2		0.0		
Colby 1S, Kansas	.05	.49	2.20	2.95	5.69	.18	.49	.01	.02	3	0.6	2	0.4	0		0	
Dresden, Kansas	.09	.31	1.67	2.86	4.93	.31	.55	.00	.10	6	1.2	8	1.5	0		0	
Goodland WB AP, Kansas	T	.44	1.23	1.60	4.37	.71	.23	T	.08	1	0.2	1	0.2	0		0	
Long Island, Kansas	.05	.04	1.49	1.27	2.85	.18	.39	.00	.10	11	2.4	11	2.2	4	1.0	0	
McDonald, Kansas	.04	.76	1.15	2.65	4.60	.40	.55	.00	.02		1.0		0.8		0.0		
Norcatur 2N, Kansas	T	.36	1.90	2.26	4.52	.46	.44	.00	.00		1.2		1.5		0.0		
Norton, Kansas	T	.07	1.85	2.08	4.00	.34	.55	.00	.02	8	1.5	8	1.8	T	0.0	0	
Oberlin, Kansas	.05	.24	1.74	2.88	4.91	.17	.52	.00	.03	5	1.0	5	1.0	0	0.0	0	
St. Francis, Kansas	.02	.31	1.33	2.71	4.37	.20	.43	T	.01	3	0.6	3	0.5	T		0	
St. Francis 8NW, Kansas	T	.39	1.47	2.24	4.10	.49	.35	T	T	7	1.5	5	0.8	0		0	
REPUBLICAN RIVER Harlan County-Junction City																	
Franklin, Nebr.	.01	.15	1.93	1.96	4.05	.49	.99	.00	.59	7	1.6	10	3.2	T	0.2	0	
Guide Rock, Nebr.	.02	.77	1.26	1.09	3.14	.44	.89	T	.10	4	2.0	6	3.2	2	0.8	0	
Hardy, Nebr.	.00	.48	1.76	1.63	3.87	.51	.87	.00	.07		2.0		3.5		3.0		
Harlan County Dam, Nebr.	T	.03	.95	.80	1.78	.25	.40	T	.07	9	2.0	12	3.2	2	0.5	0	
Holdrege, Nebr.	.03	.07	1.94	1.70	3.74	.46	.67	.00	.05	4	0.9	7	2.5	T	0.2	0	
Macon, Nebr.	.00	.17	1.06	.93	2.16	.31	.83	.00	(.04)		1.6		3.0		1.0		
Naponee, Nebr.	.10	.05	1.96	1.42	3.53	.35	.89	.00	.05	7	1.8		2.9		0.5		
Red Cloud, Nebr.	.02	.14	1.82	1.33	3.31	.65	1.20	.00	.03	15	3.0	(27)	4.0		2.8	0	
Rosemont 2S, Nebr.	T	.13	1.23	1.18	2.54	.23	.50	.00	.06		3.6		4.0		3.6		
Superior, Nebr.	.01	1.01	1.92	1.93	4.87	.48	.94	T	.15	9	1.8	16	3.2	7	2.5	0	
Upland, Nebr.	T	T	1.62	1.52	3.14	.35	.49	.00	.20		2.0		2.8		1.5		
Bellaire 12NNW, Kansas	T	(.05)	1.33	1.08	(2.46)	.24	.58	T	.06		2.4		3.5		2.1		
Belleville, Kansas	T	.64	1.94	1.38	3.96	.83	1.13	T	.04	11	2.0	20	4.0	7	2.0	0	
Clay Center, Kansas	.24	.76	2.55	1.74	5.29	.68	.98	T	.06	12	2.4	17	3.4	T	0.2	0	
Clifton, Kansas	.02	.53	2.10	1.47	4.12	.45	1.06	T	T	12	2.4	20	4.0	9	2.2	0	
Concordia WB City, Kansas	.04	.68	1.83	2.09	4.64	.70	1.14	T	.19	12	2.8	21	4.1	6	1.8	0	
Esbon 5N, Kansas	T	.48	1.97	1.83	4.28	.59	1.12	T	.12	18	2.8	26	4.2	11	2.4	0	
Jewell, Kansas	.06	.35	1.74	1.80	3.95	.79	1.28	.00	.02	8	1.1	18	3.6	2	0.5	0	
Junction City No. 2, Kansas	.19	.86	1.50	2.43	4.88	.64	1.20	.00	.05	9	1.8	12	2.9	2	0.7	0	
Lovewell Dam, Kansas	.03	.18	D1.42	1.80	3.43	.68	1.29	.00	.05	11	2.0	20	4.0	3	1.1	0	
Scandia, Kansas	.03	.67	1.79	1.84	4.33	.36	.55	.00	T		2.1		4.0		2.0		
Wakefield, Kansas	.12	.75	1.91	1.96	4.74	.55	1.08	.00	.03	15	2.1	16	3.2	5	1.0	0	
SMOKY HILL RIVER																	
Abilene, Kansas	.02	.73	1.69	1.87	4.31	.59	.71	.00	.13	8	3.0	14	3.0	1	0.4	0	
Brookville, Kansas	.15	1.06	1.40	2.30	4.91	.34	.85	.00	.29	10	2.0	13	3.4	T	T	0	
Cedar Bluff Dam, Kansas	T	.10	.59	1.35	2.04	.13	.34	.00	T	5	1.0	7	1.6	0	0.0	0	
Chapman, Kansas	.37	.66	1.73	2.32	5.08	.48	1.17	.00	.10		2.5		3.0		0.7		
Collyer 9S, Kansas	.02	.23	1.39	1.73	3.37	.35	.56	T	T	9	1.8	7	1.5	T	0.0	0	
Elkader, Kansas	.00	.12	.82	1.58	2.52	.26	.32	.00	T		1.0		0.2		0.0		
Ellis, Kansas	.04	.27	1.69	2.69	4.69	.52	.91	T	T	8	1.6	14	2.6	2	0.2	0	
Ellsworth, Kansas	.03	.72	2.10	2.21	5.06	.45	.98	.00	.16		2.2	13	3.4		0.0		
Elmo, Kansas	.10	1.04	1.89	2.36	5.39	.59	1.05	.00	.05	6	1.2	12	2.6	T		0	
Enterprise, Kansas	.14	.63	1.80	1.82	4.39	.33	.96	.00	.08	6	2.5	14	3.0	0	0.0	0	
Gove, Kansas	T	.03	1.09	2.01	3.13	.35	.70	.00	.00	5	1.4	3	0.9	0	0.0	0	
Hays 1S, Kansas	.03	.17	1.22	1.21	2.63	.28	.61	.00	.05	10	2.0	12	2.4	1	0.3	0	
Healy, Kansas	.02	.32	1.30	2.19	3.83	.46	.53	T	.02	6	1.2	6	0.9	0		0	
Herrington 3WSW, Kansas	.19	.70	1.88	2.60	5.37	.55	1.18	T	.08	10	2.0	14	3.4	0		0	
Kanopolis Dam, Kansas	.01	.37	.91	1.88	3.17	.26	1.01	.00	.20	6	1.2	13	3.4	1	0.3	0	

See footnotes at end of table.

TABLE 8.—Continued

Basin, Reach and Station	Precipitation by periods									Snow depth and water equivalent of snow on ground (inches), observed or adjusted (a)							
	1959		1960		Total	March 1960				Mar. 11		Mar. 18		Mar. 25		Mar. 31	
	Nov.	Dec.	Jan.	Feb.	Nov.-Feb.	1-11	12-18	19-25	26-31	SD	WE	SD	WE	SD	WE	SD	WE
SMOKY HILL RIVER (Cont.)																	
Leoti, Kansas	.03	.45	1.52	2.33	4.33	.29	.58	.00	.08	T	T	2	0.4	0		0	
Leoti 12N, Kansas	.02	.27	1.57	1.42	3.28	.07	.28	.00	T	T	T	T	T	0		0	
Lindsborg, Kansas	.10	1.63	2.04	3.61	7.38	.49	1.19	.00	.12	6	1.2	16	3.2	1	0.3	0	
Longford, Kansas	.12	1.61	(1.06)	(.99)	(3.78)	.12	.40	.01	1.00		3.0		3.4		1.0		
Loretta, Kansas	.03	.60	1.19	1.21	3.03	.36	.52	.00	.53	1	0.2		2.5		0.0	0	
McCracken, Kansas	.00	.40	1.25	2.16	3.81	.90	1.24	.00	.19		0.8		1.5		0.0		
Quinter, Kansas	.04	.03	1.41	3.46	3.67	.76	1.26	.00	T	8	1.6	9	1.8	0		0	
Russell FAA AP, Kansas	T	.86	1.33	2.33	4.52	.60	1.29	.00	.26	10	2.4	18	3.6	3	0.9	0	
Russell Springs, Kansas	T	.16	1.65	1.97	3.78	.19	.51	T	T	0		0		0		0	
Salina FAA AP, Kansas	.14	1.43	1.57	2.34	5.48	.31	.89	T	.46	15	3.0	19	3.8	1	0.3	0	
Scott City 13NNE, Kansas	T	.04	(1.05)	1.89	(2.98)	.20	.50	.00	.00	T		T		0		0	
Sharon Springs, Kansas	.00	.15	1.42	2.06	3.63	.19	.51	.00	.00		T		T		0.0		
Utica, Kansas	T	.39	1.29	1.51	3.19	.37	.70	.00	.00		1.0		1.2		0.0	0	
WaKeeney, Kansas	.02	.27	1.96	2.29	4.54	.57	1.00	.00	T	10	2.0	13	2.6	T	T	0	
Wallace, Kansas	.05	.11	1.33	1.52	3.01	.13	.33	.00	.00		T		T		0.0		
Winona, Kansas	.03	.15	1.75	2.27	4.20	.31	.36	T	T	1	0.2	1	0.2	0		0	
SOLOMON RIVER																	
Alton 6E, Kansas	T	.20	1.80	2.22	4.22	1.29	.75	.00	.17	4	0.7	3	0.9	T	T	0	
Barnard, Kansas	T	1.21	2.12	2.02	5.35	.91	1.20	.00	.21	6	1.4	18	3.6	8	1.9	0	
Beloit 1ESE, Kansas	T	1.47	1.36	1.41	4.24	.43	.84	.00	.00		1.6	20	3.8		1.0		
Cawker City, Kansas	T	.99	1.68	1.63	4.30	.39	.76	.00	.02	7	1.4	15	3.1	3	0.9	0	
Covert, Kansas	T	.56	1.64	1.42	3.62	.42	.85	T	.26		2.0		3.4		T		
Damar, Kansas	.05	.02	1.74	1.50	3.31	.39	.53	T	T		2.0		2.5		0.1		
Densmore, Kansas	T	.02	1.70	1.75	3.47	.28	.44	T	.05	9	1.8	10	2.0	T	T	0	
Glasco 3S, Kansas										9	2.0	15	3.8	5	1.4	0	
Harlan, Kansas	T	.04	1.14	.83	2.01	.25	.64	T	.05		1.5		3.0		0.9		
Hill City FAA AP, Kansas	.04	.09	1.89	1.70	3.72	.13	.32	T	2.12	9	1.8	13	2.4	0		0	
Hill City 9NE, Kansas	T	.03	1.55	2.87	4.45	.34	.43	.00	.00	10	2.0	9	2.0	0		0	
Hoxie, Kansas	T	.29	1.54	2.43	4.26	.35	.51	T	.01		1.0		1.2		T		
Ionia 1NW, Kansas	.02	.78	1.49	1.14	3.43	.48	.80	T	.07	10	2.0	18	3.6	4	1.2	0	
Kirwin, Kansas	T	T	1.19	1.01	2.20	.21	.57	.00	.06	8	1.6	13	2.8	1	0.3	0	
Lebanon, Kansas	T	.80	1.95	1.27	4.02	.68	1.33	.00	.15		2.0		3.5		2.0		
Lenora, Kansas	.00	.00	1.27	2.12	3.39	.14	.36	.00	.00		1.5		1.6		T		
Logan, Kansas	.00	.00	1.55	1.87	3.42	.42	.90	.00	T	6	1.2	4	1.0	0		0	
Lucerne 2SE, Kansas	.04	.08	1.12	2.39	3.63	.45	.45	.00	.04	3	0.9	6	1.4	0		0	
Mankato, Kansas	T	.30	1.61	1.78	3.69	.77	1.35	T	.07	6	1.2	11	3.0	4	1.2	0	
Miltonvale, Kansas	.10	1.01	2.65	2.36	6.12	.66	1.29	T	.03	14	2.9	22	4.2	4	1.4	0	
Mingo 5E, Kansas	T	.43	1.95	2.34	4.72	.27	.50	.00	.03	4	0.8	3	0.7	0		0	
Minneapolis 2, Kansas	.06	.96	2.81	1.84	5.67	.44	.72	.00	.05	15	3.0	13	3.0	3	1.1	0	
Morland, Kansas	.16	.22	1.87	1.94	4.19	.48	.83	.00	.00		1.8		1.8		0.0		
Niles, Kansas	T	1.20	1.23	2.55	4.98	.40	1.04	.00	.11		3.0		3.4		1.0		
Norton 8SSE, Kansas	.01	.02	2.26	1.96	4.25	.52	.78	.00	T	6	1.2	8	1.8	T	T	0	
Phillipsburg, Kansas	T	T	1.94	2.02	3.96	.49	.81	.00	.13	8	1.6	10	2.2	T	T	0	
Rexford 3E, Kansas	T	.08	1.73	3.14	4.95	.35	.32	.00	.02		0.8		0.8		0.0		
Smith Center 3W, Kansas	T	.10	1.17	.99	2.26	.43	.37	.00	.20		1.8		3.2		1.0		
Stockton, Kansas	T	.12	1.35	1.51	2.98	.40	.64	.00	.04	10	2.0	14	3.2	2	0.7	0	
Webster Dam, Kansas	T	.06	1.37	2.29	3.72	.42	.59	.00	.00	11	2.2	16	3.2	1	0.3	0	
SALINE RIVER																	
Hunter, Kansas	T	.71	1.84	1.34	3.89	.61	1.07	T	.05	10	2.0		3.4		0.6	0	
Lincoln 2ESE, Kansas	T	.63	.90	2.05	3.58	.45	.60	.00	.14	16	3.2	17	3.4	1	0.3	0	
Luray 1E, Kansas	.00	.32	1.97	1.38	3.67	.40	.99	.00	.27		2.2		3.2		0.2		
Natoma, Kansas	.05	.33	1.91	2.03	4.32	.83	.98	.00	.17		2.0		3.1		0.0		
Oakley, Kansas	T	.20	1.98	2.35	5.53	.27	.68	.00	.00	3	0.6	1	0.3	0	0.0	0	
Palco 1SSW, Kansas	.08	.07	1.59	1.83	3.57	.20	.45	.00	.00	13	2.6	16	3.2	1	0.3	0	
Plainville, Kansas	.07	.13	1.03	1.36	2.59	.19	.90	.00	.18	7	1.5	8	2.5	0	0.0	0	
St. Peter 3NE, Kansas	T	.05	.86	1.52	2.43	.32	.75	.00	.00		1.9		1.6		0.0		
Tescott, Kansas	T	.82	2.18	(1.70)	(4.70)	.47	1.03	T	.11		3.2		3.4		0.9		
WaKeeney 9N, Kansas	.08	.10	1.86	1.85	3.89	.35	.36	.00	T	12	2.4	11	2.4	2	0.4	0	
Wilson 8NW, Kansas	T	.71	1.66	2.00	4.37	.16	.51	.00	.37	8	2.8	13	3.2	3	0.4	0	
KANSAS RIVER																	
Blaine, Kansas	.05	.71	1.65	1.93	4.34	.82	.82	.00	.23		2.2		4.0		1.2		
Bonner Springs, Kansas	D .10	1.85	.94	2.43	5.32	.82	.91	.00	.37		2.1		3.0		1.0		
Easton 3WNW, Kansas	.25	2.83	2.38	2.64	8.10	.94	1.50	.00	.38		2.7		3.4		1.1		
Emmett, Kansas	.15	.89	1.48	1.47	3.99	1.15	1.30	T	.22	10	2.0	18	3.6	4	1.2	0	
Fort Riley, Kansas										8	1.8	16	3.5	2	1.0	0	
Holton, Kansas	.28	1.59	1.67	2.10	5.64	.99	1.24	.00	T	19	3.0	20	3.2	5	1.5	0	
Horton, Kansas	.02	1.39	1.46	1.42	4.29	.85	.73	.00	T	9	2.0	18	3.2	4	1.8	0	
Horton 3NW, Kansas	.11	1.24	1.48	1.56	4.39	.98	.87	.00	.08		2.5		3.6		2.0		
Horton 8NW, Kansas	.15	1.03	1.82	1.40	4.40	1.20	.96	.00	1.37		3.2		4.1		3.1		
Horton 6NW, Kansas	.20	-	1.55	1.55	-	.72	.38	T	1.27	15	3.0	22	4.0	15	3.0	0	
Horton 2NNE, Kansas	.37	1.64	1.56	1.56	5.13	.61	.41	T	.04	15	3.0	20	4.0	6	1.9	0	
Hoyt 4SW, Kansas	.04	1.60	1.17	2.35	5.16	.54	.63	T	.23	10	2.0	14	2.8	5	1.5	0	
Junction City No. 2, Kansas	.19	.86	1.50	2.43	4.98	.64	1.20	.00	.05	9	1.8	12	2.9	2	0.7	0	
Lawrence, Kansas	.14	1.56	1.34	2.90	4.94	1.09	1.50	.00	.31	10	2.0	13	2.6	T	T	0	
Lecompton, Kansas	.03	1.95	2.04	2.66	6.68	.88	.82	T	.71		2.0		2.8		0.4		
Manhattan No. 2, Kansas	.21	.46	1.50	1.95	4.12	.62	1.15	.00	.02	10	2.0	17	3.5	4	1.0	0	
Manhattan Agro. Farm, Kansas	.22	.48	1.45	2.31	4.46	.54	.77	.00	.01	10	2.0	16	3.2	5	1.3	0	
McFarland, Kansas	.22	.94	1.04	2.48	4.68	.63	.87	T	.20		1.8		3.5		1.1	0	
Olathe 3E, Kansas	.12	1.28	1.10	1.89	4.39	.76	.57	T	.10	15	2.5	14	3.0	5	1.3	0	
Oskaloosa, Kansas	.10	1.99	1.14	2.45	5.68	.89	1.26	.00	.29	14	2.8	18	3.7	4	1.0	0	
Rossville, Kansas	(T)	1.56	1.35	2.38	(5.29)	.71	1.22	.00	.24	10	2.0	16	3.3	4	1.1	0	
Soldier 5SW, Kansas	.21	.71	1.55	(1.37)	(3.84)	.77	1.62	.00	.32	11	2.2	18	3.5		1.2	0	
Topeka WB AP, Kansas	.13	1.70	1.09	2.14	5.06	.63	1.10	T	.50	10	1.8	13	3.1	1	0.3	0	
Valley Falls, Kansas	T	1.70	1.22	1.79	4.71	.80	1.10	.00	1.36	17	3.0	20	3.5	5	1.3	0	
Wakarusa 2NE, Kansas	T	1.98	1.14	2.45	5.57	.39	D1.00	.00	.35		2.0		3.8		0.2		
Wamego, Kansas	.03	.78	1.29	2.06	4.16	.55	1.10	.00	.45	6	1.5	17	3.5	3	1.0	0	
Westmoreland, Kansas	.17	.77	1.57	1.70	4.21	.68	.95	.00	.07	11	2.2	20	3.6	13	3.0	T	
BLUE RIVER																	
Axtell, Kansas	.10	.43	2.10	1.26	3.89	.18	.15	.00	.99		4.0		4.5		1.5		
Blue Rapids, Kansas	.02	1.29	3.57	2.28	7.10	.86	.95	.00	.10	12	3.5	17	5.0	6	1.5	0	
Bremen, Kansas	.06	.64	2.09	1.33	4.12	.95	.09	.00	.29		3.0		3.0		1.7		
Centralia, Kansas	.18	.82	2.03	2.28	5.31	.93	.75	.00	T	23	4.6	20	5.5	4	1.5	0	
Fact, Kansas	.03	.78	2.51	1.54	4.86	.53	1.00	.00	T	8	1.8	16	3.5	5	1.3	0	

See footnotes at end of table.

TABLE 8.—Continued

Basin, Reach and Station	Precipitation by periods									Snow depth and water equivalent of snow on ground (inches), observed or adjusted (a)							
	1959		1960		Total	March 1960				Mar. 11		Mar. 18		Mar. 25		Mar. 31	
	Nov.	Dec.	Jan.	Feb.	Nov.-Feb.	1-11	12-18	19-25	26-31	SD	WE	SD	WE	SD	WE	SD	WE
BLUE RIVER (Cont.)																	
Fostoria 6NW, Kansas	.09	.70	1.90	1.88	4.57	.70	.65	.00	.15	11	2.2	17	3.6	6	1.8	0	
Frankfort, Kansas	.10	.79	1.94	1.80	4.63	.84	.75	.00	.53	15	3.0	19	5.0	6	1.8	0	
Haddam, Kansas	.03	.51	1.93	1.07	3.54	.74	.83	.00	.02		2.0		3.5		2.8		
Marysville, Kansas	.10	.98	2.46	1.87	5.41	1.07	.88	T	.10	15	3.5	23	5.0	8	1.8		
Parallel, Kansas	.14	1.09	2.52	1.51	5.26	.77	.90	.00	.26	16	3.2	22	5.5	6	1.8	0	
Tuttle Creek Dam, Kansas	T	.48	1.65	1.75	3.88	.56	.67	T	T		2.0		3.8		1.5		
Washington, Kansas	.03	.35	1.89	1.07	3.34	.87	1.11	.00	.00	13	2.6	16	3.2		2.5	0	
Waterville 9NW, Kansas	.08	.69	2.29	1.45	4.51	-	-	-	-		2.9		3.8		1.7		
Winkler, Kansas	.05	.99	D1.97	1.38	(4.39)	.55	.77	.00	.27	9	2.2	15	3.6	6	1.2	0	
Aurora, Nebr.	.09	.62	2.07	1.17	3.95	.69	.83	.00	.02	11	2.2		3.5		3.5	0	
Barneston, Nebr.	.17	.93	1.98	1.93	5.01	1.21	.87	T	.12	13	2.8	16	3.0	7	1.7	0	
Beatrice No. 1, Nebr.	.09	.78	2.13	1.53	4.53	.63	.77	.00	.17	18	3.6	26	4.6	12	2.0	0	
Beatrice No. 2, Nebr.	.10	.88	1.87	1.49	4.34	.72	.71	.00	.40	18	3.6	19	3.5	12	2.0		
Bruning, Nebr.	.18	.67	1.79	1.56	4.20	.87	.93	.00	.01	13	2.6	18	3.2	8	2.8	T	
Clay Center, Nebr.	.09	.57	1.85	1.49	4.00	.65	.92	-	-	25	4.5	33	6.6		4.0		
Crete, Nebr.	.05	.72	1.90	1.50	4.17	.55	.69	.00	.29	11	2.2	19	4.5	8	4.3	0	
Crete 2S, Nebr.	.09	.78	1.58	2.15	4.60	.55	.69	.00	.29	15	2.8	19	4.5	10	3.2	0	
David City, Nebr.	.21	.84	2.48	1.68	5.21	.91	.72	.02	.48	25	6.5	25	6.2	19	5.7	T	
Deweese 4SE, Nebr.	T	.46	1.82	1.73	4.01	.41	.84	.00	T		4.0		5.3		4.2		
Fairbury 2SSE, Nebr.	.03	.51	1.46	.74	2.74	.76	.65	T	.07	20	4.0	27	6.0	11	3.5	0	
Fairmont, Nebr.	.28	.28	1.16	1.52	3.24	.58	.73	.00	T	10	2.0		2.9		3.2		
Friend, Nebr.	1.10	.50	1.48	1.60	4.68	.60	.77	.00	.17		2.4		3.0		3.0		
Geneva, Nebr.	.97	.59	1.45	2.30	5.31	1.21	.93	.00	.13	18	3.6		3.2		3.0	0	
Gresham 3S, Nebr.	T	.50	1.85	1.15	3.50	.92	.62	.00	T		4.0		4.0		3.4		
Harbine, Nebr.	T	.40	2.65	-	-	-	-	-	-		3.2	15	3.4	5	1.6	0	
Hastings, Nebr.	.07	.45	3.23	1.54	5.29	.53	.70	T	.06		2.0		3.5		3.0		
Hebron, Nebr.	.09	.81	1.92	1.66	4.48	.77	1.02	T	.02	12	2.4	17	4.1	9	2.6	0	
Hubbell, Nebr.	.07	.65	2.05	1.07	3.84	.48	.75	.00	.05	20	4.0	32	6.0		2.8		
McCool Junction, Nebr.	T	.35	2.23	1.27	3.85	.81	.73	.00	T		3.0		4.0		3.0		
Minden, Nebr.	T	T	1.40	1.80	3.20	.55	.85	.00	T	10	2.0	12	2.4	5	1.0	0	
Nelson, Nebr.	.04	.97	2.12	2.21	5.34	.77	1.15	T	.05	20	4.0	27	5.4	16	4.0	0	
Osceola, Nebr.	.41	.63	2.17	1.22	4.43	.76	.79	.00	.05	18	3.6	21	5.0	13	3.5	0	
Seward, Nebr.	1.77	.99	1.13	1.38	5.27	.73	.66	.00	.27	17	3.3	18	3.5	16	3.1	0	
Staplehurst, Nebr.	.19	.86	1.59	1.36	4.00	.73	.70	.00	.27	17	3.4	18	4.0	12	3.6	0	
Ulysses 3NNE, Nebr.	.24	.64	2.08	1.27	4.23	.53	.32	T	.28		5.5		5.0		3.8		
Utica, Nebr.	.08	.70	.93	.93	2.64	.45	.41	.00	.18	20	4.0		5.0		3.4	0	
Virginia 1ENE, Nebr.	T	1.15	2.63	1.54	5.32	.90	1.10	.00	.07		2.8		4.0		1.9		
Western, Nebr.	.02	.80	1.86	(1.43)	2.68	.74	1.14	T	.00		2.6	31	4.6		3.9		
Wymore 2N, Nebr.	.05	.60	1.99	1.40	4.04	1.06	.62	.00	.26	10	2.0	12	3.6	4	1.2	0	
York, Nebr.	.15	1.26	2.00	1.58	4.99	.67	.72	.02	.07	17	3.4	23	4.6	10	3.0	0	
MISSOURI RIVER Kansas City-Boonville Local																	
Boonville Waterworks, Mo.	.71	1.96	1.60	2.07	6.34	1.26	.92	.14	T	12	2.2	12	2.5	4	1.0	0	
Carrollton, Mo.	.22	1.62	2.33	2.17	6.34	1.11	1.21	.03	.07	12	1.8	16	3.2	6	1.8	0	
Clifton City, Mo.	.58	.95	1.61	2.01	5.15	1.32	.82	.03	.00	14	2.0	13	2.6	3	1.2		
Concordia, Mo.	-	1.78	3.41	2.15	-	1.17	1.22	.00	.07		1.8		2.0		0.6		
Elm, Mo.	.14	1.08	2.08	1.64	4.94	.64	.50	.00	.26		1.3		3.0		0.9		
Henrietta, Mo.	.28	1.37	1.35	1.55	4.55	.71	-	.00	.15		2.2		3.5		1.5		
Lees Summit 1N, Mo.	-	1.22	(.19)	1.40	-	(.24)	.37	.00	.92		2.0		3.2		1.0		
Lexington, Mo.	.25	1.60	1.56	1.98	5.39	.91	.71	T	.15	14	2.1	16	3.5	4	1.2	0	
Marshall, Mo.	.17	1.37	2.31	1.51	5.36	1.10	.80	.00	.06		2.0		3.0		1.0		
Mora, Mo.	.63	.96	1.16	1.50	4.25	.82	.41	.02	.03		2.0		2.8		1.2		
Odessa, Mo.	T	1.44	1.59	1.64	4.67	1.11	.94	.00	.19		1.8		3.0		0.9		
Richmond 7N, Mo.	.16	(.65)	1.82	1.54	(4.17)	1.02	.90	.00	.17		2.2		3.2		1.5		
Sedalia, Mo.	.84	1.12	1.64	1.82	5.42	.93	.60	.04	.07	13	2.0	14	2.8	4	1.2	0	
Stet 4SSE, Mo.	.25	1.72	2.18	2.63	6.78	1.33	1.09	.03	.09		2.2		3.4		1.8		
Stover, Mo.	.74	1.33	1.23	2.27	5.57	1.26	.70	.06	.00	11	1.9	11	2.2	2	0.5	0	
Sweet Springs, Mo.	.29	1.52	1.80	1.74	5.35	.91	.65	T	.09	13	2.0	10	2.0	1	0.3	0	
Warrensburg Teacher's Col., Mo.	.29	1.24	1.65	1.70	5.02	1.04	.75	.02	.43	12	1.8	9	1.8	1	0.3	0	
Waverly, Mo.	.12	1.19	2.15	1.72	5.18	1.05	.83	T	.09	14	2.0	16	3.0	6	1.1	0	
Morse, Kansas	.20	1.40	1.10	2.17	4.87	.66	.87	.00	.33		1.8		3.0		0.3		
Stilwell, Kansas	.07	1.22	1.16	2.40	4.85	.60	.85	T	.23	12	1.8	15	3.0	1	0.3	0	
GRAND RIVER																	
Albany, Mo.	.20	2.60	1.63	.99	5.42	.93	.47	T	.60	15	2.6	14	3.5	6	2.0	0	
Bedford 1S, Mo.	.12	1.52	1.09	1.63	4.36	.74	.68	.03	.07		2.0		3.4		1.8		
Bethany, Mo.	.08	2.86	1.86	1.15	5.95	.84	.60	.04	.77	12	2.0	11	3.0	4	1.4	0	
Brookfield, Mo.	.07	2.11	2.30	2.49	6.97	1.13	.93	.08	T	9	1.4	15	3.0	4	1.4	0	
Brunswick, Mo.	.04	1.53	1.94	2.28	5.79	1.05	.79	T	T	13	2.0		3.2		1.8		
Chillicothe 2S, Mo.	.05	1.86	1.75	1.21	4.87	.80	.69	.03	.03	10	1.7	15	3.0	7	1.3		
Chillicothe Radio KCHI, Mo.	.16	2.19	2.09	1.16	5.60	1.36	1.60	.05	.08	12	1.7	13	2.8	4	1.3	0	
Coloma, Mo.	.18	1.73	1.52	2.02	5.45	.66	.38	T	.04	17	2.5		3.2		1.5	0	
Fountain Grove Wildlife, Mo.	.16	2.79	2.52	2.14	7.60	2.54	.95	.10	T	20	3.0	25	5.0	8	3.2	0	
Gallatin, Mo.	.54	2.55	2.56	-	-	*	V1.88	.00	.32	-	1.8	-	3.2	3	1.7	0	
Grant City	.29	3.10	1.98	.97	6.34	1.11	1.16	T	.65	16	2.8	21	4.6	10	3.0	T	
Hamilton, Mo.	.16	2.09	2.47	1.10	5.82	.85	.89	T	.25		2.2		2.6		2.1		
Harris, Mo.	.28	2.16	2.29	1.41	6.14	.82	.42	.00	.60		2.0		3.5		1.8		
Lathrop, Mo.	.14	2.18	1.89	1.02	5.23	.99	.61	.00	.67		2.5		2.8		2.0		
Linneus 2S, Mo.	.06	1.96	2.12	(1.70)	(5.84)	.32	.54	.05	T	12	1.8	18	3.6	1	0.5	0	
Lucerne, Mo.	.10	3.48	2.16	1.39	7.13	.58	.48	.00	.35	11	2.0	20	4.0	5	1.5	0	
Mercer 6NW, Mo.	.25	3.00	2.71	1.21	7.17	.78	.67	.08	.84	20	3.2	22	5.0	9	2.8	T	
Milan, Mo.	.22	2.73	2.38	1.96	7.29	1.00	.69	.07	.24	14	2.2	15	3.1	9	2.7	T	
Pattonsburg, Mo.	.17	2.38	2.03	1.42	6.00	.89	.82	.02	.79		2.0		4.0		2.5		
Princeton, Mo.	.06	1.91	3.12	1.95	7.04	1.40	1.00	T	.54		2.0		5.0		2.0		
Ridgeway 6WNW, Mo.	.00	3.38	1.85	1.73	6.96	.90	.71	.04	1.98		2.0		3.5		1.7		
Spickard 7W, Mo.	.22	2.70	2.33	-	-	.72	1.20	.00	.65		1.8		3.5		2.0		
Stanberry, Mo.	.15	2.81	1.52	1.28	5.76	1.11	.69	.00	1.00		3.0		3.5		3.0		
Sumner 2SW, Mo.	.17	1.74	2.03	2.59	6.53	.95	.59	.04	T	15	2.8	17	4.0	9	1.9	0	
Trenton, Mo.	.15	2.65	1.69	1.35	5.84	1.31	.76	.00	.00		1.8		2.8		1.9		
Beaconsfield 1N, Iowa	.35	2.82	2.09	.48	5.74	.34	.10	.00	.36	11	3.5	15	4.0	12	3.4	0	
Lamoni FAA AP, Iowa	.20	2.92	2.47	1.31	6.90	.72	.80	.04	.50	18	3.6	21	4.9	10	3.0	0	
Lorimor, Iowa	1.15	1.83	4.20	1.65	8.83	1.10	.45	.02	.21	22	4.0		4.5	20	4.5	0	
Mount Ayr 2N, Iowa	.28	2.31	2.06	.45	5.10	.74	.38	.08	.46	17	3.2	16	4.2	6	2.4	0	
CHARITON RIVER																	
Hamden 2NE, Mo.	.04	2.12	2.21	1.56	5.93	1.00	.55	.05	.08		2.0		2.4		1.8		
Kirksville FAA AP, Mo.	.13	2.84	2.29	1.41	6.67	.43	.41	.01	T	6	1.2	8	1.6	2	0.5	0	

See footnotes at end of table.

TABLE 8.—Continued

Basin, Reach and Station	Precipitation by periods									Snow depth and water equivalent of snow on ground (inches), observed or adjusted (a)							
	1959		1960		Total	March 1960				Mar. 11		Mar. 18		Mar. 25		Mar. 31	
	Nov.	Dec.	Jan.	Feb.	Nov.-Feb.	1-11	12-18	19-25	26-31	SD	WE	SD	WE	SD	WE	SD	WE
CHARITON RIVER (Cont.)																	
Macon, Mo.	.17	2.58	1.99	1.14	5.88	.67	.52	.05	.04	10	1.7	15	3.0	7	1.9	0	
Prairie Hill 3WNW, Mo.	.12	1.91	1.34	-	-	1.39	.86	.00	.00		2.0		2.4		1.6		
Salisbury, Mo.	.16	1.99	3.00	1.53	6.68	1.00	.80	.02	T	14	2.1	12	2.4	5	1.6	0	
Unionville, Mo.	.41	2.43	2.50	1.66	7.00	.78	.58	.03	.34	15	2.9	19	4.2	10	3.0	T	
Centerville, Iowa	.34	1.57	2.94	1.44	6.29	.86	.43	.10	.75	20	3.4	20	4.2	14	3.8	0	
Chariton, Iowa	.67	2.17	3.07	2.17	8.08	1.86	.64	.18	.76	20	3.8	18	4.0	11	3.6	0	
Corydon, Iowa	.27	1.33	2.39	1.95	5.94	.91	.57	.07	.17		2.8	14	3.9	10	3.4	0	
Derby, Iowa	.38	2.60	2.63	1.05	6.66	.54	.26	.00	.50		2.5		4.1		3.9		
Russell 5ESE, Iowa	.58	2.09	3.05	1.67	7.39	.42	.27	.03	.21		3.8		3.8		3.6		
Russell, Iowa	.76	2.66	2.63	1.59	7.64	.85	.26	.09	.65		3.8		3.9		3.6		
MISSOURI RIVER Boonville-Mouth																	
California, Mo.	.68	1.73	1.15	1.34	4.90	1.09	.50	.10	T	12	2.4	15	3.0	T	T	0	
Columbia WB AP, Mo.	.56	1.91	1.55	1.85	4.87	1.17	.88	.02	.12	12	1.5	10	1.7	2	0.4	0	
Danville 1ENE, Mo.	1.11	1.61	.92	1.18	4.82	.74	.63	.04	.58		2.7		2.0		1.5		
Eldon, Mo.	1.32	2.32	1.19	1.89	6.72	1.09	.61	.05	.29	8	2.0	8	1.8	0	0.0	0	
Fayette, Mo.	.33	1.40	1.81	1.55	5.09	.92	.73	.03	T	17	2.5	15	2.6	5	1.6	0	
Fayette Exp. Lagoon, Mo.	.39	1.40	1.34	1.66	4.79	1.11	.60	T	.00		2.5		2.6		1.6		
Fulton 4SW, Mo.	.91	1.74	1.46	1.97	6.08	.93	.74	.06	.83		2.0		1.7		0.5		
Hermann, Mo.	1.93	2.26	1.33	1.62	7.14	1.29	.63	.08	.45		2.6		2.0		1.0		
Higbee 7S, Mo.	.61	2.12	1.64	1.24	5.61	1.00	.59	.05	.06		1.9		2.0		1.6		
High Point 2SW, Mo.	1.17	1.93	1.51	1.61	6.22	.94	.50	.04	.08		2.1		2.0		0.5		
Jefferson City Lincoln U., Mo.	1.21	2.11	1.37	1.81	6.50	1.00	.49	.02	.27	10	1.8	8	1.9	T	T	0	
Jefferson City, Mo.	1.06	1.92	1.31	1.55	5.84	1.00	.49	.02	.27	10	1.8	8	1.9	T	T	0	
Martinsburg, Mo.	.57	1.29	1.21	1.30	4.37	.79	1.12	.06	.41	12	1.8	13	2.1	6	1.6	0	
McCredie Exp. Station, Mo.	.58	1.97	1.20	1.41	5.16	.89	.56	.05	.14		2.0		1.8		1.1		
New Florence, Mo.	1.38	2.47	1.41	1.73	6.99	.42	.71	.18	.46	18	2.7	11	2.0	6	1.5	0	
New Franklin 1W, Mo.	.63	1.44	1.46	1.80	5.33	.92	.43	.04	T	13	2.1	11	2.4	3	0.9	0	
Speed 2WNW, Mo.	.71	1.14	1.41	1.27	4.53	.63	.34	.06	.00		2.4		2.5		0.8		
Washington 3S, Mo.	2.53	2.97	1.29	1.69	8.48	(.63)	.40	.03	1.03		3.0		2.4		0.3		
Weldon Springs Exp. Farm, Mo.	1.98	2.14	1.53	2.00	7.65	.86	.54	.03	.74	16	2.4	12	2.1	2	0.5	0	
OSAGE RIVER Above Osceola																	
Baldwin, Kansas	.23	1.68	1.08	2.09	5.08	.71	.71	.00	1.59		1.8		2.7		0.3		
Burlingame 6NW, Kansas	T	1.21	(.57)	1.39	(3.17)	.38	1.01	T	.40	14	2.1	18	3.6	3	0.9	0	
Burlingame 5NNW, Kansas	(.03)	1.46	1.17	1.11	(3.77)	.40	-	.00	.85		2.1		3.6		0.9		
Burlingame 3NW, Kansas	.07	1.58	1.29	1.82	4.76	.37	.50	T	.27	6	1.0	13	3.0	3	0.9	0	
Burlingame 3N, Kansas	.10	1.44	1.58	2.54	5.66	.48	.90	.00	.25	10	1.8	17	3.4	T	T	0	
Burlingame 3NNE, Kansas	.10	1.45	1.34	1.56	4.45	.53	.64	.00	.27	12	2.2	20	4.0	5	1.5	0	
Burlingame 1E, Kansas	T	1.47	1.50	2.46	5.43	.91	1.11	.00	.02	6	1.0	13	3.0	4	1.2	0	
Eskridge, Kansas	.12	1.39	1.85	(2.57)	(5.93)	.37	1.02	.00	.52	9	2.0	16	3.5	4	1.0	0	
Fort Scott, Kansas	.52	.87	1.49	2.34	5.22	1.14	.84	.00	.00	3	0.6	1	0.3	0	0.0	0	
Garnett, Kansas	.21	1.39	1.15	3.36	6.11	.96	1.19	T	.02	9	2.3	12	3.0	T	T	0	
Harris 1S, Kansas	.10	1.08	.88	1.98	4.04	.57	.74	.00	.05		2.5		3.0		T		
Harveyville 3N, Kansas	.12	1.43	1.21	2.16	4.92	.55	1.24	T	.37	8	2.0	18	4.0	4	1.2	0	
La Cygne, Kansas	.15	1.09	.93	(1.60)	(3.77)	1.55	.63	T	.11	7	1.2	12	2.1	0	T	0	
Lebo, Kansas	.05	1.50	1.43	2.63	5.61	.60	.73	.00	.78	6	1.2	9	2.0	T	T	0	
Lyndon, Kansas	.15	1.52	1.08	2.75	5.50	.43	1.12	.00	.48	10	2.0	13	3.0	1	0.3	0	
Moran 2SE, Kansas	.31	1.15	1.11	1.72	4.29	.66	.45	.00	.02	5	1.0	7	1.4	0	0.0	0	
Mound City, Kansas	T	.99	1.09	2.95	5.03	.90	.49	T	T	5	0.8	6	1.2	0	0.0	0	
Osage City, Kansas	.16	1.97	1.49	2.69	6.31	.80	.97	.00	.27	9	2.0	14	3.1	T	T	0	
Osawatomie, Kansas	.11	1.77	.97	2.49	5.34	1.04	1.25	.00	T		1.2		2.0		T		
Ottawa, Kansas	.17	1.17	1.26	3.02	5.62	1.08	1.12	T	.21	12	2.6	14	3.0	1	0.3	0	
Overbrook 2WSW, Kansas	.21	1.72	1.12	2.57	5.62	.57	.89	T	.25	10	2.0	13	3.0	2	0.6	0	
Paola, Kansas	.14	1.59	.87	2.38	4.98	.91	1.97	T	.03	7	1.4	14	2.8	1	0.3	0	
Quenemo No. 2, Kansas	.08	1.09	.75	2.36	4.28	.65	.46	.00	.80		2.2		3.0		T		
Reading, Kansas	.08	2.07	1.32	2.21	5.68	.48	1.34	.00	.36	7	1.4	13	2.6	0	0.0	0	
Waverly, Kansas	.02	.95	.87	2.29	4.23	.69	1.12	.00	.54	9	1.9	12	2.8	T	T	0	
Worden, Kansas	.06	1.45	1.16	2.57	5.24	.77	1.33	.00	.22	8	2.0	17	3.5	T	T	0	
Appleton City, Mo.	.77	1.05	1.64	2.00	5.46	.73	.94	.00	.50	6	1.0	3	0.9	0	0.0	0	
Butler FAA AP, Mo.	.41	1.01	1.45	1.92	4.79	.64	.53	T	.47	13	1.0	15	1.2	1	0.2		
Caplinger Mills, Mo.	1.60	2.72	1.06	2.06	7.44	1.04	.49	.00	.40	5	0.9	4	0.8	T	T	0	
Eldorado Springs, Mo.	1.16	1.32	1.06	2.02	5.56	.90	.71	.00	.55		0.8		0.8		T		
Lockwood, Mo.	2.11	2.64	.98	1.88	7.61	.85	.23	T	.12	4	0.8	1	0.2	0	0.0	0	
Nevada Sewage Plant, Mo.	.85	1.12	1.55	2.18	5.70	1.01	.72	.00	.08	4	0.8	2	0.4	0	0.0	0	
Osceola, Mo.	1.07	1.51	1.22	1.79	5.59	.72	.61	.01	.07	5	1.0	7	1.8	0	0.0	0	
Springfield WB AP, Mo.	2.27	3.35	.95	2.26	8.83	.87	.38	T	.12	6	1.4	5	0.9	T	T	0	
OSAGE RIVER Osceola-Mouth																	
Bolivar, Mo.	2.39	3.53	.91	1.50	8.33	1.12	.49	T	.06	3	0.9	2	0.6	0	0.0	0	
Buffalo, Mo.	2.34	3.19	.77	1.54	7.84	.99	.67	T	.02		0.8		0.8	0	0.0	0	
Camdenton, Mo.	2.58	3.50	1.22	2.28	9.58	1.86	.69	.08	.39	15	2.6	9	1.6	0	0.0	0	
Clinton 1NNW, Mo.	.62	.95	1.06	1.55	4.18	.48	.38	.00	.21	8	1.5	10	2.0	0	0.0	0	
Crocker 1N, Mo.	1.59	4.15	1.09	1.65	8.48	1.72	.32	T	.34	17	3.0	7	1.5	T	T	0	
Harrisonville, Mo.	.14	1.18	1.93	2.22	5.47	1.00	.98	.00	.78	12	1.8	8	1.6	T	T	0	
Hermitage, Mo.	1.62	2.38	.93	1.94	6.87	1.31	.54	.00	.00	9	1.7	5	1.0	0	0.0	0	
Lakeside, Mo.	1.82	2.50	1.09	1.70	7.11	1.04	.54	T	.42	11	1.9	6	1.2	0	0.0	0	
Lebanon, Mo.	2.34	3.47	1.04	2.06	8.91	1.41	.46	.08	.08	9	1.6	5	1.0	T	T	0	
Osceola 3NE, Mo.	(.54)	1.16	.86	1.58	(4.14)	.85	.70	.00	.20		1.0		0.9		0.0		
Pleasant Hill, Mo.	.29	1.59	1.89	2.61	6.38	1.11	1.27	.10	.67	11	1.7	15	3.0	2	0.4	0	
Versailles, Mo.	.22	1.86	1.24	1.70	5.02	-	-	.28	T	12	2.1	9	1.9	1	0.3	0	
Vienna 3NW, Mo.	1.59	3.24	.94	1.33	7.10	.75	.35	.06	.75		3.0		1.5		0.0		
Warsaw No. 1, Mo.	.82	1.20	1.48	1.95	5.45	1.20	.90	T	.03	10	1.8	7	1.6	T	T	0	
Windsor 3NW, Mo.	.75	.91	1.85	1.94	5.45	.99	.55	T	.01	14	2.3	18	3.4	5	1.1	0	
GASCONADE RIVER																	
Fort Leonard Wood, Mo.	2.25	4.05	1.26	(.95)	(8.51)	1.28	.18	.03	.30		2.0		1.6		0.0		
Grove Spring, Mo.	2.62	4.23	.62	1.64	9.01	1.51	.28	.05	.03	9	1.8	8	1.6	T	T	0	
Hazlegreen 2W, Mo.	2.32	3.81	.96	1.67	8.76	1.36	.18	T	.12		2.0		1.6		0.0		
Houston, Mo.	3.32	4.41	1.15	1.63	10.51	1.44	.50	.07	.15		2.0		1.5		0.0		
Jerome, Mo.	1.81	4.56	1.42	1.98	9.77	1.88	.75	.00	.49		2.0		1.5		0.0		
Licking 4N, Mo.	3.10	4.39	1.06	1.13	9.68	1.38	.23	.02	.44	10	2.0	8	1.6	T	T	0	
Mansfield, Mo.	2.49	3.73	1.41	2.10	9.73	1.75	T	T	.06		2.0		1.2		0.0		

See footnotes at end of table.

TABLE 8.—Continued

Basin, Reach and Station	Precipitation by periods									Snow depth and water equivalent of snow on ground (inches), observed or adjusted (a)							
	1959		1960		Total	March 1960				Mar. 11		Mar. 18		Mar. 25		Mar. 31	
	Nov.	Dec.	Jan.	Feb.	Nov.-Feb.	1-11	12-18	19-25	26-31	SD	WE	SD	WE	SD	WE	SD	WE
GASCONADE RIVER (Cont.)																	
Mountain Grove 2N, Mo.	2.79	4.08	1.20	1.77	9.84	1.11	.42	.02	T	11	2.2	5	1.0	T	T	0	
Owensville, Mo.	2.06	4.02	1.89	1.42	9.39	1.41	.56	T	1.02		2.5		1.8		0		
Roby, Mo.	4.17	4.52	1.20	1.68	11.57	1.55	.36	.09	.23	8	1.6	5	1.0	T	T	0	
Rolla School of Mines, Mo.	2.18	4.31	1.52	1.66	9.67	1.62	.42	.12	.65		2.1		1.4		0.0		
Rolla 3W, Mo.	2.19	4.15	1.44	1.68	9.46	1.25	.36	.13	.57		2.1		1.4		0.0		
Vichy FAA AP, Mo.	1.63	3.42	1.17	1.43	7.65	1.07	.34	.10	.57	14	2.1	8	1.4	T	0.0	0	
Waynesville 2W, Mo.	2.09	5.03	2.15	1.88	11.15	1.53	.32	.12	.50	15	2.6	7	1.2	T	0.0	0	
MISSISSIPPI RIVER Minneapolis-Prairie du Chien																	
Beaver, Minn.	1.50	1.54	.54	.32	3.90	.29	.14	.04	.11		0.5		0.6		0.6		
Caledonia, Minn.	4.60	1.60	.83	.66	7.69	.35	.30	.04	.54	4	0.6	3	0.6	2	0.5	0	
Dodge Center 2NE, Minn.	.87	1.62	.34	.38	3.15	.32	.06	.02	.10		0.7		1.0		0.6		
Elgin, Minn.	1.26	1.33	.32	.32	3.23	.43	.00	.15	.00	4	0.6	4	0.7	2	0.6	0	
Faribault, Minn.	.47	2.05	.51	.34	3.37	.49	.00	.06	.26	5	1.0	2	0.6	2	0.4	0	
Farmington 3NW, Minn.	.68	3.18	.56	.25	4.67	.37	T	.04	.35	5	0.6	3	0.5	1	0.2	0	
Grand Meadow, Minn.	1.62	.95	.19	.50	3.26	.50	.09	.01	.26	10	1.4	9	1.7	3	0.9	0	
Harmony, Minn.	2.19	.82	.52	.43	3.96	.30	.31	.00	.32	4	0.6	5	1.0	0	0.0	0	
Hastings Dam No. 2, Minn.	.57	1.48	.25	.13	2.43	.39	.02	T	.24		0.6		0.6		0.5		
La Crescent Dam No. 7, Minn.	1.80	1.47	.80	.43	4.50	.18	.06	.13	.76		0.4		0.5		T		
Lake City, Minn.	.76	1.75	.31	.32	3.14	.15	.03	.05	T		0.6		0.4		0.2		
Lanesboro, Minn.	1.86	1.21	.55	.38	4.00	.33	.09	.00	.13		0.7		0.4		0.1		
Le Center, Minn.	1.10	1.85	.54	.25	3.74	.53	.01	.10	.42	7	1.0	5	1.0	4	0.8	0	
Minnesota City Dam No. 5, Minn.	1.12	1.47	.50	.36	3.45	.19	.07	.09	.10		0.6		0.6		0.4		
Northfield Carleton Col., Minn.	.95	2.10	.48	.22	3.75	.46	.00	.03	.27		0.8		0.6		0.4		
Preston, Minn.	1.36	1.29	.43	.43	3.51	.47	.02	.05	.11	5	0.7	2	0.4	1	0.3	0	
Preston 6SW, Minn.	1.99	1.28	.46	.52	4.25	.40	.11	.02	.19		0.7		0.4		0.3		
Preston 8SW, Minn.	2.00	1.44	.42	.50	4.36	.53	.05	.02	.20		0.7		0.4		0.3		
Preston 4S, Minn.	1.66	1.24	.41	.52	3.83	.48	.02	.04	.10		0.7		0.4		0.3		
Red Wing, Minn.	.85	2.13	.36	.39	3.73	.20	.02	T	.06		0.6		0.5		0.4		
Red Wing Dam No. 3, Minn.	.72	1.90	.44	.47	3.53	.25	T	T	.42		0.6		0.5		0.4		
Rochester WB AP, Minn.	1.08	1.34	.40	.31	3.13	.49	.05	.04	.16	6	0.7	5	0.7	1	0.3	0	
Rosemont Agri. Exp. Sta., Minn.	.37	1.88	.78	.18	3.21	.26	T	.03	.44	5	0.6	4	0.6	1	0.2	0	
Rushford, Minn.	1.67	1.27	.55	.38	3.87	.29	.10	.05	.21		0.6		0.4		0.1		
St. Paul, Minn.	.59	1.94	.53	.17	3.23	.19	.01	.01	.41	4	0.6	2	0.4	T	T	0	
Spring Grove 1NW, Minn.	2.05	1.21	.44	.48	4.18	.34	.01	.01	.79	8	1.4	7	1.4	5	1.0	0	
Spring Valley, Minn.	1.45	1.25	.29	.52	3.51	.49	.10	.02	.26		1.0		1.2		0.6		
Wabasha, Minn.	.56	1.52	.45	.27	2.80	.26	.10	.00	T		0.6		0.4		0.3		
Winona, Minn.	1.64	1.54	.58	.35	4.11	.16	.14	T	.43	3	0.4	1	0.3	T	T	0	
Winona Dam 5A, Minn.	1.36	1.19	.41	.26	3.22	.11	T	T	.14		0.4		0.4		T		
Zumbrota, Minn.	.40	1.52	.38	.36	2.66	.20	.05	.00	.05	4	0.6	2	0.4	1	0.3	0	
Alma Dam No. 4, Wis.	1.00	1.33	.31	.25	2.89	.15	T	.02	.09		0.6		0.6		0.2		
Baldwin, Wis.	.43	1.51	.51	.33	2.78	.08	.00	.08	.51	3	0.4	1	0.2	1	0.3	T	
Blair, Wis.	1.18	1.90	.57	.36	4.01	.09	.05	.06	.52	4	0.6	0	0.0				
Dodge, Wis.	1.60	1.40	.41	.28	3.69	.13	T	T	.33	2	0.4	1	0.3	T	T	0	
Ellsworth, Wis.	.79	1.58	.38	.39	3.14	.11	.00	.03	.27	5	0.7	3	0.6	4	0.6	0	
Genoa Dam No. 8, Wis.	2.57	1.57	.59	.49	5.22	.31	.09	.07	.35		0.7		0.6		T		
La Crosse Exp. Farm, Wis.	2.68	1.34	.67	.50	5.19	.32	.04	.09	.23		0.3		0.3		0.2		
La Crosse State Col., Wis.	2.75	1.51	.76	.47	5.49	.27	.06	.16	.34	3	0.3	1	0.3	1	0.2	0	
La Crosse WB AP, Wis.	1.98	1.45	.78	.38	4.59	.23	.10	.13	.34	3	0.3	2	0.4	T	T	0	
Lynxville Dam 9, Wis.	2.61	1.65	.89	.62	5.77	.15	.18	.04	.24		0.6		1.1		1.1		
Prairie du Chien, Wis.	2.14	2.07	1.45	.72	6.38	.22	.23	.01	.43	5	0.8	5	1.0	2	0.5	0	
Sparta, Wis.	2.24	1.47	.79	.33	4.83	.23	.02	.10	.04	3	0.5	1	0.3	2	0.4	0	
Strum 4S, Wis.	1.46	1.81	.46	.36	4.09	.20	.00	.06	.05		0.6		0.2		T		
Trempealeau Dam 6, Wis.	1.70	1.57	.34	.29	3.90	.17	.07	T	.46		0.4		0.3		T		
Decorah, Iowa	2.55	1.40	.67	.60	5.22	.30	.23	.00	.64	4	0.6	3	0.6	T	T	0	
Dorchester 3S, Iowa	2.54	1.54	.64	.55	5.27	.19	.18	.03	.56		0.6		0.6		0.3		
Lansing, Iowa	3.23	1.58	1.00	.71	6.52	.21	.18	.05	.52	3	0.4	3	0.6	T	T	0	
Waukon	(2.61)	1.24	1.34	.47	(5.66)	.10	.26	T	.26	5	0.7	3	0.6	1	0.3	0	
MINNESOTA RIVER																	
Amboy, Minn.	1.00	1.63	.30	.29	3.22	.48	.09	.00	.55		1.4		1.2		1.1		
Artichoke Lake, Minn.	.33	1.61	.49	.10	2.53	.34	T	T	.43	5	0.8	3	0.6	1	0.3	0	
Beardsley, Minn.	.68	1.24	1.01	.32	3.25	.44	.01	.00	.20	8	1.2	6	1.2	1	0.3	0	
Benson, Minn.	.38	1.26	1.07	.09	2.80	.57	.00	T	.42	7	1.0	4	0.8	2	0.8	0	
Bird Island, Minn.	.48	1.76	.61	.01	2.86	.47	T	.02	.30	11	1.6	5	1.0	3	0.9	0	
Blue Earth, Minn.	1.26	1.37	.32	.33	3.28	.71	.06	T	.52	10	1.4	7	1.4	3	1.1	0	
Bricelyn, Minn.	1.30	1.33	.10	.42	3.15												
Canby, Minn.	.91	1.84	.58	.03	3.36	.70	.00	T	.38	9	1.3	7	1.3	4	1.0	T	
Chaska 1NE, Minn.	.37	1.48	.41	.05	2.31	.27	.01	.02	.48	5	0.7	3	0.6	1	0.3	0	
Comfrey, Minn.	.96	2.01	.37	.11	3.45	.60	.09	.02	.33	8	1.4	7	1.3	1	0.3	0	
Correll, Minn.	.21	1.99	.34	.05	2.59	.27	.00	.00	.70		0.8		0.8		0.3		
Dawson, Minn.	.92	1.90	.75	T	3.57	.67	.00	T	.62	11	1.6	8	1.5	4	1.1	0	
Fairmont, Minn.	1.44	1.39	.41	.40	3.64	.65	.05	.05	.43	10	1.5	6	1.2	3	1.1	T	
Gaylord, Minn.	.41	1.80	.77	.09	3.07	.71	T	.11	.21	8	1.4	4	0.8	1	0.3	0	
Glenwood, Minn.	.15	.75	.42	.02	1.34	.43	T	.04	.28	6	0.9	5	0.9	3	0.6	0	
Granite Falls Power Pl., Minn.	.95	1.69	1.14	.04	3.82	.68	.04	.00	.36		1.4		1.3		0.8		
Jordan 1S, Minn.	.49	1.66	.59	.27	3.01	.29	.04	.02	.40	3	0.5	3	0.5	1	0.3	0	
Le Sueur, Minn.	.40	1.56	.38	.10	2.44	.25	.04	.02	.34		1.1		0.9		T		
Madison, Minn.	.78	2.34	.55	.09	3.76	.65	T	T	.50	9	1.4	7	1.4	3	1.0	0	
Marshall No. 1, Minn.	1.05	2.11	.53	.02	3.71	.60	.03	.03	.64	10	2.0	8	1.6	2	0.8	0	
Milan, Minn.	.92	1.75	1.09	.05	3.81	.70	.02	T	.62	.13	1.9	11	1.9	7	1.5	T	
Minneapolis WB AP, Minn.	.63	1.28	.68	.22	2.81	.29	.03	.07	.42	3	0.4	1	0.3	T	T	0	
Minnecta, Minn.	.82	1.72	.28	.01	2.83	.61	.02	.01	.67	7	1.1	6	1.1	2	0.8	0	
Montevideo, Minn.	.41	1.77	.45	.05	2.68	.53	T	T	.45	9	1.3	7	1.2	2	0.8	0	
Montgomery, Minn.	.58	1.62	.61	.18	2.99	.45	T	.00	.36	8	1.1	6	1.1	3	0.6	0	
Morris WC School, Minn.	.30	1.08	.68	.07	2.13	.52	T	.02	.25	6	0.9	2	0.4	1	0.3	0	
New Ulm 2SE, Minn.	.67	1.64	.74	.18	3.23	.76	.03	.03	.30	7	1.1	4	0.9	T	T	0	
North Mankato, Minn.	.99	1.50	.58	.27	3.34	.56	.04	T	.47		1.2		1.0		0.4		
Ortonville Sewage Plant, Minn.	.37	1.58	.43	.19	2.57	.40	T	T	.21	5	0.8	4	0.8	T	T	0	
Redwood Falls FAA AP, Minn.	.68	2.11	.60	.05	3.44	.80	.03	T	.11	10	1.5	7	1.4	3	0.9	10	
St. James Filtration Pl., Minn.	.69	1.75	.44	.16	3.04	.27	.04	.03	.33	12	1.8	12	1.7	6	1.3	0	
St. Peter 2SW, Minn.	.79	1.39	.52	.09	2.79	.45	.03	T	.43	7	1.1	4	0.8	2	0.4	0	
Sherburn 3NNE, Minn.	1.19	1.51	.22	.54	3.46	.55	.00	.00	.44		1.5		1.4		1.2		
Springfield, Minn.	.60	1.95	.54	.03	3.12	.65	.02	T	.27	9	1.4	5	1.1	2	0.5	0	
Stewart 4SSW, Minn.	.35	2.45	.65	.06	3.51	.34	T	.00	.34		1.5		1.0		0.3		
Tracy Power Plant, Minn.	1.34	2.51	.69	.09	4.63	.62	.04	T	.32	17	2.6	12	2.4	6	1.5	0	
Tyler, Minn.	.71	1.49	.41	.09	2.70	.45	.07	.08	.54	14	2.4	13	2.2	7	1.8	0	
Vesta, Minn.	1.09	2.20	.79	.01	4.09	.45	T	T	.39	9	1.4	5	1.0	2	0.5	0	

See footnotes at end of table.

TABLE 8.—Continued

Basin, Reach and Station	Precipitation by periods									Snow depth and water equivalent of snow on ground (inches), observed or adjusted (a)							
	1959		1960		Total	March 1960				Mar. 11		Mar. 18		Mar. 25		Mar. 31	
	Nov.	Dec.	Jan.	Feb.	Nov.-Feb.	1-11	12-18	19-25	26-31	SD	WE	SD	WE	SD	WE	SD	WE
MINNESOTA RIVER (Cont.)																	
Waseca U. Exp. Farm, Minn.	1.25	1.21	.31	.39	3.16	.41	.03	.06	.13	7	1.1	7	1.1	2	0.5	0	
Watson 1NE, Minn.	1.16	1.84	(.25)	.00	(3.25)	.22	.00	.00	.35		1.5		1.4		1.2		
Wells 1NW, Minn.	.87	1.35	.26	.33	2.81	.31	.14	.00	.28	4	0.6	4	0.7	2	0.5	0	
Willmar County Hwy Garage, Minn.	.39	1.11	1.35	.00	2.85	(.05)	.00	.00	.26		1.2		1.1		1.0		
Willmar State Hospital, Minn.	.34	.89	.77	T	2.00	.15	.00	.02	.33	8	1.2	6	1.1	5	1.0	0	
Winnebago, Minn.	1.39	1.71	.44	.37	3.91	.75	.06	.03	.62	12	1.7	8	1.5	4	1.2	0	
Young America, Minn.	.25	1.87	.68	.08	2.88	.34	.13	.06	.23	5	0.9	2	0.6	0	0.0	0	
Milbank, S. Dak.	.65	1.67	.62	.26	3.20	.63	.10	T	.30	9	1.5	10	1.6	1	0.2	0	
Sisseton, S. Dak.	.77	1.24	.76	.37	3.14	.33	.07	.00	.04		1.2		1.0		0.9		
Summit, S. Dak.	.33	1.08	.29	.43	2.13	.54	.10	T	.12	19	2.9	20	2.8	12	2.2	1	
Wilmot 1ENE, S. Dak.	.35	1.26	.47	.26	2.34	.40	.08	T	.10	7	1.1	6	1.2	2	0.6	0	
SAINT CROIX RIVER																	
Hinckley, Minn.	.54	1.81	1.27	.27	3.89	.10	.03	.01	.10	9	1.6	8	1.6	6	1.4	T	
Moro, Minn.	.24	1.89	.97	.21	3.31	.07	T	.04	.15	8	1.4	5	1.2	4	1.0	T	
Stillwater 2SSE, Minn.	.49	1.58	.46	.25	2.78	.14	.05	T	.33		0.6		0.4		0.3		
Amery Black Brook Hydro Pl., Wis.	.31	1.43	.55	.21	2.50	.09	.06	T	.40	5	0.9	5	0.9	5	0.9	0	
Big Falls Hydro Pl., Wis.	.78	1.94	.71	.42	3.85	.19	T	.09	.12	11	2.5	9	2.3	7	2.0	T	
Black River Falls Sew., Wis.	1.84	1.82	.74	.34	4.78	.21	.00	.07	.04		0.6		0.2		T		
Bloomer, Wis.	.36	2.06	.58	.32	3.32	.05	.00	T	T	2	0.4	T	T	T	T	0	
Cedar Falls Hydro Pl., Wis.	.61	2.14	.42	.36	3.53	.09	.06	.01	.03	3	0.5	2	0.4	1	0.3	0	
Chippewa Falls, Wis.	.83	2.33	.53	.50	4.19	.13	.00	.03	.12		0.9		0.8		0.2		
Couderay, Wis.	1.09	2.26	1.05	.32	4.72	.16	.01	T	.24	16	2.9	11	2.7	10	2.1	T	
Cumberland, Wis.	.33	2.40	.96	.33	4.02	.13	T	.04	.63	6	1.1	4	1.0	3	0.9	T	
Curtiss, Wis.	.95	1.97	.87	.41	4.20	.13	T	.03	T	5	0.7	3	0.6	2	0.4	0	
Danbury, Wis.	.57	2.17	.99	.42	4.15	.07	.04	.04	.31	11	2.0	9	1.8	8	1.7	T	
Eau Claire, Wis.	.92	2.55	.46	.31	4.24	.06	.00	.03	.11	1	0.3	T	T	2	0.4	0	
Eau Claire FAA AP, Wis.	.38	2.22	.41	.29	3.30	.10	T	.05	.10	4	1.0	3	0.8	T	T	0	
Fairchild Ranger Sta., Wis.	1.33	1.73	.42	.37	3.85	.18	.04	.05	.16	4	0.6	3	0.5	1	0.3	0	
Flambeau Reservoir, Wis.	1.01	2.10	1.08	.84	5.03	.00	.00	.12	.30	22	4.0	21	4.0	17	3.1	10	
Frederic, Wis.	.75	1.57	.77	.46	3.55	.12	.00	.10	.50	.0	1.8	8	1.6	6	1.5	0	
Galesville 3ESE, Wis.	1.46	1.27	.51	.37	3.61	.09	.04	.05	.47		0.4		0.3		T		
Grantsburg FAA AP, Wis.	.25	1.22	.64	.31	2.42	.12	T	.06	.32	10	1.8	8	1.6	7	1.5	0	
Hatfield Dam, Wis.	1.40	1.92	.70	.46	4.48	.12	.02	.00	.04		0.6		0.2		T		
Hayward Ranger Sta., Wis.	.79	2.24	1.22	.52	4.77	.15	.04	.05	.81	18	3.2	16	3.0	13	2.7	0	
Holcombe, Wis.	.55	2.44	.61	.32	3.92	.10	.04	.03	.09	5	0.8	4	0.8	3	0.6	0	
Jump River, Wis.	.64	1.91	.64	.50	3.70	.16	.00	T	.05	6	1.0	3	0.7	2	0.4	0	
Ladysmith, Wis.	.60	2.25	.85	.46	4.16	.19	T	.05	.12	11	2.5	8	2.3	7	2.0	0	
Ladysmith Ranger Sta., Wis.	.65	2.07	.76	.59	4.07	.15	.00	.08	.12		2.5		2.3		2.0		
Medford 1SW, Wis.	.91	1.92	.40	.37	3.60	.11	T	.03	.12	7	1.0	3	0.6	2	0.4	0	
Menomonie, Wis.	.39	2.22	.41	.25	3.27	.08	T	.04	T	4	0.7	2	0.4	1	0.3	0	
Neillsville 1W, Wis.	.91	1.69	.63	.19	3.42	T	T	.00	.04		0.6		0.5		T		
New Richmond, Wis.	.36	1.67	.52	.27	2.82	.10	.00	.04	.14		0.6		0.5		0.3		
Owen, Wis.	.65	1.96	.60	.32	3.53	.09	T	.02	.05	5	0.9	2	0.4	2	0.4	0	
Park Falls, Wis.	1.20	2.29	.99	.57	5.05	.06	T	.11	.28	17	3.1	14	2.8	14	2.8	5	
Pittsville, Wis.	1.61	2.24	1.21	.51	5.57	.10	.02	.02	T	4	0.6	2	0.4	1	0.3	0	
Prentice, Wis.	1.39	.88	.98	.54	3.79	.05	.00	.05	.19		4.0		4.0		1.0		
Prentice 5W, Wis.	1.50	2.33	1.35	.88	6.06	T	T	.13	T		4.0		3.6		1.0		
Rice Lake, Wis.	.27	1.51	.75	.38	2.91	.06	T	T	.14	7	1.3	4	1.0	3	0.9	0	
Ridgeland 1ENE, Wis.	.59	2.41	.66	.38	4.04	.10	.00	.02	.10	6	1.1	5	1.0	2	0.4	0	
River Falls, Wis.	.68	1.49	.46	.34	2.97	.06	.03	.04	.20	4	0.6	1	0.6	2	0.6	0	
Saint Croix Falls, Wis.	.33	1.39	.67	.17	2.56	.11	T	.04	.36		1.1		1.0		1.0		
Spooner Exp. Station, Wis.	.47	1.43	.71	.36	2.97	.16	T	.03	.48	13	2.5	10	2.2	8	2.1	T	
Spring Valley, Wis.	.37	1.68	.97	.28	3.12	T	T	T	.03		0.4		0.4		0.3		
Stanley, Wis.	.77	1.84	.48	.39	3.48	.11	.00	.09	.05	10	1.5	6	0.9	3	0.9	0	
Weyerhauser 1N, Wis.	.72	2.62	.95	.21	4.10	.12	T	.12	.05	7	1.3	6	1.0	6	0.9	T	
Willard, Wis.	1.10	1.91	.55	.38	3.94	.10	.00	.03	.00		0.8		0.6		0.3		
Winter 6NNW, Wis.	.25	1.88	.57	.37	3.07	.03	T	T	.41	17	3.0	16	3.0	16	3.0	9	
WISCONSIN RIVER																	
Antigo, Wis.	.52	2.33	1.50	.43	4.78	.03	.06	T	T	4	0.7	3	0.6	2	0.4	T	
Arlington, Wis.	2.16	2.11	.90	.72	5.89	.17	.15	.02	.79	7	1.1	7	1.1	3	0.8	0	
Babcock, Wis.	2.13	2.34	1.08	.64	6.19	.17	.09	.06	.00		0.6		0.5		0.3		
Baraboo, Wis.	2.27	2.14	1.12	.73	6.26	.12	.26	.04	.22	6	0.9	5	1.0	5	0.9	0	
Bloomingdale 2NNE, Wis.	1.70	1.41	.69	.26	4.06	.18	.07	.14	.19		0.9		1.2		0.9		
Buckatabon, Wis.	.49	1.34	.75	.56	3.14	.05	.03	.15	.19	22	4.0	21	4.0	23	4.1	16	
Cashton, Wis.	1.99	1.25	.67	.24	4.15	.12	.12	.10	T	7	1.0	7	1.4	6	1.2	0	
Cashton 3SE, Wis.	2.49	1.81	.95	.36	5.61	(.14)	-	-	.15		1.0		1.4		0.9		
Cashton 2W, Wis.	1.96	1.61	.73	.25	4.55	.20	.20	.17	.04		1.0		1.4		0.9		
Cashton 5SE, Wis.	2.55	1.80	.69	.32	5.36	.16	.05	.07	.06	5	0.8	2	0.5	3	0.6	0	
Cashton 4SSE, Wis.	2.19	1.76	.99	.23	5.17	-	-	-	-	5	0.8	10	1.4	4	0.7	0	
Coddington 1E, Wis.	1.46	1.73	1.11	.38	4.68	.07	.03	T	.01	7	1.0	4	0.8	3	0.6	0	
Big Saint Germain Dam, Wis.	1.18	2.05	1.17	.69	5.09	T	T	.12	.49								
Eagle River 4W, Wis.	1.60	1.93	1.21	.62	5.36	.02	T	.04	.30		4.0		4.0		4.0		
Eau Pleine Reservoir, Wis.	1.41	2.26	1.75	.40	5.82	.06	.04	.02	.01		0.7		0.5		0.3		
Fennimore 1NE, Wis.	2.75	1.83	-	.56	-	.05	.10	.00	.30		1.8		2.0		2.0		
Friendship Ranger Sta., Wis.	2.37	2.05	1.16	.90	6.48	.15	.26	.09	.03		0.9		0.8		0.4		
Goodrich 1SE, Wis.	1.10	2.47	.84	.53	4.94	.13	.01	.01	.11	10	1.5	7	1.4	6	1.0	0	
Hancock Exp. Farm, Wis.	1.98	2.11	1.15	.47	5.71	.08	.15	.02	T	6	0.9	6	0.9	4	0.7	0	
Hillsboro, Wis.	2.28	1.88	.99	.66	5.81	.08	.25	T	.02	5	0.9	5	1.0	2	0.5	0	
La Farge, Wis.	1.90	1.92	1.02	.44	5.28	.23	.10	.15	.10		0.9		1.0		0.9		
Lone Rock FAA AP, Wis.	2.31	1.49	.94	.51	5.25	.29	.17	.08	.29	3	0.5	5	1.0	3	0.8	0	
Long Lake Dam, Wis.	1.17	2.03	1.19	.56	4.95	.04	.01	.06	.13	25	4.5	19	4.0	19	4.0	12	
Marshfield Exp. Farm, Wis.	1.14	2.23	1.37	.42	5.16	.06	.04	.03	.02	5	0.7	3	0.6	2	0.4	0	
Mather 3NW, Wis.	2.14	2.00	1.28	.50	5.92	.20	.12	T	.08		0.7		0.5		0.4		
Mauston 1SE, Wis.	2.45	2.09	1.11	.78	6.43	.11	.54	.03	.05	4	0.6	5	1.0	4	0.9	0	
Merrill, Wis.	1.09	1.91	.96	.35	4.31	T	T	T	.14		1.0		1.0		1.0		
Minocqua Dam, Wis.	.95	1.96	1.21	.50	4.62	.11	T	.10	.23	9	1.7	6	1.5	8	1.7	2	
Mount Horeb 1WSW, Wis.	2.11	2.52	2.94	1.26	8.83	.23	.16	.15	.97	13	2.5	12	2.4	14	2.0	T	
Muscoda, Wis.	2.60	1.88	1.34	.63	6.45	.10	.27	.02	.29		0.6		0.8		0.7		
Necedah 2NNW, Wis.	2.26	1.87	.98	.52	5.63	.12	.05	.02	.02	5	0.9	4	0.7	2	0.4	0	
North Pelican, Wis.	.49	2.09	1.19	.41	4.18	.07	.01	.02	.05	19	3.4	18	3.4	18	3.3	8	
Phelps Deerskin Dam, Wis.	1.29	1.63	1.14	.69	4.75	.09	.03	.18	.11	20	4.0	19	4.0	21	4.0	13	
Portage, Wis.	2.15	2.29	1.18	.92	6.54	.13	.03	.01	.44		1.0		1.0		0.8		
Prairie du Sac 2N, Wis.	1.69	2.19	1.24	.88	6.00	.20	.26	.11	.25	7	1.0	7	1.4	9	1.3	0	
Rainbow Reservoir, Wis.	.88	1.67	.99	.55	4.09	.07	.01	.06	.26		2.0		2.0		2.0		
Readstown, Wis.	2.95	1.34	.77	.60	5.66	.07	.09	T	.11	2	0.2	2	0.3				
Reedsburg, Wis.	2.19	1.61	1.29	.62	5.71	.16	.58	T	.03	4	0.6	5	1.0	1	0.3	0	

See footnotes at end of table.

TABLE 8.—Continued

Basin, Reach and Station	Precipitation by periods									Snow depth and water equivalent of snow on ground (inches), observed or adjusted (a)							
	1959		1960		Total	March 1960				Mar. 11		Mar. 18		Mar. 25		Mar. 31	
	Nov.	Dec.	Jan.	Feb.	Nov.-Feb.	1-11	12-18	19-25	26-31	SD	WE	SD	WE	SD	WE	SD	WE
WISCONSIN RIVER (Cont.)																	
Rhinelander, Wis.	.58	2.40	1.05	.33	4.36	.07	T	.04	.07	21	3.8	17	3.2	16	2.9	6	
Rib Falls, Wis.	.90	1.91	1.33	.29	4.43	.10	.02	T	T		0.9		0.8		0.8		
Rice Reservoir, Wis.	.66	2.10	.93	.49	4.18	.08	.02	.04	.08	16	2.4	14	2.4	14	2.0	10	
Richland Center, Wis.	3.02	2.07	1.23	.77	7.09	.37	.25	.06	.21	3	0.5	2	0.5	1	0.3	0	
South Pelican, Wis.	1.13	2.14	1.14	.83	5.24	.01	.08	.02	.02	10	1.8	8	1.6	5	1.5	1	
Spirit Falls, Wis.	.77	1.99	.65	.42	3.83	.10	T	T	.07	26	3.9	23	3.8	20	3.5	8	
Steuben 1NW, Wis.	2.90	1.92	1.42	.89	7.13	.32	.31	.13	.13		0.8		1.1		1.1		
Stevens Point, Wis.	1.32	2.44	1.35	.44	5.55	.04	.04	.02	.02	3	0.6	2	0.4	1	0.3	0	
Stratford 3N, Wis.	1.20	1.95	.85	.40	4.40	.05	.00	T	T	3	0.5	2	0.4	2	0.4	2	
Sugar Camp, Wis.	.63	1.46	1.03	.37	3.49	.06	T	.03	.18	12	2.2	9	2.0	10	3.0	4	
Summit Lake Ranger Sta., Wis.	1.50	2.81	1.12	.59	6.02	.07	.09	.03	T	17	2.8	19	3.1	18	3.0	8	
Three Lakes Ranger Sta., Wis.	.87	1.83	1.23	.60	4.53	.06	.02	.06	.02		4.0		3.6		3.0		
Tomah Ranger Sta., Wis.	2.21	1.88	.82	.47	5.38	.25	.11	.10	.06		0.6		0.4		0.4		
Tomahawk Spirit Reservoir, Wis.	.58	1.93	.83	.56	3.90	.06	.02	.02	.05		2.4		2.4		2.0		
Viroqua, Wis.	2.13	1.61	.87	.27	4.88	.02	.02	.07	.39	5	0.9	6	1.0	4	0.9	0	
Wausau, Wis.	1.38	2.07	1.41	.42	5.28	.05	.05	.00	.02		0.9		0.5		0.3		
Wausau FAA AP, Wis.	1.18	1.75	1.60	.28	4.81	.01	.03	.01	T	4	0.9	2	0.5	1	0.3	0	
Wausau Record Herald, Wis.	1.72	3.29	2.36	1.05	8.42	.17	.10	.05	.04	7	1.1	2	0.5	T	T	0	
Westby 4NE, Wis.	2.00	1.50	.74	.29	4.53	.21	.08	.19	.15		0.9		0.9		1.0		
Westby 2NE, Wis.	1.94	1.40	.62	.27	4.23	.22	.10	.18	.07	5	0.9	5	0.9	6	1.0	0	
Willow Reservoir, Wis.	.90	2.12	.85	.58	4.48	.06	.02	.04	.29	23	3.5	20	3.4	21	3.0	12	
Wisconsin Dells, Wis.	2.40	1.81	1.28	.81	6.30	.15	.32	.07	.04	7	1.0	7	1.0	5	0.9	0	
Wisconsin Rapids, Wis.	1.62	2.47	1.11	.49	5.69	.06	T	.03	T		0.6		0.5		0.3		
Wis. Rapids Grand Ave. Br., Wis.	1.81	2.17	.92	.49	5.39	.06	.03	T	.03		0.6		0.5		0.3		
MISSISSIPPI RIVER Prairie du Chien-Clinton																	
Cuba City, Wis.	(.62)	2.18	5.59	(.64)	(9.03)	.23	.93	.05	.66		2.4		3.0		2.5		
Lancaster, Wis.	2.59	1.90	2.55	.85	7.89	.28	.22	.08	.40	10	2.0	14	2.8	11	2.3	0	
Platteville, Wis.	1.98	2.13	2.98	.74	7.83	.23	.31	.10	.61	12	2.4	12	2.4	6	1.3	0	
Fulton Dam 13, Ill.	2.52	2.79	3.50	2.11	10.92	.35	.85	.08	.20	10	2.0	17	3.4	8	3.0	0	
Galena, Ill.	2.26	2.74	7.29	1.95	14.24	.48	.35	.04	.69	10	2.6	9	2.7	6	1.8	0	
Lanark, Ill.	1.83	2.03	3.75	(.54)	(8.15)	.35	.28	.10	.11		2.5		3.0		3.3		
Mount Carroll, Ill.	1.96	2.77	4.36	2.14	11.23	.19	.61	.07	.38	16	3.2	20	4.4	17	3.9	0	
Stockton, Ill.	2.74	2.62	5.09	1.82	12.27	.43	.66	.12	.18	16	3.2		4.0	14	3.5	0	
Bellevue L&D 12, Iowa	2.27	2.66	4.87	1.37	11.17	.23	.53	.07	.47		2.6		3.5		3.0		
Clinton No. 1, Iowa	1.91	2.23	4.92	2.43	11.49	.84	.35	.23	.13	15	3.0	10	3.2	7	2.8	0	
Clinton No. 2, Iowa	2.26	2.73	3.60	2.36	10.95	.41	.63	.12	.21		3.0		3.2		2.8		
Dubuque L&D 11, Iowa	1.99	1.56	4.00	.70	8.25	.18	.33	.05	1.22		3.2		3.5		3.1		
Dubuque WB AP, Iowa	2.73	3.37	6.04	1.66	13.80	.60	.65	.20	.65	18	3.2	20	3.5	13	3.1	T	
Guttenburg L&D 10, Iowa	3.18	2.15	2.28	.76	8.37	.22	.26	.02	.62	7	1.1	7	1.4	3	1.0	0	
McGregor, Iowa	2.60	2.15	1.61	.97	7.32	.28	.30	.08	.31		0.8		1.0		0.6		
TURKEY RIVER																	
Cresco, Iowa	2.73	1.32	.68	.74	5.47	.61	.30	.02	.55		1.0	5	1.1	3	0.9	0	
Fayette, Iowa	2.86	1.59	1.78	.95	7.18	.48	.49	T	.47	8	1.1	7	1.4	3	0.9	T	
Saratoga 2E, Iowa	1.93	1.32	.22	.40	3.87	.17	.14	.01	.38	7	1.3	8	1.6	6	1.2	0	
Spillville, Iowa	2.41	1.09	.69	.68	4.87	.42	.13	.05	.81		1.0		1.1		1.1		
Waucoma, Iowa	2.97	1.22	.75	.76	5.70	.50	.35	.00	.58	9	1.4	8	1.6	8	1.6	0	
MAQUOKETA RIVER																	
Cascade, Iowa	1.74	2.50	4.40	1.30	9.94	.28	.30	T	.80	12	3.1	12	3.6	7	2.1	T	
Delaware 2W, Iowa	3.42	2.35	4.63	.88	11.70	.47	.35	.09	.25	14	3.2	14	3.4	14	3.6	0	
Maquoketa, Iowa	1.01	2.05	4.18	1.96	9.20	.48	.30	.11	.56	14	3.2	12	3.6	8	2.4	T	
Strawberry Point, Iowa	3.34	2.22	3.01	.88	8.45	.60	.37	.00	.69		1.8		1.9		1.7		
MISSISSIPPI RIVER Clinton-Keokuk																	
Burlington WB AP, Iowa	.44	1.70	2.56	2.03	6.73	1.23	.81	.13	.80	15	1.8	13	2.7	6	1.8	0	
Columbus Junction, Iowa	1.57	2.73	3.48	2.44	10.22	.63	.58	.05	.20	18	3.2	17	4.2	13	4.0	0	
Davenport L&D 15, Iowa	1.63	2.61	3.76	2.14	10.14	.37	.19	.07	.42	12	3.0	11	3.2	5	2.0	T	
Donnellson 4N, Iowa	.24	1.68	3.43	1.42	6.77	.50	.24	.00	.69	13	2.0	-	2.5	-	2.0	0	
Fort Madison, Iowa	.14	1.78	2.14	2.20	6.26	1.00	.70	.10	.32	12	1.8	9	2.5	4	1.1	0	
Grinnell, Iowa	3.56	1.58	4.89	(1.01)	(11.04)	.53	.34	.03	1.30	25	4.5	25	6.0	12	3.8	0	
Keokuk L&D 19, Iowa	.36	1.71	2.24	1.35	5.66	.73	.64	.07	.60	12	2.0	10	2.9	3	1.0	0	
Le Claire L&D 14, Iowa	1.65	1.81	4.26	2.07	9.79	.41	.26	.02	.43		3.2		3.2		2.2		
Montezuma, Iowa	3.35	1.92	4.86	1.42	11.55	.80	.40	T	1.00	21	3.6	23	5.5	16	4.8	0	
Muscatine 4ENE, Iowa	1.57	2.34	3.86	2.61	10.38	.55	.50	.03	.42	13	2.6	13	3.8	12	3.2	T	
Muscatine, Iowa	1.66	2.03	3.22	1.48	8.39	.89	.42	.03	.38		2.6		3.8		3.2		
North English	2.75	2.60	3.73	2.36	11.44	.79	.40	.07	.29		4.0		5.2		4.0		
Wapello, Iowa	1.59	2.06	3.05	1.82	8.52	.71	.61	.05	.19	14	2.8	13	2.9	9	3.5	0	
Washington, Iowa	(.62)	3.44	3.64	3.27	(10.97)	.97	.60	.03	.38	25	4.7	24	5.3	18	4.8	0	
Aledo, Ill.	1.52	2.23	3.20	2.09	9.04	.40	.83	.04	.08	13	2.6	18	3.8	12	3.0	0	
Alexis Waterworks, Ill.	.95	1.95	2.22	1.79	6.91	.42	.58	.06	.48		2.5		3.0		2.0		
Gladstone Dam 18, Ill.	.57	1.82	2.27	1.72	6.38	.84	.52	.44	.30	16	2.4	16	3.0	9	2.0	T	
Illinois City Dam 16, Ill.	1.41	2.13	3.60	2.33	9.47	.57	.44	.02	.54	10	2.8	8	217	4	1.2	0	
Keithsburg 1NW, Ill.	.66	1.63	2.47	2.29	7.05	.58	.51	T	T		3.0	16	3.8	8	2.3		
Monmouth, Ill.	1.25	2.35	2.79	2.40	8.79	1.40	1.05	.10	.22	16	2.7	14	3.0	7	2.1	0	
New Boston Dam 17, Ill.	1.32	2.61	3.15	1.98	9.06	.81	.56	.04	.16	22	3.3	16	3.6	8	2.4	0	
WAPSIPINICON RIVER																	
Anamosa 1NW, Iowa	1.90	2.46	4.64	1.16	10.16	.39	.45	T	.56	17	4.0	17	4.3	12	3.5	2	
Central City, Iowa	1.75	1.83	4.63	.69	8.90	.50	.24	.07	.38		4.0		4.2		2.6		
Clarence, Iowa	2.30	2.67	4.28	2.02	11.27	.51	.68	.03	.14	15	3.0	19	4.0	12	3.6	0	
DeWitt, Iowa	1.93	2.90	3.87	1.92	10.62	.52	.46	.02	.33	18	3.8	20	4.0	12	3.0	0	
New Hampton 1E, Iowa	2.60	1.17	.44	.69	4.90	.34	.08	.00	.99	15	2.8	17	2.6	5	1.1	0	
Oelwein 2SE, Iowa	2.61	1.32	2.89	.74	7.56	.67	.23	.09	.57	6	1.0	5	1.1	4	0.8	0	
Tripoli, Iowa	2.68	1.47	1.47	.95	6.57	.61	.27	.06	.65	9	1.6	6	1.3	5	1.0	0	
Wheatland, Iowa	2.04	2.60	3.26	2.13	10.03	.61	.31	.10	.19		3.0		3.5		3.3		
ROCK RIVER																	
Belvidere Sewage Plant, Ill.	2.00	2.81	3.86	1.57	10.24	.22	.32	.07	.87		1.0		1.5		1.4		
Freeport, Ill.	2.87	2.51	4.21	1.58	11.17	.34	.38	.09	.59	11	3.0	11	2.8	5	1.4	0	
Freeport Sewage Plant, Ill.	2.71	2.39	3.59	2.55	11.24	-	-	.12	.30	12	2.6	15	2.8	10	3.7		
Geneseo, Ill.	1.23	2.10	4.27	1.93	9.53	.52	.51	.11	.25	14	2.8	15	3.1	11	2.9	0	

See footnotes at end of table.

TABLE 8.—Continued

Basin, Reach and Station	Precipitation by periods									Snow depth and water equivalent of snow on ground (inches), observed or adjusted (a)							
	1959		1960		Total	March 1960				Mar. 11		Mar. 18		Mar. 25		Mar. 31	
	Nov.	Dec.	Jan.	Feb.	Nov.-Feb.	1-11	12-18	19-25	26-31	SD	WE	SD	WE	SD	WE	SD	WE
ROCK RIVER (Cont.)																	
Marengo, Ill.	1.98	3.48	4.07	1.56	11.09	.12	.70	.24	.85		1.0		2.0		1.9		
Moline WB AP, Ill.	1.50	2.42	3.43	2.78	10.13	.42	.38	.08	.40	11	2.7	13	3.2	9	3.0		
Morrison, Ill.	1.89	2.76	3.77	1.68	10.10	.40	.52	.19	.13	12	2.4	12	3.2	10	3.0	0	
Oregon, Ill.	1.48	2.31	3.73	.95	8.47	.20	.17	.06	.76		1.5		1.5		1.5		
Prophetstown, Ill.	1.53	2.43	3.78	1.89	9.63	.68	.51	.13	.25		2.0		2.2		2.2		
Rochelle 1W, Ill.	1.84	2.07	3.30	.94	8.15	.06	.13	.01	.71	10	1.5	12	2.4	8	2.0	0	
Rockford 6ENE, Ill.	1.78	2.24	3.88	1.16	8.96	.09	.44	T	1.20		1.5		1.8		1.7		
Rockford WB AP, Ill.	2.18	2.77	4.66	1.76	11.37	.20	.42	.10	1.51	10	1.5	12	1.8	5	1.4		
Sycamore, Ill.	2.85	2.58	3.32	1.95	10.70	.25	.27	.20	.88	7	1.1	7	1.5	4	1.2	T	
Walnut, Ill.	-	-	3.82	.92	-	.20	.70	T	1.45	10	1.5	4	0.8	3	0.7	0	
Beaver Dam, Wis.	2.31	2.52	1.10	.96	6.89	.10	.16	.04	.98	6	0.9	4	0.8	2	0.5	0	
Beloit, Wis.	2.70	2.57	5.03	1.58	11.88	.14	.21	.16	.62	3	0.6	2	1.0	3	1.0	0	
Brodhead, Wis.	1.85	2.52	4.10	1.03	9.50	.19	.28	T	1.00	13	3.4	15	3.5	9	2.3	T	
Burnett, Wis.	2.20	2.47	.94	1.02	6.63	.07	T	.05	1.00	6	1.0	5	1.0	3	0.6	0	
Clinton 2N, Wis.	2.07	2.22	4.90	2.10	11.29	.27	.32	.14	.98	4	0.6	7	2.1	8	2.0	T	
Eagle 5N, Wis.	1.94	1.93	3.47	1.90	9.24	.15	.25	.07	1.07		1.4		1.7		1.5		
Fort Atkinson, Wis.	2.10	2.65	3.58	1.16	9.49	.15	.15	T	1.60	7	1.4	7	1.5	4	1.0	0	
Hartford, Wis.	2.49	2.66	1.70	1.37	8.22	.27	.24	T	1.05	6	0.9	6	1.2	3	0.7	0	
Janesville, Wis.	2.76	2.44	3.86	1.16	10.22	.21	.21	.08	.95	9	2.7	5	1.8	4	1.0	0	
Lake Mills, Wis.	2.05	2.42	2.64	1.81	8.92	.07	.08	.09	1.14	9	1.4	9	1.4	10	1.4	T	
Madison WB AP, Wis.	2.29	2.45	2.19	1.14	8.07	.23	.24	.09	1.37	5	0.7	4	0.7	2	0.3	0	
Madison WB City, Wis.	2.25	2.21	2.21	1.04	7.71	.23	.15	.06	1.90	5	0.7	3	0.7	2	0.3	0	
Martintown, Wis.	3.69	2.84	4.85	.95	12.33	.07	T	.30	.60		3.0		3.0		2.5		
Monroe 1W, Wis.	1.97	2.18	4.38	.83	9.36	.36	.79	T	.87	10	2.2	14	3.4	12	3.0	0	
Oconomowoc 1SW, Wis.	1.81	1.71	2.65	1.15	7.32	.24	.05	.07	1.27	12	1.7	9	1.8	9	1.4	0	
Stoughton, Wis.	2.00	2.56	3.00	.81	8.37	.13	.09	.01	.88	8	1.7	5	1.5	2	0.5	0	
Watertown, Wis.	2.15	2.19	1.96	.91	7.21	.15	.17	T	.91	5	0.9	5	1.0	3	0.7	0	
Whitewater, Wis.	2.04	2.29	3.56	1.20	9.09	.19	.17	T	.67	5	1.0	5	1.5	T	T	0	
PECATONICA RIVER																	
Blanchardville, Wis.	2.13	2.55	3.77	1.12	9.57	.16	.31	.10	.89		2.6		3.2		2.0		
Blanchardville 1N, Wis.	2.02	2.82	3.00	1.68	9.52	.15	.30	T	1.03		2.6		3.2		2.0		
Darlington, Wis.	1.83	2.48	3.01	.81	8.13	.16	.29	T	.77	11	2.8	13	3.2	8	2.0	0	
Dodgeville 1NE, Wis.	2.16	2.34	2.98	1.16	8.64	.20	.47	T	.50	11	2.3	16	3.2	14	2.8	T	
CEDAR RIVER																	
Albert Lea, Minn.	.96	1.06	.22	.54	2.78	.38	.12	.03	.11	8	1.1	4	0.8	2	0.5	0	
Austin 4S, Minn.	1.60	1.25	.39	.58	3.82	.87	.06	.10	.50	10	1.5	11	1.8	6	1.3	0	
Allison, Iowa	3.28	1.35	1.69	.55	6.87	.76	.26	.15	.62	16	2.9		3.0	12	2.8		
Cedar Falls, Iowa	3.11	1.46	2.33	.69	7.59	.46	.29	.11	.50	12	2.3	9	2.3	5	1.8	T	
Cedar Rapids FAA AP, Iowa	3.44	2.37	4.21	1.97	11.99	.80	.68	.21	.17	16	4.0	15	3.4	11	2.9	T	
Cedar Rapids No. 1, Iowa	3.14	2.62	4.67	1.96	12.39	.51	.44	.11	.27	12	3.6	12	3.0	12	2.8	0	
Cedar Rapids No. 2, Iowa	3.33	2.64	4.56	1.82	12.35	.85	.37	.03	.36		3.6		3.0		2.8		
Charles City, Iowa	2.41	1.18	.35	.56	4.50	.57	.32	.03	.76	11	2.1	9	2.1	3	1.0	0	
Dumont 3NNW, Iowa	2.58	.96	.71	.52	4.77	.37	.14	T	.51	9	1.9	9	2.1	5	1.5	0	
Forest City, Iowa	1.53	1.20	.33	.73	3.79	.61	.18	.04	.13		1.4		0.9		0.6		
Grundy Center 4NE, Iowa	2.71	1.35	2.70	.83	7.59	.65	.29	T	.63	12	2.3	14	3.0	11	2.9	1	
Hampton 3NE, Iowa	2.66	1.14	.95	.59	5.34	.69	.45	.03	.56	10	2.0	7	1.6	4	1.0	T	
Lake Mills, Iowa	1.55	1.14	.56	.61	3.86	.75	.30	.09	.28	12	1.8	6	1.5	2	0.5	0	
Mason City 3N, Iowa	1.73	1.06	.24	.58	3.61	.46	.12	.02	T	8	1.3	8	1.6	4	1.2	0	
Mason City FAA AP, Iowa	1.52	.72	.08	.42	2.74	.31	.15	.01	T	8	1.3	8	1.6	3	1.0	0	
Northwood, Iowa	1.33	1.32	.25	.59	3.49	.56	.15	.05	.24	9	1.4	7	1.5	2	0.5	0	
Osage, Iowa	2.33	.84	.26	.58	4.01	.53	.06	T	.27	9	1.4	8	1.5	4	1.0	0	
Saint Ansgar 2S, Iowa	1.82	.84	.21	.52	3.39	.55	.15	.22	.00		1.4		1.4		1.0		
Sheffield, Iowa	1.83	.93	.54	.61	3.91	.27	.25	.00	.32		1.8		1.6		1.0		
Shell Rock, Iowa	2.63	1.12	1.36	.74	5.85	.62	.14	.10	.60		2.5		2.5		2.0		
Tipton, Iowa	2.40	3.07	3.04	1.76	10.27	.42	.30	.14	.13	18	3.6	13	3.4	12	3.6	0	
Traer, Iowa	2.56	1.64	4.45	1.49	10.14	.74	.61	.10	1.15		3.4		3.3		2.8		
Vinton 3N, Iowa	4.18	1.25	4.68	1.11	11.22	.33	.20	.03	1.28	12	3.2	13	3.2	11	2.9	0	
Waterloo River Front Pk, Iowa	2.46	(1.21)	3.34	(.69)	(7.70)	.44	.24	.01	.33		2.0		2.4		1.6		
Waterloo WB AP, Iowa	3.45	1.78	2.04	.75	8.02	.56	.28	.03	.69	11	2.0	10	2.4	5	1.6	0	
IOWA RIVER Above Iowa City																	
Belle Plaine, Iowa	3.98	1.82	4.94	1.61	12.35	.90	.60	.12	1.28	18	4.2	17	4.1	14	3.8	T	
Britt, Iowa	1.91	1.55	.32	.89	4.67	.62	.30	.05	.12	9	1.8	5	1.0	4	0.9	0	
Eldora, Iowa	2.63	1.24	1.46	.87	6.20	.62	.22	.08	.25	23	4.6	20	4.8	13	3.6	T	
Iowa City, Iowa	1.93	2.50	3.62	1.23	9.28	.74	.42	.11	.56	21	4.1	19	4.0	12	3.7	0	
Iowa City Ralston Cr. 1, Iowa	2.43	2.86	3.13	.72	9.14	(.43)	.14	.09	.50		4.1		4.0		3.7		
Iowa City Ralston Cr. 2, Iowa	2.18	2.62	3.22	2.50	10.52	.58	.33	.11	.55		4.1		4.0		3.7		
Iowa City Ralston Cr. 3, Iowa	(1.31)	2.47	(2.98)	-	-	.75	.23	.05	.57		4.1		4.0		3.7		
Iowa City Ralston Cr. 4, Iowa	1.85	2.62	3.36	1.10	8.93	.51	.19	.08	.55		4.1		4.0		3.7		
Iowa City Ralston Cr. 5, Iowa	(1.82)	2.84	4.04	1.96	(10.66)	.92	.38	.16	.63		4.1		4.0		3.7		
Iowa Falls, Iowa	2.48	.77	(1.88)	.92	(6.05)	1.15	.35	.00	.90		3.0		3.0		2.0		
Marshalltown, Iowa	2.61	1.24	3.78	1.46	9.09	.96	.44	.02	.20	20	4.1	22	5.1	18	4.7	0	
Morse, Iowa	2.26	2.84	3.84	1.56	10.50	.59	.25	.10	.54		4.1		4.0		3.7		
Morse 1NE, Iowa	(1.29)	2.12	3.51	.61	(7.53)	(.13)	.42	.10	.70		4.1		4.0		3.7		
Morse 4SSW, Iowa	1.97	2.25	3.53	1.84	9.59	.28	.24	.07	.50		4.1		4.0		3.7		
Oasis 1NW, Iowa	1.86	2.20	3.34	(1.04)	(8.44)	.25	.30	.03	.42		4.1		4.0		3.7		
Toledo, Iowa	2.42	1.56	4.32	.97	9.27	.72	.30	T	1.59	15	3.0	13	3.2	12	3.2	0	
Williamsburg, Iowa	2.98	2.34	3.96	1.82	11.10	.59	.26	.05	.36		4.0		4.8		4.2		
SKUNK RIVER																	
Ames 3SW, Iowa	1.85	1.42	1.57	.80	5.64	.65	.16	.05	.37	18	3.5	15	3.1	13	3.3	T	
Augusta, Iowa	.56	1.98	2.59	1.25	6.38	.90	.75	T	.87		2.0		2.5		2.0		
Fairfield, Iowa	.83	3.45	3.23	1.78	9.29	.83	.41	.05	.27	21	4.1	22	5.0	15	4.0	T	
Jewell, Iowa	2.62	1.19	1.26	.94	6.01	.61	.21	.05	.46	14	2.5	15	3.1	8	3.0	T	
Mount Pleasant, Iowa	.58	1.77	2.61	1.50	6.46	1.12	.90	.11	.07	15	3.2	14	3.8	11	3.3	0	
Newton, Iowa	4.00	1.80	4.00	1.16	10.96	.66	.30	T	.67	17	3.4	17	3.9	10	3.2	T	
Sigourney, Iowa	1.19	1.11	2.02	1.38	5.70	.76	.72	.10	.28	22	4.0	22	5.1	17	4.0	0	
DES MOINES RIVER Above Boone																	
Slayton, Minn.	1.47	-	.41	.07	-	.90	.17	.05	.30		2.4		2.0		1.0		
Windom 1E, Minn.	.54	-	D .57	D .30	-	.54	T	T	-	11	1.6	10	1.5	10	1.5	T	

See footnotes at end of table.

TABLE 8.—Continued

Basin, Reach and Station	Precipitation by periods									Snow depth and water equivalent of snow on ground (inches), observed or adjusted (a)							
	1959		1960		Total	March 1960				Mar. 11		Mar. 18		Mar. 25		Mar. 31	
	Nov.	Dec.	Jan.	Feb.	Nov.-Feb.	1-11	12-18	19-25	26-31	SD	WE	SD	WE	SD	WE	SD	WE
DES MOINES RIVER (Cont.) Above Boone																	
Algona 3W, Iowa	1.65	1.41	.48	.72	4.26	.78	.25	.05	.35	9	1.7	7	1.4	2	0.7	0	
Boone, Iowa	1.85	1.11	1.39	.85	5.20	.90	.16	.05	.38	30	6.0	33	6.8	29	6.0	0	
Clarion 1SW, Iowa	1.87	.90	.58	.34	3.69	.32	.23	.09	.17	14	2.8	13	2.6	4	1.0	T	
Emmetsburg, Iowa	2.42	1.35	.38	.62	4.77	.92	.09	.05	.20	12	1.8	10	1.8	2	0.7	0	
Fort Dodge, Iowa	2.17	1.36	1.48	.90	5.91	.98	.30	.09	.34	18	3.6	15	3.4	13	3.2	T	
Humboldt No. 2, Iowa	2.15	1.19	1.06	.67	5.07	.80	.30	.10	.20		2.5		3.0		1.2		
Kanawha, Iowa	1.24	.93	.34	.56	3.07	.27	.20	.06	.27	4	1.0	5	1.0	4	0.9	0	
Pocahontas, Iowa	1.95	1.54	.81	.76	5.06	.74	.15	.12	.22	12	2.3	11	2.7	6	1.8	0	
Ringsted, Iowa	1.17	1.24	.18	.43	3.02	.49	.13	.04	.34		1.5		1.2		0.8		
Swea City, Iowa	1.21	1.21	.21	.35	3.08	.55	.17	.03	.26	7	1.1	3	0.9	2	0.6	0	
Titonka 5NE, Iowa	1.47	1.18	.10	.65	3.40	.53	.13	.08	.09	6	1.0	4	0.9	3	0.7	0	
Webster City, Iowa	2.49	1.16	1.06	.73	5.44	.69	.17	.06	.23	23	4.6	18	3.6	16	3.4	4	
RACCOON RIVER																	
Carroll 2SSW, Iowa	2.25	1.17	1.73	1.81	6.96	1.07	.47	.05	.42	23	4.6	28	6.0	15	4.1	2	
Coon Rapids, Iowa	1.54	1.26	1.14	1.09	5.03	.57	.24	.04	.45		4.1		4.2		3.8		
Guthrie Center, Iowa	1.51	1.76	2.21	1.57	7.05	.83	.34	T	.14	23	4.6	18	4.0	12	3.3	0	
Jefferson, Iowa	2.15	1.49	2.13	1.30	7.07	.97	.22	.10	.32	16	3.2	15	4.0	11	3.9	0	
Lake City, Iowa	2.27	1.53	(.79)	.54	(5.13)	.43	.26	.00	.78	16	3.6	16	4.0	9	3.0	T	
Lake View, Iowa	2.00	2.30	1.05	.97	6.32	.79	.29	.09	.09	20	4.0	19	4.0	15	4.0	0	
Perry 1SE, Iowa	2.33	1.32	1.77	1.43	6.85	.81	.28	.05	.12	20	3.8	18	4.2	12	3.3	1	
Rockwell City, Iowa	2.48	1.50	1.15	1.00	6.13	.89	.17	.15	.37	16	3.6	15	3.8	12	3.6	T	
Sac City, Iowa	1.95	1.97	.76	.92	5.60	.66	.28	.06	.12	14	3.0	14	3.2	10	2.3	0	
Storm Lake 2E, Iowa	1.13	1.64	.52	.55	3.84	.46	.17	.06	.12	15	3.0	17	3.4	7	2.1	0	
Van Meter, Iowa	2.57	1.85	3.52	1.70	9.64	.93	.37	.08	.10	12	2.4	13	3.0	11	2.8	0	
DES MOINES RIVER Boone-Keokuk																	
Albia, Iowa	.71	2.26	3.17	2.22	8.36	1.55	.57	.07	.31	32	4.8	31	5.1	14	3.9	0	
Albia Pasture Imp. Farm, Iowa	.48	2.36	3.16	2.63	8.63	1.28	1.00	.00	.50	36	5.0	23	4.8	15	3.9	0	
Ankeny 2SW, Iowa	2.83	1.31	2.42	.94	7.50	.32	.20	T	.20	16	2.9	17	3.4	6	2.0	0	
Des Moines WB AP, Iowa	2.91	1.91	4.38	1.58	10.78	.97	.30	.07	.12	18	2.5	13	2.7	10	3.0	0	
Des Moines WB City, Iowa	3.68	1.97	4.30	2.02	11.97	.97	.40	.02	.13		2.5		2.7		3.0		
Dexter, Iowa	2.71	1.51	2.48	1.60	10.57	.71	.33	.03	.03		3.8		3.9		3.0		
Eddyville, Iowa	1.01	3.06	3.85	2.27	10.19	1.25	.20	T	.30		4.0		4.3		3.8		
Indianola, Iowa	.96	1.74	3.80	2.36	4.86	.68	.35	.02	.27	14	2.6	13	2.7	10	3.0	T	
Keosauqua, Iowa	.51	2.35	2.80	1.87	7.53	.90	.59	.03	.28	19	3.6	14	3.2	7	2.3	0	
Keosauqua No. 2, Iowa	.37	2.28	2.74	1.66	7.05	.80	.48	T	.15		3.6		3.2		2.3		
Knoxville, Iowa	2.16	1.58	3.70	1.70	9.14	1.00	.26	.10	1.43	30	5.2	27	5.5	15	4.5	0	
Ogden, Iowa	(1.24)	1.24	.97	.68	(4.13)	.27	.03	.15	.28		4.0		4.0		4.0		
Osceola, Iowa	1.03	2.45	3.83	1.86	9.17	.88	.54	.08	.40		3.0		3.3		3.5		
Oskaloosa 2WSW, Iowa	1.21	2.14	3.21	1.78	8.34	.73	.29	.03	.42	18	3.8	17	4.1	11	3.3	0	
Ottumwa FAA AP, Iowa	.72	2.48	3.39	2.35	8.94	1.25	.50	.01	.24	23	4.8	25	5.5	16	4.2	0	
Ottumwa, Iowa	.88	2.68	3.65	2.23	9.44	1.16	.55	T	.52		4.8		5.5		4.2		
Saint Charles, Iowa	1.31	(1.48)	3.88	1.15	(7.82)	(.37)	.42	.29	.20		3.0		3.0		3.2		
Tracy 1NE, Iowa	1.54	1.68	3.73	1.98	8.93	.38	.21	T	.57		4.0		4.0		3.9		
Winterset 3NW, Iowa	1.98	1.80	4.25	1.11	9.14	.92	.39	.10	.06	26	4.3	26	5.2	20	5.0	T	
Woodward 7N, Iowa	1.53	1.39	1.20	.72	4.84	.85	.17	.03	.08	28	5.6	27	5.6	19	4.5	0	
MISSISSIPPI RIVER Keokuk-St. Louis																	
Bloomfield 3N, Iowa	(.25)	2.44	4.24	(1.90)	(8.83)	.95	.70	.19	.15		3.8		4.0		3.7		
Bowling Green, Mo.	.56	1.82	1.20	1.72	5.30	.80	.50	.00	1.35		2.0		2.3		1.5		
Canton L&D 20, Mo.	.20	1.24	1.36	1.22	4.02	.98	.71	.06	.19	13	2.0	16	2.9	2	0.7	0	
Cap au Gris L&D 25, Mo.	1.59	1.77	.96	1.74	6.06	1.22	.35	.10	1.43		2.1		2.0		0.9		
Centralia, Mo.	.22	1.96	1.36	1.62	5.16	.75	.28	.07	.00		2.0		1.8		0.2		
Clarksville L&D 24, Mo.	.82	1.33	1.16	1.61	4.92	1.06	.50	.08	3.60		2.0		2.0		1.0		
Downing, Mo.	.06	2.27	2.66	1.43	6.42	.47	.65	.00	.10		2.0		3.0		3.0		
Edina, Mo.	.18	2.61	2.97	1.52	7.28	.67	.57	.05	.30	7	1.3	8	1.6	4	1.3	0	
Elsberry 1S, Mo.	1.65	1.47	.99	1.11	5.22	.75	.59	.00	1.14	14	2.1	9	1.6	3	0.9	0	
Elsberry 4WSW, Mo.	1.42	1.33	.95	(1.09)	(4.79)	1.39	.68	.00	.99		2.1		1.6		0.9		
Elsberry 4SW, Mo.	1.47	1.43	.95	1.27	5.12	1.10	-	.00	.77		2.1		1.6		0.9		
Gregory Landing, Mo.	.24	1.57	1.86	1.39	5.06	.87	.64	T	.09		2.0	12	1.9	4	0.6		
Hannibal 1N, Mo.	.34	2.05	1.77	2.25	6.41	1.34	.95	.13	.73		1.4	14	1.1		1.1		
Hannibal Waterworks, Mo.	.39	1.68	1.57	1.47	5.11	.84	.91	.04	.75	6	1.4	9	1.8	4	1.1	0	
Kahoka, Mo.	-	2.04	2.36	1.71	-	.80	.42	.05	.50		2.0		2.0		1.0		
Kirksville Radio KIRX, Mo.	.16	3.01	2.09	1.80	7.06	.42	.43	.01	.12		1.2		1.8		1.5		
La Belle, Mo.	.09	1.95	1.89	.94	4.87	.49	.48	.02	.01	11	1.9	10	2.0	5	1.2	0	
Louisiana Starks Nursery, Mo.	-	-	1.54	2.26	-	.99	.78	.08	1.05	13	2.0	14	2.8	6	1.9	0	
Louisiana, Mo.	.66	1.69	1.47	1.98	5.80	1.09	.60	.09	1.34		2.0	13	3.3	5	1.7		
Madison, Mo.	.24	1.12	1.98	1.45	4.79	.83	.32	.00	.10		1.5		1.5		0.2		
Mexico, Mo.	.50	2.60	1.47	1.77	6.34	1.36	1.09	.10	.14	16	2.5	9	1.8	T	0.2	0	
Middletown 5ENE, Mo.	.99	2.14	1.38	2.24	6.75	1.43	1.18	.07	1.01	16	2.3	12	2.4	6	1.5	0	
Moberly Radio KNCM, Mo.	.36	1.98	1.99	1.26	5.59	.74	.35	.05	.02	4	1.0	5	1.0	T	0.2	0	
Monroe City, Mo.	.28	1.64	1.43	1.48	4.83	1.05	.59	T	.37		2.0		2.0		0.2		
Palmyra, Mo.	.41	1.30	1.29	1.23	4.23	1.22	.53	.10	.36	13	2.0	7	1.4	0	0.0	0	
Paris, Mo.	.70	2.23	1.46	1.37	5.76	.80	.57	.06	.15	14	2.5	11	2.2	T	0.2	0	
Perry, Mo.	.02	1.90	(.42)	(.95)	(3.29)	1.75	.52	.05	.55		2.2		2.0		0.6		
St. Louis RFC City, Mo.	4.46	2.79	1.42	1.28	9.95	1.26	.40	.08	.85	12	1.8	T	T	0	0.0	0	
St. Louis WB AP, Mo.	2.90	1.93	1.11	1.19	7.13	1.18	.44	.07	1.08	10	1.2	4	0.6	0	0.0	0	
Saverton L&D 22, Mo.	.50	2.23	1.01	1.58	5.32	1.09	.65	.05	.72	10	1.6	10	2.0	3	0.9	0	
Shelbina, Mo.	.32	1.98	2.11	1.17	5.58	.67	.46	.07	.57	11	1.9	10	2.6	5	1.1	0	
Shelbyville, Mo.	.17	2.34	2.25	.93	5.69	1.19	.69	.00	.12	17	2.6	22	4.2		1.0	0	
Steffenville 1E, Mo.	.20	1.86	1.96	1.05	5.07	.66	.43	.10	.15	8	1.4	9	2.6	7	1.4	0	
Troy, Mo.	1.56	2.01	1.48	1.27	6.32	.99	.73	.06	.36	18	2.7	11	2.1	2	0.6	0	
Vandalia, Mo.	.37	1.59	1.07	2.18	5.21	1.54	.76	-	-	16	2.3		2.0		1.0		
Alton Dam 26, Ill.	2.77	2.07	1.53	1.12	7.49	1.02	.33	.06	.80		1.4		1.0		0.2		
Barry, Ill.	.92	2.22	-	1.75	-	1.53	.59	.00	.74	17	2.6	15	3.0	8	2.5	0	
Bentley, Ill.	.38	2.07	2.57	1.25	6.27	.77	.83	.08	.58	13	2.0	16	2.9	9	2.7	0	
Edwardsville, Ill.	3.72	2.64	1.47	1.91	9.74	1.52	.32	.09	.77	5	1.0	2	0.4	T	T	0	
Golden, Ill.	.34	(1.61)	1.30	2.43	(5.68)	1.42	.65	.10	.15	15	2.5		3.0		2.5	0	
Grafton, Ill.	2.29	2.01	1.92	1.29	7.51	1.33	.58	.10	.68		2.0		1.6		0.6		
Mount Olive 2NE, Ill.	3.60	2.46	(1.53)	1.83	(9.42)	1.30	.35	.10	1.25		1.2		0.8		0.2		
Pleasant Hill, Ill.	.93	1.36	1.12	2.85	6.26	1.19	.50	.10	2.69	9	1.4	7	1.5	1	0.3	0	
Quincy, Ill.	.46	1.38	1.65	1.60	5.09	.98	.62	T	.52	13	2.0	10	2.0	3	0.7	0	
Quincy FAA AP, Ill.	.29	1.43	1.49	1.47	4.68	.95	.92	.01	.54	18	2.7	21	3.0	10	2.8		
Quincy Dam 21, Ill.	.25	1.30	1.47	1.51	4.53	.97	.69	.09	.37	7	1.5	10	2.0	2	0.4	0	
Quincy Memorial Br., Ill.	.43	1.39	1.67	1.56	5.05	1.01	.79	.02	.52		1.8		1.5	2	0.1		
Warsaw, Ill.	.45	1.76	2.66	1.55	6.42	.97	.70	.05	.50	11	2.0	10	2.6	1	0.3	0	

See footnotes at end of table.

TABLE 8.—Continued

Basin, Reach and Station	Precipitation by periods									Snow depth and water equivalent of snow on ground (inches), observed or adjusted (a)							
	1959		1960		Total	March 1960				Mar. 11		Mar. 18		Mar. 25		Mar. 31	
	Nov.	Dec.	Jan.	Feb.	Nov.-Feb.	1-11	12-18	19-25	26-31	SD	WE	SD	WE	SD	WE	SD	WE
ILLINOIS RIVER Above Kingston Mines																	
Antioch, Ill.	3.40	3.00	4.23	2.47	13.10	.25	.66	.12	.80	14	2.2	15	3.0	11	2.5	T	
Arlington Heights 4SSE, Ill.	2.53	3.31	(3.11)	2.30	(11.25)	.49	.63	.04	.41		1.6		2.1		1.6		
Aurora College, Ill.	3.52	1.80	3.85	1.76	10.93	.40	.79	.21	.49	5	0.9	8	1.6	4	1.1	0	
Channahon Dresden Is., Ill.	2.52	3.09	2.63	2.95	11.19	.30	.57	.02	.34	3	0.5	7	1.0	2	0.4	0	
Chenoa, Ill.	1.23	2.45	1.60	2.58	7.86	.43	.40	.05	.61	20	3.0	12	2.4	4	1.2	0	
Chicago O'Hare Airport, Ill.	2.57	1.99	3.07	2.70	10.33	.40	.50	.07	.20	6	0.9	11	1.3	2	0.7	0	
Chillicothe, Ill.	1.57	2.46	(2.04)	2.31	(8.38)	.69	1.08	.02	1.49		1.5		2.0		1.9		
Edelstein, Ill.	(.93)	2.36	2.10	2.03	(7.42)	(.20)	.37	.03	1.95		1.5		2.0		1.9		
Elgin, Ill.	3.49	3.12	3.55	2.75	12.91	.29	.54	.09	1.12		1.5		2.0		1.4		
Fairbury Waterworks, Ill.	2.58	2.19	1.36	2.86	8.99	.35	.56	.20	.57		2.0		2.0		1.2		
Joliet Brandon Rd. Dam, Ill.	2.15	2.49	2.66	2.70	10.00	.37	.94	T	.32		0.9		1.0		1.0		
Kankakee 3SW, Ill.	2.30	1.69	1.77	2.74	8.50	.13	.18	.04	.12	4	0.6	4	0.7	1	0.2	0	
Kankakee Sewage Pl., Ill.	2.52	2.18	1.93	3.35	9.98	.32	.64	.14	.11		0.6		0.7		0.2		
Lacon, Ill.	1.63	2.70	2.23	2.29	8.85	1.93	.98	.24	1.50	12	1.8	5	1.0	4	1.0	0	
La Salle Peru, Ill.	1.62	2.55	2.43	2.39	8.99	.58	.69	.14	.57		1.5		1.8		1.6		
La Salle 1S, Ill.	1.20	2.05	1.64	1.66	6.55	.18	.69	.07	.70		1.5		1.8		1.6		
Mackinaw, Ill.	1.43	2.06	1.79	3.53	8.81	.60	.77	.04	.80	9	1.4	7	1.4	4	1.0	0	
Marseilles Lock, Ill.	2.01	(1.38)	2.50	2.44	(8.33)	.45	.79	.02	.32		0.6		1.0		0.6		
McHenry, Ill.	2.43	2.48	2.96	1.34	9.21	(.05)	-	.08	.61		2.0		2.5		2.0		
Minonk, Ill.	2.06	2.14	1.85	2.71	8.76	.69	.76	.11	.24	16	2.4	16	3.2	13	3.2	0	
Morris, Ill.	2.09	2.16	2.73	2.20	9.18	.23	.54	T	.31		0.8		0.6		0.5		
Morris 5N, Ill.	1.76	(2.27)	-	2.77	-	.30	.40	.10	.22	5	0.8	3	0.6	2	0.5	0	
Newark 8E, Ill.	2.28	(.75)	2.21	1.95	(7.19)	.07	.10	.02	.34	6	1.0	6	1.1	5	1.0	0	
Ottawa, Ill.	2.07	2.36	2.42	2.32	9.17	.30	.43	.08	.25	6	1.0	6	1.0	2	0.4	0	
Paw Paw, Ill.	2.39	2.96	4.43	1.64	11.42	.29	.56	T	1.28	14	2.1	15	3.0	12	2.5	0	
Peoria WB AP, Ill.	.96	1.89	1.93	1.98	6.76	.67	.40	.09	2.08	8	1.3	6	1.3	3	1.0	0	
Peotone, Ill.	2.17	2.56	2.49	3.14	10.36	.51	.61	.09	.81	4	0.6	5	1.0	2	0.4	0	
Piper City, Ill.	2.08	1.76	1.30	2.60	7.74	(.15)	.58	.14	.22		0.9		1.0		0.8		
Pontiac, Ill.	1.73	2.33	1.56	2.85	8.47	.39	.65	.07	.33	8	1.2	8	1.6	4	1.1	0	
Princeville 2NW, Ill.	1.43	2.46	1.74	1.36	6.99	.40	.45	.04	2.16	9	1.4	10	2.0	9	1.9	0	
Roberts 3N, Ill.	1.73	1.67	1.38	2.55	7.33	.80	.37	.09	.20	6	0.9	5	1.1	2	0.4	0	
Streator 3N, Ill.	1.73	1.44	1.36	-	-	.67	.95	.00	1.28	4	0.6	9	1.7	5	1.3	0	
Tiskilwa, Ill.	1.30	2.16	2.80	2.04	8.30	.68	.48	.15	1.40	15	2.5	12	2.4	10	2.4	0	
Utica Starved Rock Dam, Ill.	1.96	2.27	1.79	2.53	8.55	.48	1.20	.02	.45		1.0		1.0		1.0		
Washington 1ENE, Ill.	1.42	1.58	1.53	1.90	6.43	.45	.47	.04	1.23		1.4		2.0		1.8		
Watseka, Ill.	3.00	1.89	1.79	3.24	9.92	.37	.57	.10	.11	8	1.2	5	1.0	4	0.8	0	
Wenona, Ill.	2.28	2.15	2.21	2.37	9.01	.56	.44	-	-		1.2		1.0		1.0		
Wheaton College, Ill.	2.58	2.72	5.55	2.69	13.54	.27	1.02	.04	.17	11	1.6	10	2.0	8	1.0	0	
Burlington, Wis.	2.26	2.37	4.64	1.27	10.54	.13	.24	T	2.12	11	1.7	13	2.5	9	2.3	0	
Fontana, Wis.	2.06	2.79	4.17	1.46	10.48	.50	.37	T	.97	11	2.0	12	2.4	7	1.9	0	
Lake Geneva, Wis.	2.80	3.17	4.65	1.98	12.60	.18	.31	.30	1.38	17	2.0	13	2.5	14	3.0	0	
Union Grove, Wis.	2.32	3.12	3.74	2.37	11.55	.22	.32	T	1.20	11	1.7	9	2.2	4	1.1	0	
Waukesha, Wis.	2.14	1.58	2.32	1.62	7.66	.22	.39	.07	1.59	12	2.2	14	2.9	8	2.8	0	
Collegeville St. Jos. Col., Ind.	4.22	(1.34)	1.23	3.37	(10.16)	.39	.46	.05	.40	12	1.8	11	2.2	3	0.9	0	
Kentland, Ind.	3.20	1.96	1.73	4.01	10.90	.60	.32	.07	.41		1.6		1.5		0.8		
Lakeville, Ind.	3.26	1.72	3.30	3.15	11.43	1.83	.41	.16	.29		1.6		1.8		1.5		
Plymouth Power Substa., Ind.	3.50	1.81	2.27	3.51	11.09	.87	.54	.10	.03	11	1.6	9	1.8	6	1.5	0	
Shelby, Ind.	2.95	1.46	1.93	2.96	9.30	.26	.48	.06	.10		0.8		1.0		0.6		
Valparaiso Waterworks, Ind.	2.79	1.27	2.82	2.79	9.67	.41	.37	.05	.14	8	1.2	8	1.6	5	1.4	0	
Wheatfield, Ind.	3.47	1.71	2.35	3.39	10.92	.11	.52	T	.81	6	0.9	7	1.4	4	1.0	0	
ILLINOIS RIVER Kingston Mines-Mouth																	
Avon, Ill.	.62	2.26	1.87	1.73	6.48	.59	.40	.09	.53	11	1.7	13	2.6	8	2.4	0	
Beardstown, Ill.	.57	2.37	1.58	2.36	6.88	1.16	.90	.10	.45		1.8		2.2	3	0.5		
Bloomington Waterworks, Ill.	1.54	1.98	1.32	2.46	7.30	.83	.98	.05	.76	12	2.0	8	1.8	4	1.2	0	
Bloomington Normal, Ill.	1.81	2.21	2.15	2.82	8.99	.99	.83	.05	.78	14	2.1	10	2.0	6	1.8	0	
Bluffs, Ill.	1.03	1.98	1.34	2.63	6.98	1.33	.59	.12	.87	12	1.8	9	1.8	6	1.6	0	
Canton, Ill.	.93	2.25	1.82	2.75	7.75	1.12	.75	.01	1.78	14	2.1	7	1.4	1	0.3	0	
Carlinville, Ill.	2.14	1.53	1.77	1.55	6.99	1.41	.35	.10	1.38	8	1.4	4	0.8	0	0.0	0	
Chandlerville, Ill.	.82	1.73	.74	2.70	5.99	.81	.52	.07	2.32	9	1.4	9	1.8	4	1.2	0	
Clinton 1SSW, Ill.	2.11	1.21	1.57	1.96	6.85	1.11	.38	.06	.75	13	2.0	4	0.9	1	0.3	0	
Decatur, Ill.	2.49	2.00	1.74	2.18	8.41	.87	.44	.06	.44	15	2.2	2	0.5	0	0.0	0	
Downs 2NE, Ill.	1.52	1.32	1.02	1.61	5.47	.54	.60	.00	.75		2.5		2.0		1.3		
Farmer City, Ill.	2.39	1.41	1.11	2.59	7.50	(.25)	.25	.10	.47		1.8		0.9		0.9		
Galesburg, Ill.	1.15	2.32	2.38	1.55	7.40	.44	.12	.04	.62	7	1.1	7	1.4	3	0.9	0	
Galva, Ill.	1.10	2.45	3.24	1.64	8.52	.32	.33	.05	1.21	15	2.6	17	3.4	13	2.3	0	
Gibson City 3E, Ill.	1.90	1.26	1.03	2.18	6.37	1.09	.40	.20	.40	12	1.8	10	2.0	6	1.3	0	
Griggsville, Ill.	.83	2.35	1.47	1.86	6.51	1.33	.89	.09	1.21	16	2.4	14	2.8	7	2.1	0	
Hardin, Ill.	1.80	1.54	1.53	(1.11)	(5.98)	1.16	.64	.05	2.00	14	2.1	10	2.0	2	0.6	0	
Havana, Ill.	.71	1.95	1.64	2.15	6.45	.77	.43	.08	2.17	9	1.4	8	1.6	0	0.0	0	
Havana No. 2, Ill.	.76	2.45	2.35	2.90	8.46	.80	.75	.10	2.58		1.4		1.6		0.0		
Jacksonville, Ill.	1.09	1.62	1.26	1.83	5.80	.90	.62	.03	3.50		1.6		1.7		1.5		
Jerseyville, Ill.	2.20	1.26	1.43	1.01	5.90	1.05	.60	.07	.93	13	2.0	11	1.8	6	1.6	0	
Kewanee Baker Park, Ill.	(.45)	2.63	2.08	1.79	(6.95)	.39	.36	.20	1.12		2.5		3.0		2.0		
La Harpe, Ill.	.52	1.85	1.85	1.44	5.65	.96	.51	.05	.13	15	2.3	13	2.6	9	2.7	0	
Lincoln, Ill.	1.67	1.89	1.29	2.36	7.21	.67	.80	.12	1.87	6	1.1	7	1.4	2	0.6	0	
Macomb, Ill.	.52	2.30	2.11	1.73	6.66	.64	.23	.07	.44	9	1.4	10	2.0	7	1.9	0	
Marietta, Ill.	.47	2.10	1.88	1.53	5.98	.65	-	-	.88		1.7		2.0		1.6		
Maroa, Ill.	1.80	1.47	2.34	1.48	7.09	(.30)	.30	.05	.74		2.2		0.9		0.2		
Mason City 1ESE, Ill.	.88	1.85	1.07	(1.19)	(4.99)	-	.52	-	1.91		1.4		1.6		0.5		
Medora, Ill.	2.51	1.35	1.54	1.56	6.96	1.24	.48	.07	1.52	11	1.6	10	1.7	3	0.9	0	
Monticello, Ill.	2.22	4.47	1.34	2.22	10.25	1.04	.41	.04	.80	12	1.8	5	1.1	2	0.5	0	
Morrisonville, Ill.	2.93	1.93	1.40	1.64	7.90	.84	.13	.12	1.18		1.7		1.1		0.9		
Morrisonville 4SE, Ill.	3.46	2.04	1.47	1.78	8.75	1.19	.16	.21	1.24	11	1.7	5	1.1	4	0.9	0	
Mount Pulaski, Ill.	1.73	.94	1.24	2.38	6.29	1.37	.72	T	2.09		2.0		1.0		0.2		
Mount Sterling, Ill.	.36	(1.03)	1.63	(1.45)	(4.47)	1.04	.92	.10	.65	13	2.0	19	3.0		2.4	0	
Rushville, Ill.	.55	(2.40)	1.89	2.74	(7.58)	1.39	.85	.10	.70		1.8		2.1		2.2		
Springfield WB AP, Ill.	1.35	1.33	1.31	2.15	6.14	.94	.40	.09	2.66	12	2.0	8	2.3	6	1.8		
Taylorville, Ill.	2.74	1.51	1.91	1.72	7.88	1.08	.26	.26	.88	8	1.2	6	1.2	2	0.5	0	
Toulon, Ill.	1.75	2.07	2.70	1.99	8.51	.40	.77	.01	1.11	8	1.4	9	1.9	4	1.2	0	
Virden, Ill.	1.97	1.28	1.54	2.36	7.15	1.27	.32	.13	1.30	7	1.1	3	0.9	T	T	0	
White Hall 1E, Ill.	1.37	1.50	1.24	1.28	5.39	1.16	.69	.09	.89	18	2.7	14	2.8	4	1.1	0	
Yates City, Ill.	(.43)	2.11	1.87	(1.52)	(5.93)	V .78	.61	.04	1.27		1.6		1.5		1.6		

See footnotes at end of table.

TABLE 8.—Concluded

Basin, Reach and Station	Precipitation by periods									Snow depth and water equivalent of snow on ground (inches), observed or adjusted (a)							
	1959		1960		Total	March 1960				Mar. 11		Mar. 18		Mar. 25		Mar. 31	
	Nov.	Dec.	Jan.	Feb.	Nov.-Feb.	1-11	12-18	19-25	26-31	SD	WE	SD	WE	SD	WE	SD	WE
MISSISSIPPI RIVER St. Louis-Thebes																	
Chester, Ill.	1.67	4.66	(1.04)	1.53	(8.90)	1.63	.28	.00	.58		1.7		0.3		0.0		
Cobden 2S, Ill.	(1.69)	4.14	2.38	1.98	(10.19)	1.56	.17	.05	.79		1.5		0.2		0.0		
Grand Tower 2N, Ill.	2.87	4.70	3.12	2.52	13.21	1.46	.19	.13	.54		1.5		0.2		0.0		
Prairie du Rocher, Ill.	2.03	4.64	1.85	2.18	10.70	1.71	.43	.05	.61		1.5		0.9		0.0		
Sparta, Ill.	2.31	5.80	1.80	1.42	11.33	1.59	.10	.03	1.09	11	1.7	3	0.5	0	0.0	0	
Waterloo, Ill.	2.48	3.62	1.88	2.00	9.98	1.71	.50	.04	.87	13	2.0	5	0.9	0	0.0	0	
Cape Girardeau, Mo.	1.91	4.00	3.18	1.96	11.05	2.34	.23	T	.67		0.5		0.0		0.0		
De Soto, Mo.	3.20	3.76	1.37	2.44	10.77	1.64	.41	.00	.61	18	2.7	7	1.3	T	T	0	
Jackson, Mo.	2.21	3.64	2.23	1.85	9.93	1.16	.21	T	.60	6	1.0	0	0.0	0	0.0	0	
Jefferson Barracks 2SW, Mo.	3.11	2.80	1.65	1.63	9.49	1.14	.46	.04	.87		2.0		0.9		0.0		
Marble Hill, Mo.	2.96	4.02	2.29	1.78	11.05	1.35	.40	T	.61	8	1.2	0	0.0	0	0.0	0	
Perryville, Mo.	2.05	5.15	2.07	1.99	11.26	1.70	.46	.00	.66		1.5		0.3		0.0		
Webster Groves, Mo.	3.01	3.08	1.89	1.95	9.93	-	.44	.11	1.09		2.0		0.9		0.0		
Weingarten, Mo.	3.40	6.60	1.32	1.79	13.11	1.05	.15	.00	.67	12	1.8		0.3	0		0	
MERAMEC RIVER																	
Belleview, Mo.	2.01	4.80	1.61	2.02	10.44	1.37	.32	.10	.36		1.5		1.0		0.0		
Berryman 6NW, Mo.	2.84	4.86	2.44	1.92	12.06	1.85	.24	.36	.42	16	2.4	8	1.6	T	T	0	
Cook Station, Mo.	3.04	5.42	1.75	1.73	11.94	1.52	.53	.00	1.96		2.4		1.6		0.0		
Cuba, Mo.	3.40	4.85	1.67	1.45	11.37	1.55	.42	.05	.32	13	2.0	9	1.8	T	T	0	
Gerald, Mo.	2.04	4.41	1.70	1.61	9.76	1.59	.54	.06	.65	18	2.7	11	1.9	T	T	0	
Moselle, Mo.	3.32	3.24	1.54	1.84	9.94	1.23	.53	.06	1.01		3.5		3.0		0.6		
Pacific, Mo.	3.44	2.90	1.60	1.72	9.66	1.29	.62	.07	1.27		2.5		1.5		0.5		
Potosi 2S, Mo.	2.48	3.75	1.00	1.81	9.04	1.19	.43	.03	.76		2.0		1.5		0.0		
Richwoods, Mo.	2.75	3.59	1.70	2.08	10.12	1.61	.59	.00	.60		2.5		1.5		0.0		
Rolla 5SE, Mo.	2.55	4.40	1.31	1.74	10.00	1.44	.41	.03	.26		2.1		1.8		T		
St. James 3NW, Mo.	2.44	3.59	1.36	.88	8.27	1.06	.34	.07	.51		2.0		1.6		T		
Salem, Mo.	3.04	7.33	1.42	2.35	14.14	1.68	.58	.22	.59	14	2.1	7	1.6	T	T	0	
Steelville 1NW, Mo.	2.94	5.25	1.80	1.25	11.24	1.49	.41	.05	.58		2.0		1.8		T		
Sullivan 3E, Mo.	2.73	4.04	2.11	1.89	10.77	1.49	.60	.05	1.00	16	2.7	8	2.0		0.6		
Union 1SE, Mo.	1.92	3.12	1.37	1.47	7.88	1.27	.42	.08	1.08	28	3.6	35	4.1	2	0.6	0	
Valley Park, Mo.	3.68	2.60	1.35	1.59	9.22	1.26	1.10	.07	1.19		2.0		1.0		0.2		
KASKASKIA RIVER																	
Belleville Scott AF Base, Ill.	2.06	4.30	2.28	1.64	10.28	1.65	.30	.08	.94	13	1.9	4	0.9	T	T	0	
Carlyle, Ill.	2.24	3.84	1.69	2.20	9.97	1.66	.11	.06	1.15		1.0		0.7	0	0.0	0	
Hillsboro, Ill.	3.82	2.59	1.90	2.02	10.33	.89	.34	.10	1.38		1.2		0.8		0.2		
Nashville 3NW, Ill.	2.80	(5.65)	1.62	1.77	(11.84)	1.27	.10	.08	1.27		1.5		0.6		0.0		
Pana, Ill.	3.22	2.31	1.78	2.25	9.56	1.28	.23	.18	.88	16	2.4	8	1.3	2	0.6	0	
Red Bud, Ill.	1.88	4.64	1.72	1.83	10.07	.95	.27	.01	.63	9	1.4	4	0.9	0	0.0	0	
Salem, Ill.	3.26	4.78	1.67	1.94	11.65	1.43	.21	.16	1.40	6	0.9	3	0.7	2	0.6	0	
Sullivan Waterworks, Ill.	3.42	1.89	1.51	2.36	9.18	.77	.31	.03	.77		2.0		1.5		0.6		
Vandalia 1SW, Ill.	3.00	2.76	1.86	2.14	9.76	1.02	.22	.19	.90		1.0		0.8		0.0		
Vandalia FAA AP, Ill.	2.37	3.27	1.94	2.47	10.05	1.18	.18	.16	.82	12	1.0	3	0.8	2	0.6		
Windsor, Ill.	3.26	2.84	2.97	2.97	12.04	1.20	.25	.15	.57	12	1.8	7	1.4	2	0.6	0	
MUDDY RIVER																	
Benton, Ill.	1.79	4.31	2.46	1.90	10.46	1.17	.17	.10	1.04		1.2		0.6		0.0		
Carbondale Sewage Plant, Ill.	2.31	4.44	2.37	2.36	11.48	1.48	.15	.04	.79		1.5		0.6		0.0		
Du Quoin, Ill.	2.75	5.23	2.45	1.27	11.70	1.19	.24	T	.91		1.2		0.6		0.0		
Makanda 1NW, Ill.	2.08	4.69	2.56	2.58	11.91	1.36	.22	.04	.78	10	1.5	4	0.6	0	0.0	0	
Marion 2W, Ill.	1.80	3.87	2.43	2.28	10.38	1.54	T	.07	1.59		1.5		0.6		0.0		
Mount Vernon, Ill.	2.66	5.41	1.56	1.45	11.08	.76	.14	.07	1.25	10	1.5	2	0.6	0	0.0	0	
Murphysboro Waterworks, Ill.	2.96	5.39	3.87	2.99	15.21	1.79	.22	.00	1.02		1.5		0.6		0.0		
Richview, Ill.	2.32	4.92	1.50	1.58	10.32	1.54	.17	.11	1.06		1.5		0.6		0.0		

(a) Adjustments were based on observed snow depth and the density ratio as computed for surrounding stations. They apply to the general area and not necessarily to a specific point.
( ) Partial record.
* Amount included in following measurement.
V Includes total for previous period.

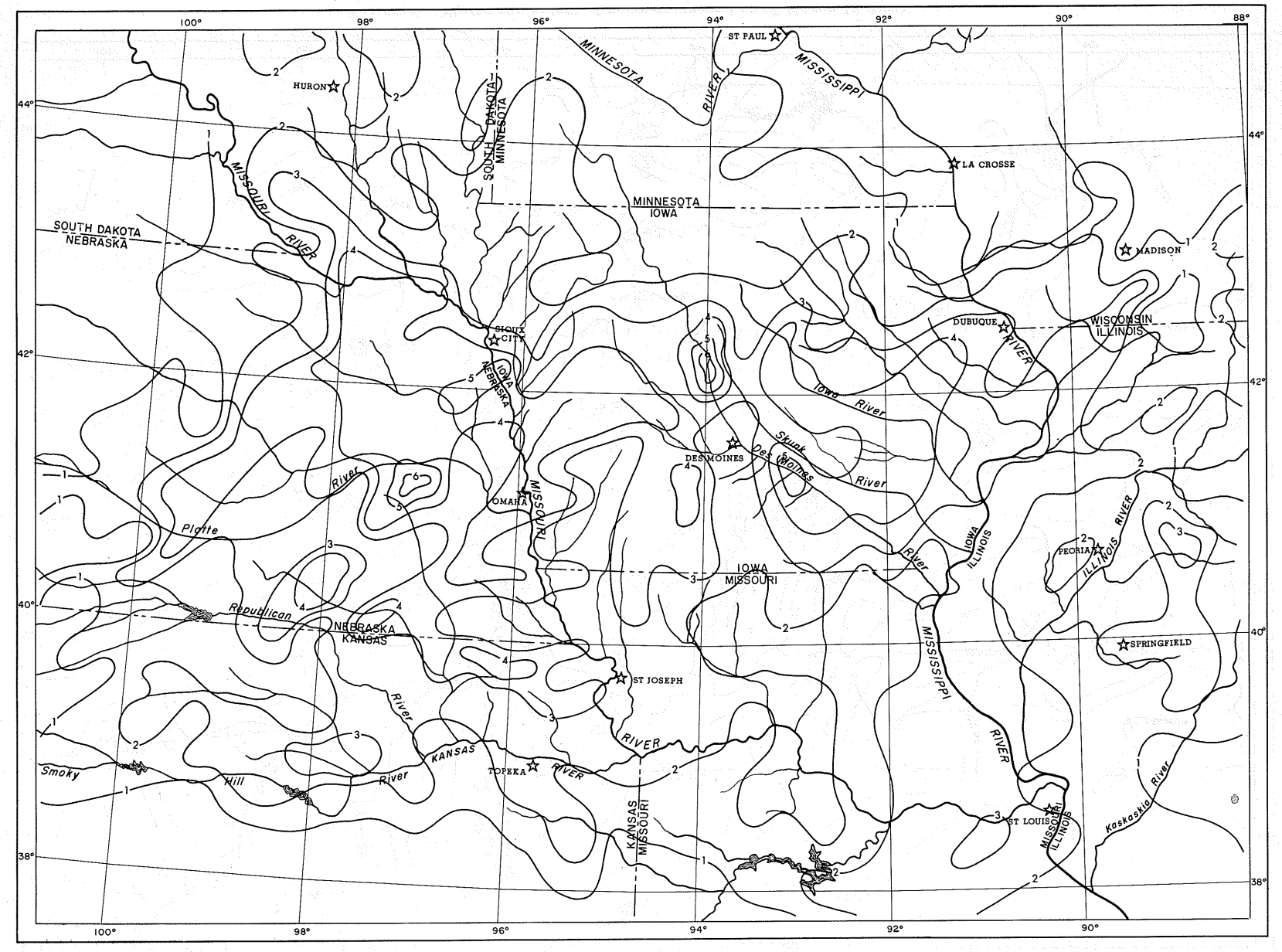

FIGURE 5.—Water equivalent of snow on ground as of March 11, 1960.

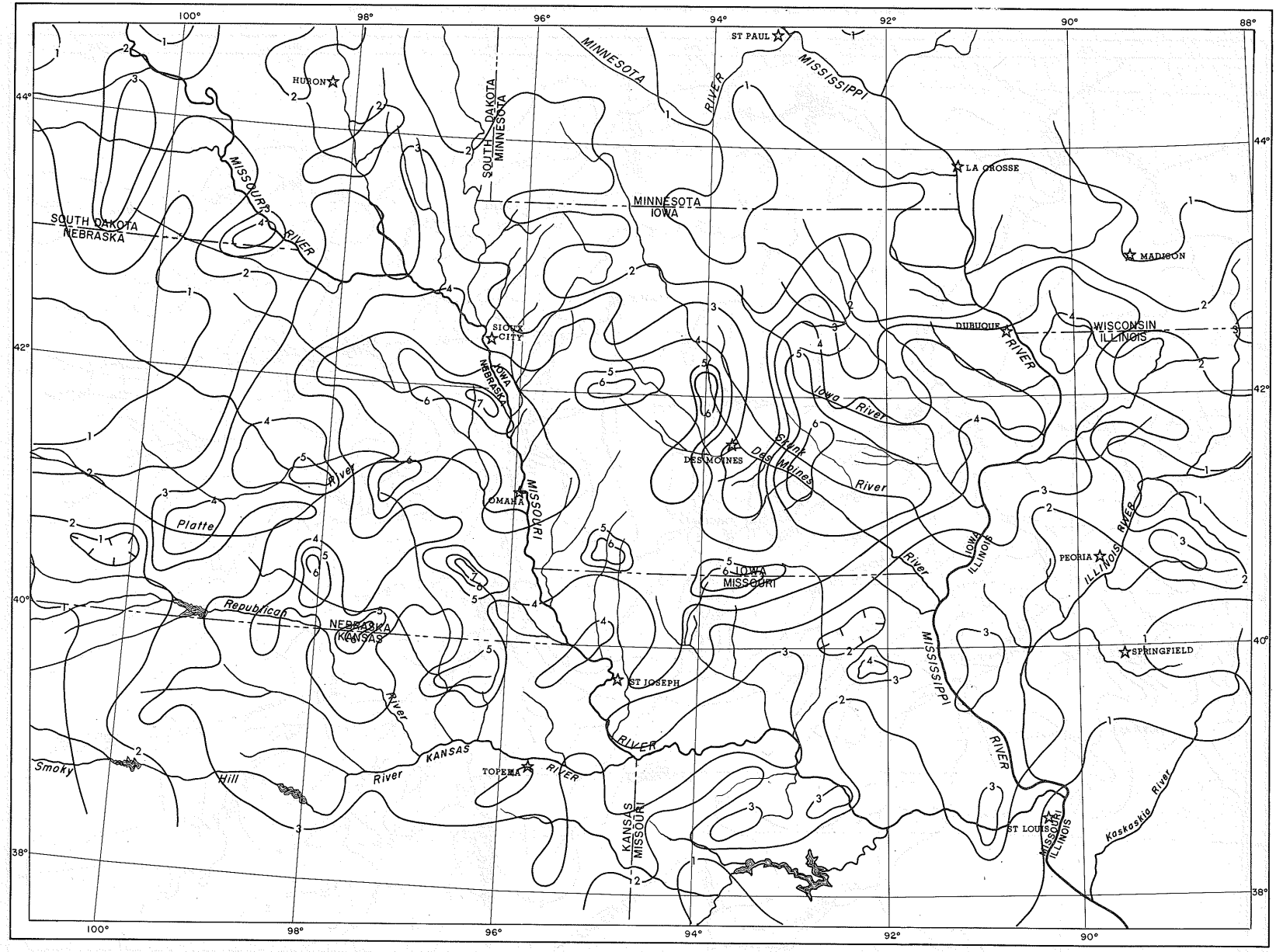

FIGURE 6.—Water equivalent of snow on ground as of March 18, 1960.

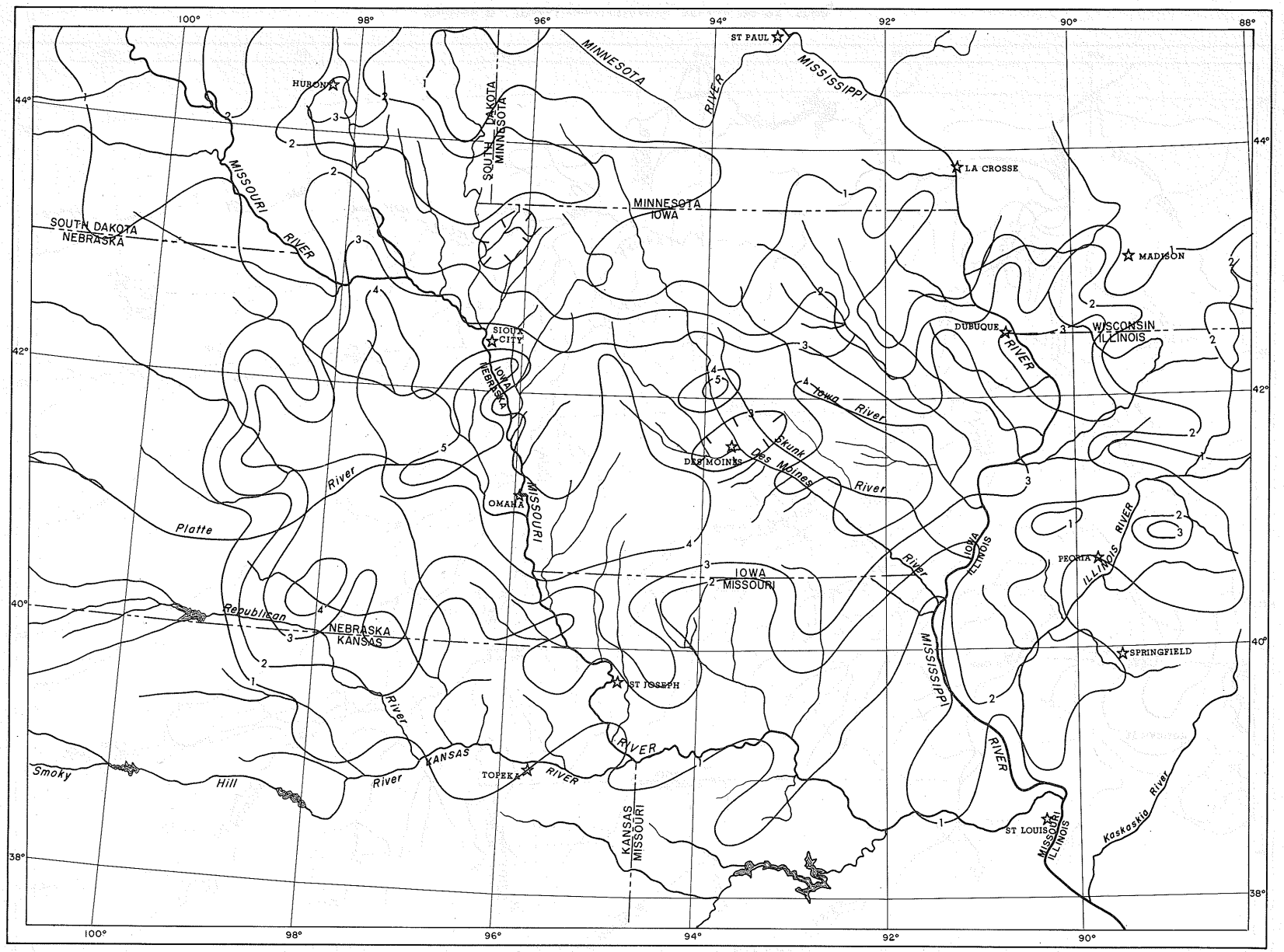

FIGURE 7.—Water equivalent of snow on ground as of March 25, 1960.

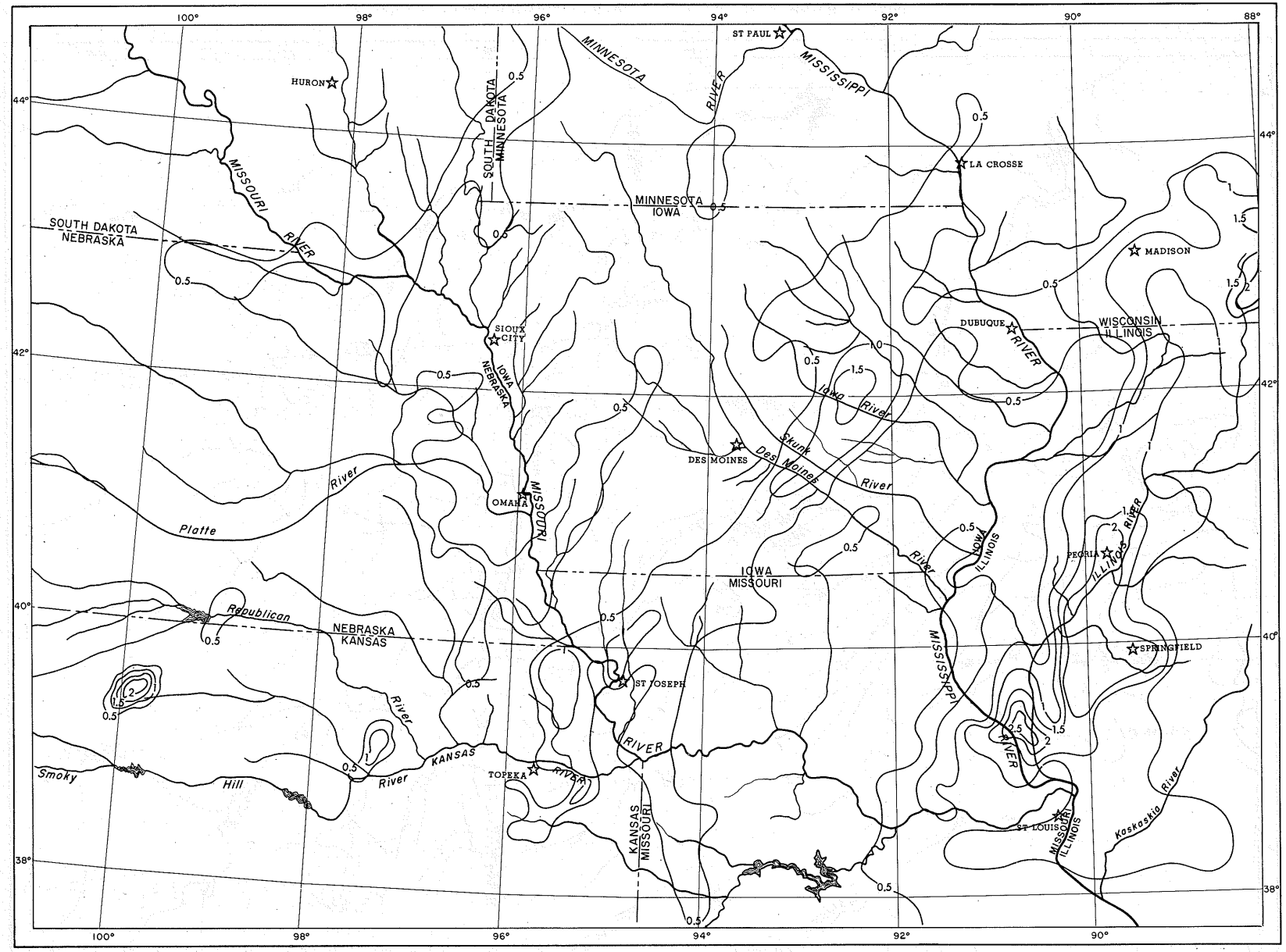

FIGURE 8.—Total precipitation, March 26–31, 1960.

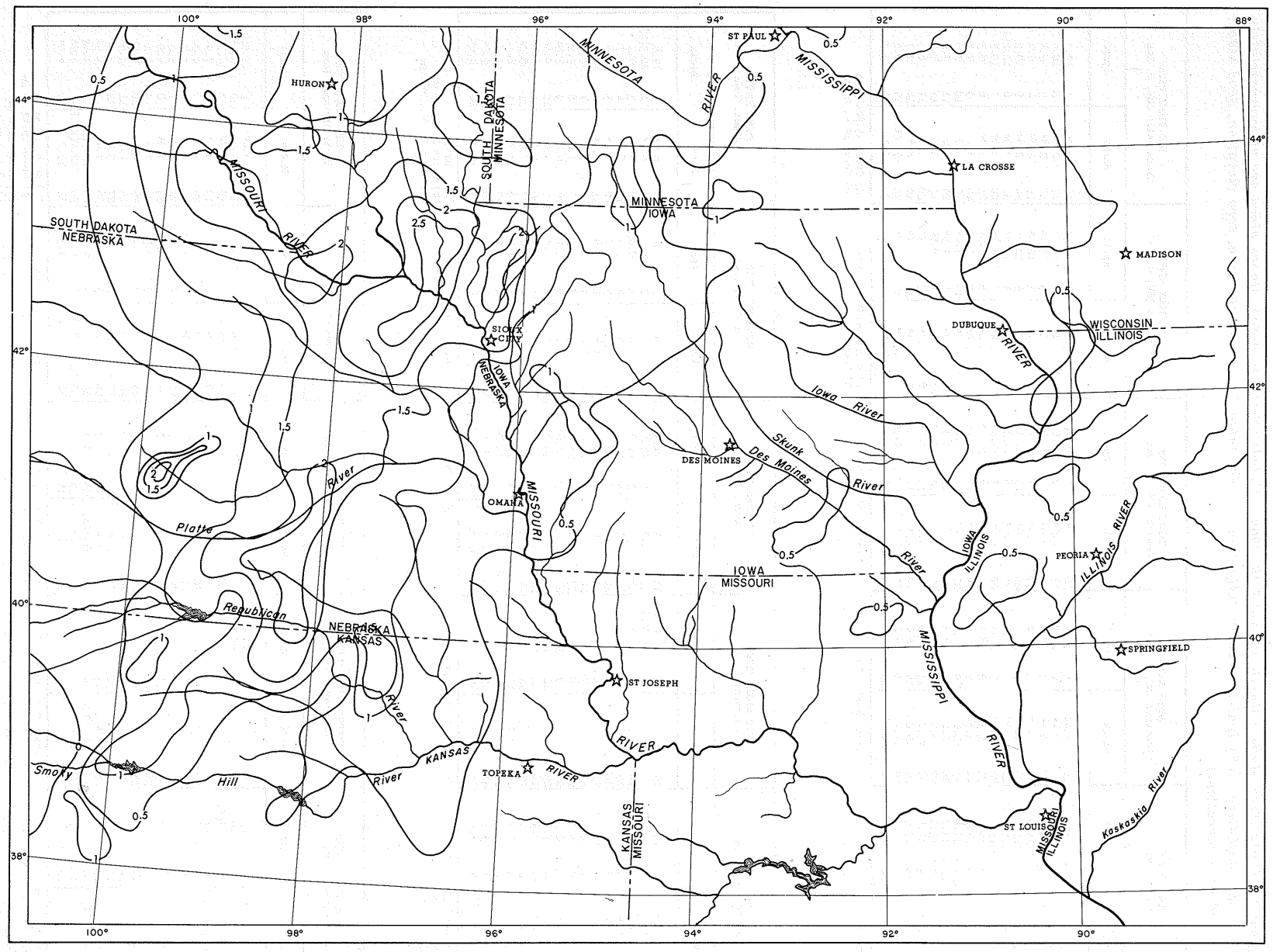

FIGURE 9.—Total precipitation, April 1–3, 1960.

TABLE 9.—*Daily river stages, March 16–April 16, 1960. Unless otherwise noted, stages given are at approximately 7 a.m. local time. (*) indicates mean daily stage. (See table 3 for drainage area, zero elevation, flood stage, and gage operation.)*

JAMES RIVER Huron, S. Dak.				JAMES RIVER Scotland 5NE, S. Dak.				VERMILLION RIVER Wakonda 7SE, S. Dak.				BIG SIOUX RIVER Dell Rapids 3SW, S. Dak.				BIG SIOUX RIVER Sioux Falls 1SW, S. Dak.			
March		April		March		April		March		April		March		April		March		April	
16		1	14.7	16	2.4*	1	18.1	16	4.6*	1	16.2(1)	16	3.1*	1	14.3*	16	2.7*	1	12.3
17		2	14.7	17	2.4*	2	18.2	17	4.5*	2	16.6	17	3.1*	2	14.2*	17	2.8*	2	10.6
18		3	14.8	18	2.4*	3	18.0	18	4.6*	3	16.4	18	3.1*	3	13.1*	18	2.8*	3	9.4
19		4	15.0	19	2.4*	4	18.2	19	4.6*	4	15.7	19	3.1*	4	12.0*	19	2.8*	4	9.4
20		5	15.2	20	2.4*	5	18.4	20	4.6*	5	15.3	20	3.2*	5	12.6*	20	2.8*	5	10.2
21		6	15.3(1)	21	2.5*	6	18.6(1)	21	4.6*	6	14.8	21	3.2*	6	12.8*	21	2.9*	6	12.2(2)
22		7	15.1	22	2.5*	7	18.5	22	4.6*	7	14.6*	22	3.2*	7	12.4*	22	3.0*	7	10.3
23		8	14.7	23	2.5*	8	18.2	23	4.6*	8	15.3*	23	3.2*	8	11.6*	23	3.0*	8	8.3
24		9	14.1	24	2.5*	9	17.9	24	4.6*	9	15.1*	24	3.2*	9	11.8*	24	3.1	9	7.5
25		10	13.8	25	2.6	10	17.7	25	4.6*	10	14.4*	25	3.2*	10	12.2*	25	3.0	10	7.8
26		11	13.7	26	2.6	11	17.3	26	4.6	11	13.9*	26	3.2*	11	11.5*	26	3.0	11	7.8
27		12	13.5	27	3.3	12	17.1	27	4.7	12	13.6*	27	3.2*	12	10.5*	27	3.1	12	7.9
28	7.0	13	13.4	28	13.7	13	16.9	28	5.5	13	13.6*	28	4.7*	13	9.3*	28	3.4	13	8.3
29	10.2	14	12.9	29	16.0	14	16.6	29	11.3	14	13.3*	29	11.4*	14	7.9*	29	8.8	14	7.7
30	13.9	15	12.4	30	17.2	15	16.2	30	16.3	15	13.3*	30	14.4*	15	7.0*	30	15.1(1)	15	6.6
31	14.4	16	11.6	31	17.9	16	15.9	31	16.5	16	13.3*	31	14.6*(1)	16	6.6*	31	12.2	16	5.9
(1) Crest 15.42, 10 am				(1) Crest 18.66, 10 am				(1) Crest 16.94, 8 pm				(1) Crest 14.84(B), 8 am (B) Backwater				(1) Crest 15.56, 5 am (2) Crest 12.4, 2 am			

ROCK RIVER Rock Valley 2W, Iowa				BIG SIOUX RIVER Hawarden, Iowa				BIG SIOUX RIVER Akron, Iowa				MISSOURI RIVER Sioux City, Iowa				FLOYD RIVER James, Iowa			
March		April		March		April		March		April		March		April		March		April	
16	4.9*	1	13.5	16		1	22.2	16	3.2	1	21.3(1)	16	0.8	1	7.4	16	6.6*	1	15.8
17	4.9*	2	15.0(2)	17		2	21.8(1)	17	3.2	2	21.4	17	1.2	2	8.1	17	6.7*	2	20.3(3)
18	4.9*	3	14.8	18		3	21.9	18	3.2	3	20.9	18	1.6	3	9.8(2)	18	6.7*	3	20.1
19	4.9*	4	13.5	19		4	21.0	19	3.2	4	20.5	19	1.5	4	9.9	19	6.8*	4	18.7
20	4.9*	5	11.3	20		5		20	3.2	5	19.6	20	1.5	5	8.7	20	6.8*	5	15.6
21	4.9*	6	11.0	21		6	19.2	21	3.2	6	19.0	21	1.4	6	7.8	21	6.9*	6	11.3
22	4.9*	7	9.5	22		7		22	3.2	7	18.6	22	1.4	7	7.0	22	7.0	7	9.8*
23	4.8*	8	8.7*	23		8		23	3.2	8	18.0*	23	1.3	8	6.5	23	7.0	8	9.2*
24	4.8*	9	8.1*	24		9	17.8	24	3.1	9	17.6*	24	1.1	9	6.1	24	6.8	9	8.8*
25	4.9*	10	7.7*	25		10	17.9	25	3.1	10	16.8*	25	1.1	10	5.7	25	6.8*	10	8.6*
26	4.9*	11	7.5	26		11	17.2	26	3.1	11	15.9*	26	1.0	11	5.5	26	6.8	11	8.4*
27	5.7	12	7.2	27		12		27	3.3	12	15.2*	27	1.3*	12	4.6	27	7.4(1)	12	8.2*
28	12.4	13	9.4	28	13.5	13		28	13.2	13	15.3*	28	2.5	13	4.4	28	18.7	13	8.3
29	14.7*	14	10.2(3)	29		14		29	16.8	14	15.8*	29	4.4	14	4.5	29	21.0(2)	14	11.0
30	15.2	15	9.3	30	20.1	15		30	20.3	15	16.1*	30	7.1(1)	15	4.3	30	21.1	15	9.2*
31	15.2(1)	16	7.2	31	21.4	16		31	20.8(1)	16	15.6*	31	7.5	16	4.2	31	19.2	16	8.6*
(1) Crest 15.38, 1 pm (2) 14.9, 2 pm (3) 10.2, 9 am				(1) Crest 22.3, 2 am				(1) Crest 21.56, 7 pm				(1) 10.0, 6 pm (2) Crest 10.52, 7 pm				(1) 3 pm (2) Crest 21.93, 5 pm (3) Crest 20.82, 3:45 pm			

LITTLE SIOUX RIVER Spencer, Iowa				LITTLE SIOUX RIVER Cherokee, Iowa				LITTLE SIOUX RIVER Correctionville, Iowa				MAPLE RIVER Mapleton, Iowa				WEST FORK DITCH Holly Springs, Iowa			
March		April		March		April		March		April		March		April		March		April	
16		1	10.5	16		1	17.3	16	7.2	1	18.9	16		1	8.6(2)	16	4.6*	1	15.9(4)
17		2	12.0	17		2	19.8	17	7.3	2	19.7	17	3.9*	2	10.1	17	4.6*	2	11.0(5)
18		3	13.3(3)	18		3		18	7.3	3	19.9(2)	18	3.9*	3		18	4.7*	3	16.1
19		4	11.6	19		4		19	7.3	4	20.0	19	3.9*	4		19	4.7*	4	7.9
20		5	10.0	20		5		20	7.3	5	18.4	20	3.8*	5		20	4.8*	5	6.3
21		6		21		6		21	7.3	6	16.7	21	3.8*	6	5.1*	21	4.7*	6	5.5
22		7		22		7		22	7.3	7	16.7	22	3.7*	7	4.9*	22	4.7*	7	5.1
23		8		23		8		23	7.4	8	16.7	23	3.7*	8	4.7*	23	4.8*	8	4.8
24		9		24		9		24	7.4	9	14.2	24	3.7*	9	4.5*	24	4.8	9	4.1
25		10		25		10		25	7.6	10	12.9	25	3.7*	10	4.4*	25	4.8	10	4.0*
26		11		26		11		26	7.6	11	12.0	26	3.6*	11	4.3*	26	4.7	11	3.8*
27		12		27		12		27	7.6	12	11.2	27	3.5	12	4.3*	27	5.0	12	3.9*
28	10.9(1)	13		28	18.4	13		28	16.4	13	11.3	28	5.9	13	4.3*	28	7.4	13	4.5*
29	12.9(2)	14		29	20.3(1)	14		29	21.7(1)	14	10.9	29	12.0	14	4.3*	29	15.5(1)	14	4.6*
30	13.0	15		30	18.1	15		30	22.4	15	10.6	30	17.8(1)	15	4.3*	30	22.4(2,3)	15	4.2*
31	11.7	16		31		16		31	19.9	16	10.5	31	12.0	16	4.3*	31	15.0	16	4.0*
(1) 13.1, 11 pm (2) Crest 13.2, 4 pm (3) Crest 13.3, 8 am				(1) Crest 20.3, 8 am				(1) Crest 22.57, 9 pm (2) Crest 20.21, 7 pm				(1) Crest 17.9, 10 am (2) 10.5, 11 pm				(1) 22.0, 10 pm (2) Crest 22.43, 6 am (3) 21.8, 3:30 pm (4) 9.5, 2 am (5) Crest 17.27, 10 pm			

TABLE 9.—Continued

SOLDIER RIVER Pisgah, Iowa				BOYER RIVER Logan, Iowa				MISSOURI RIVER Omaha, Nebr.				PLATTE RIVER Grand Island 5SE, Nebr.				LOUP RIVER Columbus, Nebr.			
March		April		March		April		March		April		March		April		March		April	
16	6.2	1	8.1	16	3.7*	1	8.6	16	0.6	1	16.3(1)	16	4.5	1	3.3	16	5.1	1	4.3
17	6.3	2	7.8(4)	17	3.8*	2	9.1(4)	17	0.5	2	14.8	17	4.2	2	3.4	17	5.1	2	4.8
18	6.3	3	7.0	18	3.8*	3	6.4	18	0.5	3	15.3	18	4.3	3	3.3	18	5.1	3	4.0
19	6.3	4	7.0	19	3.7*	4	5.9	19	0.5	4	16.5(2)	19	4.5	4	3.4	19	5.1	4	3.9
20	6.2	5	6.5	20	3.8*	5	5.4	20	0.8	5	16.9	20	4.9	5	3.2	20	5.1	5	3.7
21	6.2	6	6.4	21	3.8*	6	5.0	21	1.0	6	15.9	21	5.0	6	3.1	21	5.2	6	3.4
22	6.3	7	6.4	22	4.0*	7	4.9	22	1.1	7	14.4	22	5.0	7	3.0	22	5.3	7	2.8
23	6.3	8	6.1	23	4.1*	8	4.7	23	1.2	8	13.1	23	4.8	8	3.0	23	5.6	8	2.7
24	6.3	9	5.9	24	4.0*	9	4.5	24	1.2	9	12.1	24	5.2	9	3.0	24	5.8	9	3.2
25	6.3	10	5.9	25	4.0*	10	4.2*	25	1.2	10	11.0	25	6.0	10	2.8	25	6.2	10	2.7
26	6.3	11	5.9	26	4.0*	11	4.1*	26	1.1	11	10.2	26	6.1	11	2.7	26	6.7	11	2.5
27	6.4	12	5.8	27	4.0	12	4.1*	27	1.1	12	9.3	27	6.2(1)	12	2.7	27	7.2	12	2.5
28	9.6(1)	13	5.9	28	11.9(1)	13	4.0*	28	1.4	13	8.0	28	4.5*	13	2.7	28	7.2(1)	13	3.0
29	11.7(2,3)	14	5.9	29	10.7(2)	14	3.9*	29	2.8	14	7.6	29	3.7	14	2.7	29	9.7	14	2.3
30	9.0	15	5.7	30	11.5(3)	15	3.8*	30	7.4	15	7.3	30	3.3	15	2.7	30	8.1	15	2.8
31	7.1	16	5.7	31	9.9	16	3.7*	31	13.8	16	6.8	31	3.1	16	2.6	31	5.3	16	2.4
(1) Crest 12.46, 8 pm (2) 11.0, 3 pm (3) 11.9, 7 pm (4) 9.1, 1 am				(1) 9.1, noon (2) Crest 14.62, 9 pm (3) 9.9, 5 pm (4) 9.9, 1 am				(1) 16.8, 8 am (2) Crest 16.96, 7 pm				(1) Crest 6.16, 10 am				(1) Crest 10.50, 10 pm			

PLATTE RIVER North Bend 1S, Nebr.				ELKHORN RIVER Ewing, Nebr.				ELKHORN RIVER Norfolk 1S, Nebr.				ELKHORN RIVER Pilger, Nebr.				ELKHORN RIVER West Point, Nebr.			
March		April		March		April		March		April		March		April		March		April	
16	4.2	1	4.6*	16	5.0*	1	9.2	16		1	9.8	16	6.7	1	8.3(2)	16	8.0	1	10.8
17	4.1	2	4.6*	17	5.0*	2	8.5	17		2	9.9	17	6.7	2	8.2	17	8.0	2	10.2
18	4.1	3	4.0*	18	5.0*	3	7.9	18		3	7.8	18	6.8	3	8.1	18	8.1	3	10.1
19	4.2	4	3.8*	19	5.0*	4	7.8	19		4	7.3	19	6.3	4	7.3	19	8.2	4	9.1
20	4.2	5	3.5	20	5.0*	5	8.3	20		5	7.3	20	6.4	5	7.0	20	8.2	5	8.2
21	4.3	6	3.2	21	5.1*	6	9.3	21		6	7.7	21	6.5	6	6.9	21	8.3	6	7.9
22	4.5	7	2.9	22	5.1*	7	9.2*	22		7	8.0	22	6.5	7	7.0	22	8.5	7	8.4
23	4.8	8	2.7	23	5.1*	8	8.8*	23		8	8.3	23	6.5	8	6.5	23	8.6	8	8.6
24	5.1	9	2.6E	24	5.0*	9	8.2*	24		9		24	6.5	9	6.3	24	8.7	9	8.0
25	5.2	10	2.5	25	4.9	10	7.4*	25		10		25		10		25	8.7	10	7.2
26	5.5	11	2.5	26	5.0	11	6.9*	26	9.1	11		26	6.5	11	6.0	26	8.8	11	6.7
27	6.1	12	2.2	27	4.9	12	6.8*	27		12		27	6.7	12	5.5	27	8.8	12	6.3
28	6.2	13	2.4	28	7.8(1)	13	7.1*	28	12.0E	13		28	7.0	13	5.5	28	8.9	13	6.3
29	6.9*(1)	14	2.4	29	10.6	14	7.0*	29	13.7E(1)	14		29	8.2I	14	5.6	29	9.3	14	6.5
30	6.3*	15	2.5	30	10.0	15	7.0*	30	11.0	15		30	7.3I	15	5.5	30	11.6I	15	6.6
31	5.1*	16	2.4	31	9.5	16	7.2*	31	11.8	16		31	8.8I(1)	16	5.6	31	15.9I(1)	16	6.5
(1) Crest 8.04, 12M (E) Estimated				(1) Crest 10.96, 8 pm				(1) Crest 13.74, 2 pm (E) Estimated				(1) May have been higher DN (2) Crest 8.8, 6:30 pm (I) Affected by ice				(1) Crest 16.09, 3:30 am (I) Affected by ice			

LOGAN CREEK Uehling 2SW, Nebr.				ELKHORN RIVER Waterloo, Nebr.				SALT CREEK Roca, Nebr.				SALT CREEK Lincoln, Nebr.				WAHOO CREEK Ithaca, Nebr.			
March		April		March		April		March		April		March		April		March		April	
16	2.5*	1	10.2	16	2.8	1	10.8(4)	16	5.7*	1	9.4	16	5.2*	1	7.7	16	7.9*	1	15.9*
17	2.6*	2	14.4(1)	17	2.8	2	13.0(5)	17	5.7*	2	14.1(6)	17	5.2*	2	10.5(4)	17	7.9*	2	17.1*(2)
18	2.6*	3	12.3	18	2.8	3	13.7	18	5.7*	3	8.9	18	5.3*	3	7.1	18	7.9*	3	11.8*
19	2.7*	4	8.3*	19	2.8	4	12.8	19	5.9*	4	8.0	19	5.3*	4	6.6	19	7.5*	4	11.3*
20	2.7*	5	8.8*	20	2.9	5	10.8	20	6.0*	5	7.1*	20	5.4*	5	6.4	20	7.6*	5	10.9*
21	2.8*	6		21	2.8	6	8.8	21	6.0*	6	6.9*	21	5.5*	6	6.2	21	7.8*	6	10.6*
22	2.8*	7		22	2.9	7	7.8	22	6.0*	7	6.5*	22	5.4*	7	6.1*	22	7.5*	7	10.2*
23	2.8*	8	4.5*	23	2.8	8	7.1	23	6.0	8	6.2*	23	5.5*	8	5.9*	23	7.3*	8	9.7*
24	2.8*	9	3.9*	24	3.0	9	6.4	24	6.1	9	6.0*	24	5.5*	9	5.8*	24	7.6*	9	9.4*
25	2.8*	10	3.5*	25	3.0	10	5.4	25	6.0	10	5.9*	25	5.5*	10	5.7*	25	7.8*	10	9.1*
26	2.8*	11	3.2*	26	3.0	11	4.8	26	6.0(1)	11	5.8*	26	5.7*	11	5.7*	26	8.3*	11	9.3*
27	2.8	12	3.2*	27	2.9	12	4.2	27	8.0(2)	12	5.7*	27	6.3(1)	12	5.6*	27	8.8*	12	9.1*
28	3.1	13	3.2*	28	2.5(1)	13	3.8	28	20.4(3)	13	5.8*	28	15.6(2)	13	5.6*	28	19.7*	13	9.4*
29	4.6	14	3.1*	29	3.8	14	3.8	29	19.7(4)	14	5.8*	29	15.0(3)	14	5.6*	29	21.4*(1)	14	9.0*
30	10.2	15	2.8*	30	10.8(2)	15	3.9	30	13.0	15	5.6*	30	11.9	15	5.5*	30	18.2*	15	8.8*
31	13.0	16		31	10.3(3)	16	3.8	31	10.0(5)	16	5.5*	31	8.2	16	5.5*	31	12.8*	16	8.7*
(1) Crest 15.2, 3 pm				(1) 2.5, 6 pm (2) Crest 11.95, 7 pm (3) 9.9, 6 pm (4) 11.6, 6 pm (5) Crest 14.11, 4 pm				(1) 6.1, 11 pm (2) Crest 20.85, 11 pm (3) 19.4, 2 pm (4) 20.1, 2 am (5) 9.0, 7 pm (6) 14.8, 4 am				(1) Crest 18.75, 11 pm (2) 18.1, 8 pm (3) 16.2, 2 pm (4) 10.93, 12:30 am				(1) Crest 21.68, 9 pm (2) 21.3, 1 am			

TABLE 9.—Continued

PLATTE RIVER Louisville 1N, Nebr.				MISSOURI RIVER Nebraska City, Nebr.				W. NISHNABOTNA RIVER Randolph, Iowa				E. NISHNABOTNA RIVER Red Oak, Iowa				NISHNABOTNA RIVER Hamburg, Iowa			
March		April		March		April		March		April		March		April		March		April	
16	7.1	1	9.2	16	3.8*	1	20.7	16	8.5	1	13.3(5)	16		1	10.4(3,4)	16		1	25.0
17	7.1	2	10.0	17	3.8	2	20.4	17	8.5	2	13.9(6)	17		2	9.5	17		2	24.1
18	7.1	3	9.8	18	3.7	3	20.7	18	8.6	3	11.8	18		3	6.0	18		3	23.2
19	7.0	4	9.2	19	3.7	4	21.1	19	8.6	4	11.3	19		4	5.3	19		4	21.6
20	7.0	5	8.8	20	3.9	5	21.2(1)	20	8.6	5	10.8	20		5	4.4*	20		5	20.2
21	7.1	6	7.7	21	4.1	6	21.2	21	8.5	6	10.7	21	2.5	6	4.2*	21		6	18.8
22	7.1	7	7.2	22	4.4	7	20.5	22	8.5	7	10.5	22		7	4.0*	22		7	17.6
23	7.1	8	6.8	23	4.4	8	19.3	23	8.4	8	10.3	23		8	3.6*	23		8	
24	7.2	9	6.5	24	4.6	9	18.1	24	8.4	9	9.9	24		9	3.3*	24		9	
25	7.4	10	6.3	25	4.7	10	16.8	25	8.2	10	9.7	25	3.3	10	3.1*	25		10	
26	7.6	11	6.1	26	5.0	11	15.4	26	8.1	11	9.5	26	3.3	11	3.0*	26		11	
27	7.7	12	5.8	27	5.5	12	14.6	27	8.2	12	9.5	27	3.3	12	3.0*	27	8.4	12	
28	8.8	13	5.6	28	7.8	13	13.1	28	9.5(1)	13	9.5	28	3.9	13	2.9*	28	13.0	13	
29	8.8	14	5.5	29	11.9	14	12.3	29	16.4(2)	14	9.4	29	14.5	14	2.9*	29	23.3	14	
30	8.8(1)	15	5.6	30	16.2	15	11.8	30	18.4(3)	15	9.2	30	16.4(1)	15	2.8*	30	24.1	15	
31	11.1	16	5.6	31	19.3	16	11.3	31	13.2(4)	16	9.2	31	10.1(2)	16	2.7*	31	25.7(1)	16	

(1) Crest 12.45, 4 pm

(1) Crest 21.43, 2 pm

(1) 15.3, 11 pm
(2) 15.0, 5:20 pm
(3) Crest 19.18, 1 am
(4) 12.7, 2 pm
(5) 13.3, 11 pm
(6) 12.0, 11 pm

(1) 16.40, 11 am
(2) 7.6, 7 pm
(3) 9.8, 4 pm
(4) 10.1, 11 pm

(1) Crest 25.7

LITTLE NEMAHA RIVER Auburn 1E, Nebr.				TARKIO RIVER Fairfax, Mo.				MISSOURI RIVER Rulo, Nebr.				NEMAHA RIVER Falls City, Nebr.				NODAWAY RIVER Burlington Jct. 2W, Mo.			
March		April		March		April		March		April		March		April		March		April	
16		1	9.4*	16	8.8	1	12.1	16	5.0	1	19.7	16	4.9	1	7.3	16	3.4*	1	9.8
17	6.4*	2	10.7*	17	8.9	2	11.3	17	5.0	2	21.1	17	5.2	2	8.7	17	3.3*	2	8.9
18	6.5*	3	8.4*	18	8.8	3	9.1	18	5.0	3	22.0	18	5.3	3	8.9	18	3.3*	3	6.6*
19	6.5*	4	7.6*	19	8.8	4	8.5	19	4.9	4	22.3	19	5.4	4	7.0	19	3.3*	4	5.4*
20		5	7.2*	20	8.6	5	8.1	20	5.0	5	22.4	20	5.5	5	6.1	20		5	4.7*
21	6.0*	6	6.9*	21	8.7	6	7.8	21	5.1	6	22.4(1)	21	5.5	6	5.7	21	3.2*	6	
22	6.2*	7	6.7*	22	8.9	7	7.6	22	5.4	7	22.3	22	5.8	7	5.4	22	3.2*	7	4.0*
23	5.9*	8	6.5*	23	8.7	8	7.3	23	5.6	8	21.8	23	5.8	8	5.2	23	3.1*	8	3.6*
24	5.9*	9	6.4*	24	8.8	9	7.2	24	5.6	9	20.9	24	6.1	9	5.0	24	3.2*	9	3.2*
25	5.9*	10	6.3*	25	8.4	10	7.1	25	5.7	10	19.4	25	5.3	10	4.8	25	3.2*	10	2.9*
26	6.1(1)	11	6.2*	26	8.3	11	7.0	26	5.8	11	17.6	26	5.0	11	4.8	26	2.6*	11	2.7*
27	7.3(2)	12	6.1*	27	8.9(1)	12	6.9	27	6.1	12	16.0	27	10.9(1,2)	12	4.7	27	9.8(1)	12	
28	19.3(3,4)	13	6.1*	28	12.4(2,3)	13	6.9	28	13.2	13	14.8	28	27.7(3)	13	4.6	28	10.4(2,3)	13	2.5*
29	17.7(5)	14	6.3*	29	19.8(4,5)	14	7.0	29	16.7	14	13.8	29	20.7	14	4.8	29	15.2(4)	14	3.0*
30	11.2	15	6.9*	30	14.9	15	6.8	30	16.8	15	13.3	30	12.7	15	4.7	30	15.8(5)	15	2.7*
31	9.1*	16	6.0*	31	11.0(6)	16	6.8	31	18.3	16	12.8	31	8.7	16	4.5	31	12.5(6)	16	2.4*

(1) 6.0, 10 pm
(2) Crest 24.2, 11 pm
(3) 17.6, 3 pm
(4) 20.2, 10 pm
(5) 16.5, 7 pm

(1) 11.4, 5 pm
(2) 11.7, noon
(3) 17.8, 6 pm
(4) Crest 19.80, 5 am
(5) 17.2, 5:20 pm
(6) 10.1, 6 pm

(1) Crest 22.36, 2 pm

(1) 16.2, 1 pm
(2) 25.8, 5 pm
(3) Crest 27.75, 7 am

(1) 5:00 pm
(2) 15.0, 5:30 pm
(3) Crest 16.1, 10 pm
(4) 15.7, 3:30 pm
(5) 15.9, 5:30 pm
(6) 9.5, 5:30 pm

MISSOURI RIVER St. Joseph, Mo.				ONE HUNDRED & TWO RIVER Maryville 1E, Mo.				PLATTE RIVER Agency 4NE, Mo.				REPUBLICAN RIVER Concordia 1N, Kans.				REPUBLICAN RIVER Clay Center 1S, Kans.			
March		April		March		April		March		April		March		April		March		April	
16	6.6	1	20.8	16		1		16	5.1	1	25.7	16	2.2	1	3.9	16	8.6	1	12.3
17	6.3	2	21.3	17		2		17	5.3	2	24.4	17	2.3	2	5.4(2)	17	8.7	2	13.6(4)
18	6.3	3	21.5	18		3		18	5.3	3	17.8*	18	2.3	3	5.8	18	8.7	3	11.9
19	6.2	4	21.8	19		4		19	5.4*	4	12.4*	19	2.4	4	4.1	19	8.5	4	12.8
20	6.3	5	21.8	20		5		20	5.3*	5	11.3	20	2.4	5	3.3	20	8.4	5	11.0
21	6.5	6	22.0(1)	21		6		21	5.2*	6	10.0	21	2.4	6	2.6	21	8.5	6	10.3
22	6.7	7	21.9	22		7		22	5.4*	7	8.6*	22	2.4	7	2.3	22	8.3	7	9.8
23	6.9	8	21.8	23		8		23	5.3*	8	8.1*	23	2.4	8	2.6	23	8.5	8	9.5
24	7.1	9	21.2	24		9		24	5.8*	9	7.6*	24	2.4	9	3.4	24	8.5	9	9.3
25	7.2	10	20.4	25		10		25	5.8*	10	7.1*	25	2.4	10	3.9	25	8.5	10	10.0
26	7.5	11	18.6	26		11		26	5.8	11	6.9*	26	2.9	11	4.4	26	8.7	11	10.3
27	7.7	12	16.5	27	9.4(1,2)	12		27	7.8	12	6.7*	27	7.0	12	4.9	27	12.1(1,2)	12	10.6
28	15.4	13	15.4	28	12.5(3)	13		28	20.5	13	6.8*	28	10.6(1)	13	5.2	28	19.7(3)	13	11.0
29	18.0	14	14.1	29	15.1(4)	14		29	23.3	14	8.5*	29	10.2	14	5.4	29	18.4	14	11.4
30	19.5	15	13.3	30	16.1(5,6)	15		30	25.0	15	7.8	30	7.5	15	5.5	30	17.8	15	11.6
31	19.9	16	13.0	31	7.3	16		31	26.1(1)	16	8.2	31	5.2	16	5.1	31	14.6	16	11.6

(1) Crest 22.1, 11 pm

(1) 6:30 pm
(2) 12.1, midnight
(3) 12.8, 1 pm
(4) 15.9, 7 & 11 pm
(5) Crest 16.15, 1 am
(6) 15.4, 7 pm

(1) Crest 26.09, 7 am

(1) Crest 10.93, noon
(2) Crest 6.50, 10:30 pm

(1) 16.8, 6 pm
(2) 18.2, 9 pm
(3) Crest 19.69, 7 am
(4) Crest 13.80, 3 am

TABLE 9.—Continued

SALINE RIVER Tescott, Kans.				SOLOMON RIVER Beloit, Kans.				SOLOMON RIVER Niles 1 W, Kans.				SMOKY HILL RIVER Enterprise, Kans.				BIG BLUE RIVER Seward, Nebr.			
March		April		March		April		March		April		March		April		March		April	
16	7.9*	1	18.1	16	5.2	1	10.5(2)	16	5.3*	1	28.7	16	6.5	1	22.0	16	3.0*	1	17.9(3)
17	7.9*	2	14.9	17	4.9	2	20.7(3)	17	5.3*	2	28.6	17	6.7	2	22.6(2)	17	3.0*	2	14.9
18	7.9	3	13.8	18	4.8	3	16.4(4)	18	5.3*	3	25.4	18	6.6	3	21.9(3)	18	3.0*	3	11.5
19	7.8	4	13.2	19	4.9	4	11.2	19	5.3*	4	20.7(5)	19	6.7	4	17.6	19	3.0*	4	7.8
20	8.0	5	14.3	20	5.2	5	9.7	20	5.2*	5	20.5	20	6.8	5	13.8	20	3.0*	5	6.2
21	7.7	6	13.0	21	5.4	6	8.6	21	5.3*	6	16.1	21	6.9	6	12.7	21	3.1*	6	5.3
22	8.2	7	12.1	22	5.5	7	8.1	22	5.5*	7	12.8	22	7.2	7	11.0	22	3.1*	7	4.4
23	9.6	8	11.6	23	5.6	8	7.8	23	6.1*	8	11.5*	23	8.5	8	9.8	23	3.2*	8	4.2
24	13.9	9	11.3	24	6.6	9	8.9	24	7.7*	9	10.7*	24	11.0	9	9.3	24	3.1*	9	3.8
25	20.2	10	11.1	25	12.6	10	10.3	25	9.4*	10	10.3*	25	13.5	10	8.9	25	3.1*	10	3.5*
26	24.3	11	10.8	26	16.4	11	10.4	26	16.6(1)	11	10.6*	26	16.2	11	8.9	26	3.1*	11	3.4*
27	27.1	12	10.7	27	25.4	12	10.3	27	23.7(2)	12	11.7*	27	20.5(1)	12	9.5	27	3.2	12	3.2*
28	28.9	13	10.5	28	29.0(1)	13	10.3	28	26.8	13	12.2*	28	20.6	13	10.2	28	14.9(1)	13	3.1*
29	29.4(1)	14	10.5	29	27.2	14	10.1	29	28.2(3)	14	15.1	29	20.0	14	12.9	29	17.3	14	3.1*
30	29.2	15	10.5	30	22.1	15	10.1	30	28.7	15	12.2	30	19.9	15	12.9	30	19.2(1)	15	3.0*
31	26.2	16	10.4	31	12.0	16	10.0	31	28.8(4)	16	11.7*	31	21.0	16	11.5	31	19.4	16	3.0*

(1) Crest 29.40, 8 am

(1) Crest 29.17, 12 noon
(2) 17.9, 6 pm
(3) Crest 20.65, 8 am
(4) 11 am

(1) 6 pm
(2) 25.4, 12 noon
(3) 28.6, 6 pm
(4) Crest 28.76, 8 pm
(5) Crest 21.3, 9 pm

(1) Crest 20.88, 3 pm
(2) Crest 22.60, 10 am
(3) 20.6, 6 pm

(1) 14.2, 1 am
(2) Crest 19.70, 6 pm
(3) 17.1, 7 pm

BIG BLUE RIVER Crete 2S, Nebr.				BIG BLUE RIVER Beatrice, Nebr.				BIG BLUE RIVER Barneston, Nebr.				LITTLE BLUE RIVER Fairbury 1S, Nebr.				BLACK VERMILLION RIVER Frankfort 2SW, Kans.			
March		April		March		April		March		April		March		April		March		April	
16	5.3	1	26.1	16	4.0	1	25.6	16	3.2	1	25.5	16	1.3*	1	6.8	16	4.6	1	9.3
17	5.2	2	24.4	17	5.2	2	24.6	17	3.5	2	26.1(3)	17	1.4*	2	8.5	17	4.6	2	13.0(2)
18	5.4	3	22.5	18	5.2	3	21.9(2)	18	3.3	3	24.7	18	1.4*	3	9.2(4)	18	4.6	3	11.5
19	5.4	4	19.6	19	5.2	4	17.7(3)	19	3.1	4	23.6	19	1.5*	4	6.2	19	4.7	4	8.2
20	5.4	5	17.1	20	5.1	5	14.1	20	3.0	5	15.4	20	1.5*	5	5.3	20	4.8	5	7.3
21	5.5	6	14.8	21	5.1	6	11.5	21	3.1	6	12.6	21	1.6*	6	4.6	21	5.0	6	6.9*
22	5.5	7	13.2	22	5.1	7	9.5	22	3.1	7	10.6	22	1.7*	7	4.1	22	5.2	7	6.6*
23	5.8	8	11.6	23	4.1	8	8.4	23	3.3	8	9.4	23	1.6	8	3.8	23	6.0	8	6.4*
24	5.6	9	10.2	24	4.1	9	7.3	24	3.4	9	8.4	24	1.7	9	3.6	24	6.1	9	6.1*
25	5.7	10	9.0	25	4.1	10	6.6	25	3.6	10	7.6	25	1.6	10	3.4	25	6.5	10	6.0*
26	5.7	11	8.8	26	4.3	11	6.2	26	4.4	11	7.2	26	1.7	11	3.2	26	6.5	11	5.9*
27	6.4(1)	12	8.4	27	10.4	12	5.8	27	14.1(1)	12	6.8	27	7.8	12	3.1	27	17.0	12	5.8*
28	19.1(2)	13	8.1	28	22.7	13	5.6	28	27.3(2)	13	6.5	28	13.7(1)	13	3.1	28	28.2(1)	13	5.8*
29	25.5	14	7.9	29	24.4	14	5.4	29	26.2	14	6.3	29	15.0(2)	14	3.0	29	24.3	14	6.9*
30	27.4	15	7.7	30	23.7	15	5.3	30	24.6	15	6.2	30	13.2(3)	15	2.9	30	18.7	15	7.0*
31	28.0(3)	16	7.5	31	25.1(1)	16	5.1	31	24.3	16	6.0	31	10.1	16	2.9	31	9.5	16	5.8*

(1) 14.2, 6 pm
(2) 22.4, 6 pm
(3) Crest 28.0, 1 am

(1) Crest 25.66, 11 pm
(2) 20.3, 5 pm
(3) 16.2, 6 pm

(1) 23.4, 6 pm
(2) Crest 27.60, 1 pm
(3) Crest 26.07, 8 am

(1) Crest 15.80, 5 pm
(2) 15.3, 7 pm
(3) 13.7, noon
(4) 9.4, 1 am

(1) Crest 28.52, 3 am
(2) Crest 14.54, 2 pm

BIG BLUE RIVER Blue Rapids, Kans.				KANSAS RIVER Wamego, Kans.				VERMILLION RIVER Wamego, Kans.				KANSAS RIVER Topeka, Kans.				SOLDIER CREEK Topeka, Kans.			
March		April		March		April		March		April		March		April		March		April	
16		1	26.5	16	6.3	1	18.0(2)	16	6.4	1	10.5	16	4.3	1	19.6	16	1.2*	1	4.7*
17		2	26.5	17	6.8	2	17.7	17	6.5	2	10.7(2)	17	5.4	2	19.0	17	1.2*	2	4.3*
18		3	27.6(5)	18	6.9	3	17.7	18	6.6	3	10.8	18	5.7	3	18.6	18	1.2*	3	3.9*
19		4	26.8	19	7.0	4	17.4	19	6.7	4	9.2	19	5.6	4	18.6	19	1.3*	4	3.6*
20		5	20.2	20	6.8	5	16.7	20	6.9*	5	8.6	20	5.4	5	17.8	20	1.3*	5	3.0*
21		6	17.1	21	6.7	6	15.8	21	6.9*	6	8.3*	21	5.4	6	16.7	21	1.3*	6	2.1*
22		7	15.4	22	5.5	7	15.1	22	7.3*	7	8.1*	22	5.8	7	15.8	22	1.5*	7	1.5*
23	9.1	8	14.0	23	5.6	8	14.9	23	7.5*	8	7.9*	23	6.3	8	15.2	23	1.8*	8	1.2*
24	9.2	9	13.1	24	6.7	9	14.2	24	8.3(3)	9	7.7*	24	5.7	9	14.6	24	2.8*	9	1.3*
25	9.2	10	12.3	25	8.6	10	11.2	25	7.5	10	7.6*	25	8.1	10	13.0	25	2.6*	10	1.6*
26	9.9	11	11.2	26	9.5	11	9.1	26	8.7	11	7.5*	26	9.1	11	10.2	26	4.8*	11	1.4*
27	18.6(1,2)	12	11.4	27	13.1	12	9.0	27	18.1	12	7.4*	27	14.5	12	8.2	27	13.9*	12	1.3*
28	32.0(3)	13	11.1	28	16.7	13	12.9	28	26.8(1)	13	7.4*	28	19.8	13	9.5	28	16.3(1)*	13	1.3*
29	32.3	14	10.9	29	18.6(1)	14	13.1	29	16.6	14	7.3*	29	20.5	14	13.2	29	11.0*	14	
30	35.3(4)	15	10.1	30	18.9	15	13.5	30	12.6	15	7.3*	30	20.8(1)	15	13.3	30	6.8*	15	
31	32.0	16	10.5	31	18.4	16	12.9	31	9.8	16	7.2*	31	19.9	16	13.0	31	5.2*	16	

(1) 23.7, noon
(2) 28.9, 6 pm
(3) 32.7, 1 pm
(4) Crest 35.27, 7 am
(5) Crest 27.60, noon

(1) Crest 19.04, 10 pm
(2) Crest 18.83, 5 pm

(1) Crest 26.8, 6 am
(2) 12.0, 4-5 pm
(3) 6 pm

(1) Crest 21.0, noon

(1) Crest 17.23, 8 am

TABLE 9.—Continued

DELAWARE RIVER Valley Falls, Kans.				WAKARUSA RIVER Lawrence, Kans.				STRANGER CREEK Tonganoxie, Kans.				KANSAS RIVER Bonner Springs, Kans.				MISSOURI RIVER Kansas City, Mo.			
March		April		March		April		March		April		March		April		March		April	
16	2.4*	1	4.6	16	6.0*	1	8.3*	16	8.1*	1	23.0(2)	16	6.3	1	14.6	16	3.2	1	22.0
17	2.6*	2	4.2	17	6.2*	2	8.2*	17	8.1*	2	11.9*	17	6.5	2	13.9	17	2.8	2	22.3
18	2.6*	3	4.1*	18	6.2*	3	7.4*	18	8.3*	3	11.0*	18	2.5	3	13.6	18	3.0	3	22.7
19	2.8*	4	3.8*	19	6.7*	4	7.1*	19	8.6*	4	10.5	19	2.1	4	13.4	19	3.0	4	22.8(1)
20	2.9*	5	3.5*	20	7.5*	5	6.9*	20	9.1	5	10.0*	20	2.0	5	12.7	20	3.1	5	22.7
21	3.0*	6	3.3*	21	8.1*	6	6.8*	21	10.1*	6	9.5	21	2.3	6	12.1	21	3.4	6	22.6
22	3.3*	7	3.2*	22	9.5*	7	6.7*	22	11.6	7	9.4*	22	2.8	7	11.4	22	3.7	7	21.9
23	3.4*	8	3.1*	23	12.0*	8	6.5*	23	13.0*	8	9.1*	23	3.5	8	10.8	23	4.2	8	21.6
24	4.1*	9	3.0*	24	16.2*	9	6.4*	24	15.2*	9	8.8	24	4.5	9	10.4	24	4.9	9	21.2
25	3.9*	10	2.9*	25	16.9*	10	6.3*	25	14.6*	10	8.7*	25	5.4	10	9.6	25	5.7	10	20.6
26	4.6*	11	2.9*	26	17.6*	11	6.3*	26	13.3	11	8.6*	26	6.1	11	7.5	26	5.8	11	19.3
27	10.6(1)	12	2.9*	27	25.2*(1)	12	6.3*	27	23.6	12	8.5	27	10.8	12	6.1	27	7.1	12	16.8
28	24.1(2)	13	2.9*	28	21.9*	13	6.2*	28	24.3	13	8.5*	28	15.3	13	5.2	28	14.4	13	14.9
29	21.3(3)	14	2.9*	29	11.7*	14	15.8*	29	26.7(1)	14	15.3	29	16.9	14	8.8	29	19.3	14	14.2
30	8.2	15	2.9*	30	11.5*	15	10.2*	30	25.2	15	16.9	30	18.0(1)	15	9.4	30	22.4	15	14.8
31	4.9	16	2.8*	31	10.6*	16	7.6*	31	22.9	16	10.8	31	16.0	16	9.2	31	22.2	16	14.1

(1) 20.4, 5:30 pm
(2) Crest 24.73, 3 pm
(3) 10.2, 6 pm

(1) Crest 26.25, 8 pm

(1) Crest 26.71, 11 am
(2) 15.0, 4:30 pm

(1) Crest 18.0, 2 am

(1) Crest 22.95, noon

GRAND RIVER Pattonsburg, Mo.				GRAND RIVER Gallatin 1NE, Mo.				EAST FORK BIG CREEK Bethany 2N, Mo.				THOMPSON RIVER Davis City, Iowa				WELDON RIVER Mercer 4NW, Mo.			
March		April		March		April		March		April		March		April		March		April	
16		1	27.5	16		1	29.3(5)	16	3.4	1	4.9	16	0.8*	1	11.2*	16		1	
17		2	12.4	17	3.9*	2	18.5	17	3.4	2	4.8	17	0.8*	2	6.7*	17		2	
18		3		18	3.9*	3	11.4*	18	3.4	3	4.2	18	0.8*	3	4.2*	18		3	
19		4		19	3.9*	4	10.0	19	3.4	4	3.9	19	0.8*	4	2.8*	19		4	
20		5		20	4.0	5	9.2	20	3.4	5	3.7	20	0.8*	5	2.4*	20		5	
21		6		21	4.1	6	8.7	21	3.4	6	3.6*	21	0.8*	6	2.2*	21		6	
22		7		22	4.1	7	8.2	22	3.4	7	3.5*	22	0.8*	7	2.1*	22		7	
23		8		23	4.1	8	7.9	23	3.4	8	3.4*	23	0.8*	8	1.9*	23		8	
24	3.2	9		24	4.2	9	7.6	24	3.4	9	3.4*	24	0.8*	9	1.7*	24		9	
25		10		25	4.3	10	7.4	25	3.4	10	3.3*	25	0.8*	10	1.6*	25		10	
26		11		26	4.5	11	7.2	26	3.4	11	3.3*	26	0.8*	11	1.6*	26		11	
27	4.7	12		27	4.7	12	7.2	27	3.5	12	3.3*	27	1.8*	12	1.5*	27	6.5(1,2)	12	
28	26.0	13		28	19.9(1)	13	6.8	28	10.5	13	3.5*	28	7.0*	13	1.5*	28	10.4(3)	13	
29	29.4	14		29	23.8(2)	14	8.2	29	12.2(1)	14	3.8*	29	11.7*	14	1.7*	29	12.7(4,5)	14	3.1
30	30.6(1)	15		30	26.2(3)	15	9.0	30	16.4(2)	15	3.7*	30	16.2*(1)	15	1.9*	30	11.5(6)	15	
31	30.6	16		31	29.9(4)	16	8.8	31	7.0	16	4.6*	31	15.4*	16	2.4*	31		16	7.1

(1) Crest 30.77, 5:30 pm

(1) 23.1, 6:30 pm
(2) 24.5, 5:30 pm
(3) 28.2, 6 pm
(4) Crest 30.45, 5 pm
(5) 27.0, 6 pm

(1) 14.4, 6 pm
(2) Crest 16.54, 6 am

(1) Crest 16.63, 6 am

(1) 5 pm
(2) 14.8, 9 pm
(3) Crest 19.0, 9 pm
(4) 13.0, 5:30 pm
(5) Crest 18.0, 10 pm
(6) 7.9, noon

WELDON RIVER Mill Grove, Mo.				THOMPSON RIVER Trenton 1W, Mo.				GRAND RIVER Chillicothe, Mo.				GRAND RIVER Sumner 2SW, Mo.				CHARITON RIVER Novinger 1E, Mo.			
March		April		March		April		March		April		March		April		March		April	
16	1.1*	1	5.3*	16	6.8	1	15.1	16	7.3	1	30.9	16	8.3	1	37.2(3)	16	6.7	1	24.5(3)
17	1.1*	2	3.8*	17	6.5	2	12.9	17	7.7	2	30.2	17	9.0	2	36.1	17	7.4	2	26.4(4)
18	1.1*	3	3.8*	18	6.6	3	9.7	18	7.7	3	26.2	18	9.0	3	34.7	18	7.4	3	26.2
19	1.2*	4	2.3*	19	6.6	4	8.4	19	7.7	4	19.6	19	9.4	4	32.3	19	7.4	4	24.4
20	1.2*	5	2.2*	20	6.6	5	7.5	20	7.7	5	16.7	20	9.4	5	29.8	20	6.9	5	23.2
21	1.2*	6		21	6.9	6	7.2	21	7.7	6	14.8	21	9.5	6	26.0	21	6.8	6	19.7
22	1.2*	7	1.9*	22	6.7	7	6.8	22	7.8	7	13.8	22	9.7	7	20.7	22	7.2	7	15.6
23	1.3*	8	1.7*	23	6.8	8	6.4	23	7.9	8	13.1	23	9.8	8	17.1	23	7.1	8	13.6
24	1.3*	9	1.5*	24	6.3	9	6.1	24	8.1	9	12.3	24	10.2	9	15.1	24	8.2	9	9.7
25	1.3*	10	1.4*	25	5.9	10	5.9	25	8.9	10	11.6	25	10.5	10	14.0	25	7.7	10	8.4
26	1.3*	11	1.4*	26	5.9	11	5.6	26	8.4	11	11.2	26	10.9	11	13.3	26	6.8	11	7.7
27	3.8*	23	1.4*	27	5.9	12	5.6	27	9.0	12	10.9	27	11.3(1)	12	12.7	27	8.7(1)	12	7.2
28	13.3*	13	1.4*	28	15.5(1)	13	5.5	28	27.4	13	10.8	28	28.9(2)	13	12.4	28	21.8(2)	13	6.9
29	17.2*(1)	14	3.4*	29	20.5(2,3)	14	8.1	29	29.5	14	12.2(2)	29	31.5	14	13.1	29	23.4	14	11.4(5)
30	16.2*	15	3.0*	30	21.1(4)	15	7.1	30	30.9	15	18.8	30	33.9	15	26.4	30	24.4	15	16.0
31	5.9*	16	3.7*	31	20.3(5)	16	6.8	31	31.4(1)	16	15.7	31	35.8	16	24.8	31	24.4	16	10.3

(1) Crest 17.95, 10 am

(1) 15.0, 3 pm
(2) 20.8, noon to 5 pm
(3) 19.7, 9 pm
(4) Crest 21.25, 3 am
(5) 16.0, 3:15 pm

(1) Crest 31.4, 10 am
(2) 20.0, 6 pm

(1) 11.8, noon
(2) 29.8, noon
(3) Crest 37.2, 5-7 am

(1) 18.5, 6 pm
(2) 22.1, 6 pm
(3) 25.5, 6 pm
(4) Crest 26.65, 6 pm
(5) 16.2, noon

TABLE 9.—Continued

CHARITON RIVER Prairie Hill 3NW, Mo.				MISSOURI RIVER Boonville, Mo.				MARAIS DES CYGNES RIVER Ottawa, Kans.				MARAIS DES CYGNES RIVER Trading Post, Kans.				OSAGE RIVER Osceola, Mo.			
March		April		March		April		March		April		March		April		March		April	
16	3.1	1	18.5	16	6.0	1	25.5	16	4.8	1	5.9	16		1	25.5	16	7.6	1	14.7
17	3.7	2	18.8	17	5.7	2	26.3	17	4.8	2	5.4	17		2	22.2	17	7.9	2	14.5
18	4.3	3	19.3	18	5.5	3	27.1	18	4.9	3	5.2	18		3	8.1	18	8.1	3	14.3
19		4	19.9(2)	19	5.3	4	27.9	19	3.5	4	4.3	19		4		19	8.5	4	14.1
20	3.7*	5	20.2	20	5.2	5	28.1(1)	20	3.5	5	3.8	20	5.4	5		20	10.2	5	12.8
21	3.7	6	18.2	21	5.7	6	28.0	21	5.2	6	3.6	21		6		21	12.0	6	9.0
22	3.8	7	14.8	22	5.9	7	27.4	22	6.2	7	3.4	22	(1)	7		22	13.9	7	6.2
23	4.1	8	11.2	23	6.3	8	26.8	23	9.1	8	3.2	23	15.3	8		23	15.3	8	5.1
24	4.3	9	9.1	24	7.1	9	25.9	24	14.3	9	3.2	24	19.8	9		24	15.4	9	4.8
25	4.5	10	6.1	25	8.2	10	25.1	25	19.0	10	3.2	25	22.7	10		25	14.6	10	4.5
26	4.5	11	5.6*	26	9.2	11	24.4	26	20.1	11	3.1	26	23.5	11		26	14.3	11	4.5
27	5.1(1)	12	5.2*	27	9.6	12	23.9	27	23.1(1)	12	3.1	27	24.0	12		27	14.3	12	4.5
28	18.0	13	4.9	28	14.4	13	22.8	28	23.5	13	3.1	28	24.3	13	2.9	28	14.6	13	4.4
29	18.7	14	5.4	29	21.1	14	20.3	29	21.6	14	3.0	29	24.7	14	3.7	29	14.8	14	10.4
30	18.2	15	13.0	30	23.0	15	19.2	30	13.0	15	9.1(2)	30	25.4	15	10.0	30	14.8	15	13.6
31	18.4	16	10.6	31	23.9	16	20.0	31	10.0	16	5.0	31	25.9(2)	16	9.9	31	14.9	16	13.2
(1) 11.7, 7 pm (2) Crest 20.4, 10 pm				(1) Crest 28.15, 7 am				(1) Crest 24.0, 9 pm (2) Crest 10.0, 2 am				(1) 12.0, evening (2) Crest 25.85, noon				(1) Crest 15.6, 2 am			

MISSOURI RIVER Hermann, Mo.				MISSOURI RIVER St. Charles, Mo.				MISSISSIPPI RIVER La Crosse, Wis.				ROOT RIVER Houston, Minn.				UPPER IOWA RIVER Decorah, Iowa			
March		April		March		April		March		April		March		April		March		April	
16	6.5	1	25.6	16	9.4	1	27.9	16	4.7	1	6.1	16	6.2	1	7.3	16	4.6*	1	5.7*
17	7.0	2	26.1	17	10.6	2	28.5	17	4.8	2	6.6	17	6.1	2	6.8	17	4.6	2	5.5*
18	8.3	3	26.7	18	11.5	3	29.3	18	4.7	3	6.6	18	6.1	3	6.6	18	4.7*	3	5.5*
19	8.8	4	27.1	19	12.8	4	30.0	19	4.7	4	7.2	19	6.2	4	6.9	19	4.6*	4	5.5*
20	8.1	5	27.4	20	13.1	5	30.6	20	4.7	5	7.2	20	6.2	5	6.6	20	4.6*	5	5.4*
21	6.5	6	28.0	21	12.4	6	30.8	21	4.7	6	7.1	21	6.1	6	6.4	21	4.7*	6	5.1
22	6.5	7	28.3(4)	22	10.9	7	31.8	22	4.6	7	7.5	22	6.1	7	6.2	22	4.8*	7	5.1*
23	9.7	8	28.2	23	11.4	8	32.2(1)	23	4.5	8	7.6	23	6.1	8	6.2	23	4.7*	8	5.1*
24	11.7	9	27.4	24	14.8	9	32.0	24	4.5	9	7.8	24	5.9	9	6.1	24	4.6	9	5.0*
25	13.4	10	26.7	25	16.5	10	31.3	25	4.6	10	7.8	25		10	6.1	25	4.7*	10	4.9*
26	13.9	11	25.7	26	17.5	11	30.6	26	4.6	11	7.8	26	5.7	11	6.0	26	4.6*	11	4.9*
27	15.4	12	24.7	27	18.3	12	29.5	27	4.6	12	7.9	27	6.2(1)	12	6.0	27	5.7(1,2)	12	4.9*
28	17.6(1)	13	24.1	28	20.2	13	28.7	28	5.4	13	8.2	28	14.0(2)	13	6.2	28	6.8*	13	4.9
29	21.6(2)	14	22.7	29	22.7	14	27.8	29	6.2	14	8.3	29	10.9(3)	14	6.6	29	7.2*	14	5.3*
30	24.5(3)	15	21.1	30	26.2	15	26.1	30	6.1	15	8.3	30	9.2(4)	15	7.9	30	7.5(3)	15	5.5*
31	25.2	16	21.2	31	27.5	16	24.9	31	5.8	16	8.6	31	10.6(5)	16	7.1	31	6.1*	16	5.4*
(1) 19.3, 7 pm (2) 23.4, 7 pm (3) 25.0, 7 pm (4) Crest 28.44, 2 pm				(1) Crest 32.2, noon								(1) 8.9, 4 pm (2) Crest 14.0, 7 am (3) 9.5, 4 pm (4) 10.4, 4 pm (5) 7.8, 4 pm					(1) Crest 7.86, pm (2) 6.7, 7 pm (3) Crest 8.44, 1:30 am			

MISSISSIPPI RIVER McGregor, Iowa				KICKAPOO RIVER La Farge, Wis.				KICKAPOO RIVER Steuben, Wis.				TURKEY RIVER Garber, Iowa				MISSISSIPPI RIVER Dubuque, Iowa			
March		April		March		April		March		April		March		April		March		April	
16	6.8	1	10.9	16	2.2	1	2.4	16	3.3	1	9.0	16	5.9	1	11.7	16	7.4	1	13.6
17	6.9	2	10.0	17	2.2	2	2.3	17	3.2	2	8.1	17	5.8	2	10.3	17	7.4	2	13.3
18	6.9	3	9.8	18	2.2	3	2.5	18	3.2	3	5.5	18	5.6	3	9.6	18	7.5	3	11.8
19	7.2	4	9.7	19	2.4	4	2.4	19	3.1	4	5.1	19	5.7	4	9.1	19	7.3	4	10.8
20	7.3	5	9.7	20	2.5	5	2.2	20	3.2	5	4.8	20	5.7	5	8.5	20	7.4	5	10.8
21	7.2	6	9.8	21	2.2	6	2.1	21	3.4	6	4.5	21	5.6	6	8.0	21	7.5	6	10.7
22	7.2	7	9.8	22	2.0	7	2.1	22	3.2	7	4.3	22	5.7	7	7.7	22	7.6	7	10.8
23	7.2	8	9.6	23	2.1	8	2.3	23	3.1	8	4.3	23	5.6	8	7.5	23	7.6	8	10.8
24	7.1	9	9.8	24	2.1	9	2.0	24	3.2	9	4.2	24	5.6	9	7.3	24	7.5	9	10.7
25	7.0	10	9.8	25	1.7	10	2.0	25	3.1	10	4.0	25	5.6	10	7.1	25	7.5	10	10.6
26	6.9	11	9.8	26	1.9	11	2.1	26	2.8	11	3.8	26	5.5	11	7.0	26	7.4	11	10.7
27	6.8	12	10.0	27	2.5(1,2)	12	2.0	27	3.1(1)	12	3.8	27	6.6	12	6.9	27	7.4	12	10.9
28	8.3	13	10.0	28	11.2(3.4)	13	2.3	28	8.4	13	3.9	28	17.2	13	6.9	28	7.8	13	11.1
29	10.1	14	10.0	29	5.6	14	2.7	29	8.9	14	4.0	29	18.3	14	6.9	29	10.4	14	11.1
30	11.1(1)	15	10.4	30	2.9	15	2.4	30	9.1(2,3)	15	4.5	30	22.7(1)	15	7.0	30	12.9	15	11.2
31	11.1	16	10.5	31		16	5.0	31	9.2	16	4.5	31	16.9	16	7.3	31	13.9(1)	16	11.3
(1) Crest 8 am				(1) 6.5, 4 pm (2) 8.4, 7:30 pm (3) Crest 11.42, 10 am (4) 10.0, 10 pm				(1) 7.7, 4 pm (2) 9.2, 4 pm (3) Crest 9.23, 11 pm				(1) Crest 22.96, 5 am				(1) Crest 7 am			

TABLE 9.—Continued

MAQUOKETA RIVER Maquoketa, Iowa				MISSISSIPPI RIVER Clinton, Iowa				WAPSIPINICON RIVER Independence, Iowa				WAPSIPINICON RIVER De Witt, Iowa				MISSISSIPPI RIVER Davenport, Iowa			
March		April		March		April		March		April		March		April		March		April	
16	1.4	1	17.3	16	6.5	1	14.9	16	4.8*	1	11.0	16	5.2	1	11.0	16	5.3	1	14.1
17	1.1	2	15.2	17	6.5	2	15.3(1)	17	4.8*	2	10.1	17	5.2	2	11.4*	17	5.4	2	14.9
18	1.2	3	10.4	18	6.5	3	14.8	18	4.8*	3	8.8	18	5.4	3	11.6	18	5.2	3	15.2(1)
19	1.5	4	7.9	19	6.7	4	13.3	19	4.8*	4	7.6	19	5.2	4	11.7(1)	19	5.2	4	14.6
20	1.5	5	6.8	20	6.7	5	11.7	20	4.8*	5	6.8*	20	5.2	5	11.6	20	5.0	5	13.5
21		6	6.2	21	6.8	6	11.1	21	4.8*	6	6.4	21	5.1	6	11.2	21	5.0	6	12.2
22		7	5.7	22	6.8	7	10.9	22	4.8*	7	6.2*	22	4.8	7	10.9	22	5.0	7	11.7
23		8	5.2	23	6.8	8	10.9	23	4.8*	8	5.9*	23	4.9	8	10.6	23	5.0	8	11.3
24		9	4.8	24	6.9	9	10.9	24	4.8*	9	5.8*	24	4.9	9	10.2	24	5.1	9	10.9
25		10	4.4	25	6.9	10	10.6	25	4.8*	10	5.7*	25	4.8	10	9.3	25	5.1	10	10.5
26	1.2	11	4.1	26	6.9	11	10.1	26	4.8*	11	5.7*	26	4.6	11	8.7	26	5.1	11	9.8
27	1.5	12	3.9	27	6.7	12	10.1	27	4.8*	12	5.6*	27	4.8	12	7.8	27	5.0	12	9.4
28	1.6	13	3.8	28	6.7	13	10.3	28	5.2	13	5.6*	28	5.5	13	7.5	28	5.1	13	9.2
29	4.3(1)	14	3.5	29	8.0	14	10.8	29	6.2	14	5.6*	29	7.7	14	7.8	29	5.8	14	9.4
30	16.8(2,3)	15	3.0	30	10.2	15	10.8	30	14.4(2)	15	5.7	30	11.1	15	7.7	30	8.9	15	9.8
31	18.6(4)	16	3.0	31	13.9	16	10.8	31	13.7	16	5.8*	31	11.3	16	7.3	31	11.6	16	9.6
(1) 7.4, 4:50 pm (2) 18.7, 4:50 pm (3) Crest 18.91, 9 pm (4) 17.6, 5:30 pm				(1) Crest 7 am				(1) Crest 15.63, 4 pm				(1) Crest 11.71, 8 pm				(1) Crest 15.3, 7 am			

PECATONICA RIVER Darlington, Wis.				E. BR. PECATONICA RIVER Blanchardville, Wis.				PECATONICA RIVER Martintown, Wis.				PECATONICA RIVER Freeport, Ill.				ROCK RIVER Rockton, Ill.			
March		April		March		April		March		April		March		April		March		April	
16	3.0(1)	1	6.1(1)	16	3.7	1	8.2	16	5.2	1	19.6(1)	16	3.6	1	14.6	16	3.7	1	12.4
17	3.1(1)	2	6.8*	17	3.7	2	7.8	17	5.1	2	18.4	17	3.5	2	15.9(2)	17	3.7(1)	2	13.3(5)
18	3.1*	3	5.9	18	3.6	3	7.1	18	5.1	3	17.2	18	3.6	3	16.3(3)	18	3.7(1)	3	13.4
19	3.2(1)	4	5.1(1)	19	3.6	4	6.3	19	5.1	4	16.2	19	3.6	4	15.8(4)	19		4	13.1
20	3.1(1)	5	4.8*	20	3.5	5	5.9	20	5.1	5	14.1	20	3.8	5	14.5	20	3.8(1)	5	13.2(6)
21	3.1(1)	6	4.7(1)	21	3.4	6	5.6	21	5.1	6	12.5	21	4.1	6	13.5	21	3.8(1)	6	13.0
22	3.1(1)	7	4.4(1)	22	3.3	7	5.4	22	5.1	7	10.1	22	4.0	7	12.6	22	4.0(1)	7	12.6
23	3.1(1)	8	4.2(1)	23	3.4	8	5.3	23	5.1	8	9.4	23	4.0	8	11.8	23	4.0(1)	8	12.0
24	3.1(1)	9	4.0(1)	24	3.4	9	5.1	24	5.1	9	8.6	24	3.8	9	11.2	24	4.2(1)	9	11.3
25	3.2(1)	10	3.9(1)	25	3.3	10	4.9	25	5.1	10	7.4	25	3.9	10	10.4	25	4.0(1)	10	10.7
26	3.1(1)	11	4.0(1)	26	3.1	11	4.8	26	5.1	11	7.4	26	3.6	11	9.6	26	3.9	11	10.2
27	3.2(1)	12	3.9(1)	27	3.4	12	4.8	27	5.1	12	7.3	27	3.5	12	8.6	27	4.1(1)	12	9.6
28	9.6(1)	13	3.9(1)	28	4.9	13	4.7	28	8.1	13	6.8	28	4.6	13	8.3	28	4.5(1)	13	9.3
29	11.8(1)	14	3.9(1)	29	7.9	14	4.7	29	10.3	14	6.8	29	8.2	14	8.0	29	5.1(2)	14	8.9
30	15.6(2)	15	3.8(1)	30	14.2(1)	15	4.7	30	14.5	15	6.8	30	12.4	15	7.8	30	9.4(3)	15	8.6
31	12.4	16	3.9(1)	31	11.1	16	4.6	31	16.8	16	6.8	31	14.4(1)	16	7.6	31	11.4(4)	16	8.4
(1) 6 pm stage (2) Crest 16.06, 6 am				(1) Crest 14.81, noon				(1) Crest 19.55, 4 am				(1) Crest 14.62, 3 am (2) Crest 16.35, 10 pm (3) 15.9, 7 pm (4) 15.0, 6 pm				(1) 4 pm stage (2) 6.1, 4:15 pm (3) 10.4, 3 pm (4) 11.7, 5 pm (5) Crest 13.49, 10 pm (6) 13.2, 2:30 pm			

ROCK RIVER Joslin, Ill.				ROCK RIVER Moline, Ill.				MISSISSIPPI RIVER Muscatine, Iowa				IOWA RIVER Marshalltown, Iowa				CEDAR RIVER Charles City, Iowa			
March		April		March		April		March		April		March		April		March		April	
16	7.6	1	15.6	16	9.5	1	13.2(3)	16	5.8	1	15.7	16	7.1	1	17.2	16		1	3.2
17	7.6	2	15.8	17	9.0	2	13.8	17	5.9	2	17.4	17	7.1	2	16.9	17	2.2	2	3.1
18	7.5	3	16.1(1)	18	8.9	3	14.0	18	5.9	3	18.3(1)	18	7.1	3	15.8	18	2.2	3	3.7
19	7.6	4	15.8	19	8.9	4	14.1(4)	19	5.9	4	18.3	19	7.2	4	14.8	19	2.2	4	4.0
20	7.7	5	15.7	20	9.0	5	14.0	20	6.0	5	17.3	20	7.2	5	14.1	20	2.3	5	2.9
21	7.7	6	15.3	21	9.0	6	13.9	21	6.0	6	16.0	21	7.1	6	13.1	21	2.2	6	3.0
22	6.9	7	14.9	22	9.0	7	13.8	22	6.0	7	15.1	22		7	12.4	22	2.4	7	2.8
23	6.1	8	14.6	23	9.0	8	13.5	23	6.0	8	14.3	23	7.2	8	11.2	23	2.2	8	3.5
24	5.6	9	14.2	24	9.1	9	13.3	24	6.2	9	13.5	24	7.2	9	10.5	24	2.2	9	2.7
25	5.6	10	13.8	25	9.1	10	13.0	25	6.2	10	13.0	25	7.2	10	9.9	25	2.2	10	2.5
26	5.6	11	13.2	26	9.0	11	12.7	26	6.3	11	12.5	26	7.2	11	9.7	26	3.3	11	2.2
27	5.7	12	12.6	27	8.4	12	12.3	27	6.2	12	11.7	27	7.4	12	9.4	27	4.6	12	2.2
28	5.9	13	12.2	28	8.5	13	11.9	28	6.2	13	11.4	28	8.2	13	9.3	28	5.3	13	2.1
29	8.1	14	11.9	29	9.3	14	11.6	29	6.7	14	11.3	29	10.2(1,2)	14	9.2	29	8.5(1)	14	4.3
30	11.4	15	11.9	30	10.9(1)	15	11.6	30	8.3	15	12.0	30	13.5(3,4)	15	9.0	30	7.9	15	5.2
31	13.9	16	11.9	31	12.4(2)	16	11.5	31	12.9	16	11.9	31	16.8(5)	16	8.9	31	6.1	16	3.7
(1) Crest 16.08, 4 pm				(1) 12.1, midnight (2) 12.8, 7 pm (3) 13.4, 1 pm (4) Crest 14.1, 1 am				(1) Crest 18.38, 3 pm				(1) 11.1, 10 am (2) 12.5, 9:30 pm (3) 14.4, 12:45 pm (4) 15.4, 9 pm (5) Crest 17.51, 6:30 pm				(1) Crest					

TABLE 9.—Continued

CEDAR RIVER Waterloo, Iowa				CEDAR RIVER Cedar Rapids, Iowa			
March		April		March		April	
16	5.2	1	16.0(5)	16	3.5	1	13.2(1)
17	5.2	2	11.9	17	3.4	2	16.3(2)
18	5.2	3	9.4	18	3.4	3	15.7
19	5.2	4	8.3	19	3.4	4	11.7
20	5.2	5	7.8	20	3.6	5	8.8
21	5.2	6	7.5	21	3.8	6	7.4
22	5.2	7	7.2	22	3.5	7	6.5
23	5.3	8	7.0	23	3.4	8	6.0
24	5.2	9	6.8	24	3.4	9	5.5
25	5.2	10	6.6	25	3.5	10	5.3
26	5.2	11	6.5	26	3.3	11	5.1
27	5.3	12	6.3	27	3.4	12	4.9
28	5.5	13	6.2	28	3.6	13	4.4
29	7.8	14	6.1	29	4.3	14	4.6
30	11.7(1,2)	15	6.1	30	6.6	15	4.5
31	17.9(3,4)	16	6.5	31	10.6	16	4.5

(1) 12.9, 11:30 am
(2) 15.3, 7 pm
(3) Crest 18.10, 10 am
(4) 17.9, 3 pm
(5) 14.9, 1 pm

(1) 14.0, 5 pm
(2) Crest 16.75, 3 pm

IOWA RIVER Wapello, Iowa				SKUNK RIVER Augusta, Iowa				MISSISSIPPI RIVER Burlington, Iowa			
March		April		March		April		March		April	
16	4.5	1	14.5	16	3.8	1	20.3	16		1	15.2
17	4.3	2	15.4	17	3.8	2	22.3	17		2	16.6
18	4.5	3	15.8	18	3.8	3	24.9(1)	18		3	17.9
19	4.3	4	16.6(1)	19	3.9	4	24.3	19		4	18.6(1)
20	4.2	5	16.9(2,3)	20	3.9	5	21.8	20		5	18.6
21	4.3	6	15.5(4)	21	3.9	6	19.5	21		6	17.8
22	4.3	7	13.9(5)	22	3.9	7	18.0	22		7	17.0
23	4.2	8	12.4(6)	23	4.2	8	17.2	23		8	16.2
24	4.2	9	11.1	24	4.1	9	15.7	24		9	15.4
25	4.0	10	10.0	25	4.1	10	13.8	25	8.9	10	14.7
26	3.9	11	9.1	26	4.1	11	12.3	26	8.9	11	14.2
27	4.0	12	8.5	27	4.0	12	10.8	27	8.9	12	13.4
28	4.9	13	8.1	28	9.6	13	9.3	28	9.6	13	12.8
29	5.4	14	8.1	29	16.4	14	8.4	29	10.9	14	12.5
30	9.4	15	8.8	30	19.1	15	15.3(2,3)	30	11.9	15	12.9
31	11.5	16	8.0	31	20.0	16	13.8	31	13.3	16	13.2

(1) 16.9, 5 pm
(2) Crest 17.02, 2 am
(3) 16.2, 5:20 pm
(4) 14.8, 5:30 pm
(5) 13.2, 5:15 pm
(6) 11.8, 6 pm

(1) Crest 25.0, noon
(2) 12.8, 1:30 pm
(3) 15.25, 7 pm

(1) Crest 18.7, 4 pm

MISSISSIPPI RIVER Keokuk, Iowa				W. FK. DES MOINES RIVER Humboldt, Iowa				E. FK. DES MOINES RIVER Humboldt, Iowa			
March		April		March		April		March		April	
16	2.5	1	18.0	16	2.9	1	8.4	16	7.9	1	14.0
17	2.5	2	19.3	17	2.9	2	8.4	17	7.9	2	12.7
18	2.3	3	21.0(1)	18	2.9	3	8.1	18	7.9	3	12.0
19	2.3	4	21.6	19	2.9	4	7.8	19	7.9	4	11.9
20	2.4	5	21.0	20	2.8	5	7.8	20	7.9	5	11.7
21	2.4	6	20.6	21	2.8	6	7.8	21	7.9	6	11.5
22	2.4	7	20.0	22	2.8	7	7.7	22	8.0	7	11.1
23	2.3	8	18.8	23	2.9	8	7.7	23	8.0	8	11.0
24	2.4	9	17.6	24	2.9	9	7.6	24	7.9	9	10.8
25	2.4	10	16.2	25	2.9	10	7.4	25	8.0	10	10.6
26	2.4	11	14.5	26	2.9	11	7.4	26	8.0	11	10.2
27	2.4	12	13.4	27	3.0	12	7.3	27	8.1	12	9.8
28	4.4	13	11.9	28	4.3	13	7.2	28	11.0	13	9.4
29	7.5	14	11.3	29	6.2	14	7.2	29	17.3(1)	14	9.5
30	11.4	15	11.5	30	7.5	15	7.1	30	14.2	15	9.5
31	17.0	16	12.3	31	8.3	16	7.1	31	13.0	16	9.4

(1) Crest 21.8, 4 pm

(1) Crest 17.49, 4 pm

DES MOINES RIVER Boone, Iowa				DES MOINES RIVER Des Moines, Iowa			
March		April		March		April	
16	0.3	1	14.0	16	11.6	1	24.6(1)
17	0.3	2	11.1	17	11.6	2	25.2
18	0.3	3	9.6	18	11.5	3	23.6
19	0.4	4	8.5	19	11.5	4	21.6
20	0.3	5	7.5	20	11.6	5	20.1
21	0.4	6	6.7	21	11.7	6	19.2
22	0.4	7	6.1	22	11.9	7	18.5
23	0.3	8	5.5	23	11.9	8	17.9
24	0.3	9	5.0	24	12.1	9	17.4
25	0.3	10	4.6	25	12.1	10	16.9
26	0.4	11	4.2	26	12.1	11	16.6
27	0.3	12	3.8	27	12.4	12	16.4
28	0.4	13	3.4	28	13.1	13	16.0
29	5.7	14	3.1	29	14.1	14	15.8
30	14.3	15	2.7	30	16.3	15	15.6
31	16.9(1)	16	2.7	31	19.1	16	15.4

(1) Crest 17.08, 3 am

(1) Crest 25.25, 6 pm

RACCOON RIVER Jefferson, Iowa				SOUTH RACCOON RIVER Redfield, Iowa				RACCOON RIVER Van Meter, Iowa			
March		April		March		April		March		April	
16	4.8(1)	1	18.5	16	3.9	1	14.5(4)	16	3.8	1	18.8(4)
17	4.8(1)	2	15.9	17	3.9	2	12.8	17	3.8	2	21.1(5,6)
18	4.8(1)	3	14.3	18	3.9	3	9.7	18	3.8	3	19.3
19	4.8(1)	4	13.4	19	3.9	4	7.7	19	3.8	4	16.8
20	4.8(1)	5	12.7	20	3.9	5	6.7	20	3.8	5	14.5
21	4.9(1)	6	11.5	21	3.9	6	6.3	21	3.8	6	12.5
22	4.9(1)	7	10.1	22	3.9	7	5.8	22	3.8	7	11.0
23	4.9(1)	8	9.1	23	3.9	8	5.4	23	3.8	8	9.6
24	4.9(1)	9	8.0	24	3.9	9	5.0	24	3.8	9	8.2
25	4.9(1)	10	7.3	25	3.9	10	4.8	25	3.8	10	7.3
26	5.0(1)	11	6.8	26	3.9	11	4.6	26	3.8	11	6.7
27	5.0(1)	12	6.3	27	3.9	12	4.5	27	3.9	12	6.2
28	6.8(1)	13	6.1	28	8.6	13	4.3	28	11.4(1,2)	13	5.9
29	11.1	14	5.6	29	9.9	14	4.3	29	9.5	14	5.6
30	13.7	15	5.1	30	14.9(1,2)	15	4.2	30	13.5(3)	15	5.4
31	18.9(2,3)	16	5.7	31	13.3(3)	16	4.1	31	14.2	16	5.2

(1) Stage at 1 pm
(2) Crest 19.43, 12:30 pm
(3) 19.3, 6:30 pm

(1) Crest 15.31, 2 am
(2) 13.6, 7 pm
(3) 12.8, 7 pm
(4) Crest 14.8, 10 am

(1) Crest 14.00, 5:30 am
(2) 11.5, 12:30 pm
(3) 14.5, 2 pm
(4) 20.7, 4 pm
(5) Crest 21.18, 3 am
(6) 20.5, 5:30 pm

NORTH RIVER Norwalk, Iowa				MIDDLE RIVER Indianola, Iowa			
March		April		March		April	
16	7.9*	1	18.9*	16	5.0*	1	14.4*
17	7.9*	2	18.6*	17	5.0*	2	13.0
18	8.0*	3	18.2*	18	5.0*	3	9.4*
19	8.1*	4	14.7*	19	5.1	4	7.8*
20	8.0*	5	12.5*	20	5.1*	5	7.3*
21	8.0*	6	11.7*	21	5.0*	6	6.9*
22	8.0*	7	11.1*	22	5.0*	7	6.4*
23	8.1*	8	10.9*	23	5.0*	8	6.0*
24	8.2*	9	10.0*	24	5.0*	9	5.6*
25	8.2*	10	9.3*	25	4.9*	10	5.4*
26	8.1*	11	9.2*	26	4.9	11	5.3
27	9.7*	12	9.0*	27	6.7*	12	5.2*
28	17.1*	13	8.9*	28	17.8	13	5.1*
29	19.9*	14	8.9*	29	20.0	14	5.1*
30	20.9(1)	15	8.8*	30	20.4(1)	15	5.1*
31	19.9*	16	8.9*	31	17.2	16	5.0*

(1) 21.0, noon

(1) Crest 20.43, 3:30 am

TABLE 9.—Concluded

SOUTH RIVER Ackworth, Iowa			
March		April	
16	2.7	1	11.2
17	2.7	2	7.0
18	2.7	3	4.4
19	2.8	4	3.6
20	2.8	5	3.6*
21	2.7	6	3.1
22	2.7	7	2.6
23	2.8	8	2.4
24	2.8	9	2.0
25	2.7	10	1.9
26	2.6	11	1.9
27	2.8	12	1.8
28	15.1	13	1.7
29	21.3(1)	14	1.8
30	22.6(2)	15	1.9
31	10.2	16	1.9

(1) 22.0, 4 pm
(2) Crest 22.60, 9 am

WHITEBREAST CREEK Knoxville, Iowa			
March		April	
16		1	13.5*(e)
17		2	9.0*(e)
18		3	6.5*(e)
19		4	4.5*(e)
20		5	3.7*(e)
21		6	2.9*
22		7	2.6*
23		8	2.3*
24		9	2.1*
25		10	2.0*
26		11	2.0*
27		12	1.9*
28	15.6*(e)	13	1.9*
29	17.8*(1)	14	2.0*
30	18.9*(2)	15	2.5*
31	17.9*	16	2.5*

(1) 14.3, 7 am
(2) Crest 19.0, 5 pm
(e) Derived from mean daily discharge

DES MOINES RIVER Tracy, Iowa			
March		April	
16	5.8	1	22.1
17	5.9	2	22.2(3)
18	5.9	3	22.7(4)
19	5.8	4	22.9(5,6)
20	6.0	5	22.0
21	6.0	6	20.4
22	6.0	7	18.7
23	6.1	8	17.3
24	6.0	9	15.7
25	6.0	10	13.4
26	6.0	11	11.9
27	4.7	12	11.1
28	9.4	13	10.5
29	16.1	14	10.0
30	19.9(1)	15	9.6
31	22.2(2)	16	9.3

(1) 21.5, 6 pm
(2) Crest 22.28, 6 pm
(3) 22.6, 6 pm
(4) 22.8, 6 pm
(5) Crest 23.0, 2 am
(6) 22.7, 6 pm

DES MOINES RIVER Ottumwa, Iowa			
March		April	
16	1.5	1	17.5(1)
17	1.6	2	17.4
18	1.7	3	17.2
19	1.3	4	17.4(2)
20	1.3	5	17.2*
21	1.7	6	16.6
22	1.6	7	14.9
23	1.7	8	13.4
24	1.7	9	11.7
25	1.8	10	9.8
26	1.7	11	7.9
27	1.5	12	7.0
28	5.4	13	6.4
29	10.5	14	6.3
30	14.3	15	5.9
31	16.7	16	5.5

(1) Crest 17.49, 7 am
(2) Crest 17.4, 11:30 pm

DES MOINES RIVER Keosauqua, Iowa			
March		April	
16	2.5	1	17.4
17	2.3	2	18.3(5)
18	3.3	3	17.5
19	2.8	4	17.5
20	2.6	5	18.0(6)
21	2.5	6	18.2
22	2.3	7	16.0
23	2.6	8	13.6
24	2.6	9	11.6
25	2.8	10	9.6
26	2.6	11	7.6
27	2.9	12	6.4
28	10.3	13	5.7
29	11.1(1,2)	14	6.3
30	16.7(3)	15	6.3
31	16.4	16	5.2

(1) 11.1, 12:15 pm
(2) 15.4, 9:30 pm
(3) Crest 17.0, noon
(4) Crest 18.34, 6 am
(5) Crest 18.21, 11 pm

FOX RIVER Wayland, Mo.			
March		April	
16	2.9	1	15.8
17	3.0	2	
18	3.1	3	8.2
19	3.0	4	5.9
20	3.0	5	5.2
21	3.0	6	4.7
22	3.1	7	4.4
23	3.3	8	4.1
24	3.5	9	3.9
25	3.7	10	3.7
26		11	3.6
27	10.5	12	3.5
28	14.9	13	3.5
29	16.3	14	3.5
30	18.5(1)	15	10.2
31	18.8	16	8.0

(1) Crest 20.19, 5 pm

MISSISSIPPI RIVER Gregory Landing, Mo.			
March		April	
16	6.9	1	18.7
17	6.6	2	19.8
18	6.0	3	21.5(2)
19	6.0	4	21.2(3,4)
20	5.6	5	19.1
21	5.6	6	19.8
22	5.8	7	19.6
23	5.8	8	18.8
24	6.0	9	17.9
25	6.2	10	16.5
26	6.4	11	15.3
27	6.4	12	14.1
28	7.6	13	12.8
29	9.0	14	12.1
30	12.2(1)	15	12.1
31	17.3	16	12.7

(1) 13.6, 7 pm
(2) 22.1, 7 pm
(3) Crest 22.31, 1:45 am
(4) 19.4, 7 pm

MISSISSIPPI RIVER Quincy, Ill.			
March		April	
16	10.0	1	20.4(2)
17	10.7	2	21.9(3)
18	11.1	3	23.1
19	10.9	4	24.3(4)
20	10.7	5	21.0(5)
21	10.6	6	22.7
22	10.3	7	23.9(6)
23	10.3	8	23.7
24	10.7	9	22.7
25	11.0	10	21.3
26	11.0	11	19.8
27	11.1	12	18.4
28	11.4	13	16.7
29	11.9(1)	14	15.3
30	14.0	15	14.6
31	17.2	16	15.2

(1) 19.2, 6 pm
(2) 21.4, 6 pm
(3) 22.4, 6 pm
(4) Crest 24.38, 4:30 am
(5) 21.1, 6 pm
(6) Crest 23.95, 6 pm

MISSISSIPPI RIVER Hannibal, Mo.			
March		April	
16	10.4	1	19.6
17	9.9	2	21.2
18	10.5	3	22.2
19	10.6	4	23.4(1)
20	10.4	5	21.3
21	10.3	6	21.4
22	10.2	7	23.0
23	10.2	8	23.1
24	9.9	9	22.6
25	9.9	10	21.4
26	9.9	11	20.1
27	10.0	12	18.7
28	11.1	13	17.3
29	12.9	14	16.0
30	14.2	15	15.1
31	16.6	16	15.6

(1) Crest 23.4, 6 pm

ILLINOIS RIVER Morris, Ill.			
March		April	
16	5.5	1	14.6
17	5.8	2	13.9
18	5.9	3	12.6
19	5.8	4	11.7
20	5.7	5	10.9
21	5.7	6	10.0
22	5.7	7	9.4
23	5.7	8	9.1
24	6.0	9	8.4
25	5.8	10	8.0
26	5.7	11	7.6
27	5.7	12	7.9
28	11.4(1,2)	13	7.3
29	13.3(3)	14	7.3
30	14.8	15	7.3
31	15.4(4)	16	7.8

(1) 12.4, 1 pm
(2) 12.9, 7 pm
(3) 14.0, 7 pm
(4) Crest 15.39, 10 am

ILLINOIS RIVER La Salle, Ill.			
March		April	
16	11.9	1	25.5(5)
17	11.9	2	24.5
18	12.0	3	24.1
19	12.3	4	23.6
20	12.1	5	23.2
21	12.3	6	22.8
22	11.8	7	22.4
23	12.1	8	21.9
24	12.1	9	21.4
25	12.1	10	20.8
26	11.8	11	20.6
27	12.0	12	20.3
28	11.1(1)	13	19.2
29	21.5(2)	14	19.4
30	24.1(3)	15	19.2
31	25.8(4)	16	19.2

(1) 18.1, 1 pm
(2) 22.1, 1 pm
(3) 24.9, 1 pm
(4) Crest 25.90, noon
(5) 24.8, 7 pm

ILLINOIS RIVER Peoria, Ill.			
March		April	
16	11.8	1	19.4(2)
17	11.3	2	20.5
18	11.2	3	21.2
19	11.3	4	21.5
20	11.2	5	21.6(3)
21	11.2	6	21.3
22	11.2	7	21.2
23	11.2	8	20.9
24	11.1	9	20.5
25	11.3	10	20.2
26	11.4	11	19.4
27	10.9	12	19.4
28	12.9	13	19.0
29	12.6	14	18.6
30	14.6	15	18.4
31	17.4(1)	16	18.0

(1) 18.3, 3 pm
(2) 20.0, 7 pm
(3) Crest 21.6, 4 pm

ILLINOIS RIVER Havana, Ill.			
March		April	
16	7.7	1	16.3(3)
17	7.8	2	17.6(4)
18	8.0	3	18.7
19	8.0	4	19.3
20	8.0	5	19.8
21	7.8	6	20.0(5,6)
22	7.8	7	19.9
23	7.8	8	19.7
24	7.8	9	19.4
25	7.6	10	19.1
26	7.4	11	18.7
27	7.2	12	18.5
28	8.0	13	18.2
29	11.9	14	17.9
30	13.6(1)	15	17.6
31	14.8(2)	16	17.3

(1) 14.0, 1 pm
(2) 15.4, 5 pm
(3) 16.9, 5 pm
(4) 18.0, 5 pm
(5) 19.95, 7 am to 5 pm
(6) Crest estimated 20.0, 7 am

ILLINOIS RIVER Beardstown, Ill.			
March		April	
16	9.1	1	16.2(3)
17	9.1	2	17.8(4)
18	9.3	3	19.3(5)
19	9.3	4	20.4
20	9.3	5	21.2
21	9.1	6	21.6
22	9.1	7	21.8(6)
23	9.1	8	21.7
24	9.1	9	21.7
25	9.0	10	21.5
26	8.9	11	21.2
27	9.0	12	20.8
28	9.9	13	20.4
29	11.4	14	20.0
30	13.3(1)	15	19.6
31	14.9(2)	16	19.5

(1) 14.0, 6 pm
(2) 15.4, 6 pm
(3) 16.9, 6 pm
(4) 18.4, 6 pm
(5) 19.7, 6 pm
(6) Crest 21.8, noon

MISSISSIPPI RIVER St. Louis, Mo.			
March		April	
16	1.7	1	27.1
17	2.3	2	28.2
18	3.0	3	29.5
19	3.3	4	30.5
20	4.6	5	31.4
21	4.5	6	32.1
22	3.3	7	32.7(2)
23	2.4	8	33.2
24	4.8	9	33.6
25	7.5	10	33.7(3)
26	8.3	11	33.7(4)
27	9.6	12	33.1
28	12.4	13	32.4(5)
29	17.8	14	31.6(6)
30	22.9	15	30.5
31	25.9	16	29.0

(1) 24.3, 4 pm
(2) 33.0, 4 pm
(3) Crest 33.78, 1:30 pm
(4) 33.6, 4 pm
(5) 30.8, 4 pm
(6) 31.3, 4 pm

Seven deaths resulted from this flood, five in the Missouri Basin and two in the upper Mississippi. In dollars the loss from the March–April 1960 flood ranks 25th in national flood disasters and 4th among floods due to melting snow. Total damage has been estimated at $34,465,800. Approximately $23,142,500 damage was sustained in the Missouri River Basin and $11,323,300 in the Mississippi River Basin. Six States bore the brunt of the damage: Missouri, $10,082,900; Nebraska, $5,535,400; South Dakota, $3,382,500; Iowa, $7,933,000; Kansas, $633,800; and Illinois, $6,887,200. Minor damage also occurred in Minnesota, Montana, North Dakota, and Wisconsin. Detailed flood damage surveys were made by the Corps of Engineers, Weather Bureau, and other State and Federal agencies. A summary of the flood damages is given in table 10. At best, these are estimates, for it is impossible to assess accurate values to many intangible losses, to personal inconveniences, and the far-reaching effect on the Nation's economy.

Missouri Basin.—Damage along the main stem of the Missouri River was confined mostly to rural areas with no major damage to cities. More than $3,300,000 damage was inflicted to communities by tributary flooding. Severe damage was experienced in the Big Sioux Basin, especially from Sioux Falls, S. Dak., to Sioux City, Iowa. At Sioux Falls levees and a diversion channel constructed since 1957 held damages to a minimum. Between Westfield and Sioux City, Iowa, farm lands were flooded as far as 3 miles from the main channel. At Akron, Iowa, the Big Sioux was above flood stage for 20 days and in the western part of Sioux City, 150 houses were flooded and about 250 more reported water in their basements.

Sioux City and its suburbs reported about $1 million loss from the high water on the Big Sioux and Floyd Rivers. The Elkhorn River caused over half a million dollars in damages to cities and villages along its course. Relatively speaking, flooding was most severe on the North Fork between Pierce and Norfolk, Nebr. Ice jams were common throughout the Elkhorn Basin and were responsible for higher stages as far downstream as Waterloo, Nebr. Nearly half a million dollars in damages occurred to small communities along the Platte and Loup Rivers in Nebraska. Over 165,000 acres of fertile farmland were flooded in the Lower Platte Basin and tributaries. It is noteworthy that the total damage in the Platte Basin was over $4 million, but damage to movable property was only about $100,000 or 2.5 percent. This is attributed to the organized response by State and Federal agencies and private business to early warnings of the flood danger. In the Kansas Basin, the heaviest damage was along the Blue River in Nebraska and Kansas. As in the Platte Basin, the precautionary measures taken held the loss of life and damage to movable property to a minimum. Serious flooding occurred over the entire Grand River Basin. Over 200,000 acres were flooded and this represents about 80 percent of all damage. Agricultural production in the Grand River flood plain was extremely low in 1960, but this was not due solely to the snowmelt flood. Planting was delayed by the flood, but subsequent rains and floods throughout the summer resulted in near complete crop failures.

Rural damages in the Missouri Basin resulting from flooding of more than 1,738,000 acres of land amounted to $19,835,100. This included over $10 million crop damage, over $4 million damage to railroads, highways, and bridges, nearly $4 million damage to farm buildings, fences, and machinery, and the remainder principally Federal costs for levee repair and flood fighting. More than 200 farm levees, mostly along the Missouri River main stem were overtopped or breached. Considerable expense was involved in clearing debris, replacing and repairing fences. Erosion and sedimentation damage to many small areas was severe, and a few small acreages were abandoned because of the high cost of rehabilitation. Erosion and sediment damages are not included in the summary in table 10.

Upper Mississippi Basin.—About two-thirds of the urban damage in the Mississippi Basin above the mouth of the Missouri River was due to main stem flooding. Hardest hit were Quincy, Ill., $367,800; Hannibal, Mo., $337,400; and Keokuk, Iowa, $312,000, out of the total main stem urban

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TABLE 10.—*Summary of flood damage, March–April 1960.* (*Property losses in thousands of dollars.*)

Stream Basin	Urban Property					Acres Flooded (1000s)	Rural Property					Other Property		Misc.	Total Loss	Lives Lost
	Residential		Commercial		Public		Crops		Livestock	Other		RR's, bridges, highways, etc.	Public Utilities			
	Fixed	Movable	Fixed	Movable			Growing	Stored		Fixed	Movable					
Missouri River Basin																
Missouri and tributaries in Mont. and N. Dak.						1.5	3.0			8.0					11.0	0
Minor tributaries in S. Dak. and Nebr.	28.0	50.0	20.0	20.0	135.0	20.9	34.0			50.0		300.0	10.0	50.0	697.0	0
James	40.0	12.0	45.0	15.0	150.0	45.0	75.0	250.0		90.0		280.0	9.0	70.0	1,036.0	0
Vermillion	15.0		5.0		30.0	49.5	150.0	60.0		50.0		350.0		45.0	705.0	1
Big Sioux	450.0	75.0	125.0	35.0	260.0	80.0	110.0	275.0	13.0	285.0	40.0	950.0	15.0	118.0	2,751.0	1
Floyd	30.0	25.0	25.0	210.0	16.0	11.0		38.0		42.0	4.0	30.0	7.0	67.0	494.0	0
Little Sioux	38.0*					38.8	23.0			310.0		83.0			454.0	0
Loup	87.0*					29.8	7.0		1.5	151.5		80.0			327.0	1
Elkhorn	200.0	75.0	50.0	10.5	250.0	96.2	42.5	85.0	9.2	106.0	17.5	261.4	58.9	138.1	1,304.1	0
Salt Creek						11.5	6.0			62.0		14.0			82.0	1
Platte	484.0*					60.4	54.0		32.0	1,218.0		731.0			2,519.0	1
Nishnabotna						11.5	12.0			61.0		182.0			255.0	0
Missouri above Rulo, Nebr.						103.7	680.0		5.0	1,321.0		265.0			2,271.0	0
Nemaha	0.7					21.8	51.0					54.4			106.1	0
Nodaway	1.7					19.0	45.3					14.4		26.0	87.4	0
Platte of Missouri	9.3					61.0	142.3					74.5		20.5	246.6	0
Saline	2.0	0.2	0.4	0.3	2.0	41.0	41.0			1.0	1.5	1.0	0.5	5.0	54.9	0
Solomon	0.5				7.3	40.9	33.0			4.0					44.8	0
Smoky Hill					1.0	6.4	6.4			0.5				2.0	9.9	0
Republican					14.2	48.4	76.9	7.0		3.8	0.5	34.3		0.3	137.0	0
Little Blue	2.5	2.4			42.7	10.6	11.0	0.5	0.1	8.5		91.4		6.2	165.3	0
Big Blue	44.0	3.0	81.1	4.0	52.5	34.2	14.5	5.0	24.5	18.5	1.0	22.7	16.5	6.2	293.5	0
Kansas and minor tributaries	3.0	0.1	2.0	0.5	0.5	14.0	15.0	1.0	0.5	4.0	0.5	5.0	0.5	2.0	34.6	0
Grand and tributaries	2.0					201.7	1,393.5					74.2		87.0	1,556.7	0
Chariton						61.0	266.0					42.5		57.0	365.5	0
Blackwater						5.0	25.0					2.8			27.8	0
Lamine						8.0	42.0					1.1			43.1	0
Osage (Marais des Cygnes)	2.0					48.7	35.5					9.7			47.2	0
Missouri below Rulo, Nebr.	15.0					557.0	6,622.0					77.0		302.0	7,016.0	0
Total	1,454.7	242.7	353.5	295.3	961.2	1,738.5	10,016.9	721.5	85.8	3,794.8	65.0	4,031.4	117.4	1,002.3	23,142.5	5
Upper Mississippi River Basin																
Turkey					5.0	13.9						60.0			65.0	0
Maquoketa						9.0						26.0			26.0	0
Wapsipinicon	5.0	0.5			38.5	51.4	0.7	1.5		2.0	0.3	375.0		1.5	425.0	0
Rock	61.0	25.0		10.0	75.0	31.4	52.5			40.0	0.8	120.5		9.9	394.7	0
Cedar	50.0		20.0		5.0	80.0	0			140.0		75.0		35.0	325.0	0
Iowa	10.0		10.0		25.0	80.0	0			600.0		288.0		30.0	963.0	0
Skunk						75.0	0			180.0		100.0		25.0	305.0	0
Mississippi above Des Moines	98.5		256.5	0.4	109.9	100.4	21.6			10.0		500.0		624.0	1,620.9	2
Raccoon	5.0					30.0	0			100.0		75.0		5.0	185.0	0
Des Moines	50.0		25.0		25.0	100.0	0			350.0		200.0		50.0	700.0	0
Fabius, Fox, North, Salt, South	16.0	0.5	3.0	2.0	1.0	22.6	102.6			19.0	3.0	80.0			227.1	0
Sangamon						4.0	20.0			30.0	5.0	10.0		3.0	68.0	0
Spoon						42.1	10.0	5.0		13.2	1.0	20.0			49.2	0
La Moine					0.5	1.2	1.0				1.0				2.5	0
Illinois	48.5	22.1	26.0	11.5	97.2	62.3	39.0	11.0		44.5	10.0	185.0	27.0	34.1	555.9	0
Mississippi main stem Des Moines to Missouri	755.4	0.2	0.5	1.0	0.5	83.6	835.4	46.5	1.0	917.0	88.0	745.5	88.0	1,599.1	5,078.1	0
Mississippi main stem Missouri to Ohio	72.0	12.0	1.0	1.5	5.5	180.0	137.7	1.0	1.4	27.0	15.0	12.0	2.0	44.8	332.9	0
Total	1,171.4	60.3	342.0	26.4	388.1	966.9	1,220.5	65.0	2.4	2,472.7	124.1	2,872.0	117.0	2,461.4	11,323.3	2
Upper Mississippi-Missouri System Grand Total	2,626.1	303.0	695.5	321.7	1,349.3	2,705.4	11,237.4	786.5	88.2	6,267.5	189.1	6,903.4	234.4	3,463.7	34,465.8	7

* Includes all urban property.
Note: So far as practicable, figures in this table have been coordinated with Corps of Engineers and other Federal and State agencies.

damage of over $1,300,000. Damage to about 25 communities along 10 tributaries in this area was estimated at $680,000. Rural damages in the Mississippi Basin resulting from the flooding of about 967,000 acres totaled $9,335,000. Crop damage was estimated at $1 million. Railroads, highways, and bridges sustained nearly $3 million damages, and farm buildings, fences, and machinery $2.5 million. Federal expenditures for emergency levee repair were over $238,000, and evacuation, flood fighting, movement of stock, drainage ditch cleanout, and other rehabilitation amounted to nearly $2.5 million. About 1,000 persons were evacuated in the Upper Mississippi Basin.

Some minor damage occurred in Minnesota but, in general, severe flooding was confined to the States of Iowa, Illinois, and Wisconsin. There was no main stem damage above Davenport, Iowa. Because of the large area involved and the extent of development, over half of the upper Mississippi damage was along the main stem from Davenport to the mouth of the Missouri. Much of this was in the fertile agricultural area of Missouri and Illinois. Accurate assignment of damages attributable to snowmelt flooding is not possible. Snowmelt water left the ground water table high and delayed planting. This was followed by a very wet summer. Vast areas were not cultivated. The Cedar-Iowa Basin also sustained major damage. Flooding was most severe in the Skunk Basin but damages were essentially confined to rural property, roads, and bridges. Damage in the Illinois basin was about two-thirds of a million dollars and may be classified as moderate. Below the mouth of the Missouri, where flood waters were controlled by levees, only about one-third of a million dollars in losses was reported.

TABLE 11.—*Comparative damage, major floods in the Midwest United States*

Date	River	Total damage	Lives lost
May–June 1903	Kansas, Lower Missouri, and Upper Mississippi.	$40,000,000	100
March 1913	Ohio and tributaries	147,000,000	467
Spring of 1927	Mississippi Valley	284,118,000	313
May–June 1935	Republican, Kansas, and Lower Missouri Rivers.	28,000,000	110
Jan.–Feb. 1937	Ohio and Lower Mississippi River Basins.	418,000,000	137
April–June 1943	Maumee, Wabash, Upper Mississippi, Missouri, White, and Arkansas River Basins.	172,500,000	60
April–June 1944	Upper Mississippi, Missouri, Arkansas, Red, Lower Mississippi Basins, and East Texas Streams.	82,000,000	17
May–July 1947	Lower Missouri–Middle Mississippi River Basins.	235,000,000	29
June–July 1951	Missouri, Mississippi, Arkansas	935,000,000	28
April–May 1952	Upper Mississippi, Missouri, and Red River of North.	200,359,000	11
March–April 1960	Upper Mississippi–Lower Missouri.	34,466,000	7

FLOOD SCENES

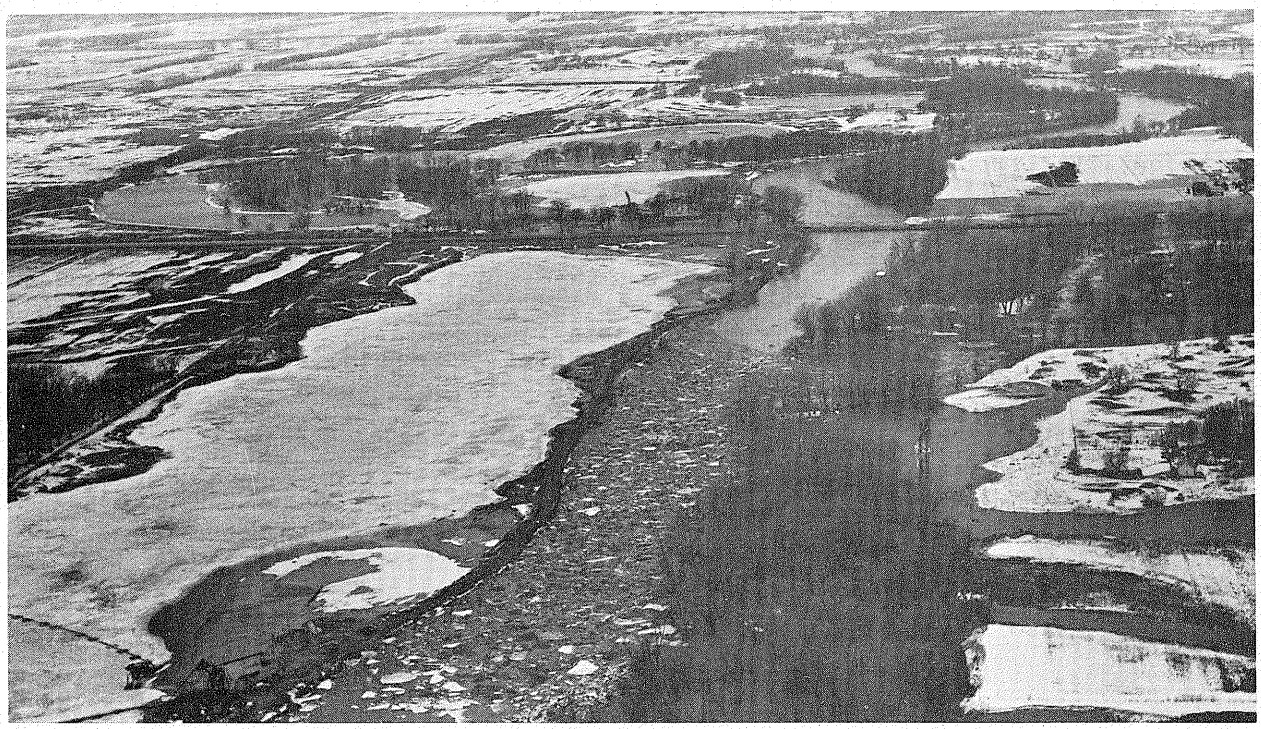
The foregoing portions of this report have been statistical in nature and confined to the presentation of factual data associated with the phenomenal event. Many of the readers and users of this information personally may have observed the raging water and experienced the devastation of property. To them the following series of photographs, plates 1 to 9, will serve as a grim reminder. To others geographically removed from the area, and to posterity, the photographs will illustrate the destruction of the floods better than can be described in words.

Future developers of flood plain areas must always take the statistical history of the river and its flood potential into consideration in their planning. Photographs may be used to supplement these statistics.

PLATE 1

A. Ice jam on the Niobrara River swept away portions of this bridge on State Highway 12, West of Niobrara, Nebr., March 26, 1960. (*Courtesy Norfolk Daily News, photo by Frank Wiedenbach*)

B. Norfolk, Nebr., City Park (right foreground) heavily damaged by ice jam flooding. Stage 13.7 ft. March 29, 1960. (*Courtesy Norfolk Daily News, photo by Frank Wiedenbach*)



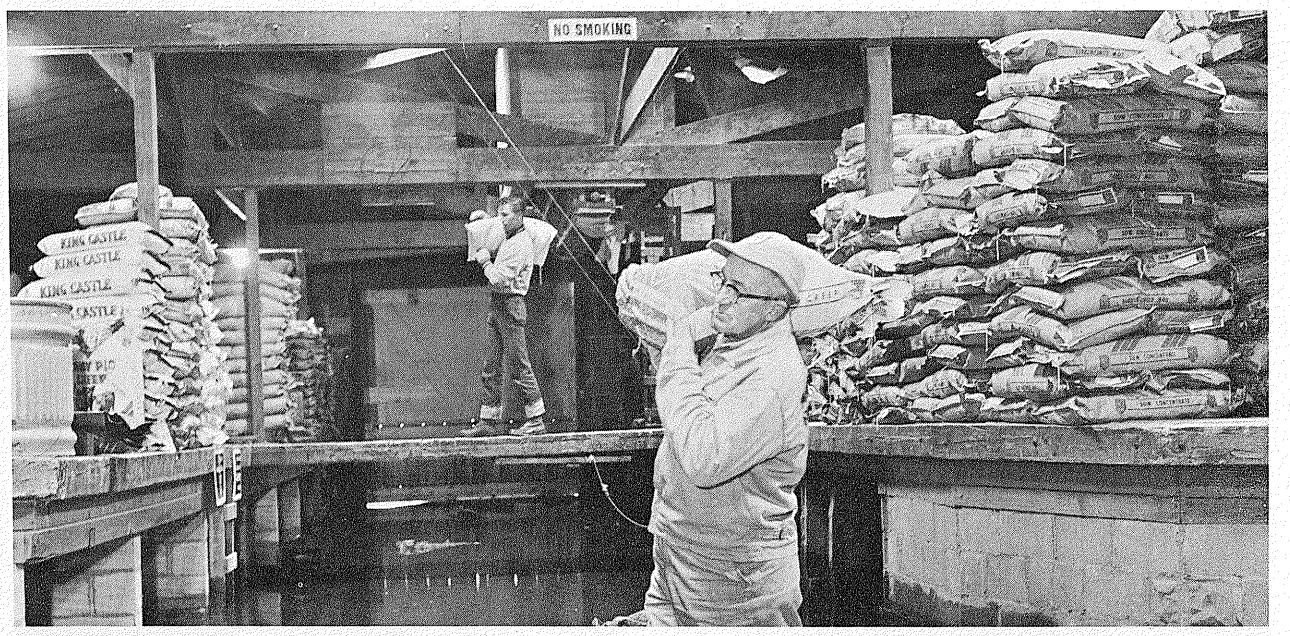


PLATE 2

A. Early advisories of snowmelt flooding permitted precautionary measures to save life and property.

B. High water conditions—Mississippi River. On State Highway 61, looking north on south side of La Grange, Mo. 20.0-ft. stage at Lock 20.

(*Official photograph, U.S. Corps of Engineers*)

PLATE 3

A. Farm buildings near West Point, Nebr., surrounded by water and ice from the flooding Elkhorn River. West Point, Nebr., stage 11.6 ft., crest 16.09 ft. March 30, 1960.
(*Courtesy Norfolk Daily News, photo by Frank Wiedenbach*)

B. Elkhorn River flooding Cuming County Fair Grounds at West Point, Nebr., stage 15.9 ft. March 31, 1960.
(*Courtesy Norfolk Daily News, photo by Frank Wiedenbach*)

PLATE 4

The Black Vermillion River at Frankfort, Kans., had receded about 2 ft. from a crest of 28.5 ft. Mud and debris made streets and railroad tracks impassible. March 28, 1960. (*Courtesy Topeka Capital-Journal*)

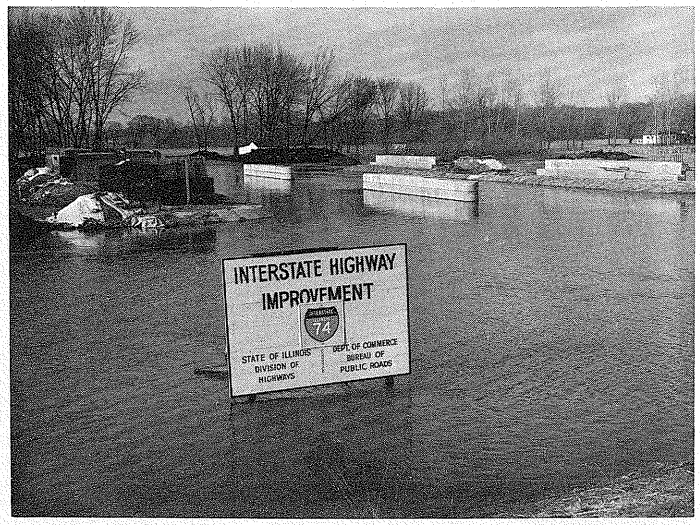


PLATE 5

Effect of Rock River on industry, commerce, and agriculture, Moline, Ill. area.

(*All pictures courtesy Moline Dispatch*)

A. Rock River at Carbon Cliff, Ill. Moline stage 14.1 ft., April 4, 1960.

B. Shaffer Creek at confluence with Rock River. Moline stage 14.1 ft. April 4, 1960.

C. Private levee near Hillsdale, Ill. Rock River stage at Moline, 13.8 ft., April 2, 1960.

D. Rock River at Moline, gage at crest, 14.1 ft., April 4, 1960.

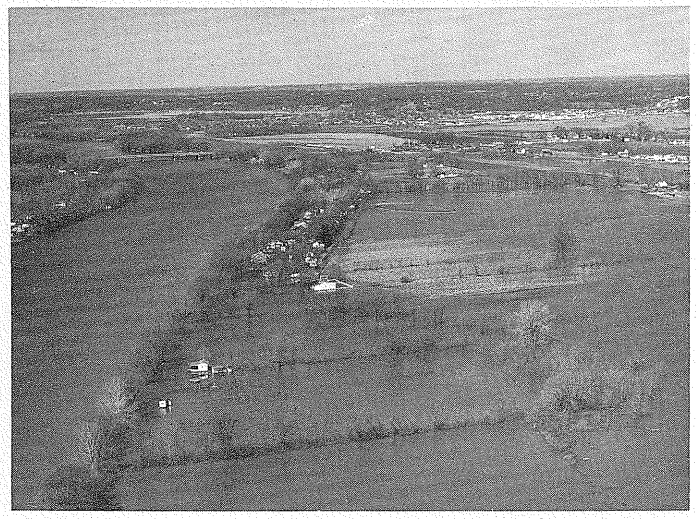


PLATE 6

A. Des Moines River flooding north of Des Moines, Iowa. Stage 24.6 ft. at 2d Avenue gage in Des Moines. April 1, 1960. (*Courtesy Des Moines Tribune*)

B. Raccoon River flooding in West Des Moines, Iowa. Crest was 0.5 ft. higher later in the day. April 2, 1960.

PLATE 7

A. Missouri River flooding near McPaul, Iowa. Nebraska City stage 20.7 ft. April 1, 1960.
(*Courtesy Des Moines Register and Tribune*)

B. Mississippi River at Meyer, Ill., Quincy, Ill. stage 23.9 ft. April 7, 1960.
(*Official photograph, U.S. Corps of Engineers*)

PLATE 8

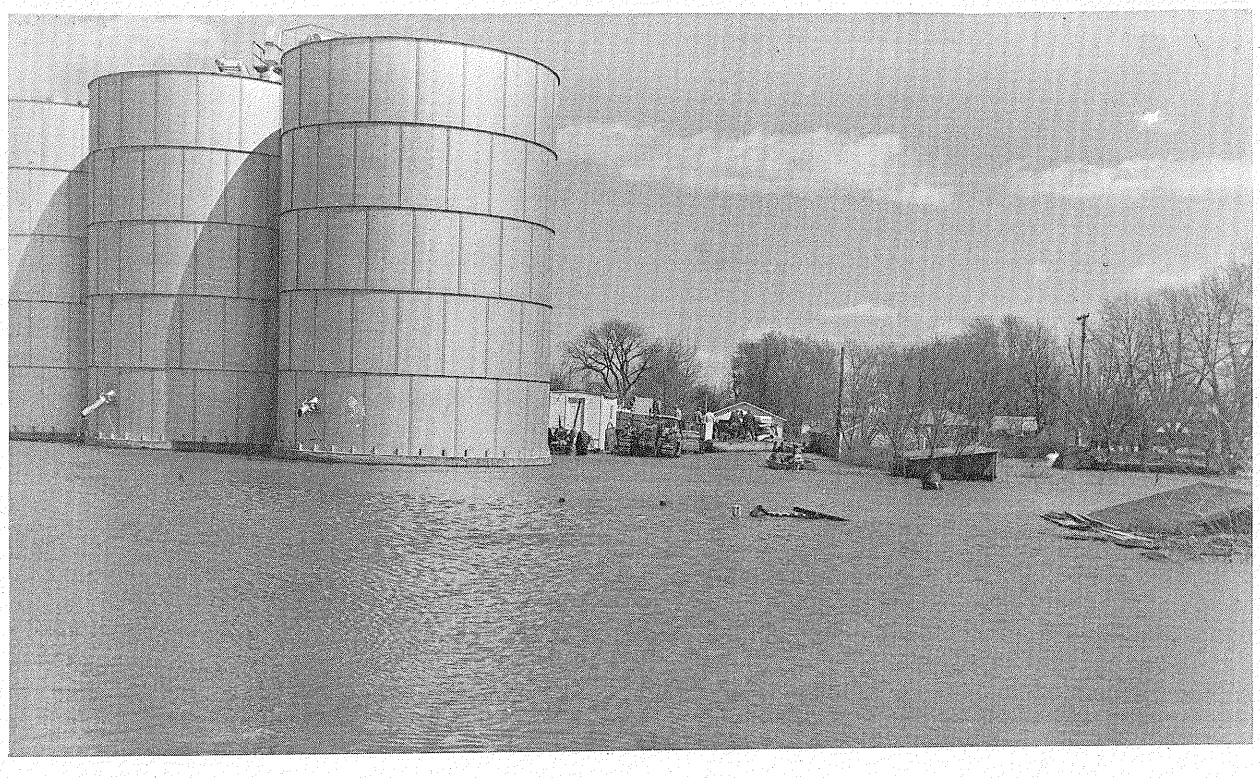
A. Mississippi River at South Quincy, Ill., looking upstream from South Front and Jefferson Streets. Stage 23.7 ft. April 8, 1960.

B. Mississippi River, Lima Lake Drainage District levee at Meyer, Ill. Quincy, Ill. stage 23.9 ft. April 7, 1960.

(*Official photographs, U.S. Corps of Engineers*)

PLATE 9

A. Industry flooded. Mississippi River at Keokuk, Iowa, stage 20.6 ft. April 6, 1960.
B. Industry flooded. Mississippi River at Meyer, Ill. Quincy, Ill. stage 23.9 ft. April 7, 1960.
(*Official photographs, U.S. Corps of Engineers*)



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The collection and coordination of field data were under the direct supervision of Verne Alexander, north-central area hydrologic engineer, Kansas City, Mo. A major portion of the basic data was collected, tabulated and analyzed by the River Forecast Centers at Kansas City and St. Louis, Mo., under the supervision of hydrologists in charge, Ray E. Johnson and Phillip Light, respectively. Earl A. Johnson, assistant north-central area hydrologic engineer assisted with the field office review. Officials in charge of offices participating in the collection of information were: I. P. Rennels, Sioux City, Iowa; E. F. Stapowich, Omaha, Nebr.; Harold Alexander, Norfolk, Nebr.; R. A. Garrett, Topeka, Kans.; H. L. Jacobson, Kansas City, Mo.; J. H. Strub, Jr., Minneapolis, Minn.; W. A. Joern, Moline, Ill.; C. F. Jesperson, Burlington, Iowa; C. E. Lamoureaux, Des Moines, Iowa; and G. N. Brancato, St. Louis, Mo.

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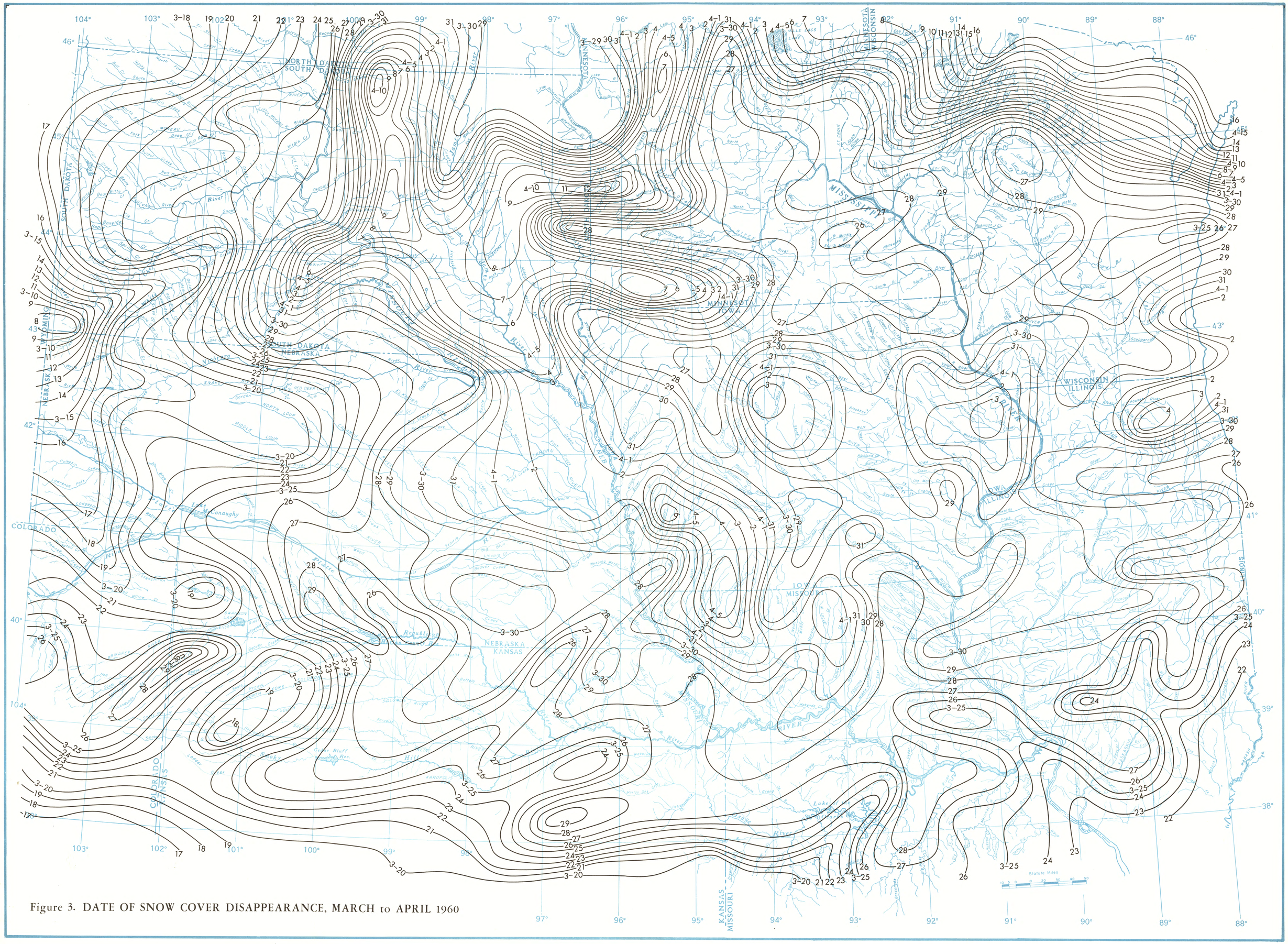

Figure 3. DATE OF SNOW COVER DISAPPEARANCE, MARCH to APRIL 1960

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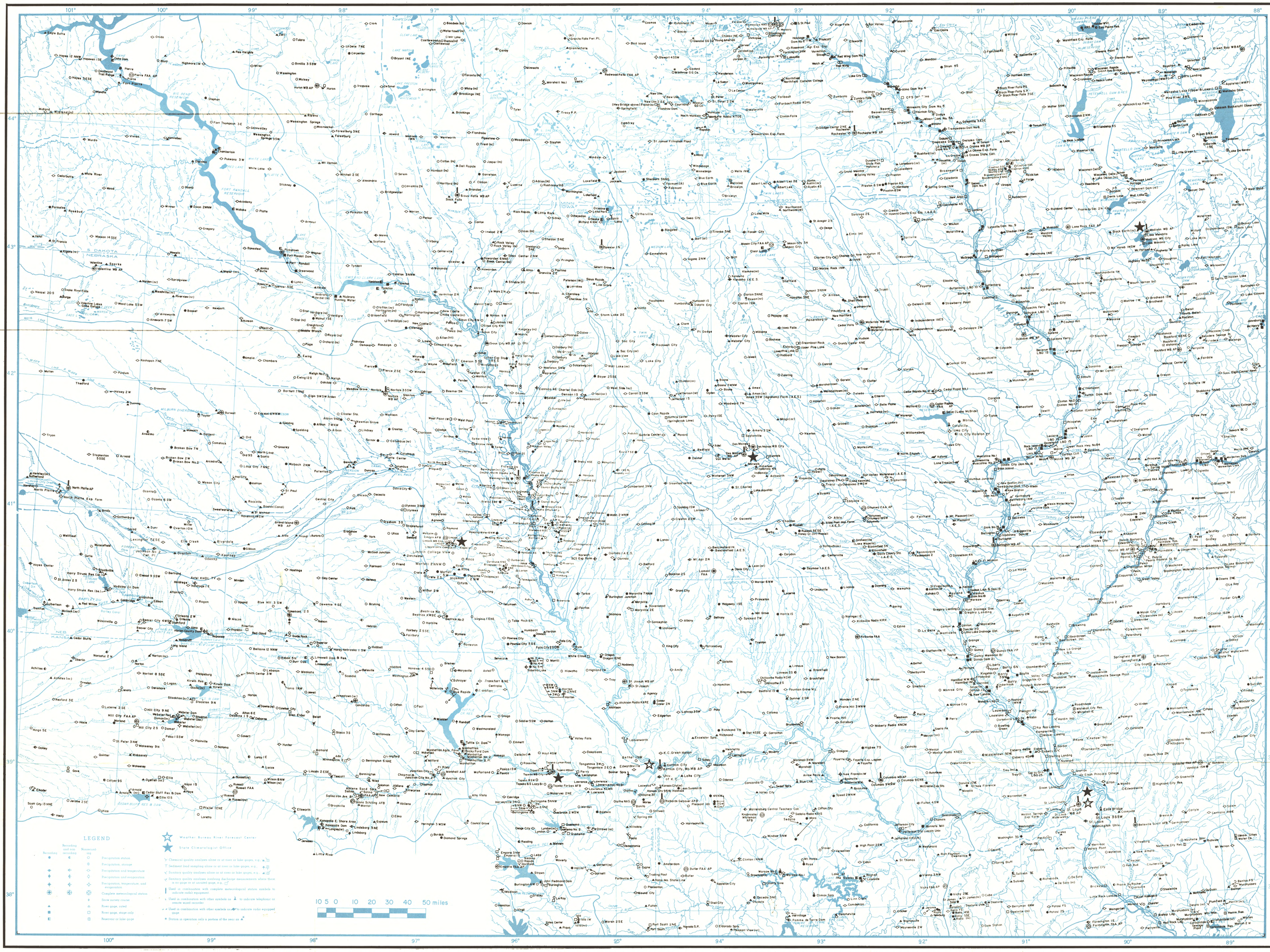

FIGURE 10. CLIMATOLOGICAL AND HYDROLOGIC STATIONS IN THE SNOWMELT FLOOD AREA, SPRING 1960.

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