DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY
GEORGE OTIS SMITH, DIRECTOR

WATER-SUPPLY PAPER 353

SURFACE WATER SUPPLY OF THE UNITED STATES

1913

PART III. OHIO RIVER BASIN

BY

A. H. HORTON, W. E. HALL
AND H. J. JACKSON

Prepared in cooperation with the State of West Virginia

WASHINGTON
GOVERNMENT PRINTING OFFICE
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ILLUSTRATIONS.

SURFACE WATER SUPPLY OF OHIO RIVER BASIN FOR THE YEAR ENDING SEPTEMBER 30, 1913.

By A. H. HORTON, W. E. HALL, and H. J. JACKSON.

AUTHORIZATION AND SCOPE OF WORK.

This volume is one of a series of twelve reports presenting results of measurements of flow made on streams in the United States during 1913. Six of these reports contain data for the year ending September 30, and the other six for the calendar year, as indicated in the table on page 6.

The data presented in these reports were collected by the United States Geological Survey under authority implied in the organic law (20 Stat. L., p. 394) which contains the following paragraph:

Provided, That this officer [the Director] shall have the direction of the geological survey and the classification of public lands and examination of the geological structure, mineral resources, and products of the national domain.

The work was begun in 1888 in connection with special studies of water supply for irrigation. Since the fiscal year ending June 30, 1895, successive sundry civil bills passed by Congress have carried the following item and appropriations:

For gaging the streams and determining the water supply of the United States, and for the investigation of underground currents and artesian wells, and for the preparation of reports upon the best methods of utilizing the water resources.

Annual appropriations for the fiscal years ending June 30, 1895–1914.

1895	$12,500
1896	20,000
1897 to 1900, inclusive	50,000
1901 to 1902, inclusive	100,000
1903 to 1906, inclusive	200,000
1907	150,000
1908 to 1910, inclusive	100,000
1911 to 1914, inclusive	150,000

In the execution of the work many private and State organizations have cooperated, either by furnishing data or by assisting in collecting data. Acknowledgments for cooperation of the first kind are made

in connection with the description of each station affected, and of the second kind on page 16.

Measurements of stream flow have been made at about 3,000 points in the United States, and also at many points in small areas in Seward Peninsula and the Yukon-Tanana region, Alaska, and in the Hawaiian Islands. In July, 1913, 1,388 gaging stations were being maintained by the Survey and the cooperating organizations in the United States, and many miscellaneous discharge measurements were made at other points. In connection with this work data were also collected in regard to precipitation, evaporation, storage reservoirs, river profiles, and water power in many sections of the country and will be made available in the regular water-supply papers from time to time.

PUBLICATIONS.

A report has been prepared for each year embodying the stream-flow data collected during that year. An index to the reports containing stream-flow measurements prior to 1904 has been published as Water-Supply Paper 119. Circulars are also available giving complete lists of the gaging stations maintained by the Survey to date, and a list of the reports relating to the water supply of the country.

Prior to 1901 gage heights and discharge measurements were published in water-supply papers or bulletins and estimates of monthly discharge in annual reports; since 1901 both classes of data have been published in water-supply papers, and they are now being published in twelve parts, as shown in the following table:

Papers on surface water supply of the United States, 1913.

Part.	No.	Title.	Year used.
I	351	North Atlantic basins	Calendar year.
II	352	South Atlantic and eastern Gulf of Mexico basins	Do.
III	353	Ohio River Basin	Year ending Sept. 30.
IV	354	St. Lawrence River Basin	Calendar year.
V	355	Upper Mississippi River and Hudson Bay basins	Year ending Sept. 30.
VI	356	Missouri River Basin	Calendar year.
VII	357	Lower Mississippi River Basin	Do.
VIII	358	Western Gulf of Mexico basins	Year ending Sept. 30.
IX	359	Colorado River Basin	Calendar year.
X	360	Great Basin	Year ending Sept. 30.
XI	361	Pacific basins in California	Do.
XII	362	North Pacific basins	Do.

A list of reports containing stream-flow data is presented in the following table:

Stream-flow data in reports of the United States Geological Survey.

[A=Annual Report; B=Bulletin; WS=Water-Supply Paper.]

Report.	Character of data.	Year.
10th A, pt. 2	Description information only	
11th A, pt. 2	Monthly discharge	1884 to Sept., 1890.
12th A, p. 2	do	1884 to June 30, 1891.
13th A, pt. 3	Mean discharge in second-feet	1884 to Dec. 31, 1892.
14th A, pt. 2	Monthly discharge (long-time records, 1871 to 1893)	1888 to Dec. 31, 1893.
B 131	Descriptions, measurements, gage heights, and ratings	1893 and 1894.
16th A, pt. 2	Descriptive information only	
B 140	Descriptions, measurements, gage heights, ratings, and monthly discharge (also many data covering earlier years).	1895.
WS 11	Gage heights (also gage heights for earlier years)	1896.
18th A, pt. 4	Descriptions, measurements, ratings, and monthly discharge (also similar data for some earlier years).	1895 and 1896.
WS 15	Descriptions, measurements, and gage heights, for eastern United States, eastern Mississippi River, and Missouri River above junction with Kansas.	1897.
WS 16	Descriptions, measurements, and gage heights, for western Mississippi River below junction of Missouri and Platte, and western United States.	1897.
19th A, pt. 4	Descriptions, measurements, ratings, and monthly discharge (also some long-time records).	1897.
WS 27	Measurements, ratings, and gage heights, for eastern United States, eastern Mississippi River, and Missouri River.	1898.
WS 28	Measurements, ratings, and gage heights, for Arkansas River and western United States.	1898.
20th A, pt. 4	Monthly discharge (also for many earlier years)	1898.
WS 35 to 39	Descriptions, measurements, gage heights, and ratings	1899.
21st A, pt. 4	Monthly discharge	1899.
WS 47 to 52	Descriptions, measurements, gage heights, and ratings	1900.
22d A, pt. 4	Monthly discharge	1900.
WS 65, 66	Descriptions, measurements, gage heights, and ratings	1901.
WS 75	Monthly discharge	1901.
WS 82 to 85	Complete data	1902.
WS 97 to 100	do	1903.
WS 124 to 135	do	1904.
WS 165 to 178	do	1905.
WS 201 to 214	do	1906.
WS 241 to 252	do	1907–8.
WS 261 to 272	do	1909.
WS 281 to 292	do	1910.
WS 301 to 312	do	1911.
WS 321 to 332	do	1912.
WS 351 to 362	do	1913.

NOTE.—No data regarding stream flow are given in the 15th and 17th annual reports.

The table on page 8 gives, by years and drainage basins, the numbers of the papers on surface-water supply published from 1899 to 1913. The data for any particular station will be found in the reports covering the years during which the station was maintained. For example, data for any station in the area covered by Part I are published in Water-Supply Papers 97, 124, 165, 201, 241, 261, 281, 301, 321, and 351, which contain records for the New England streams from 1903 to 1913. The year covered by the report is indicated at the head of the column in which the paper is listed.

Numbers of water-supply papers containing results of stream measurements, 1899–1913.

	[a] 1899	[b] 1900	1901	1902	1903	1904	1905	1906	1907–8	1909	1910	1911	1912
North Atlantic coast (St. John River to York River)	35	47, [c] 48	65, 75	82	97	[d] 124, [e] 125, [f] 126	[d] 165, [e] 166, [f] 167	[d] 201, [e] 202, [f] 203	241	261	281	301	321
South Atlantic coast and eastern Gulf of Mexico (James River to the Mississippi)	[g] 35, 36	48	65, 75	[g] 82, 83	[g] 97, 98	[f] 126, 127	[f] 167, 168	[f] 203, 204	242	262	282	302	322
Ohio River basin	36	48, [h] 49	65, 75	83	98	128	169	205	243	263	283	303	323
St. Lawrence River and Great Lakes	36	49	65, 75	[i] 82, 83	97	129	170	206	244	264	284	304	324
Hudson Bay and upper Mississippi River	36	49	[j] 65, 66, 75	[j] 83, 85	[j] 98, 99, [k] 100	[j] 128, 130	171	207	245	265	285	305	325
Missouri River	[l] 36, 37	49, [m] 50	66, 75	84	99	130, [n] 131	172	208	246	266	286	306	326
Lower Mississippi River	37	50	[j] 65, 66, 75	[j] 83, 84	[j] 98, 99	[j] 128, 131	[j] 169, 173	[j] 205, 209	247	267	287	307	327
Western Gulf of Mexico	37	50	66, 75	84	99	132	174	210	248	268	288	308	328
Colorado River	[o] 37, 38	50	66, 75	85	100	133	175, [s] 177	211	249	269	289	309	329
Great Basin	38, [p] 39	51	66, 75	85	100	133, [q] 134	176, [q] 177	212, [q] 213	250, [q] 251	270, [q] 271	290	310	330
Pacific coast in California	38, [r] 39	51	66, 75	85	100	134	177	213	251	271	291	311	331
North Pacific coast	38	51	66, 75	85	100	135	[t] 177, 178	214	252	272	292	[u] 312	[u] 332

[a] Rating tables and index to Water-Supply Papers 35–39 contained in Water-Supply Paper 39. Estimates for 1899 in Twenty-first Annual Report, part 4.

[b] Rating tables and index to Water-Supply Papers 47–52 and data on precipitation, wells, and irrigation in California and Utah contained in Water-Supply Paper 52. Estimates for 1900 in Twenty-second Annual Report, part 4.

[c] Wissahickon and Schuylkill rivers to James River.

[d] New England rivers only.

[e] Hudson River to Delaware River, inclusive.

[f] Susquehanna River to Yadkin River, inclusive.

[g] James River only.

[h] Scioto River.

[i] Lake Ontario and tributaries to St. Lawrence River proper.

[j] Tributaries of Mississippi from east.

[k] Hudson Bay only.

[l] Gallatin River.

[m] Loup and Platte rivers near Columbus, Nebr., and all tributaries below junction with Platte.

[n] Platte and Kansas rivers.

[o] Green and Gunnison rivers and Grand River above junction with Gunnison.

[p] Mohave River only.

[q] Great Basin in California, excepting Truckee and Carson drainage basins.

[r] Kings and Kern rivers and south Pacific coast drainage basins.

[s] Below junction with Gila.

[t] Rogue, Umpqua, and Siletz rivers only.

[u] In three parts: *A*, Pacific basins in Washington and upper Columbia River; *B*, Snake River; *C*, Lower Columbia River and Rogue, Umpqua, and Siletz rivers.

Water-supply papers and other publications of the United States Geological Survey containing data in regard to the water resources of the United States may be obtained or consulted as indicated below:

1. Copies may be obtained free of charge by applying to the Director of the Geological Survey, Washington, D. C. The edition printed for free distribution is, however, small and is soon exhausted.

2. Copies may be purchased at nominal cost from the superintendent of documents, Government Printing Office, Washington, D. C., who will on application furnish lists giving prices.

3. Sets of the reports may be consulted in the libraries of the principal cities in the United States.

4. Complete sets are available for consultation in the local offices of the water-resources branch of the Geological Survey, as follows:

Albany, N. Y., room 18, Federal Building.
Atlanta, Ga., Post Office Building.
Madison, Wis., Capitol Building.
Newport, Ky., Federal Building. (Temporarily discontinued.)
St. Paul, Minn., Old Capitol Building.
Helena, Mont., Montana National Bank Building.
Denver, Colo., 302 Chamber of Commerce Building.
Salt Lake City, Utah, Brooks Arcade.
Boise, Idaho, 615 Idaho Building.
Portland, Oreg., 416 Couch Building.
San Francisco, Cal., 328 Customhouse.
Santa Fe, N. Mex., Capitol Building.
Honolulu, Hawaii, Kapiolani Building.

A list of the Geological Survey's publications will be sent on application to the Director of the United States Geological Survey, Washington, D. C.

DEFINITION OF TERMS.

The volume of water flowing in a stream—the "run-off" or "discharge"—is expressed in various terms, each of which has become associated with a certain class of work. These terms may be divided into two groups—(1) those which represent a rate of flow, as second-feet, gallons per minute, miner's inches, and discharge in second-feet per square mile, and (2) those which represent the actual quantity of water, as run-off (depth in inches), acre-feet, and millions of cubic feet. The units used in this series of reports are second-foot, second-feet per square mile, run-off in inches, acre-foot, and millions of cubic feet. They may be defined as follows:

"Second-foot" is an abbreviation for "cubic foot per second" and is a unit for the rate of discharge of water flowing in a stream. A second-foot is the rate of discharge of water flowing in a channel of rectangular cross-section 1 foot wide and 1 foot deep at an average velocity of 1 foot a second. It is generally used as a fundamental unit from which others are computed by the use of the factors given in the tables of convenient equivalents (p. 10).

"Second-feet per square mile" is the average number of cubic feet of water flowing per second from each square mile of area drained, on the assumption that the run-off is distributed uniformly both as regards time and area.

"Run-off (depth in inches)" is the depth to which the drainage area would be covered if all the water flowing from it in a given period were conserved and uniformly distributed on the surface. It is used for comparing run-off with rainfall, which is usually expressed in depth in inches.

An "acre-foot" is equivalent to 43,560 cubic feet, and is the quantity required to cover an acre to the depth of 1 foot. The term is commonly used in connection with storage for irrigation.

"Millions of cubic feet" is a unit used to express quantities of water stored in reservoirs, and is most frequently used in studies of flood control.

The following terms used in these reports are not in common use, and may be defined as follows:

"Control," "controlling section," and "point of control" are terms used to designate that cross section of the stream below the gage which controls or regulates the height of the water surface at the gage. It should be noted that the control may not be the same cross section at all stages.

"Discharge relation" is an abbreviation for the term "relation of gage height to discharge."

The "point of zero flow" for a given gaging station is that point on the gage—the gage height—to which the surface of the river would fall if there were no flow.

CONVENIENT EQUIVALENTS.

The following is a list of convenient equivalents for use in hydraulic computations:

Table for converting velocity in feet per second into velocity in miles per hour.

[1 foot per second=0.681818 · · miles per hour, or very nearly ⅔ mile per hour. 1 mile per hour=1.4666 · feet per second, or very nearly 1½ feet per second. In computing the table the values 0.68182 and 1.4667 were used.]

Units.	Tenths.									
	0	1	2	3	4	5	6	7	8	9
0	0.000	0.068	0.136	0.205	0.273	0.341	0.409	0.477	0.545	0.614
1	.682	.750	.818	.886	.955	1.02	1.09	1.16	1.23	1.30
2	1.36	1.43	1.50	1.57	1.64	1.70	1.77	1.84	1.91	1.98
3	2.05	2.11	2.18	2.25	2.32	2.39	2.45	2.52	2.59	2.66
4	2.73	2.80	2.86	2.93	3.00	3.07	3.14	3.20	3.27	3.34
5	3.41	3.48	3.55	3.61	3.68	3.75	3.82	3.89	3.95	4.02
6	4.09	4.16	4.23	4.30	4.36	4.43	4.50	4.57	4.64	4.70
7	4.77	4.84	4.91	4.98	5.05	5.11	5.18	5.25	5.32	5.39
8	5.45	5.52	5.59	5.66	5.73	5.80	5.86	5.93	6.00	6.07
9	6.14	6.20	6.27	6.34	6.41	6.48	6.55	6.61	6.68	6.75

Table for converting discharge in second-feet per square mile into run-off in depth in inches over the area.

Discharge in second-feet per square mile.	Run-off in inches.				
	1 day.	28 days.	29 days.	30 days.	31 days.
1.....	0.03719	1.041	1.079	1.116	1.153
2.....	.07438	2.083	2.157	2.231	2.306
3.....	.11157	3.124	3.236	3.347	3.459
4.....	.14876	4.165	4.314	4.463	4.612
5.....	.18595	5.207	5.393	5.578	5.764
6.....	.22314	6.248	6.471	6.694	6.917
7.....	.26033	7.289	7.550	7.810	8.070
8.....	.29752	8.331	8.628	8.926	9.223
9.....	.33471	9.372	9.707	10.041	10.376

NOTE.—For part of month multiply the values for one day by the number of days.

Table for converting discharge in second-feet into run-off in acre-feet.

Discharge in second-feet.	Run-off in acre-feet.				
	1 day.	28 days.	29 days.	30 days.	31 days.
1.....	1.983	55.54	57.52	59.50	61.49
2.....	3.967	111.1	115.0	119.0	123.0
3.....	5.950	166.6	172.6	178.5	184.5
4.....	7.934	222.1	230.1	238.0	246.0
5.....	9.917	277.7	287.6	297.5	307.4
6.....	11.90	333.2	345.1	357.0	368.9
7.....	13.88	388.8	402.6	416.5	430.4
8.....	15.87	444.3	460.2	476.0	491.9
9.....	17.85	499.8	517.7	535.5	553.4

NOTE.—For part of a month multiply values for one day by the number of days.

Table for converting discharge in second-feet into run-off in millions of gallons.

Discharge in second-feet.	Run-off in millions of gallons.				
	1 day.	28 days.	29 days.	30 days.	31 days.
1.....	0.6463	18.10	18.74	19.39	20.04
2.....	1.293	36.20	37.48	38.78	40.08
3.....	1.939	54.30	56.22	58.17	60.12
4.....	2.585	72.40	74.96	77.56	80.16
5.....	3.232	90.50	93.70	96.95	100.2
6.....	3.878	108.6	112.4	116.3	120.2
7.....	4.524	126.7	131.2	135.7	140.3
8.....	5.170	144.8	149.9	155.1	160.3
9.....	5.817	162.9	168.7	174.5	180.4

NOTE.—For part of a month multiply the value for one day by the number of days.

Table for converting discharge in second-feet into run-off in millions of cubic feet.

Discharge in second-feet.	Run-off in millions of cubic feet.				
	1 day.	28 days.	29 days.	30 days.	31 days.
1.....	0.0864	2.419	2.506	2.592	2.678
2.....	.1728	4.838	5.012	5.184	5.356
3.....	.2592	7.257	7.518	7.776	8.034
4.....	.3456	9.676	10.024	10.368	10.712
5.....	.4320	12.095	12.530	12.960	13.390
6.....	.5184	14.514	15.036	15.552	16.068
7.....	.6048	16.933	17.542	18.144	18.746
8.....	.6912	19.352	20.048	20.736	21.424
9.....	.7776	21.771	22.554	23.328	24.102

NOTE.—For part of a month multiply values for one day by the number of days.

1 second-foot equals 40 California miner's inches (law of March 23, 1901).
1 second-foot equals 38.4 Colorado miner's inches.
1 second-foot equals 40 Arizona miner's inches.
1 second-foot equals 7.48 United States gallons per second; equals 448.8 gallons per minute; equals 646,317 gallons for one day.
1 second-foot for one year covers 1 square mile 1.131 feet, or 13.572 inches deep.
1 second-foot for one year equals 31,536,000 cubic feet.
1 second-foot equals about 1 acre-inch per hour.
1 second-foot for one day equals 86,400 cubic feet.
1,000,000,000 (1 United States billion) cubic feet equals 11,570 second-feet for one day.
1,000,000,000 cubic feet equals 414 second-feet for one 28-day month.
1,000,000,000 cubic feet equals 399 second-feet for one 29-day month.
1,000,000,000 cubic feet equals 386 second-feet for one 30-day month.
1,000,000,000 cubic feet equals 373 second-feet for one 31-day month.
100 California miner's inches equals 18.7 United States gallons per second.
100 California miner's inches for one day equals 4.96 acre-feet.
100 Colorado miner's inches equals 2.60 second-feet.
100 Colorado miner's inches equals 19.5 United States gallons per second.
100 Colorado miner's inches for one day equals 5.17 acre-feet.
100 United States gallons per minute equals 0.223 second-foot.
100 United States gallons per minute for one day equals 0.442 acre-foot.
1,000,000 United States gallons per day equals 1.55 second-feet.
1,000,000 United States gallons equals 3.07 acre-feet.
1,000,000 cubic feet equals 22.95 acre-feet.
1 acre-foot equals 325,850 gallons.
1 inch deep on 1 square mile equals 2,323,200 cubic feet.
1 inch deep on 1 square mile equals 0.0737 second-foot per year.
1 foot equals 0.3048 meter.
1 mile equals 1.60935 kilometers.
1 mile equals 5,280 feet.
1 acre equals 0.4047 hectare.
1 acre equals 43,560 square feet.
1 acre equals 209 feet square, nearly.
1 square mile equals 2.59 square kilometers.
1 cubic foot equals 0.0283 cubic meter.
1 cubic foot of water weighs 62.5 pounds.
1 cubic meter per minute equals 0.5886 second-foot.
1 horsepower equals 550 foot-pounds per second.
1 horsepower equals 76.0 kilogram-meters per second.
1 horsepower equals 746 watts.
1 horsepower equals 1 second-foot falling 8.80 feet.
1⅓ horsepower equal about 1 kilowatt.

To calculate water power quickly: $\frac{\text{Sec.-ft.} \times \text{fall in feet}}{11}$ = net horsepower on water-wheel realizing 80 per cent of theoretical power.

EXPLANATION OF DATA.

The data presented in this report cover the year beginning October 1, 1912, and ending September 30, 1913, and not, as in previous reports, the calendar year. At the 1st of January in most parts of the country a large amount of precipitation for the preceding three months is stored, either as ground water, in the form of snow, or in

lakes. This stored water passes off in the streams during the spring break-up. At the end of September the only stored water available for run-off in the streams is possibly a small amount held in ground storage. Therefore the run-off for a year, beginning with October 1, is practically all derived from precipitation occurring within that year.

Records of gage height on Ohio River as far back as 1838 show that high-water periods extending from December into January are much more frequent and pronounced on the Ohio than high-water periods extending from September into October. In other words, much of the precipitation during December runs off in the flood flow of January in the next calendar year. October 1, therefore, is a much better starting point than January 1 for what may be termed the run-off or water year.

For each regular current-meter gaging station the following data, so far as available, are given: Description of the station, list of discharge measurements, table of daily gage height, table of daily discharge, table of monthly and yearly discharge and run-off. For stations located at weirs or dams the gage-height table is usually omitted.

In addition to statements regarding the location and installation of current-meter stations, the descriptions give information in regard to any conditions which may affect the constancy of the relation of gage height to discharge, covering such points as ice, logging, shifting channels, and backwater; also information regarding diversions which decrease the total flow at the measuring section. Statements are also made regarding the accuracy of the data.

The table of daily gage height shows the daily fluctuations of the surface of the river as found from the mean of the gage readings taken each day, usually in the morning and in the evening, though at many stations only one reading is made each day. At a comparatively few stations automatic gages are used, some of which give a continuous record of river stage in the form of a hydrograph and others a record printed at regular intervals, from which the mean daily gage height can be computed. The gage height given in the table represents the elevation of the surface of the water above the zero of the gage. All gage heights affected by the presence of ice in the streams or by backwater from obstructions are published as recorded, with suitable footnotes. The rating table is not applicable for such periods unless the proper corrections to the gage heights are known and applied. Attention is called to the fact that the zero of the gage is placed at an arbitrary datum and has no relation to zero flow or the bottom of the river. In general the zero is located somewhat below the gage height of the lowest known flow, so that negative readings shall not occur.

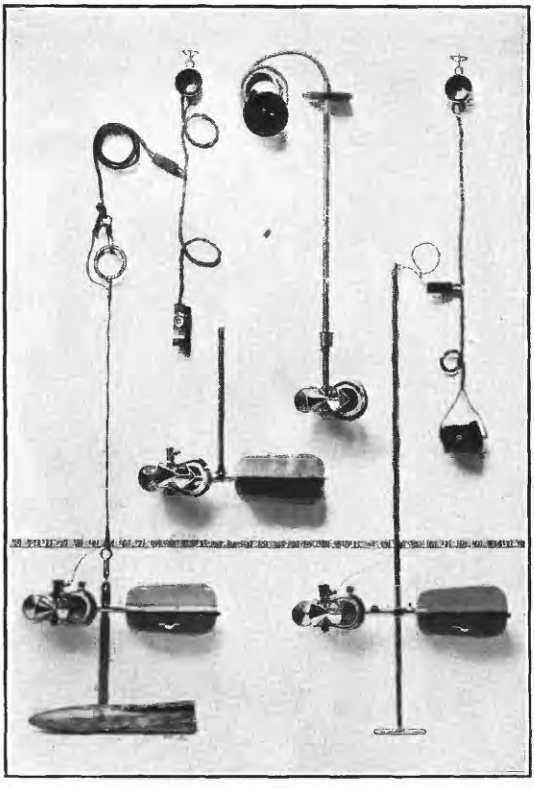
In the tables of daily gage height the use of zeros in the hundredths place indicates the limits of accuracy to which the gage was read and to which the mean daily gage height was computed. If a gage is read to tenths or half tenths once a day or to tenths twice a day, no zeros appear in the hundredths place for any stage. If the gage is read to half tenths twice a day or to quarter tenths or hundredths, regardless of the number of readings a day, the gage heights are published to hundredths, and zeros appear in the hundredths place, below a certain limiting stage. This limiting stage is so selected that the average error in the mean daily discharge, resulting from not using the mean daily gage height to hundredths above that stage, shall not be greater than 2 per cent. For automatic gages the allowable average error of the daily discharge has been taken as 1 per cent. The selection of the percentage is arbitrary, but it should be noted that the maximum error will in all cases be twice the average error. In like manner half tenths are used from the hundredths limit to another higher limit, above which only tenths are used. It is the aim to have the gage-height observations at each gaging station recorded to the degree of refinement required by the above method of use, but in practice it is found necessary, in order to avoid confusion in the gage observer's record, to have the observations for all stages recorded to the degree of refinement required for low stages, which usually necessitates readings to hundredths of a foot.

The discharge measurements and gage heights are the base data from which rating tables, daily discharge tables, and monthly discharge tables are computed.

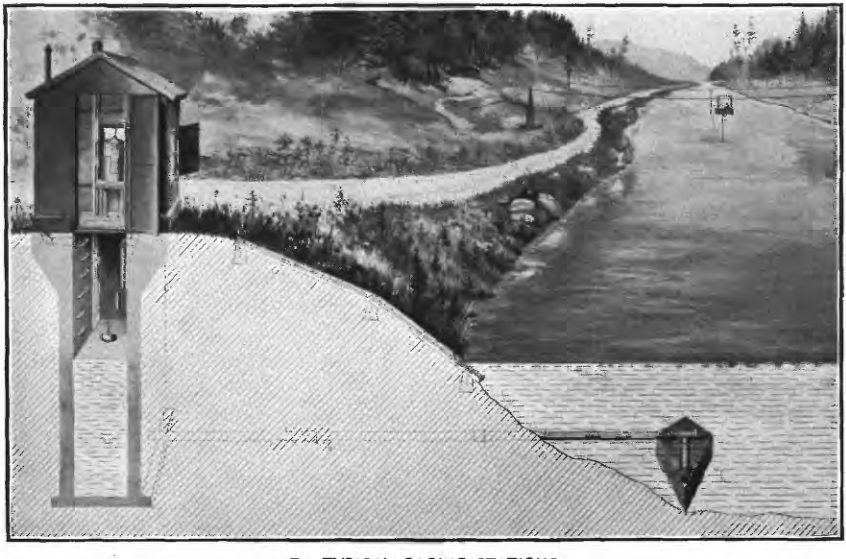
The rating table gives, either directly or by interpolation, the discharge in second-feet corresponding to every stage of the river recorded during the period for which it is applicable. It is not published in this report, but can be determined from the tables of daily gage heights and daily discharge by plotting gage heights in feet as ordinates and discharge in second-feet as abscissas.

The table of daily discharge determined from the rating table gives the discharge in second-feet corresponding to the mean of the gage readings observed each day.

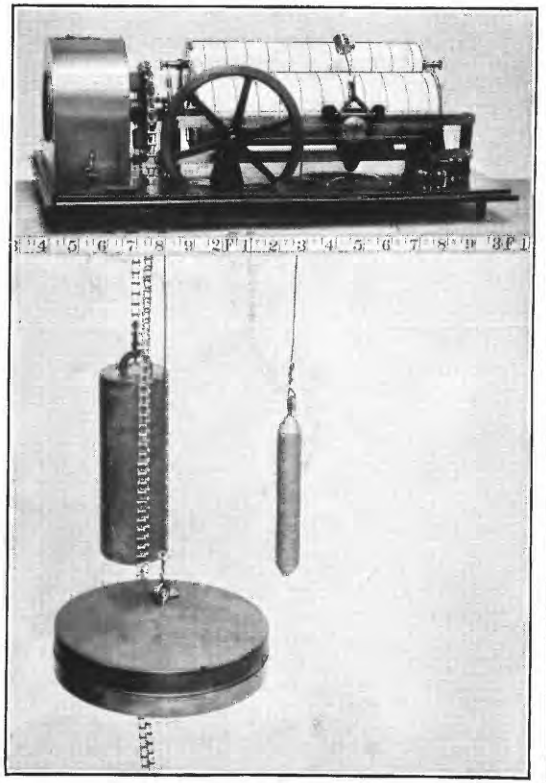
In the table of monthly discharge the column headed "Maximum" gives the mean flow, as determined from the rating table, for the day when the mean gage height was highest. As the gage height is the mean for the day, it does not indicate correctly the stage when the water surface was at crest height and the corresponding discharge was consequently larger than given in the maximum column. Likewise in the column at "Minimum" the quantity given is the mean flow for the day when the mean gage height was lowest. The column headed "Mean" is the average flow in cubic feet for each second dur-



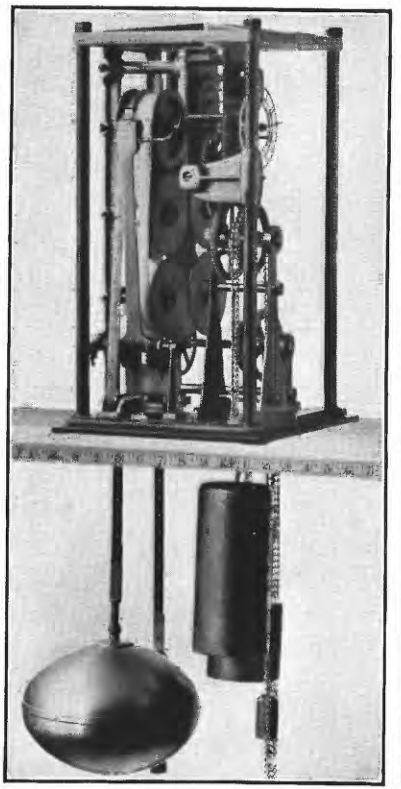
A. PRICE CURRENT METERS.



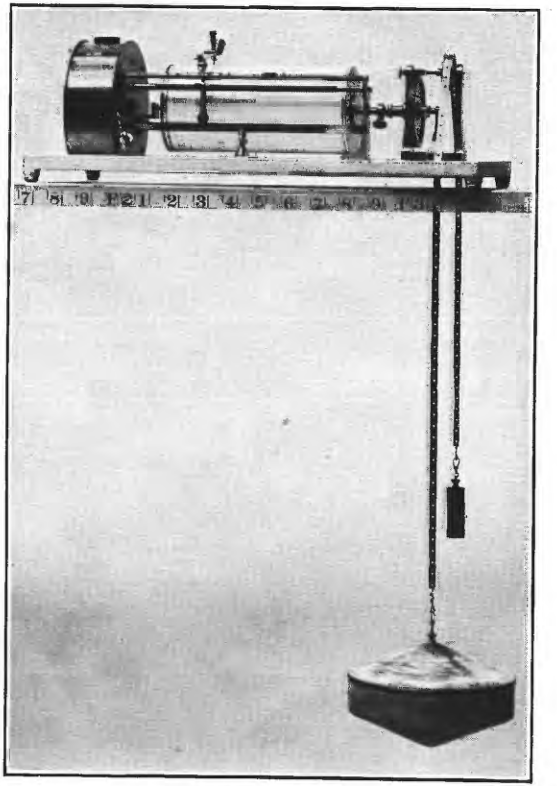
B. TYPICAL GAGING STATIONS.



A. STEVENS.



B. GURLEY.



C. FRIEZ.

AUTOMATIC GAGES.

ing the month. On this the computations for the remaining columns, which are defined on page 9, are based.

The base data presented in this report, unless otherwise stated in description of station, have been collected by the methods commonly used at current-meter gaging stations and described in standard textbooks. (See Pls. I and II.)

ACCURACY OF FIELD DATA AND COMPUTED RESULTS.

The accuracy of stream-flow data depends (1) on permanence of the relation between discharge and stage, and (2) on the accuracy of observations of stage, measurements of discharge, and interpretation of data.

In order to give engineers and others information regarding the probable accuracy of the computed results, footnotes are added to the daily discharge tables, stating the probable accuracy of the rating curves used, and an accuracy column is inserted in the monthly discharge table. For the rating curves, "well defined" indicates, in general, that the rating is probably accurate within 5 per cent; "fairly well defined," within 10 per cent; "poorly defined" or "approximate," within 15 to 25 per cent. These notes are very general and are based on the plotting of the individual measurements with reference to the mean rating curve.

The accuracy column in the monthly discharge table does not apply to the maximum or minimum nor to any individual day, but to the monthly mean. It is based on the accuracy of the rating, the probable reliability of the observer, the number of gage readings per day, the range of the fluctuation in stage, and knowledge of local conditions. In this column, A indicates that the mean monthly flow is probably accurate within 5 per cent; B, within 10 per cent; C, within 15 per cent; D, within 25 per cent. Special conditions are covered by footnotes.

Even though the monthly means for any station may represent with a high degree of accuracy the quantity of water flowing past the gage, the figures showing discharge per square mile and depth of run-off in inches may be subject to gross errors, which result from including in the measured drainage area large noncontributing districts or omitting estimates of water diverted for irrigation or other use. "Second-feet per square mile" and "run-off (depth in inches)" have therefore not been computed for stations draining areas having an annual rainfall of less than 20 inches, nor for stations draining areas of over 20 inches of rainfall for which the computations would probably be uncertain and misleading because of the presence of large noncontributing districts in the measured drainage area, of omitting estimates of water diverted for irrigation or

other use, or of artificial control or unusual natural control of the flow of the river above the gaging station. All values of "second-feet per square mile" and "run-off (depth in inches)" previously published by the Survey should be used with extreme caution, and such values in this report should be used with care because of possible inherent sources of error not known to the Survey.

In general, the base data collected each year by the Survey are published, not only to comply with the law, but also to afford any engineer the means of examining and adjusting to his own needs the results of the computations. The table of monthly discharge is so arranged as to give only a general idea of the flow at the station and should not be used for other than preliminary estimates. The determinations of daily discharge allow more detailed studies of the variation in flow by which the period of deficiency may be determined.

It should be borne in mind that the observations in each succeeding year may be expected to throw new light on data already collected and published, and the engineer who makes use of the figures presented in these papers should verify all ratings and make such adjustments for earlier years as may seem necessary.

COOPERATION.

Work in West Virginia during the year ending September 30, 1913, was done in cooperation with the State Geological Survey, I. C. White, State geologist. The State Geological Survey of Tennessee, A. H. Purdue, State geologist; the department of public service of the city of Cincinnati, V. T. Price, director; and F. W. Scheidenhelm, of the Hydro-Electric Co. of West Virginia, also cooperated with the United States Geological Survey during the year ending September 30, 1913.

DIVISION OF WORK.

Field data for Allegheny River at Red House, N. Y., were collected under the direction of C. C. Covert, district engineer, assisted by G. H. Canfield and C. S. De Golyer.

Field data for the Ohio River basin, except those for the Allegheny at Red House, N. Y., and for the basin of Tennessee River, were collected under the direction of A. H. Horton, district engineer, assisted by G. C. Stevens, H. J. Jackson, C. T. Bailey, and W. R. King. Stations in Pennsylvania are maintained and stream-flow data collected by the Water Supply Commission of Pennsylvania.

Field data in the Tennessee River basin were collected under the direction of W. E. Hall, district engineer, assisted by B. M. Hall, jr.

The ratings, special estimates, and studies of the completed data, except Tennessee River at Chattanooga, Florence, and Johnsonville, were made by W. E. Hall, A. H. Horton, and B. J. Peterson.

The completed data, except Tennessee River at Chattanooga, Florence, and Johnsonville, were prepared for publication under the direction of H. J. Jackson, assistant engineer, by B. J. Peterson.

The ratings and preliminary studies of the data for Tennessee River at Chattanooga, Tenn., Florence, Ala., and Johnsonville, Tenn., were made by A. H. Horton, R. H. Bolster, and H. J. Jackson. The special estimates and studies of the completed data were made by H. J. Jackson, who also prepared the data for publication.

The computations were made by M. I. Walters, B. J. Peterson, J. H. Morgan, and E. D. Burchard.

The manuscript for this report was completed April 30, 1914, and use made of all records available up to that date, even though obtained subsequent to September 30, 1913. Some data, especially for the Tennessee River stations, were added after April 30, 1914, while the report was in proof.

The report was edited by Mrs. B. D. Wood.

STATION RECORDS.

ALLEGHENY RIVER BASIN.

ALLEGHENY RIVER AT RED HOUSE, N. Y.

Location.—At highway bridge at Red House, N. Y., on the road leading from the Pennsylvania Railroad station to the Erie Railroad station; about 5 miles below Salamanca and 13 miles above the State line between New York and Pennsylvania. Conewango Creek, the outlet of Chautauqua Lake, enters the Allegheny in the State of Pennsylvania.

Records available.—September 4, 1903, to September 30, 1913.

Drainage area.—1,640 square miles.

Gage.—Standard chain attached to the upstream side of bridge near left-hand end; gage read once daily at noon to half-tenths. Limits of use: Half-tenths below and tenths above 5.0.

Control.—Practically permanent since station was established. Current broken by three bridge piers, good for medium and high stages, and rather slow at low stages. Bed of stream at measuring section composed of coarse gravel.

Discharge measurements.—Made from downstream side of bridge.

Floods.—The flood of March 25–30, 1913, reached a gage height of 12.7 feet on March 26, as recorded by the observer and later verified from high-water marks by engineers of the Geological Survey. The corresponding discharge was approximately 40,000 second-feet, or 24.4 second-feet per square mile of drainage area.

Winter flow.—Affected by ice for short periods. Effect negligible during the very mild winter of 1912–13.

Regulation.—Low-water flow may be slightly affected by the operation of several small power plants above Salamanca. At Olean, N. Y., a wasteway from Cuba reservoir enters the river through Olean Creek. This reservoir is on the divide between Oil Creek, tributary to Allegheny River, and Genesee River, tributary to Lake Ontario. The stored water is commonly turned into Genesee River through the abandoned summit level of Genesee River canal, but may be diverted into Oil Creek through a guard lock at the head of the canal.

Accuracy.—Records fairly good.

Discharge measurements of Allegheny River at Red House, N. Y., in the year ending Sept. 30, 1913.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
1912.		*Feet.*	*Sec.-ft.*	1913.		*Feet.*	*Sec.-ft.*
Dec. 6	C. S. De Golyer	6.67	6,670	Mar. 29	C. S. De Golyer	11.27	27,700
6	do	6.72	7,190	May 1	do	7.96	11,500
				1	do	7.72	10,400
1913.				Aug. 12	G. H. Canfield	3.25	358
an. 21	do	8.35	13,300	12	do	3.22	341

Daily gage height, in feet, of Allegheny River at Red House, N. Y., for the year ending Sept. 30, 1913.

[W. E. Coe, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	4.7	4.4	4.45	4.6	4.8	5.4	7.2	7.8	4.45	3.3	3.1	3.0
2	5.0	4.5	4.8	4.8	4.6	5.0	6.5	7.3	4.6	3.35	3.1	3.0
3	5.8	4.4	6.9	5.0	4.4	4.7	6.1	6.6	4.0	3.4	3.15	3.05
4	5.4	4.4	6.85	5.8	4.4	4.6	6.0	5.4	4.25	3.3	3.05	3.0
5	5.0	4.35	5.8	6.0	4.15	5.0	6.6	5.2	4.2	3.3	3.05	3.15
6	4.0	4.45	6.7	5.8	4.2	5.0	6.0	5.2	4.25	3.2	3.25	3.1
7	3.9	5.2	6.2	7.7	4.0	5.2	5.9	5.7	4.4	3.2	3.3	3.2
8	3.95	5.8	6.2	10.2	4.0	5.0	5.6	5.4	4.2	3.55	3.3	3.25
9	3.9	5.8	5.6	10.3	3.85	5.2	5.4	5.2	4.15	3.45	3.25	3.1
10	3.8	5.5	5.1	10.0	3.9	5.2	5.6	4.9	4.0	3.4	3.1	3.15
11	4.1	5.5	5.2	9.6	3.8	5.8	5.6	4.95	3.75	3.35	3.1	3.0
12	4.2	5.5	5.4	9.6	3.8	6.4	5.6	4.85	3.75	3.4	3.1	3.0
13	3.8	5.6	5.5	9.0	3.7	6.0	5.3	4.9	3.65	3.3	3.05	3.0
14	3.9	5.9	5.4	7.7	3.65	6.6	5.2	4.35	3.6	3.3	3.1	3.1
15	3.8	5.8	4.8	7.0	3.7	6.9	5.2	4.15	3.65	3.4	3.05	3.1
16	3.8	5.5	4.4	6.7	3.9	6.4	5.0	3.9	3.7	3.3	3.05	3.1
17	3.65	5.2	4.4	7.9	3.7	5.9	4.9	3.8	3.5	3.65	3.2	3.1
18	3.6	5.2	4.25	9.1	3.85	5.6	4.7	3.75	3.65	3.55	3.2	3.1
19	3.6	4.8	4.2	8.8	4.25	5.3	4.75	3.55	3.65	3.35	3.35	3.05
20	3.6	4.2	4.1	7.8	5.4	5.2	4.5	3.75	3.55	3.45	3.2	3.1
21	3.65	4.2	4.0	8.3	5.4	5.0	4.3	3.65	3.6	3.35	3.2	3.0
22	3.6	4.0	4.1	7.9	5.6	4.8	4.25	3.55	3.55	3.3	3.1	3.1
23	4.3	4.0	4.0	7.1	5.6	6.2	4.2	3.65	3.35	3.3	3.1	3.1
24	6.2	4.2	4.2	8.2	5.2	8.8	4.2	3.65	3.45	3.3	3.0	3.0
25	5.8	4.0	4.1	7.6	5.0	10.8	4.5	3.55	3.45	3.2	3.05	3.0
26	5.7	3.95	4.0	7.2	5.4	12.7	6.6	3.6	3.35	3.3	3.0	2.95
27	5.4	3.9	4.2	6.6	4.2	12.6	6.8	4.0	3.35	3.25	3.0	2.95
28	5.0	3.95	4.6	6.0	5.0	12.2	9.6	6.7	3.45	3.25	3.0	3.0
29	4.8	3.9	4.6	5.6	.....	11.0	10.2	6.8	3.2	3.2	3.1	3.0
30	4.6	3.9	4.55	5.2	.....	9.6	9.0	6.5	3.0	3.35	3.1	3.0
31	4.5	.....	4.55	5.2	.....	8.7	.....	4.85	.....	3.25	3.0	.....

NOTE.—Discharge relation not affected by ice.

Daily discharge, in second-feet, of Allegheny River at Red House, N. Y., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	2,320	1,850	1,920	2,160	2,490	3,690	8,750	10,800	1,820	410	260	200
2	2,860	2,000	2,490	2,490	2,160	2,860	6,480	9,100	2,070	455	260	200
3	4,610	1,850	7,720	2,860	1,850	2,320	5,360	6,780	1,170	500	295	230
4	3,690	1,850	7,560	4,610	1,850	2,160	5,090	3,630	1,520	410	230	200
5	2,860	1,780	4,610	5,100	1,500	2,860	6,780	3,200	1,440	410	230	295
6	1,300	1,920	7,080	4,610	1,570	2,860	5,090	3,200	1,520	330	370	260
7	1,180	3,260	5,630	10,500	1,300	3,260	4,830	4,320	1,740	330	410	330
8	1,240	4,610	5,630	21,800	1,300	2,860	4,080	3,630	1,440	650	410	370
9	1,180	4,610	4,140	22,400	1,120	3,260	3,630	3,200	1,370	550	370	260
10	1,060	3,910	3,060	20,800	1,180	3,260	4,080	2,610	1,170	500	260	295
11	1,440	3,910	3,260	18,800	1,060	4,610	4,080	2,700	865	455	260	200
12	1,570	3,910	3,690	18,800	1,060	6,190	4,080	2,520	865	500	260	200
13	1,060	4,140	3,910	15,900	940	5,100	3,410	2,610	755	410	230	200
14	1,180	4,850	3,690	10,500	884	6,780	3,200	1,660	700	410	260	260
15	1,060	4,610	2,490	8,050	940	7,720	3,200	1,370	755	500	230	260
16	1,060	3,910	1,850	7,080	1,180	6,190	2,800	1,040	810	410	230	260
17	884	3,260	1,850	11,200	940	4,850	2,610	920	600	755	330	260
18	828	3,260	1,640	16,400	1,120	4,140	2,240	865	755	650	330	260
19	828	2,490	1,570	15,000	1,640	3,470	2,330	650	755	455	455	230
20	828	1,570	1,440	10,800	3,690	3,260	1,900	865	650	550	330	260
21	884	1,570	1,300	12,800	3,690	2,860	1,590	755	700	455	330	200
22	828	1,300	1,440	11,200	4,140	2,490	1,520	650	650	410	260	260
23	1,710	1,300	1,300	8,400	4,140	5,630	1,440	755	455	410	260	260
24	5,630	1,570	1,570	12,400	3,260	15,000	1,440	755	550	410	200	200
25	4,610	1,300	1,440	10,200	2,860	25,100	1,900	650	550	330	230	200
26	4,370	1,240	1,300	8,750	3,690	a36,000	6,780	700	455	410	200	175
27	3,690	1,180	1,570	6,780	1,570	35,400	7,390	1,170	455	370	200	175
28	2,860	1,240	2,160	5,100	2,860	33,000	18,800	7,080	550	370	200	200
29	2,490	1,180	2,160	4,140	.....	26,200	21,800	7,390	330	330	260	200
30	2,160	1,180	2,080	3,260	.....	18,800	15,900	6,480	200	455	260	200
31	2,000	.....	2,080	3,260	.....	14,600	.....	2,520	.....	370	200	.....

a See "Floods" in station description.

NOTE.—Daily discharge computed from a well-defined rating curve. A new rating curve used beginning Mar. 27, 1913, which differs from the former curve only below gage height 6.1 feet.

Monthly discharge of Allegheny River at Red House, N. Y., for the year ending Sept. 30, 1913.

[Drainage area, 1,640 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
October	5,630	828	2,070	1.26	1.45	A.
November	4,850	1,180	2,550	1.55	1.73	A.
December	7,720	1,300	3,020	1.84	2.12	A.
January	22,400	2,160	10,200	6.22	7.17	B.
February	4,140	884	2,000	1.22	1.27	B.
March	36,000	2,160	9,570	5.84	6.73	A.
April	21,800	1,440	5,420	3.30	3.68	A.
May	10,800	650	3,050	1.86	2.14	B.
June	2,070	200	922	.562	.63	B.
July	755	330	450	.274	.32	B.
August	455	200	278	.170	.20	C.
September	370	175	237	.145	.16	C.
The year	36,000	175	3,340	2.04	27.60	

ALLEGHENY RIVER AT KITTANNING, PA.

Location.—At the Market Street Bridge, in the city of Kittanning, Pa., about 4 miles above the mouth of Crooked River and more than 12 miles above the mouth of Kiskiminitas River.

Records available.—August 18, 1904, to September 30, 1913.

Drainage area.—9,010 square miles.

Gage.—Chain gage attached to bridge; gage read once daily in the afternoon to half-tenths.

Control.—Probably permanent.

Discharge measurements.—Made from downstream side of bridge.

Winter flow.—Ice may affect the discharge relation for short periods during December, January, and February.

Accuracy.—Conditions of flow practically constant; low and medium stage rating curve excellent; numerous measurements at high stages. A marked difference exists between the discharge at a given high gage height for rising and for falling stage, due to increase and decrease of slope; the difference at times amounts to as much as 15 per cent, and as the variation differs for each flood it is difficult to determine accurately the daily discharge at high stages.

Cooperation.—Station now maintained by the Water Supply Commission of Pennsylvania, which has furnished all records for year ending September 30, 1913.

Discharge measurements of Allegheny River at Kittanning, Pa., in the year ending Sept. 30, 1913.

Date.	Hydrographer.	Gage height.	Discharge.
1912.		*Feet.*	*Sec.-ft.*
Dec. 8	R. A. Boehringer[a]	9.93	34,400
1913.			
Aug. 22	....do	1.56	1,010

[a] An engineer of the Water Supply Commission of Pennsylvania.

Daily gage height, in feet, of Allegheny River at Kittanning, Pa., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	5.25	6.55	4.60	8.70	7.90	10.60	12.30	10.90	6.10	4.60	2.05	1.55
2	5.10	5.80	6.10	7.80	7.20	9.80	10.80	10.15	5.75	4.10	2.00	1.50
3	4.85	5.40	5.80	7.50	6.60	9.10	9.40	9.30	5.40	3.90	1.95	1.50
4	4.60	5.15	8.80	8.80	6.15	7.80	8.85	8.20	5.10	3.60	1.95	1.45
5	4.40	4.90	9.25	8.20	5.50	7.10	8.30	7.40	4.80	3.35	1.90	1.45
6	4.10	4.60	9.10	9.50	4.80	6.45	7.95	6.60	4.55	3.15	1.85	1.40
7	3.90	5.80	8.20	14.55	4.65	5.80	7.60	5.95	4.30	2.95	1.80	1.35
8	3.70	6.60	7.45	21.35	4.70	5.20	7.25	5.20	4.05	2.85	1.75	1.30
9	3.45	7.90	7.40	[a]22.54	4.75	5.10	6.90	4.85	3.90	2.70	1.75	1.27
10	3.20	8.60	7.30	17.40	4.90	6.30	6.70	4.55	3.60	2.60	1.80	1.25
11	3.30	8.90	6.90	17.10	5.00	7.70	7.20	4.20	3.35	3.50	1.90	1.20
12	3.90	8.00	6.40	18.00	5.05	9.60	7.05	3.95	3.20	5.10	2.10	1.18
13	4.30	7.30	5.95	15.60	5.20	13.05	6.90	4.40	3.20	5.25	2.05	1.15
14	4.20	6.50	5.60	13.90	5.10	12.10	7.80	4.45	3.15	5.05	2.00	1.15
15	4.05	6.10	5.25	12.40	4.95	10.90	7.50	4.20	3.05	4.50	1.95	1.10
16	3.90	6.90	5.05	12.80	4.80	9.60	7.15	3.90	2.90	3.70	1.90	1.10
17	4.20	6.40	5.40	13.10	4.70	8.90	6.80	3.65	2.75	3.20	1.85	1.10
18	4.60	5.70	5.80	11.90	4.65	8.20	6.55	3.40	2.55	2.80	1.85	1.20
19	4.25	5.20	5.60	11.00	4.55	7.75	6.10	3.20	2.70	2.60	2.30	1.40
20	4.10	4.90	5.25	16.00	4.45	7.40	5.65	3.70	3.40	2.45	2.40	1.55
21	4.80	4.70	4.85	14.40	4.40	7.10	5.30	3.85	3.55	2.20	2.30	1.80
22	5.40	4.45	4.50	14.60	6.45	6.90	5.10	3.75	3.45	2.05	1.88	2.05
23	6.30	4.20	4.30	13.10	11.20	7.05	4.90	3.50	4.80	2.00	2.25	2.15
24	8.10	3.95	4.20	13.50	9.05	7.20	4.70	3.30	6.10	1.95	1.88	2.60
25	12.10	3.80	4.05	12.55	8.60	20.05	4.60	3.10	6.90	1.90	2.10	2.75
26	13.60	3.70	3.90	11.60	9.75	[b]29.55	5.05	4.60	7.60	1.85	2.00	2.70
27	12.05	3.55	3.80	11.10	11.80	29.15	6.20	6.10	6.50	1.85	1.90	2.60
28	10.20	3.45	4.00	9.60	12.25	24.55	8.10	6.95	6.15	1.80	1.85	2.50
29	9.00	3.30	4.30	9.80	.....	18.95	9.90	7.10	5.70	1.95	1.80	2.60
30	8.10	3.20	5.40	9.20	.....	16.48	11.45	6.90	5.15	2.10	1.70	2.50
31	7.40	.....	9.60	8.50	.....	14.10	.....	6.40	.....	2.10	1.60	.....

[a] Maximum, 25.3 feet at 1 a. m.; discharge, 194,000 second-feet.
[b] Maximum, 30.7 feet, at 4 p. m.; discharge, 269,000 second-feet.

NOTE.—No ice reported. Discharge relation probably not affected by ice.

Daily discharge, in second-feet, of Allegheny River at Kittanning, Pa., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1.....	10,300	16,500	7,600	29,700	24,500	42,900	55,300	45,000	14,300	7,600	1,680	1,040
2.....	9,640	12,800	14,300	23,900	20,200	37,200	44,300	39,700	12,600	6,100	1,600	990
3.....	8,580	11,000	12,800	22,000	16,800	32,400	34,400	33,700	11,000	5,580	1,540	990
4.....	7,600	9,860	30,400	30,300	14,500	23,900	30,700	26,400	9,640	4,850	1,540	985
5.....	6,960	8,780	33,400	26,400	11,400	19,600	27,100	21,400	8,380	4,280	1,460	935
6.....	6,100	7,600	32,400	35,100	8,380	16,000	24,800	16,800	7,430	3,830	1,400	880
7.....	5,580	12,800	26,400	73,900	7,790	12,800	22,600	13,600	6,660	3,380	1,340	828
8.....	5,080	16,800	21,700	144,000	7,980	10,100	20,500	10,100	5,970	3,160	1,280	775
9.....	4,500	24,500	21,400	159,000	8,180	9,640	18,400	8,580	5,580	2,850	1,280	744
10.....	3,940	29,000	20,800	101,000	8,770	15,300	17,300	7,430	4,850	2,640	1,340	722
11.....	4,160	31,000	18,400	97,600	9,200	23,300	20,200	6,380	4,280	4,620	1,460	670
12.....	5,580	25,200	15,800	107,000	9,420	35,800	19,300	5,710	3,940	9,640	1,760	650
13.....	6,660	20,800	13,600	83,300	10,100	61,200	18,400	6,960	3,940	10,300	1,680	620
14.....	6,380	16,200	11,900	68,200	9,630	53,800	23,900	7,110	3,830	9,420	1,600	620
15.....	5,970	14,300	10,300	56,100	8,990	45,000	22,000	6,380	3,600	7,260	1,540	570
16.....	5,580	18,400	9,420	59,200	8,380	35,800	19,900	5,580	3,270	5,080	1,460	570
17.....	6,380	15,800	11,000	61,600	7,980	31,000	17,800	4,960	2,960	3,940	1,400	570
18.....	7,600	12,400	12,800	52,300	7,790	26,400	16,500	4,390	2,540	3,060	1,400	670
19.....	6,520	10,100	11,900	45,700	7,430	23,600	14,300	3,940	2,850	2,640	2,080	880
20.....	6,100	8,780	10,300	87,000	7,110	21,400	12,100	5,080	4,390	2,350	2,260	1,040
21.....	8,380	7,980	8,580	72,600	6,950	19,600	10,500	5,460	4,740	1,920	2,080	1,340
22.....	11,000	7,110	7,260	74,400	16,000	18,400	9,640	5,200	4,500	1,680	1,440	1,680
23.....	15,300	6,380	6,660	61,600	47,100	19,300	8,780	4,620	8,380	1,600	2,000	1,840
24.....	25,800	5,710	6,380	64,900	32,000	20,200	7,980	4,160	14,300	1,540	1,440	2,640
25.....	53,800	5,340	5,970	57,200	29,000	129,000	7,600	3,720	18,400	1,460	1,760	2,960
26.....	65,700	5,080	5,580	50,000	36,800	253,000	9,420	7,600	19,000	1,400	1,600	2,850
27.....	53,400	4,740	5,340	46,400	51,500	247,000	14,800	14,300	16,200	1,400	1,460	2,640
28.....	40,000	4,500	5,840	35,800	54,900	184,000	25,800	18,700	14,500	1,340	1,400	2,440
29.....	31,700	4,160	6,660	37,200	.....	117,000	37,900	19,600	12,400	1,540	1,340	2,640
30.....	25,800	3,940	11,000	33,000	.....	91,500	49,000	18,400	9,860	1,760	1,220	2,440
31.....	21,400	.....	35,800	28,400	.....	70,000	.....	15,800	.....	1,760	1,100	.....

Monthly discharge of Allegheny River at Kittanning, Pa., for the year ending Sept 30, 1913.

[Drainage area, 9,010 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).
	Maximum.[a]	Minimum.	Mean.	Per square mile.	
October	65,700	3,940	15,500	1.72	1.98
November	31,000	3,940	12,600	1.40	1.56
December	35,800	5,340	14,600	1.62	1.87
January	194,000	22,000	62,100	6.89	7.94
February	54,900	6,950	17,500	1.94	2.02
March	269,000	9,640	56,300	6.25	7.21
April	55,300	7,600	22,000	2.44	2.72
May	45,000	3,720	12,800	1.42	1.64
June	19,000	2,540	8,140	.903	1.01
July	10,300	1,340	3,870	.430	.50
August	2,260	1,100	1,560	.173	.20
September	2,960	570	1,310	.145	.16
The year	269,000	570	19,100	2.12	28.81

[a] Crest discharge where available. See footnotes to table of daily gage height.

NOTE.—Estimates of monthly discharge were computed according to rules of the U. S. Geological Survey and differ slightly from those published by the Water-Supply Commission of Pennsylvania.

KISKIMINITAS RIVER AT AVONMORE, PA.

Location.—At the highway bridge near Avonmore station on the Pennsylvania Railroad, about 4 miles below the mouth of Blacklegs Creek, about 1 mile above the mouth of Long Run, and about 5 miles below the junction of Conemaugh River with Loyalhanna Creek to form the Kiskiminitas.

Records available.—June 11, 1907, to September 30, 1913.

Drainage area.—1,720 square miles.

Gage.—Chain attached to bridge; read daily morning and evening to half-tenths.
Control.—Probably permanent.
Discharge measurements.—Made from downstream side of bridge.
Floods.—Flood of March 19, 1908, reached a height of 30.8 feet on the gage; discharge estimated at 80,500 second-feet, or about 47 second-feet per square mile from 1,720 square miles of drainage area.
Winter flow.—Ice may affect the discharge relation for short periods during December, January, and February.
Accuracy.—New rating curve, based on 4 discharge measurements made during 1912 and 1913, and on 5 measurements made in 1914, used beginning January 1, 1913; discharge measurement made December 6, 1912, indicates that new curve is probably applicable also to 1912. Persons using records should give due weight to this probability. Last measurement prior to 1912 made March 2, 1910.
Cooperation.—Station now maintained by the Water-Supply Commission of Pennsylvania, which furnished all records for the year ending September 30, 1913.

Discharge measurements of Kiskiminitas River at Avonmore, Pa., in the year ending Sept. 30, 1913.

Date.	Hydrographer.	Gage height.	Discharge.
1912.		*Feet.*	*Sec.-ft.*
Dec. 6	R. A. Boehringer	6.43	3,310
1913.			
Jan. 9	Boehringer and Hinkley	17.53	26,900
9	....do	17.00	25,600
Aug. 16	R. A. Boehringer	2.58	359

Daily gage height, in feet, of Kiskiminitas River at Avonmore, Pa., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	6.02	4.92	3.38	7.93	5.71	8.95	6.91	5.16	6.92	3.04	2.97	2.40
2	5.35	4.80	3.30	6.89	5.03	7.96	6.15	4.78	6.00	2.94	2.92	2.49
3	4.92	4.55	3.68	8.46	4.86	6.41	5.89	4.52	5.47	2.87	2.77	2.40
4	4.65	4.24	4.30	11.23	5.76	6.50	6.07	4.34	5.00	2.92	2.62	2.40
5	4.22	3.96	3.80	8.79	6.83	6.61	5.53	4.12	4.60	2.82	2.57	2.35
6	4.05	3.92	5.94	8.66	[a] 8.83	6.11	5.26	4.00	4.27	4.42	2.54	2.30
7	3.78	4.70	7.00	14.39	7.86	5.19	4.86	3.92	4.12	3.57	2.62	2.30
8	3.70	8.66	5.95	[b] 20.21	7.72	4.76	4.69	3.84	4.22	3.14	3.12	3.95
9	3.61	6.96	5.30	16.61	7.81	5.53	4.46	3.70	3.92	3.12	2.90	3.88
10	3.92	6.20	4.62	11.21	7.73	5.86	4.29	3.54	3.64	3.44	2.74	3.05
11	5.50	5.70	4.75	11.59	7.66	6.71	4.29	3.40	3.50	3.67	2.74	2.75
12	4.45	5.20	4.42	18.43	8.06	7.57	4.93	3.32	3.37	3.22	2.92	2.62
13	3.90	4.98	3.62	13.96	7.31	6.72	5.01	3.27	3.30	2.92	2.84	2.58
14	3.60	4.95	3.65	10.53	6.79	7.12	5.09	3.24	3.22	2.82	2.70	2.50
15	3.40	5.25	4.06	8.73	6.83	7.93	5.37	3.30	3.16	2.87	2.63	2.45
16	3.39	4.70	4.02	8.30	6.89	7.21	5.89	4.54	3.02	3.00	2.60	2.35
17	3.30	5.02	4.00	9.75	6.79	6.40	5.70	4.54	2.97	2.84	2.57	2.45
18	3.25	4.25	3.85	10.35	6.56	5.81	5.16	4.04	3.04	3.24	2.57	2.60
19	3.42	4.16	4.08	10.13	6.49	5.47	4.85	3.68	2.97	3.37	2.74	2.72
20	3.52	3.94	4.42	8.83	6.73	5.29	4.56	3.50	3.00	3.02	2.62	2.72
21	3.72	3.98	4.02	9.15	7.10	5.29	4.30	3.36	3.27	2.82	2.60	3.05
22	3.44	3.86	3.70	8.42	[a] 9.49	5.16	4.15	3.45	3.44	2.74	2.50	3.95
23	5.80	3.76	3.40	8.70	7.71	4.86	4.06	4.84	3.27	2.77	3.04	4.02
24	8.46	3.74	3.55	11.46	6.16	4.61	3.97	8.68	3.02	2.72	2.80	3.35
25	9.54	3.60	3.74	9.79	4.86	4.66	3.83	7.14	3.27	2.77	2.70	3.05
26	[c] 10.60	3.68	3.70	8.30	4.90	9.01	3.75	6.07	3.30	2.82	2.60	2.82
27	8.55	3.58	3.60	7.51	5.75	[d] 15.16	3.85	[e] 14.27	4.22	2.76	2.54	2.72
28	7.20	3.51	4.22	7.01	10.26	12.87	4.83	13.47	4.27	2.62	2.52	2.62
29	6.25	3.40	4.09	6.55	.....	9.59	5.96	10.24	3.72	3.02	2.52	2.58
30	5.65	3.15	4.75	6.15	.....	8.06	5.91	8.20	3.34	3.32	2.44	2.55
31	5.22	.....	9.82	6.01	.....	7.21	.....	7.96	.....	3.17	2.42	.....

[a] River frozen over, Feb. 6–22.
[b] Maximum, 22.21 feet, at 4.45 p. m.; discharge, 44,700 second-feet.
[c] Maximum, 11 feet, at 8.30 a. m.; discharge, 12,200 second-feet.
[d] Maximum, 16.11 feet, at 4.45 p. m.; discharge, 24,000 second-feet.
[e] Maximum, 18.47 feet, at 4.45 p. m.; discharge, 31,300 second-feet.

Daily discharge, in second-feet, of Kiskiminitas River at Avonmore, Pa., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	3,710	2,350	956	5,860	3,040	7,380	4,500	2,420	4,520	626	582	285
2	2,860	2,220	900	4,480	2,280	5,900	3,560	2,030	3,380	564	552	285
3	2,350	1,960	1,190	6,650	2,110	3,880	3,250	1,790	2,770	522	464	285
4	2,060	1,670	1,720	11,600	3,100	3,990	3,460	1,630	2,250	552	385	285
5	1,650	1,430	1,290	7,140	4,400	4,130	2,830	1,430	1,860	492	362	265
6	1,500	1,390	3,600	6,950	.....	3,510	2,530	1,320	1,560	1,700	348	245
7	1,270	2,110	5,000	19,200	.....	2,450	2,110	1,260	1,430	994	385	245
8	1,200	7,590	3,620	37,400	.....	2,010	1,950	1,200	1,520	693	679	1,280
9	1,130	4,950	2,800	25,500	.....	2,830	1,730	1,090	1,260	679	540	1,230
10	1,390	3,940	2,030	11,600	.....	3,210	1,580	973	1,040	903	447	632
11	3,040	3,300	2,160	12,400	.....	4,250	1,580	875	945	1,070	447	452
12	1,860	2,680	1,830	31,200	.....	5,360	2,180	819	854	749	552	385
13	1,380	2,420	1,140	18,100	.....	4,260	2,260	784	805	552	504	366
14	1,120	2,390	1,160	10,200	.....	4,780	2,340	763	749	492	425	330
15	970	2,740	1,510	7,060	.....	5,860	2,650	805	707	522	390	308
16	963	2,110	1,480	6,410	.....	4,890	3,250	1,810	613	600	375	265
17	900	2,470	1,460	8,720	.....	3,860	3,030	1,810	582	504	362	308
18	868	1,680	1,330	9,840	.....	3,160	2,420	1,360	626	763	362	375
19	985	1,600	1,530	9,420	.....	2,770	2,100	1,080	582	854	447	436
20	1,060	1,410	1,830	7,200	.....	2,560	1,820	945	600	613	385	436
21	1,220	1,440	1,480	7,700	.....	2,560	1,590	847	784	492	375	632
22	1,000	1,340	1,200	6,590	.....	2,420	1,460	910	903	447	330	1,290
23	3,420	1,260	970	7,010	5,550	2,110	1,380	2,090	784	464	626	1,340
24	7,250	1,240	1,080	12,100	3,570	1,870	1,300	6,980	613	436	480	840
25	9,160	1,120	1,240	8,780	2,110	1,920	1,190	4,800	784	464	425	632
26	11,300	1,190	1,200	6,410	2,150	7,480	1,130	3,460	805	492	375	492
27	7,400	1,110	1,120	5,280	3,090	21,200	1,200	18,900	1,520	458	348	436
28	5,280	1,050	1,650	4,630	9,660	15,400	2,080	16,900	1,560	385	339	385
29	4,000	970	1,540	4,050	.....	8,440	3,330	9,630	1,100	613	339	366
30	3,230	802	2,160	3,560	.....	6,050	3,270	6,260	833	819	303	352
31	2,700	.....	9,700	3,390	.....	4,890	.....	5,900	.....	714	294	.....

NOTE.—Discharge Feb. 6–22, 1913, estimated because of ice as follows: Feb. 6–22, 1,640 second-feet. See "Accuracy" in station description.

Monthly discharge of Kiskiminitas River at Avonmore, Pa., for the year ending Sept. 30, 1913.

[Drainage area, 1,720 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).
	Maximum.[a]	Minimum.	Mean.	Per square mile.	
October	12,200	868	2,850	1.66	1.91
November	7,590	802	2,130	1.24	1.38
December	9,700	900	2,000	1.16	1.34
January	44,700	3,390	10,500	6.10	7.03
February	9,660	.....	2,460	1.43	1.49
March	24,000	1,870	5,010	2.91	3.36
April	4,500	1,130	2,300	1.34	1.50
May	31,300	763	3,320	1.93	2.22
June	4,520	582	1,280	.744	.83
July	1,700	385	653	.380	.44
August	679	294	427	.248	.29
September	1,340	245	515	.299	.33
The year	44,700	245	2,810	1.63	22.12

[a] Crest discharge where available.

NOTE.—See "Accuracy" in station description and footnotes to table of daily gage heights.

BLACKLICK CREEK AT BLACKLICK, PA.

Location.—At highway bridge, about one-fourth mile from the railroad station at Blacklick, Pa., about 1 mile below the junction of Blacklick and Two Lick creeks and about 6 miles above the junction of Blacklick Creek with Conemaugh River.

Records available.—August 16, 1904, to July 15, 1906; January 8, 1907, to September 30, 1913.

Drainage area.—386 square miles.

Gage.—Chain attached to bridge read daily, morning and evening, to hundredths.

Control.—Fairly permanent.

Discharge measurements.—At high and medium stages made from upstream side of highway bridge; at low stages made by wading at section just above the bridge. Extreme high-water measurements made from the coal tipple one-fourth mile above the bridge.

Winter flow.—Ice may affect the discharge relation for short periods during December, January, and February.

Accuracy.—Changes in rating curves necessitated by the reconstruction of the highway bridge were discussed in Water-Supply Paper 263, page 43. Rating curve used for year ending September 30, 1913, differs above 1,800 second-feet from that used prior to 1912 as a result of discharge measurements made during 1912 and 1913.

Cooperation.—Since January 8, 1907, station has been maintained by the Water Supply Commission of Pennsylvania, which supplied all records for the year ending September 30, 1913.

Discharge measurements of Blacklick Creek at Blacklick, Pa., in the year ending Sept. 30, 1913.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge
1912.		*Feet.*	*Sec.-ft.*	1913.		*Feet.*	*Sec.-ft.*
Dec. 6	R. A. Boehringer.....	5.30	2,372	Jan. 9	—— Reckord.....	6.72	4,976
				9	.....do.....	6.39	4,255
1913.				12	.....do.....	8.60	9,153
Jan. 9	—— Reckord.....	7.01	5,442	Aug. 16	R. A. Boehringer.....	2.16	37

Daily gage height, in feet, of Blacklick Creek at Blacklick, Pa., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	3.48	3.48	2.68	4.50	3.81	4.90	4.00	3.63	4.02	2.50	2.26	2.08
2	3.26	3.44	2.82	4.03	3.38	4.56	3.74	3.37	3.72	2.46	2.22	2.05
3	3.16	3.28	3.53	6.21	3.48	4.20	3.66	3.23	3.45	2.42	2.17	2.07
4	3.06	3.14	3.18	6.14	3.40	3 95	3.50	3.12	3.29	2.38	2.14	2.03
5	2.96	3.04	3.04	5.85	3.17	4.16	3.40	3.05	4.15	2.50	2.12	2.01
6	2.87	2.98	4.98	5.53	3.23	3.87	3.29	2.97	3.05	2.52	2.08	2.03
7	2.78	3.58	4.88	7.51	3.22	3.32	3.20	3.01	2.97	2.42	3.49	2.09
8	2.69	4.14	4.11	[a] 9.81	3.24	3.36	3.10	2.88	2.98	2.34	3.30	2.30
9	3.16	3.69	3.72	6.68	3.18	3.61	3.02	2.80	2.83	2.36	2.96	2.27
10	3.24	3.60	3.44	5.32	3.07	3.86	2.97	2.75	2.69	2.41	2.57	2.17
11	2.92	3.53	3.68	7.35	3.08	4.44	3.06	2.70	2.58	2.48	2.50	2.13
12	2.80	3.46	3.83	8.78	3.10	4.24	3.41	2.67	2.57	2.38	2.41	2.10
13	2.74	3.41	[b] 3.78	6.40	3.05	4.05	3.24	2.63	2.57	2.32	2.32	2.07
14	2.72	3.40	3.51	5.16	3.13	4.58	3.27	2.59	2.52	2.31	2.27	2.05
15	2.70	3.31	3.16	4.56	3.04	4.49	3.33	2.68	2.49	2.32	2.22	2.05
16	2.62	3.20	3.14	4.60	2.92	4.15	3.30	3.21	2.45	2.28	2.16	2.05
17	2.60	3.10	3.10	5.92	2.87	3.84	3.17	3.26	2.41	2.28	2.16	2.14
18	2.58	3.04	3.16	5.82	2.81	3.60	3.06	2.97	2.29	2.75	2.30	2.25
19	2.82	3.00	3.28	5.40	2.85	3.55	3.04	2.87	2.11	2.50	2.29	2.29
20	3.08	2.98	3.16	4.83	3.12	3.48	2.96	2.84	2.51	2.34	2.22	2.23
21	2.84	2.94	3.18	5.10	3.53	3.44	2.87	2.79	2.68	2.27	2.18	2.51
22	2.72	2.88	3.19	4.70	4.71	3.35	2.82	3.45	2.64	2.20	2.16	2.73
23	5.89	2.83	3.08	5.32	4.80	3.20	2.83	4.67	2.50	2.11	2.17	2.52
24	5.31	2.80	2.92	6.08	3.78	3.18	2.78	3.90	2.45	2.18	2.15	2.35
25	[c] 6.60	2.82	[d] 2.86	5.14	3.51	3.34	2.76	3.74	2.47	2.43	2.13	2.25
26	6.20	2.79	2.80	4.62	3.36	5.64	2.76	3.85	2.49	2.39	2.13	2.23
27	5.04	2.76	2.92	4.26	4.12	[e] 8.13	3.34	[f] 9.76	3.39	2.26	2.08	2.15
28	4.45	2.73	2.91	3.98	5.97	6.20	3.65	6.67	2.95	2.30	2.06	2.13
29	4.06	2.66	2.75	3.74	.....	5.07	4.28	5.25	2.91	2.70	2.07	2.09
30	3.78	2.66	3.76	3.58	.....	4.52	3.80	4.61	2.71	2.72	2.15	2.07
31	3.56	.....	5.38	3.64	.....	4.22	.....	4.57	.....	2.39	2.13	.....

[a] Maximum, 10.5 feet, at 3 p. m.; discharge, 13,500 second-feet.
[b] Creek frozen across.
[c] Maximum, 7.10 feet, at 6 p. m.; discharge, 5,690 second-feet.
[d] Ice all out of creek.
[e] Maximum, 8.7 feet, at 2 p. m.; discharge, 9,100 second-feet.
[f] Maximum, 10.41 feet, at 11 a. m.; discharge, 13,300 second-feet.

NOTE.—Discharge relation probably not materially affected by ice.

Daily discharge, in second-feet of Blacklick Creek at Blacklick, Pa., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	577	577	198	1,420	813	1,840	965	681	982	140	73	35
2	448	551	248	990	514	1,480	760	508	745	128	64	30
3	395	459	611	3,890	577	1,140	702	432	558	116	53	33
4	347	385	405	3,760	525	925	590	375	464	105	46	26
5	304	338	338	3,250	400	1,100	525	342	390	140	42	23
6	268	312	1,940	2,730	432	861	464	308	342	146	35	26
7	233	646	1,820	6,550	426	481	415	325	308	116	584	36
8	202	1,090	1,060	11,700	437	503	365	272	312	94	470	83
9	395	723	745	4,820	405	667	329	240	252	99	304	76
10	437	660	551	2,400	352	853	308	222	202	113	162	53
11	288	611	716	6,220	356	1,360	347	205	166	134	140	44
12	240	564	829	9,280	365	1,180	532	195	162	105	113	38
13	219	532	790	4,260	342	1,010	437	182	162	88	88	33
14	212	525	597	2,170	380	1,500	454	169	146	86	76	30
15	205	476	395	1,480	338	1,410	486	198	137	88	64	30
16	179	415	385	1,520	288	1,100	470	420	125	78	51	30
17	172	365	365	3,370	268	837	400	448	113	78	51	46
18	166	338	395	3,200	244	660	347	308	81	222	83	71
19	248	320	459	2,520	260	625	338	268	40	140	81	81
20	356	312	395	1,760	375	577	304	256	143	94	64	66
21	256	296	405	2,090	611	551	268	236	198	76	55	143
22	212	272	410	1,620	1,630	498	248	558	185	59	51	216
23	3,320	252	356	2,400	1,730	415	252	1,590	140	40	53	146
24	2,390	240	288	3,650	790	405	233	885	125	55	48	96
25	4,660	248	264	2,150	597	492	226	760	131	119	44	71
26	3,880	236	240	1,540	503	2,900	226	845	137	107	44	66
27	2,010	226	288	1,190	1,070	7,850	492	11,600	520	73	35	48
28	1,370	216	284	949	3,460	3,875	695	4,800	300	83	31	44
29	1,020	192	222	760	.....	2,050	1,210	2,300	284	205	33	36
30	790	192	775	646	.....	1,440	805	1,530	208	212	48	33
31	632	.....	2,500	688	.....	1,160	.....	1,490	.....	107	44	.....

Monthly discharge of Blacklick Creek at Blacklick, Pa., for the year ending Sept. 30, 1913.

[Drainage area, 386 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).
	Maximum.[a]	Minimum.	Mean.	Per square mile.	
October	5,690	166	853	2.21	2.55
November	1,090	192	419	1.09	1.21
December	2,500	198	622	1.61	1.86
January	13,500	646	3,060	7.93	9.14
February	3,460	244	660	1.71	1.78
March	9,100	405	1,350	3.50	4.04
April	1,210	226	473	1.23	1.37
May	13,300	169	1,060	2.75	3.17
June	982	40	269	.697	.78
July	222	40	111	.288	.33
August	584	31	101	.262	.30
September	216	23	60	.155	.17
The year	13,500	23	759	1.97	26.70

[a] Crest discharge where available. See footnotes to table of daily gage height.

MONONGAHELA RIVER BASIN.

TYGART RIVER AT BELINGTON, W. VA.

Location.—At highway bridge at Belington, W. Va., one-fourth mile above the mouth of Mill Creek.

Records available.—June 5, 1907, to September 30, 1913.

Drainage area.—390 square miles.

Gage.—Standard chain gage attached to bridge; gage read daily in the morning to hundredths. Limits of use: Hundredths below 3.5, half tenths from 3.5 to 4.5, and tenths above 4.5. Sea-level elevation of the zero of the gage is 1,679.89 feet.

Control.—Practically permanent.

Discharge measurements.—Made from upstream side of the bridge.

Floods.—Flood of July, 1912, reached gage height 20.3 feet.

Point of zero flow.—Determination by leveling, August 22, 1910, indicated that there would be no flow past the gage if the river stage were to fall to about 1.6 feet, referred to the gage datum. On November 6, 1913, this stage was found to be 1.4 feet ±0.2 foot.

Winter flow.—Ice may affect the discharge relation for two or three weeks at a time during December, January, and February.

Accuracy.—Discharge rating curves poorly defined above 2,500 second-feet, being simply extensions; all discharge values above that point should be used with due regard for this fact.

The following discharge measurement was made by G. C. Stevens:

March 30, 1913: Gage height, 5.46 feet; discharge, 1,520 second-feet.

Daily gage height, in feet, of Tygart River at Belington, W. Va., for the year ending Sept. 30, 1913.

[S. A. Campbell, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	2.99	2.50	2.64	6.7	4.6	4.35	4.45	5.1	6.5	2.60	3.41	2.50
2	2.90	2.53	2.51	5.0	4.3	4.25	4.05	5.0	5.1	2.46	3.04	2.40
3	2.82	2.53	2.80	4.3	4.5	4.2	3.95	4.1	4.45	2.44	2.98	2.40
4	2.72	2.53	2.81	6.8	7.4	4.0	3.8	3.85	4.0	2.58	2.75	2.42
5	2.54	2.52	3.20	6.2	6.9	3.9	3.75	3.65	3.95	3.45	2.63	2.40
6	2.51	2.49	4.1	5.6	5.5	3.75	3.7	3.5	3.65	3.55	2.55	2.40
7	2.48	2.64	4.8	9.6	4.6	3.6	3.65	3.42	3.5	3.43	2.48	2.30
8	2.48	6.7	4.0	10.2	4.05	3.49	3.55	3.36	3.9	3.25	2.44	2.50
9	2.44	5.6	3.85	10.8	3.95	3.6	3.5	3.28	4.3	2.96	2.40	3.00
10	2.40	4.6	3.65	7.0	3.9	3.7	3.49	3.10	4.2	6.4	2.38	2.81
11	2.35	3.7	3.40	5.5	3.7	4.5	3.41	3.04	3.85	10.4	2.36	2.62
12	2.35	4.45	3.27	9.0	4.45	6.7	3.48	3.00	3.5	5.5	2.61	2.45
13	2.30	3.28	3.27	8.4	4.5	5.6	3.46	2.96	3.31	4.9	4.0	2.41
14	2.27	3.20	3.20	6.2	4.8	5.5	3.42	2.88	3.09	4.3	10.6	2.35
15	2.26	3.22	2.91	6.1	4.45	8.3	3.48	3.34	3.02	6.5	4.7	2.30
16	2.23	3.15	2.88	4.6	4.0	6.8	9.7	3.65	2.91	5.1	3.75	2.30
17	2.23	3.06	2.99	4.9	3.75	5.4	6.6	5.0	2.82	4.35	3.14	2.33
18	2.22	3.00	2.92	4.8	3.65	4.6	5.4	5.0	2.72	6.6	3.12	4.0
19	2.22	2.92	2.95	4.8	3.55	4.2	4.7	5.0	2.64	4.6	3.65	3.75
20	2.22	2.86	2.85	4.6	3.5	3.85	4.6	4.2	2.59	3.9	3.23	3.16
21	2.22	2.84	2.82	4.5	3.55	3.7	4.6	3.85	2.50	3.65	3.14	3.6
22	2.44	2.80	2.81	4.9	3.7	3.7	4.2	3.65	2.50	3.37	3.00	7.6
23	2.50	2.73	2.80	4.7	3.85	3.42	3.95	3.95	2.60	3.19	5.2	4.6
24	2.50	2.64	2.90	4.9	3.95	3.30	3.85	9.6	3.40	3.00	4.3	3.75
25	2.64	2.57	2.80	6.8	3.75	3.00	3.6	7.6	3.5	4.4	3.85	3.35
26	2.87	2.70	2.75	6.0	3.55	3.24	3.48	5.6	3.11	3.7	3.42	3.14
27	2.86	2.64	2.89	5.4	3.55	6.9	3.85	6.8	2.91	3.41	3.18	3.00
28	2.78	2.61	3.12	5.0	3.75	10.5	7.1	12.1	2.91	3.20	2.96	2.93
29	2.70	2.50	3.65	4.7	.....	6.8	5.8	9.5	2.81	3.65	2.90	2.55
30	2.62	2.50	3.9	4.3	.....	5.3	5.7	6.3	2.56	3.16	2.80	2.71
31	2.55	.....	10.2	4.1	.....	4.9	.....	7.8	.....	3.46	2.60	.....

NOTE.—Observer made no notes concerning ice. Discharge relation probably not materially affected by ice during the year ending Sept. 30, 1913.

Daily discharge, in second-feet, of Tygart River at Belington, W. Va., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	197	84	110	2,390	954	812	868	1,260	2,150	90	325	73
2	172	89	86	1,200	784	758	654	1,200	1,190	67	195	59
3	151	89	146	784	896	731	603	679	824	65	178	59
4	128	89	149	2,470	2,960	628	529	554	595	87	121	62
5	91	88	265	2,000	2,550	578	505	458	570	342	96	59
6	86	82	679	1,580	1,520	505	481	390	430	385	82	59
7	81	110	1,070	5,060	954	435	458	355	363	334	70	47
8	81	2,390	628	5,720	654	386	412	329	546	264	65	73
9	74	1,580	554	6,410	603	435	390	296	745	172	59	183
10	68	954	458	2,630	578	481	386	231	694	2,070	57	134
11	61	481	346	1,520	481	896	350	212	522	5,950	54	94
12	61	868	292	4,430	868	2,390	381	200	363	1,440	92	66
13	54	296	292	3,840	896	1,580	372	189	286	1,070	595	60
14	50	265	265	2,000	1,070	1,520	355	167	210	745	6,180	53
15	49	273	175	1,930	868	3,750	381	321	189	2,150	959	47
16	45	248	167	954	628	2,470	5,170	458	159	1,190	475	47
17	45	219	172	1,130	505	1,450	2,310	1,200	137	771	226	51
18	44	200	178	1,070	458	954	1,450	1,200	114	2,230	220	595
19	44	178	186	1,070	412	731	1,010	1,200	98	904	430	475
20	44	162	159	954	390	554	954	731	88	546	257	233
21	44	156	151	896	412	481	954	554	73	430	226	407
22	74	146	149	1,130	481	481	731	458	73	309	183	3,050
23	84	130	146	1,010	554	355	603	603	90	243	1,250	904
24	84	110	172	1,130	603	304	554	5,060	321	183	745	475
25	110	97	146	2,470	505	200	435	3,120	363	797	522	302
26	164	123	134	1,860	412	281	381	1,580	216	452	329	226
27	162	110	169	1,450	412	2,550	554	2,470	159	325	239	183
28	141	104	238	1,200	505	6,060	2,710	7,950	159	246	172	164
29	123	84	458	1,010	.....	2,470	1,720	4,950	134	430	156	82
30	106	84	578	784	.....	1,390	1,650	2,000	83	233	132	112
31	93	.....	5,720	679	.....	1,130	.....	3,230	.....	346	90	.....

NOTE.—See "Accuracy" in station description.

Monthly discharge of Tygart River at Belington, W. Va., for the year ending Sept. 30, 1913.

[Drainage area, 390 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
October	197	44	90.7	0.233	0.27	C.
November	2,390	82	330	.846	.94	B.
December	5,720	86	466	1.19	1.37	B.
January	6,410	679	2,020	5.18	5.97	B.
February	2,960	390	818	2.10	2.19	B.
March	6,060	200	1,220	3.13	3.61	B.
April	5,170	350	944	2.42	2.70	C.
May	7,950	167	1,410	3.62	4.17	C.
June	2,150	73	398	1.02	1.14	B.
July	5,950	65	802	2.06	2.38	C.
August	6,180	54	477	1.22	1.41	C.
September	3,050	47	281	.721	.80	B.
The year	7,950	44	774	1.98	26.95	

NOTE.—See "Accuracy" in station description.

TYGART RIVER AT FETTERMAN, W. VA.

Location.—At highway bridge at Fetterman, W. Va., three-fourths of a mile above the mouth of Otter Creek.

Records available.—June 3, 1907, to September 30, 1913.

Drainage area.—1,340 square miles.

Gage.—Standard chain gage attached to bridge; gage read daily morning and evening to hundredths. Limits of use: Hundredths below 4.0 feet, half-tenths from 4.0 to 5.5, and tenths above 5.5. The sea-level elevation of the zero of the gage is 957.86 feet.

Control.—Practically permanent; channel at measuring section broken by one pier; current sluggish at low stages.

Discharge measurements.—Made from downstream side of bridge.

Floods.—No records of floods previous to installation of gage. Highest stage recorded since the station was established, 29.1 feet in July, 1912.

Winter flow.—Ice probably does not affect the discharge relation. It is said that riffle below gage usually remains open.

Accuracy.—No discharge measurements were made at this station during the year ending September 30, 1913, but on October 30 and 31, 1913, the station was visited by engineers of the Survey, and two discharge measurements were made. These measurements indicate a change in the discharge relation as expressed by the rating table used prior to September 30, 1912, and estimates of discharge published in the following tables are based on the assumption that this change occurred gradually between the dates of the last two visits to the station—September 2, 1912, and October 30, 1913. Estimates of discharge for October, November, and December, 1912, as published in this report, differ therefore from those published in Water-Supply Paper 323. This difference varies from about 2 to 14 per cent, the maximum difference being at low stage.

Daily gage height, in feet, of Tygart River at Fetterman, W. Va., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	4.3	3.70	3.68	8.4	5.4	5.4	6.0	5.9	8.8	3.78	5.4	3.68
2	4.2	3.68	3.72	6.8	5.3	5.3	5.4	5.7	8.2	3.70	4.9	3.60
3	4.1	3.58	3.78	9.3	5.6	5.2	5.05	5.5	7.5	3.62	4.6	3.58
4	4.0	3.50	3.88	8.1	8.2	5.1	4.9	5.35	6.1	3.58	4.5	3.55
5	3.98	3.50	4.15	6.8	9.4	5.05	4.8	5.0	5.2	3.52	4.2	3.52
6	3.78	3.50	5.6	7.4	7.1	4.95	4.65	4.8	4.9	4.3	3.92	3.45
7	3.60	4.2	6.1	12.9	6.2	4.8	4.6	4.6	4.75	4.2	3.72	3.40
8	3.50	8.6	5.7	14.3	5.6	4.65	4.55	4.5	5.3	4.15	3.68	3.35
9	3.42	7.6	5.5	14.1	5.3	4.6	4.4	4.4	5.3	4.1	3.62	3.30
10	3.40	6.0	5.4	9.4	5.1	4.5	4.3	4.3	5.0	5.05	3.48	3.52
11	3.40	5.25	4.6	8.4	5.5	4.9	4.3	4.2	4.7	10.0	3.52	3.68
12	3.40	4.8	4.2	11.6	9.7	6.4	4.4	4.1	4.5	6.8	3.78	3.60
13	3.38	4.6	4.1	11.0	8.0	7.1	4.7	4.05	4.2	5 7	7.4	3.55
14	3.35	4.5	4.0	8.0	6.8	7.2	5.5	4.0	4.1	6.6	8.3	3.50
15	3.50	4.4	4.0	6.8	6.7	8.8	5.9	4.1	3.88	7.5	6.8	3.50
16	3.48	4.3	4.0	6.0	5.5	8.3	7.8	4.6	3.80	7.0	5.05	3.40
17	3.42	4.3	4.05	6.3	5.2	6.5	7.0	5.6	3.80	8.8	4.7	3.32
18	3.40	4.2	4.15	7.7	4.95	5.6	6.5	7.0	3.75	7.8	4.5	3.55
19	3.42	4.1	4.05	6.8	4.8	5.3	6.2	6.3	3.75	6.0	4.65	3.90
20	3.38	4.0	3.95	6.2	4.5	5.2	6.1	5.45	3.72	5.6	4.9	3.82
21	3.35	4.0	3.9	6.3	4.4	5.1	6.0	5.05	3.68	5.4	4.5	4.45
22	3.30	4.0	3.85	6.6	4.7	4.9	5.7	5.5	3.64	4.8	4.2	5.6
23	3.42	3.98	3.95	6.5	4.7	4.7	5.2	10.6	3.60	4.55	5.2	5.8
24	3.52	3.95	4.0	7.1	4.7	4.6	4.85	14.3	3.60	4.3	5.9	5.3
25	3.65	3.95	4.05	8.4	4.65	4.5	4.7	9.8	4.2	4.5	5.5	4.5
26	3.68	4.0	4.1	8.0	4.75	5.5	4.55	7.5	4.4	5.6	5.2	4.1
27	3.95	3.98	4.25	6.8	5.4	11.2	4.6	10.2	4.2	5.2	4.5	4.0
28	4.0	3.90	4.6	6.4	5.45	12.8	6.1	15.2	4.05	4.8	4.15	3.95
29	3.90	3.90	4.8	6.0	.....	8.6	6.7	12.6	3.88	4.7	3.98	3.80
30	3.82	3.75	6.6	5.7	.....	7.0	6.4	9.8	3.82	4.55	3.90	3.72
31	3.78	.....	12.2	5.5	.....	6.2	.....	10.1	.....	4.4	3.82	.....

NOTE.—Observer made no notes concerning ice. Discharge relation probably not materially affected by ice during the year ending Sept. 30, 1913.

Daily discharge, in second-feet, of Tygart River at Fetterman, W. Va., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	750	296	284	7,780	2,420	2,420	3,380	3,210	8,530	312	2,330	253
2	653	284	253	4,820	2,250	2,250	2,330	2,850	7,410	268	1,480	213
3	566	233	341	9,480	2,680	2,080	1,740	2,510	6,110	228	1,040	204
4	495	195	397	7,220	7,410	1,900	1,480	2,250	3,560	209	916	190
5	481	195	598	4,820	9,670	1,820	1,320	1,650	1,990	181	607	177
6	347	195	2,680	5,920	5,370	1,650	1,110	1,320	1,480	699	391	149
7	248	653	3,560	16,900	3,740	1,400	1,040	1,040	1,250	607	274	131
8	200	8,340	2,850	20,100	2,680	1,110	978	916	2,160	566	253	115
9	164	6,480	2,590	19,600	2,250	1,040	802	802	2,160	525	223	101
10	157	3,560	2,420	9,670	1,900	916	699	699	1,650	1,740	161	177
11	157	2,160	1,110	7,780	2,590	1,480	699	607	1,180	10,800	177	253
12	157	1,400	653	14,000	10,200	4,100	802	525	916	4,820	306	213
13	149	1,110	566	12,700	7,030	5,370	1,180	495	607	2,850	5,920	190
14	138	978	481	7,030	4,820	5,550	2,510	458	525	4,460	7,590	168
15	200	859	481	4,820	4,640	8,530	3,210	525	372	6,110	4,820	164
16	190	750	481	3,380	2,590	7,590	6,660	1,040	323	5,190	1,740	128
17	164	750	518	3,920	2,080	4,280	5,190	2,680	323	8,530	1,180	103
18	153	653	607	6,480	1,650	2,680	4,280	5,190	296	6,660	916	186
19	161	566	518	4,820	1,400	2,160	3,740	3,920	296	3,380	1,110	372
20	145	488	444	3,740	978	1,990	3,560	2,420	279	2,680	1,480	323
21	134	488	411	3,920	859	1,820	3,380	1,740	258	2,330	916	859
22	118	488	378	4,460	1,250	1,480	2,850	2,510	238	1,320	607	2,680
23	161	473	444	4,280	1,250	1,180	1,990	12,000	218	978	1,990	3,030
24	204	451	481	5,370	1,250	1,040	1,400	20,100	218	699	3,210	2,160
25	268	451	518	7,780	1,180	916	1,180	10,400	607	916	2,510	916
26	284	488	566	7,030	1,320	2,510	978	6,110	802	2,680	1,990	510
27	451	473	699	4,820	2,420	13,200	1,040	11,200	607	1,990	916	438
28	488	418	1,110	4,100	2,510	16,600	3,560	22,100	488	1,320	566	404
29	418	418	1,400	3,380	.....	8,160	4,640	16,200	372	1,180	431	312
30	366	323	4,460	2,850	.....	5,190	4,100	10,400	335	978	378	268
31	341	.....	15,300	2,590	.....	3,740	.....	11,000	.....	802	329	.....

NOTE.—See "Accuracy" in station description.

Monthly discharge of Tygart River at Fetterman, W. Va., for the year ending Sept. 30, 1913.

[Drainage area, 1,340 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
October	750	118	287	0.214	0.25	B.
November	8,340	195	1,150	.858	.96	B.
December	15,300	253	1,540	1.15	1.33	B.
January	20,100	2,590	7,280	5.43	6.26	B.
February	10,200	859	3,230	2.41	2.51	B.
March	16,600	916	3,750	2.80	3.23	B.
April	6,660	699	2,390	1.78	1.99	B.
May	22,100	458	5,120	3.82	4.40	B.
June	8,530	218	1,520	1.13	1.26	B.
July	10.800	181	2,450	1.83	2.11	B.
August	7,590	161	1,510	1.13	1.30	B.
September	3,030	101	513	.383	.43	B.
The year	22,100	101	2,570	1.92	26.03	

NOTE.—See "Accuracy" in station description.

WEST FORK RIVER AT ENTERPRISE, W. VA.

Location.—At highway bridge at Enterprise, W. Va., three-fourths of a mile above the mouth of Bingamon Creek.

Records available.—June 2, 1907, to September 30, 1913.

Drainage area.—750 square miles.

Gage.—Standard chain gage attached to bridge; gage read daily in the morning to hundredths. Limits of use: Hundredths below 2.0, half-tenths from 2.0 to 3.5, and tenths above 3.5 feet. Sea-level elevation of zero of the gage, 869.91 feet.

Control.—Practically permanent. Channel at measuring section broken by one pier; smooth rock bottom.

Discharge measurements.—Made from downstream side of bridge.

Floods.—Flood of 1888, referred to present gage datum, reached stage about 33 feet. Maximum gage height recorded since establishment of station, 17.6 feet, January 30, 1911, and January 12, 1913.

Winter flow.—Ice may affect the discharge relation for two or three weeks at a time during December, January, and February.

The following discharge measurement was made by G. C. Stevens:

March 28, 1913: Gage height, 10.23 feet; discharge, 8,100 second-feet.

Daily gage height, in feet, of West Fork River at Enterprise, W. Va., for the year ending Sept. 30, 1913.

[C. M. Tetrick, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	2.5	1.60	1.40	5.2	3.7	3.25	3.1	2.3	5.2	2.0	1.56	1.20
2	2.3	1.52	1.40	3.7	3.3	3.1	2.9	2.25	4.0	1.90	1.52	1.20
3	1.00	1.51	1.38	4.5	3.25	3.1	2.7	2.2	3.4	1.80	1.50	1.15
4	1.00	1.60	1.80	7.9	8.5	2.8	2.65	2.2	3.0	1.75	1.40	1.13
5	1.90	1.60	2.05	6.1	6.3	3.2	2.45	2.1	2.85	1.70	1.35	1.10
6	1.70	1.55	3.0	5.0	4.7	3.05	2.1	2.1	2.7	1.63	1.30	.90
7	1.64	1.70	5.6	12.0	3.6	3.0	2.0	2.05	2.35	1.60	1.27	.80
8	1.60	3.2	4.5	14.3	3.7	2.5	1.93	2.0	2.2	1.54	1.20	.80
9	1.55	4.2	3.0	10.0	3.7	2.9	1.81	2.0	2.15	1.50	1.15	1.00
10	1.50	3.3	2.4	6.0	3.6	3.0	1.70	1.87	2.1	7.5	1.10	1.00
11	1.50	2.4	2.3	4.0	3.0	3.6	2.5	1.80	1.00	5.1	1.00	.80
12	1.48	2.1	2.1	17.6	8.4	4.7	2.95	1.70	1.93	3.3	1.00	.70
13	1.45	2.0	1.90	14.5	5.4	4.5	2.7	1.62	1.86	3.0	1.10	1.20
14	1.40	2.0	1.85	8.4	3.7	4.9	2.55	1.50	2.5	2.8	1.05	1.30
15	1.40	1.98	1.80	4.4	3.4	4.2	2.3	1.50	1.78	2.5	1.00	1.30
16	1.30	1.92	1.70	3.5	3.1	4.0	6.1	1.40	1.72	2.25	1.90	1.30
17	1.60	1.85	1.70	6.0	3.0	4.3	4.5	3.7	1.62	2.1	3.5	1.40
18	1.55	1.80	1.80	6.0	2.9	3.35	3.4	3.3	1.60	2.1	2.8	1.45
19	1.40	1.80	1.90	5.7	2.8	3.0	3.1	3.0	1.51	2.2	2.4	1.57
20	1.30	1.75	2.0	4.8	2.75	2.75	2.9	2.6	1.45	2.2	2.2	1.50
21	1.35	1.70	1.95	4.5	2.75	2.6	2.7	2.4	1.40	2.05	2.1	1.50
22	1.30	1.70	1.82	6.6	2.65	2.4	2.65	2.2	1.30	1.90	2.0	1.50
23	1.20	1.65	1.8	5.3	2.6	2.2	2.45	12.4	1.30	1.82	3.0	1.60
24	1.10	1.62	1.76	7.0	2.5	2.1	2.4	13.0	1.25	1.73	2.4	1.50
25	1.90	1.60	1.70	5.8	2.4	2.05	2.2	7.7	1.20	3.7	2.15	1.60
26	1.80	1.56	1.60	5.0	2.4	3.0	2.1	4.3	1.90	2.9	2.0	1.60
27	1.80	1.52	1.80	4.5	2.3	14.5	2.1	8.2	1.80	2.6	1.82	1.50
28	1.75	1.50	3.0	4.1	3.7	11.8	2.0	14.5	1.85	2.2	1.70	1.50
29	1.72	1.48	3.7	4.0	.....	5.8	2.6	8.3	1.80	1.75	1.50	1.40
30	1.70	1.42	4.2	4.0	.....	4.4	2.4	5.5	1.70	1.68	1.40	1.40
31	1.60	.....	6.5	3.8	.....	3.7	.....	7.3	.....	1.60	1.30	.....

NOTE.—Observer made no report concerning ice. Discharge relation probably not affected by ice during the year ending Sept. 30, 1913.

Daily discharge, in second-feet, of West Fork River at Enterprise, W. Va., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	441	99	64	2,360	1,160	861	767	350	2,360	227	91	43
2	350	83	64	1,160	893	767	649	328	1,380	190	83	43
3	30	81	62	1,760	861	767	540	307	959	155	79	40
4	30	99	155	5,180	5,860	593	514	307	707	140	64	38
5	190	99	246	3,250	3,460	829	418	266	621	124	58	36
6	124	89	707	2,180	1,920	737	266	266	540	106	52	25
7	109	124	2,750	10,200	1,090	707	227	246	372	99	49	20
8	99	829	1,760	13,200	1,160	441	201	227	307	87	43	20
9	89	1,530	707	7,670	1,160	649	159	227	286	79	40	30
10	79	893	395	3,150	1,090	707	124	180	266	4,740	36	30
11	79	395	350	1,380	707	1,090	441	155	30	2,270	30	20
12	76	266	266	17,700	5,740	1,920	678	124	201	893	30	16
13	72	227	190	13,400	2,550	1,760	540	104	176	707	36	43
14	64	227	172	5,740	1,160	2,090	465	79	441	593	33	52
15	64	220	155	1,680	959	1,530	350	79	149	441	30	52
16	52	197	124	1,030	767	1,380	3,250	64	130	328	190	52
17	99	172	124	3,150	707	1,600	1,760	1,160	104	266	1,030	64
18	89	155	155	3,150	649	926	959	893	99	266	593	72
19	64	155	190	2,850	593	707	767	707	81	307	395	93
20	52	140	227	2,010	566	566	649	489	72	307	307	79
21	58	124	208	1,760	566	489	540	395	64	246	266	79
22	52	124	162	3,780	514	395	514	307	52	190	227	79
23	43	112	155	2,460	489	307	418	10,700	52	162	707	99
24	36	104	143	4,200	441	266	395	11,400	48	133	395	79
25	190	99	124	2,950	395	247	307	4,960	43	1,160	286	99
26	155	91	99	2,180	395	707	266	1,600	190	649	227	99
27	155	83	155	1,760	350	13,400	266	5,510	155	489	162	79
28	140	79	707	1,450	1,160	9,900	227	13,400	172	307	124	79
29	130	76	1,160	1,380	.....	2,950	489	5,620	155	140	79	64
30	124	67	1,530	1,380	.....	1,680	395	2,650	124	119	64	64
31	99	.....	3,670	1,230	.....	1,160	.....	4,520	.....	99	52	.....

NOTE.—Daily discharge computed from a rating curve that is well defined between 0 and 2,180 second-feet (gage heights 0.0 to 5.0 feet) and fairly well defined between 2,270 and 6,460 second-feet (gage heights 5.1 to 9.0 feet).

Monthly discharge of West Fork River at Enterprise, W. Va., for the year ending Sept. 30, 1913.

[Drainage area, 750 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
October	441	30	111	0.148	0.17	A.
November	1,530	67	235	.313	.35	A.
December	3,670	62	548	.731	.84	A.
January	17,700	1,030	4,090	5.45	6.28	B.
February	5,860	350	1,330	1.77	1.84	B.
March	13,400	247	1,680	2.24	2.58	B.
April	3,250	124	585	.780	.87	A.
May	13,400	64	2,180	2.91	3.36	B.
June	2,360	30	345	.460	.51	A.
July	4,740	79	517	.689	.79	B.
August	1,030	30	189	.252	.29	A.
September	99	16	56	.075	.08	B.
The year	17,700	16	994	1.33	17.96	

ELK CREEK NEAR CLARKSBURG, W. VA.

Location.—At a footbridge near Clarksburg, W. Va., 300 feet above Turkey Run and about 6 miles above the mouth of the creek.

Records available.—October 11, 1910, to September 30, 1913.

Drainage area.—107 square miles (Pittsburgh Flood Commission).

Gage.—Wooden staff gage (during 1912) fastened to a tree near right abutment of footbridge. Gage read daily in the morning to hundredths. On November 1, 1913, a metal gage section (0–3 feet) was attached to the old gage, and the gage was then lowered 1.0 foot to avoid negative readings. Sea-level elevation of zero of the gage is 955.01 feet. See "Accuracy."

Control.—Rocky and practically permanent. Banks high, not subject to overflow.

Discharge measurements.—Made from footbridge at high stages; low-water measurements made by wading at section about 200 feet below bridge.

Floods.—Flood of July, 1912, reached a height of 15 feet on present gage.

Point of zero flow.—Gage height at which flow past the gage will cease is about 0.9 foot, as determined August 30, 1912.

Winter flow.—Discharge relation may be affected by ice for short periods in December, January, and February.

Accuracy.—On November 1, 1913, when gage was lowered 1.0 foot, as noted above, old gage was found to be inclined a sufficient amount to cause slight errors in readings above 6 feet. Gage was reset in a vertical position. Length of time gage was in inclined position not known; no correction applied to gage heights, as during the year ending September 30, 1913, only one reading exceeded 6 feet. All gage heights published in this report refer to the new datum. Data insufficient for estimates of discharge.

No discharge measurements were made at this station during the year ending September 30, 1913.

Daily gage height, in feet, of Elk Creek near Clarksburg, W. Va., for the year ending Sept. 30, 1913.

[E. H. Smith, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	2.24	1.52	1.50	2.94	2.68	2.5	2.3	2.0	3.0	1.32	1.35	.....
2	2.15	1.58	1.50	2.5	2.2	2.4	2.1	1.9	2.7	1.3	1.3	.....
3	2.00	1.54	1.70	3.3	2.4	2.14	2.0	1.85	2.35	1.3	1.3	.....
4	1.90	1.52	1.72	3.6	4.06	2.18	1.95	1.8	2.1	.....	.....	.....
5	1.80	1.50	1.72	2.78	3.2	2.18	2.0	1.7	2.0	.....	.....	.....
6	1.70	1.49	3.10	3.5	2.8	2.2	1.9	1.68	1.9	.....	.....	.....
7	1.60	1.60	2.60	5.45	2.8	2.1	1.8	1.75	1.8	1.8	.....	.....
8	1.60	3.20	2.40	5.2	2.8	2.0	1.76	1.68	2.2	1.6	.....	.....
9	1.59	2.60	2.20	3.9	2.78	2.2	1.7	1.6	1.98	1.6	.....	1.7
10	1.58	2.10	2.00	3.0	2.48	2.2	1.8	1.6	1.8	4.3	.....	1.6
11	1.58	1.90	1.90	2.94	2.2	2.65	1.8	1.56	1.7	2.4	.....	1.48
12	1.57	1.82	1.80	7.2	4.1	2.8	2.3	1.5	1.6	2.0	.....	1.4
13	1.59	1.80	1.72	3.88	3.0	2.58	2.1	1.5	1.58	1.9	1.4	.....
14	1.60	1.82	1.64	3.0	2.9	3.66	2.1	1.5	1.56	3.8	1.5	.....
15	1.60	1.76	1.62	2.65	2.8	3.3	2.1	1.8	1.5	3.2	1.5	.....
16	1.59	1.72	1.65	2.8	2.3	2.8	3.0	1.7	1.48	2.6	1.45	.....
17	1.65	1.68	1.68	3.2	2.2	2.5	2.5	3.1	1.42	2.2	1.4	.....
18	1.62	1.64	1.68	3.28	2.2	2.3	2.3	2.8	1.40	2.5	1.3	.....
19	1.58	1.62	1.80	3.1	2.08	2.16	2.1	2.3	1.38	2.2	1.9	.....
20	1.60	1.60	1.75	2.8	2.1	2.1	2.08	2.0	1.3	2.0	1.7	.....
21	1.60	1.59	1.70	3.1	2.1	2.1	2.0	1.9	1.3	1.9	1.5	.....
22	1.58	1.58	1.64	3.3	2.1	2.0	1.85	1.8	1.35	1.8	3.35	1.7
23	1.87	1.58	1.60	3.0	2.1	1.9	1.8	6.8	1.38	1.7	2.8	1.7
24	1.80	1.57	1.60	3.5	2.06	1.9	1.78	5.4	1.48	1.65	2.2	1.55
25	1.70	1.56	1.60	3.6	1.98	1.8	1.6	3.2	1.60	1.65	1.9	1.45
26	1.75	1.55	1.60	3.0	1.9	2.6	1.6	2.7	1.70	1.7	1.75	1.4
27	1.72	1.54	1.90	2.7	1.9	7.3	2.1	6.2	1.60	1.6	1.5	1.3
28	1.68	1.53	2.80	2.8	2.7	3.86	2.3	6.5	1.46	1.5	1.48	.....
29	1.65	1.52	2.78	2.65	.....	2.98	2.16	3.7	1.40	1.45	1.4	.....
30	1.62	1.51	3.20	2.5	.....	2.6	2.2	2.86	1.32	1.4	1.35	.....
31	1.56	.....	4.30	2.45	.....	2.4	.....	4.8	.....	1.4	1.3	.....

NOTE.—Observer made no report relative to ice. Discharge relation probably not materially affected by ice during the year ending Sept. 30, 1913.
Water below gage July 4–6, Aug. 4–12, Sept. 1–8, 13–21, and 28–30. See "Gage" in station description.

CHEAT RIVER NEAR PARSONS, W. VA.

Location.—At highway bridge, 3 miles below the confluence of Shavers and Dry forks and 2 miles due north of Parsons, W. Va.

Records available.—Gage heights, January 1 to September 30, 1913. First discharge measurement made August 24, 1912.

Drainage area.—716 square miles (determined by West Virginia Development Co.).

Gage.—Standard chain gage attached to bridge; gage read daily morning and evening to tenths. Limits of use: Half-tenths below 4.0 and tenths above 4.0.

Control.—Rocky; probably permanent.

Discharge measurements.—Made from downstream side of bridge.

Winter flow.—Discharge relation affected by ice during severe winters.

Accuracy.—Gage-height record probably reliable; data insufficient for estimates of discharge.

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Discharge measurements of Cheat River near Parsons, W. Va., in the years ending Sept. 30, 1912–13.

[Hydrographer, H. P. Drake, engineer of the Pittsburgh Hydro-Electric Co.]

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.
1912.	*Feet.*	*Sec.-ft.*	1913.	*Feet.*	*Sec.-ft.*
Aug. 24	2.93	704	May 12	2.57	494
Do	[a] 2.93	708	Do	[a] 2.57	496
Dec. 20	2.60	454	June 12	3.02	811
			Do	[a] 3.02	810
			Sept. 5	2.06	198
			Do	[a] 2.06	198

[a] Same soundings used as for other measurement on this date.

Daily gage height, in feet, of Cheat River near Parsons, W. Va., for the year ending Sept. 30, 1913.

[O. C. Callihan, observer.]

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	4.4	4.1	4.2	4.3	.....	3.6	2.9	3.25	2.25
2	4.2	3.85	3.85	3.9	.....	3.5	2.9	2.9	2.15
3	5.6	3.9	3.7	(a)	.....	3.45	2.8	2.8	2.15
4	5.1	5.1	3.6	.....	.....	3.35	2.95	2.6	2.05
5	5.6	4.7	3.5	.....	.....	3.2	3.05	2.45	2.05
6	6.4	4.1	3.3	.....	.....	3.2	3.35	2.5	2.05
7	7.1	3.65	3.3	.....	.....	3.65	3.2	2.35	2.25
8	9.8	3.15	3.15	.....	.....	3.9	2.85	2.4	2.6
9	7.4	3.0	3.15	.....	.....	3.65	2.8	2.3	2.55
10	5.6	3.15	3.7	.....	.....	3.35	7.5	2.25	2.3
11	5.0	4.2	5.2	.....	.....	3.2	5.5	2.7	2.2
12	6.4	4.7	5.2	.....	.....	2.95	3.9	3.0	2.1
13	5.8	4.0	5.4	.....	.....	2.8	4.4	6.9	2.0
14	4.8	3.5	6.8	.....	.....	2.75	5.8	5.5	2.0
15	4.3	3.2	6.4	.....	.....	2.7	5.2	3.95	2.0
16	4.2	3.05	5.4	.....	.....	2.6	4.0	3.4	1.95
17	4.6	3.35	4.6	.....	.....	2.5	5.4	3.0	2.05
18	4.4	3.75	4.4	.....	.....	2.35	5.6	2.85	3.25
19	4.2	4.4	4.4	.....	.....	2.2	4.4	2.85	3.0
20	3.95	4.6	4.4	.....	.....	2.15	3.6	2.85	2.7
21	3.85	4.8	4.2	.....	.....	2.2	3.4	2.5	5.6
22	4.2	4.7	3.9	.....	.....	2.55	3.25	2.5	5.2
23	4.2	4.3	3.7	.....	.....	3.5	3.2	3.95	5.0
24	5.0	3.7	3.7	.....	.....	3.8	3.1	4.2	4.3
25	5.2	3.5	3.6	.....	.....	3.85	3.45	3.7	3.55
26	4.5	3.35	3.85	.....	.....	4.4	3.3	3.15	2.8
27	4.3	3.2	8.0	.....	.....	3.9	2.9	2.7	2.55
28	4.0	4.2	6.8	.....	.....	3.5	2.85	2.5	2.45
29	3.75	.....	5.3	.....	.....	3.25	3.2	2.35	2.45
30	3.45	.....	4.9	.....	.....	3.1	2.85	2.35	2.4
31	4.1	.....	4.4	.....	(a)	.....	3.55	2.25	.....

[a] Gage not read Apr. 3–May 31, 1913.

NOTE.—Observer made no report concerning ice. Discharge relation probably not materially affected by ice during the year ending Sept. 30, 1913.

CHEAT RIVER NEAR MORGANTOWN, W. VA.

Location.—At highway bridge at Uneva, W. Va., 10 miles above mouth of river. Parallel of latitude 39° 40′ crosses the river at this bridge.

Records available.—July 8 to December 30, 1899; July 1 to December 29, 1900; August 21, 1902, to December 31, 1905; November 18, 1908, to September 30, 1913.

Drainage area.—1,380 square miles.

Gage.—Standard chain gage attached to bridge. Gage read daily, morning and evening, to hundredths. Limits of use: Hundredths below 2.0, half-tenths from 2.0 to 4.5, and tenths above 4.5 feet. See history of this station in Water-Supply Papers 263 and 283.

Control.—Probably permanent.

Discharge measurements.—Made from upstream side of bridge or, at low water, by wading.

Winter flow.—Ice forms sometimes to a thickness of several inches, and large ice jams may affect the discharge relation during short periods in December, January, and February.

Accuracy.—Station not visited by United States Geological Survey engineers during the year ending September 30, 1913. On November 3 and 4, 1913, bench marks and elevation of the zero of the gage were checked with a wye level and two discharge measurements were made by Survey engineers. Measurements check revised rating curve used for 1912, as noted in Water-Supply Paper 323.

Discharge measurements of Cheat River near Morgantown, W. Va., for the year ending Sept. 30, 1913.

[Hydrographer, H. P. Drake, engineer of the Pittsburgh Hydro-Electric Co.]

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.
1913.	*Feet.*	*Sec.-ft.*	1913.	*Feet.*	*Sec.-ft.*
Jan. 8	9.55	29,100	June 9	3.88	2,960
Do	9.55	29,200	Do	3.88	2,870
May 14	2.78	746	Sept. 3	2.20	[a] 329
Do	2.78	735	Do	2.20	[a] 329

[a] Measurement by wading one-third mile above gage.

Daily gage height, in feet, of Cheat River near Morgantown, W. Va., for the year ending Sept. 30, 1913.

[C. F. Baker, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	3.7	2.9	2.55	5.4	4.1	4.6	4.25	4.2	5.9	3.0	3.4	2.3
2	3.55	2.9	2.65	4.5	4.2	4.35	3.95	4.0	5.0	2.85	3.25	2.2
3	3.35	2.85	3.2	4.9	4.0	4.0	3.95	3.65	4.4	2.8	3.0	2.2
4	3.2	2.85	3.3	5.6	4.9	3.75	3.8	3.5	3.95	2.7	2.85	2.2
5	3.05	2.75	3.35	5.0	4.8	3.75	3.6	3.35	3.75	2.7	2.8	2.1
6	3.0	2.75	3.5	4.8	4.3	3.65	3.6	3.3	3.55	3.1	2.6	2.1
7	2.9	.....	5.0	8.7	3.9	3.4	3.4	3.2	3.45	3.45	2.5	2.05
8	2.8	6.9	4.4	9.4	3.85	3.15	3.4	3.05	3.6	3.15	2.45	2.05
9	2.75	5.4	3.95	8.0	3.7	3.4	3.3	3.05	3.9	2.9	2.4	2.15
10	2.75	4.5	3.65	.....	3.6	3.65	.....	3.0	3.55	4.3	2.4	2.55
11	2.7	4.05	3.45	5.2	3.45	4.35	3.05	.....	3.35	5.7	2.4	2.5
12	2.6	3.9	3.35	7.8	5.5	5.3	3.45	2.8	3.15	4.25	2.5	2.35
13	2.6	3.65	3.2	6.9	4.6	4.8	3.5	2.8	3.05	3.8	2.9	2.25
14	2.6	3.65	3.15	5.4	4.0	4.9	4.9	2.8	3.0	4.7	5.4	2.15
15	2.55	3.6	3.2	4.7	3.95	6.0	4.6	3.2	2.9	5.8	3.9	2.15
16	2.5	3.5	3.15	4.45	3.55	5.6	6.1	3.7	2.75	5.1	3.4	2.1
17	2.45	3.35	3.1	4.8	3.4	4.7	5.2	3.7	2.7	4.8	3.05	2.0
18	2.45	3.25	3.0	5.0	3.3	4.25	4.5	.....	2.6	6.0	2.9	2.1
19	2.45	3.2	3.05	4.9	3.25	4.0	4.15	4.3	2.55	4.8	2.85	2.6
20	2.5	3.1	3.15	4.6	3.3	3.85	4.0	3.85	2.5	4.4	2.75	2.95
21	2.45	3.05	3.1	4.45	3.65	3.7	3.9	3.95	2.8	3.8	2.75	2.8
22	2.6	2.95	3.1	4.5	4.1	3.6	3.7	4.5	2.6	3.5	2.6	4.8
23	2.65	2.9	2.85	4.4	4.3	3.5	3.6	6.6	2.6	3.25	2.55	3.85
24	2.85	2.9	.....	5.1	4.15	3.4	3.45	8.2	3.3	3.1	2.65	3.3
25	3.95	2.9	2.8	5.5	3.85	3.3	3.35	.....	3.75	3.2	3.15	3.05
26	3.9	2.85	2.8	5.1	3.45	4.3	3.25	5.1	4.0	3.6	2.85	2.85
27	3.65	2.8	2.85	4.6	3.5	7.5	.....	6.9	3.45	3.25	2.7	2.7
28	3.45	2.7	3.1	4.3	4.3	7.6	4.4	8.6	3.85	3.0	2.55	2.55
29	3.25	2.65	3.25	4.05	.....	5.7	4.3	6.6	3.4	3.05	2.5	2.5
30	3.1	2.6	4.05	3.85	.....	5.0	4.35	5.5	3.25	3.05	2.4	2.45
31	3.0	.....	6.9	3.85	.....	4.5	.....	8.1	.....	3.0	2.3	.....

NOTE.—Observer made no notes concerning ice. Discharge relation probably not affected by ice during the year ending Sept. 30, 1913.

Daily discharge, in second-feet, of Cheat River near Morgantown, W. Va., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	2,200	805	512	9,040	3,300	5,110	3,790	3,620	11,600	915	1,520	375
2	1,840	805	585	4,700	3,620	4,140	2,880	3,000	7,000	758	1,260	330
3	1,430	758	1,180	6,500	3,000	3,000	2,860	2,080	4,320	710	915	330
4	1,180	758	1,340	10,100	6,500	2,320	2,450	1,730	2,860	625	758	330
5	980	668	1,430	7,000	6,020	2,320	1,960	1,430	2,320	625	710	290
6	915	668	1,730	6,020	3,960	2,080	1,960	1,340	1,840	1,040	545	290
7	805	a 8,680	7,000	25,900	2,710	1,520	1,520	1,180	1,620	1,620	480	272
8	710	16,700	4,320	29,400	2,580	1,120	1,520	980	1,960	1,120	452	272
9	668	9,040	2,860	22,300	2,200	1,520	1,340	980	2,710	805	425	310
10	668	4,700	2,080	a15,200	1,960	2,080	a 1,160	915	1,840	3,960	425	512
11	625	3,150	1,620	8,020	1,620	4,140	980	a 812	1,430	10,600	425	480
12	545	2,710	1,430	21,300	9,550	8,530	1,620	710	1,120	3,790	480	400
13	545	2,080	1,180	16,700	5,110	6,020	1,730	710	980	2,450	805	352
14	545	2,080	1,120	9,040	3,000	6,500	6,500	710	915	5,550	9,040	310
15	512	1,960	1,180	5,550	2,860	12,100	5,110	1,180	805	11,100	2,710	310
16	480	1,730	1,120	4,510	1,840	10,100	12,600	2,200	668	7,510	1,520	290
17	452	1,430	1,040	6,020	1,520	5,550	8,020	2,200	625	6,020	980	255
18	452	1,260	915	7,000	1,340	3,790	4,700	a 3,080	545	12,100	805	290
19	452	1,180	980	6,500	1,260	3,000	3,460	3,960	512	6,020	758	545
20	480	1,040	1,120	5,110	1,340	2,580	3,000	2,580	480	4,320	668	860
21	452	980	1,040	4,510	2,080	2,200	2,710	2,860	710	2,450	668	710
22	545	860	1,040	4,700	3,300	1,960	2,200	4,700	545	1,730	545	6,020
23	585	805	758	4,320	3,960	1,730	1,960	15,200	545	1,260	512	2,580
24	758	805	a 734	7,510	3,460	1,520	1,620	23,300	1,340	1,040	585	1,340
25	2,860	805	710	9,550	2,580	1,340	1,430	a15,400	2,320	1,180	1,120	980
26	2,710	758	710	7,510	1,620	3,960	1,260	7,510	3,000	1,960	758	758
27	2,080	710	758	5,110	1,730	19,800	a 2,790	16,700	1,620	1,260	625	625
28	1,620	625	1,040	3,960	3,960	20,300	4,320	25,400	2,580	915	512	512
29	1,260	585	1,260	3,150	.....	10,600	3,960	15,200	1,520	980	480	480
30	1,040	545	3,150	2,580	.....	7,000	4,140	9,550	1,260	980	425	452
31	915	.....	16,700	2,580	.....	4,700	.....	22,800	.....	915	375	.....

a Interpolated.

NOTE.—Daily discharge computed from a rating curve well defined between 115 and 47,800 second-feet gage heights 1.5 and 13.0 feet).

Monthly discharge of Cheat River near Morgantown, W. Va., for the year ending Sept. 30, 1913.

[Drainage area, 1,380 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
October	2,860	452	1,010	0.732	0.84	B.
November	16,700	545	2,320	1.68	1.87	A.
December	16,700	512	2,020	1.46	1.68	A.
January	29,400	2,580	9,080	6.58	7.59	A.
February	9,550	1,260	3,140	2.28	2.37	A.
March	20,300	1,120	5,250	3.80	4.38	A.
April	12,600	980	3,180	2.30	2.57	A.
May	25,400	710	6,260	4.54	5.23	B.
June	11,600	480	2,050	1.49	1.66	B.
July	12,100	625	3,110	2.25	2.59	A.
August	9,040	375	1,040	.754	.87	A.
September	6,020	255	729	.528	.59	B.
The year	29,400	255	3,280	2.38	32.24	

SHAVERS FORK AT PARSONS, W. VA.

Location.—At steel highway bridge 600 feet northwest of the railroad station at Parsons, W. Va., one-third mile above confluence with Dry Fork.

Records available.—October 14, 1910, to September 30, 1913.

Drainage area.—210 square miles (Pittsburgh Flood Commission).

Gage.—Standard chain gage attached to bridge, read daily morning and evening to tenths. Limits of use: Half-tenths below 7.0 and tenths above 7.0. Sea-level elevation of zero of gage, 1,631.70 feet.

Control.—Rocky; probably permanent.

Discharge measurements.—Made from downstream side of bridge or (at low stages) by wading.

Floods.—High waters of 1888 and 1907 reached a height of approximately 12.5 feet referred to present gage datum.

Point of zero flow.—Levels run September 4, 1912, indicate that there would be no flow past the gage if the river were to fall to a stage of 1.8 feet±0.2 foot.

Winter flow.—Discharge relation affected by ice during severe winters.

Accuracy.—Most discharge measurements at this station prior to 1913 were made by subsurface method; coefficients used in computations vary from 0.88 to 0.95. (See introduction to Water-Supply Paper 263.) Estimates of daily and monthly discharge for the year ending September 30, 1912, appear excessive. Gage-height record not thoroughly reliable, as noted in the footnote to the table of daily gage height in Water-Supply Paper 323, page 36; therefore data for 1912 should be used with caution and should be compared with those for other gaging stations in the locality and with records of precipitation.

Cooperation.—Established and maintained by Pittsburgh Flood Commission until taken over by the United States Geological Survey, July 1, 1912.

Discharge measurements of Shavers Fork at Parsons, W. Va., in the year ending Sept. 30, 1913.

[Hydrographer, H. P. Drake, engineer of the Pittsburgh Flood Commission.]

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.
1912.	*Feet.*	*Sec.-ft.*	1913.	*Feet.*	*Sec.-ft.*
Dec. 24	3.18	144	June 12	3.36	256
			Do	3.36	259
1913.			Sept. 5	2.78	[a]50
May 10	3.23	176	Do	2.78	[a]52
Do	3.23	177			

[a] Measurement made by wading at a section about 300 feet above Western Maryland Railroad bridge.

Daily gage height, in feet, of Shavers Fork at Parsons, W. Va., for the years ending Sept. 30, 1911–1913.

[R. W. Evans, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1911.[a]												
1	.....	2.97	4.54	3.90	5.78	3.06	3.94	3.62	3.60	3.38	2.76	4.64
2	.....	2.97	3.54	4.50	4.48	3.26	4.44	3.62	3.60	3.08	2.76	3.74
3	.....	3.07	3.54	5.90	4.18	3.26	4.54	3.42	3.60	2.78	2.96	3.54
4	.....	2.97	3.74	5.30	4.08	3.26	4.64	3.52	3.40	2.78	2.86	3.44
5	.....	2.97	3.54	4.70	3.88	3.26	6.24	3.62	3.40	2.78	2.76	3.34
6	.....	3.07	3.24	3.90	3.88	3.36	5.64	3.52	3.60	2.78	2.66	3.34
7	.....	2.97	3.24	3.70	3.78	4.56	5.64	3.42	3.80	2.68	1.86	3.14
8	.....	2.97	3.14	3.60	3.68	4.46	5.44	3.52	4.00	2.78	2.56	3.24
9	.....	2.97	2.94	3.50	3.88	2.96	5.24	3.42	3.90	2.78	2.66	2.94
10	.....	2.97	3.04	3.20	3.78	4.16	5.04	3.32	3.80	2.68	2.56	2.74
11	.....	2.97	3.14	3.20	3.68	4.06	4.84	3.02	3.90	2.88	2.46	3.74
12	.....	2.97	3.14	3.50	3.78	3.96	4.64	3.12	3.80	3.38	2.46	4.34
13	.....	2.97	3.14	7.20	3.48	4.46	4.84	3.02	3.80	3.18	2.36	3.74
14	2.89	2.77	2.94	6.50	3.48	4.96	5.04	3.12	4.00	3.08	2.46	3.74
15	2.89	2.97	2.94	5.50	3.38	5.26	5.64	3.22	3.90	2.98	2.56	2.84
16	2.80	2.97	2.94	5.60	3.38	5.06	4.74	2.92	3.80	2.98	2.66	6.74
17	2.89	2.77	2.94	4.50	3.48	3.96	4.44	3.02	3.70	2.98	2.66	5.44
18	2.89	2.87	2.94	4.10	3.58	3.86	4.44	2.92	4.40	2.78	2.56	4.34
19	2.80	2.87	3.14	3.90	3.48	4.06	4.04	2.82	4.00	2.88	2.56	3.74
20	2.89	2.87	3.04	3.80	3.68	4.66	4.64	2.82	4.00	2.68	2.56	3.94
21	2.89	2.77	2.94	3.60	3.58	4.46	4.84	2.92	3.80	2.78	2.66	4.04
22	2.89	2.87	3.04	4.50	3.48	4.36	5.04	2.82	3.80	2.78	2.66	3.94
23	3.10	2.87	3.14	4.50	3.28	4.06	4.84	1.92	3.70	2.98	2.86	3.84
24	3.20	2.87	3.74	4.40	3.28	3.96	4.24	2.62	3.80	2.88	2.66	3.74
25	3.00	2.97	3.74	4.60	3.08	3.86	4.04	2.62	4.00	2.78	2.86	3.74
26	3.00	3.77	3.54	4.80	3.28	3.56	4.14	2.72	3.80	2.78	2.56	3.84
27	3.00	3.57	3.24	5.70	3.28	3.46	4.04	4.22	4.00	2.78	2.46	3.94
28	3.00	3.67	3.24	5.60	3.18	3.46	3.84	4.02	3.80	2.68	2.66	4.04
29	3.03	4.87	3.84	5.30	.....	3.66	4.04	3.82	3.70	2.58	2.86	3.94
30	3.01	3.97	5.94	9.90	.....	3.86	3.64	3.72	3.40	2.68	2.96	3.74
31	3.00	.....	4.84	5.90	.....	4.06	.....	3.72	.....	2.88	6.36	.....
1912.												
1	5.72	3.20	3.90	5.4	4.2	5.4	5.0	3.2	3.0	3.4	4.1	3.4
2	5.12	3.40	3.90	5.0	4.1	5.4	5.1	3.1	3.1	3.3	3.2	3.3
3	4.72	3.30	3.80	4.9	3.6	5.2	4.9	3.2	3.0	3.3	3.3	3.2
4	4.72	3.20	3.70	4.6	3.2	5.0	4.6	3.2	3.1	4.8	3.3	3.01
5	4.62	3.10	3.80	4.3	3.2	4.8	4.5	3.1	3.0	4.4	3.2	3.02
6	4.32	4.20	3.60	4.0	3.0	4.7	4.6	3.4	2.1	4.3	3.1	3.01
7	4.72	5.50	3.40	4.0	3.0	5.0	4.2	3.5	3.1	4.2	3.2	2.81
8	5.32	4.20	3.50	3.6	3.1	5.2	4.1	3.4	3.0	3.1	3.2	2.81
9	4.72	4.00	3.40	.....	3.0	5.3	4.0	3.3	2.1	3.6	3.2	2.72
10	4.92	3.90	3.30	.....	3.1	5.4	4.2	4.0	2.8	3.3	3.1	2.10
11	5.02	3.80	3.20	.....	3.2	5.2	4.1	3.8	2.8	3.3	3.0	2.01
12	3.82	3.60	3.30	.....	3.3	5.3	3.6	7.0	2.8	3.3	3.0	2.02
13	4.22	3.50	3.40	.....	3.2	4.6	3.4	6.3	2.6	3.5	3.1	2.03
14	3.90	3.40	3.50	.....	3.1	4.8	3.5	6.0	2.8	3.4	3.0	2.02
15	4.10	3.40	3.60	.....	3.0	5.3	3.4	5.8	2.8	4.2	3.0	2.82
16	4.70	3.50	4.00	.....	3.1	7.3	3.3	6.1	2.8	4.0	3.1	3.00
17	4.00	3.40	4.60	.....	3.0	.....	3.6	5.9	2.9	4.0	3.0	3.02
18	7.40	.....	4.20	.....	3.2	.....	3.5	5.0	4.4	6.3	2.9	3.01
19	5.00	.....	4.30	.....	3.5	.....	4.0	4.6	4.5	6.0	3.0	2.90
20	4.60	.....	4.20	5.2	3.7	.....	4.0	4.0	4.6	4.4	3.1	3.02
21	4.20	.....	4.10	5.3	3.8	.....	3.8	3.7	3.1	4.0	3.3	3.00
22	4.50	.....	3.70	5.0	3.9	6.1	3.7	3.7	3.9	7.6	3.2	3.00
23	4.60	.....	4.00	5.1	4.3	5.7	3.6	3.6	4.0	6.6	3.6	3.22
24	4.40	3.70	4.20	5.0	4.4	4.8	3.4	3.5	4.0	5.0	3.4	4.80
25	4.00	3.60	4.60	4.9	4.6	4.7	3.5	3.4	3.0	8.0	3.2	5.0
26	4.00	3.50	5.00	4.8	6.1	4.7	3.6	3.2	3.1	4.2	3.4	4.05
27	3.50	3.60	5.10	4.6	7.4	4.6	3.4	3.4	3.9	4.4	3.6	4.05
28	3.40	3.40	5.00	4.5	6.5	5.0	3.5	3.1	3.7	4.0	3.4	3.82
29	3.30	3.30	4.90	4.8	5.6	5.2	3.6	3.2	3.9	3.9	3.3	3.55
30	3.40	3.40	4.60	5.1	.....	6.0	3.5	3.1	3.6	4.2	3.3	3.42
31	3.30	.....	5.00	4.8	.....	5.0	.....	3.1	.....	4.1	3.4	.....

[a] This and all similar headings in this paper indicate the year ending Sept. 30 (climatic year), which includes three months of the preceding calendar year.

Daily gage height, in feet, of Shavers Fork at Parsons, W. Va., for the years ending Sept. 30, 1911–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1913.												
1	3.30	3.23	2.87	4.2	3.85	4.1	4.2	4.0	4.5	3.0	3.4	3.1
2	3.22	3.08	2.97	4.0	3.9	4.0	4.05	3.8	4.0	3.0	3.3	3.05
3	3.25	3.00	3.07	3.9	4.3	3.9	4.0	3.6	3.75	.....	3.2	2.9
4	3.02	2.83	3.02	4.0	4.4	3.8	3.7	3.6	3.7	.....	3.15	2.9
5	3.10	2.70	3.07	4.2	4.35	3.6	3.8	3.55	3.6	.....	3.0	2.8
6	3.05	2.88	3.87	4.35	4.0	3.7	3.8	3.5	3.75	.....	2.95	2.85
7	3.00	3.03	3.72	6.3	3.6	3.8	3.7	3.4	3.85	3.2	2.9	2.9
8	3.10	6.2	3.87	6.6	3.5	3.7	3.5	3.35	3.8	3.2	2.9	3.05
9	2.95	6.0	3.77	6.0	3.4	4.0	3.45	3.35	3.85	3.3	2.9	3.3
10	2.92	4.18	3.72	4.35	3.3	4.2	3.5	3.3	3.75	5.45	2.8	3.2
11	2.85	3.98	3.57	4.2	3.4	4.5	3.6	3.2	3.55	5.0	2.95	3.1
12	2.75	3.73	3.47	4.0	4.5	4.7	3.7	3.1	3.3	4.55	3.15	3.0
13	3.00	3.78	3.42	4.1	4.3	4.5	4.2	3.0	3.3	4.7	6.7	3.0
14	3.10	3.93	3.12	4.0	4.3	4.3	4.5	3.2	3.2	4.65	4.95	2.9
15	2.85	3.78	3.02	4.0	4.15	5.1	5.2	3.3	3.2	5.0	4.05	2.9
16	2.90	3.73	3.17	4.1	4.0	4.9	5.4	3.5	3.05	4.5	4.0	2.75
17	2.80	3.58	3.07	3.95	3.45	4.6	4.8	4.0	3.0	4.3	.....	2.45
18	2.92	3.68	3.17	4.0	3.35	4.4	4.5	4.4	3.0	4.5	3.35	3.55
19	3.10	3.63	3.12	4.0	3.25	4.4	4.4	4.3	2.95	4.15	3.25	3.45
20	2.95	3.48	3.07	3.95	3.4	4.2	4.3	4.1	2.85	3.6	3.2	3.25
21	2.80	3.38	3.02	3.8	3.3	4.3	4.3	4.2	2.8	3.45	3.1	5.4
22	2.95	3.40	2.97	4.0	4.0	4.0	4.1	4.6	3.0	3.35	3.0	4.6
23	3.02	3.33	2.77	4.05	4.1	3.8	4.0	5.1	3.15	3.3	4.05	3.85
24	3.45	3.30	2.87	4.0	3.8	3.4	3.8	6.3	3.35	3.3	3.4	3.5
25	3.60	3.38	.....	4.0	3.35	4.0	3.6	4.6	3.45	3.55	3.2	3.3
26	3.55	3.33	.....	4.2	3.5	4.6	3.7	5.2	3.45	3.45	3.2	3.25
27	3.50	3.18	3.27	4.1	3.6	7.3	4.0	6.25	3.45	3.3	3.3	3.15
28	2.95	3.28	3.17	4.0	3.7	6.6	4.2	6.45	3.3	3.2	3.2	3.1
29	2.83	3.12	3.07	3.8	.....	4.8	4.4	5.2	3.3	3.25	3.15	3.1
30	3.30	2.87	5.15	3.9	.....	4.6	4.6	5.35	3.2	3.2	3.05	3.05
31	3.25	.....	5.25	3.65	.....	4.1	.....	5.3	.....	3.75	3.0	.....

NOTE.—Discharge relation probably affected by ice about Dec. 25, 1912, to Jan. 1, 1913, and Feb. 8 to 16, 1913. Observer reported river frozen over Dec. 25-26, "ice going out" Dec. 30, and "ice backing up," Dec. 31, 1912.

Daily discharge, in second-feet, of Shavers Fork at Parsons, W. Va., for the years ending Sept. 30, 1911–1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1911.												
1	.....	94	1,290	590	3,140	115	628	364	350	226	56	1,420
2	.....	94	314	1,240	1,220	176	1,170	364	350	120	56	452
3	.....	118	.....	3,350	869	176	1,290	246	350	59	92	314
4	.....	94	.....	2,360	765	176	1,420	302	235	59	72	257
5	.....	94	.....	1,500	572	176	3,980	364	235	59	56	208
6	.....	118	.....	590	572	217	2,900	302	350	59	43	208
7	.....	94	.....	420	484	1,320	2,900	246	500	46	72	137
8	.....	94	.....	350	406	1,190	2,570	302	685	59	32	169
9	.....	94	.....	290	572	92	2,270	246	590	59	43	87
10	.....	94	.....	155	484	848	1,980	199	500	46	32	54
11	.....	94	.....	155	406	745	1,700	105	590	76	23	452
12	.....	94	.....	290	484	647	1,420	131	500	226	23	1,050
13	.....	94	.....	5,890	279	1,190	1,700	105	500	149	16	452
14	77	58	.....	4,470	279	1,860	1,980	131	685	120	23	452
15	77	94	.....	2,670	226	2,300	2,900	162	590	96	32	69
16	62	94	.....	2,830	226	2,000	1,560	83	500	96	43	4,950
17	77	58	.....	1,240	279	647	1,170	105	420	96	43	2,570
18	77	74	.....	785	338	554	1,170	83	1,120	59	32	1,050
19	62	74	.....	590	279	745	725	65	685	76	32	452
20	77	74	.....	500	406	1,450	1,420	65	685	46	32	628
21	77	58	.....	350	338	1,190	1,700	83	500	59	43	725
22	77	74	.....	1,240	279	1,070	1,980	65	500	59	43	628
23	125	74	.....	1,240	183	745	1,700	83	420	96	72	536
24	155	74	452	1,120	183	647	934	38	500	76	43	452
25	100	94	452	1,370	120	554	725	38	685	59	72	452
26	100	476	314	1,640	183	326	827	51	500	59	32	536
27	100	332	169	3,000	183	268	725	912	685	59	23	628
28	100	399	169	2,830	149	268	536	705	500	46	43	725
29	108	1,740	536	2,360	.....	392	725	518	420	34	72	628
30	102	656	3,420	12,300	.....	554	378	436	235	46	92	452
31	100	.....	1,700	3,350	.....	745	.....	436	.....	76	4,200	.....

Daily discharge, in second-feet, of Shavers Fork, at Parsons, W. Va., for the years ending Sept. 30, 1911–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1912.												
1	3,030	155	590	2,510	890	2,510	1,920	155	100	235	785	235
2	2,090	235	590	1,920	785	2,510	2,060	125	125	190	155	190
3	1,530	190	500	1,780	350	2,210	1,780	155	100	190	190	155
4	1,530	155	420	1,370	155	1,920	1,370	155	125	1,640	190	102
5	1,400	125	500	1,000	.....	1,640	1,240	125	100	1,120	155	105
6	1,020	890	350	685	.....	1,500	1,370	235	125	1,000	125	102
7	1,530	2,670	235	.....	.....	1,920	890	290	125	890	155	64
8	2,390	890	290	.....	.....	2,210	785	235	100	125	155	64
9	1,530	685	235	.....	.....	2,360	685	190	125	350	155	51
10	1,810	590	190	.....	.....	2,510	890	685	62	190	125	125
11	1,950	500	155	.....	.....	2,210	785	500	62	190	100	102
12	518	350	190	.....	.....	2,360	350	5,470	62	190	100	105
13	912	290	235	.....	.....	1,370	235	4,090	36	290	125	108
14	590	235	290	.....	.....	1,640	290	3,530	62	235	100	105
15	785	235	350	.....	.....	2,360	235	3,170	62	890	100	65
16	1,500	290	685	.....	.....	6,110	190	3,710	62	685	125	100
17	685	235	1,370	.....	.....	5,000	350	3,350	79	685	100	105
18	6,330	350	890	.....	.....	3,500	290	1,920	1,120	4,090	79	102
19	1,920	700	1,000	.....	.....	2,000	685	1,370	1,240	3,530	100	79
20	1,370	1,200	890	2,210	.....	2,200	685	685	1,370	1,120	125	105
21	890	900	785	2,360	500	2,700	500	420	785	685	190	100
22	1,240	700	420	1,920	590	3,710	420	420	590	6,790	155	100
23	1,370	500	685	2,060	1,000	3,000	350	350	685	4,670	350	162
24	1,120	420	890	1,920	1,120	1,640	235	290	685	1,920	235	1,640
25	685	350	1,370	1,780	1,370	1,500	290	235	100	7,740	155	1,920
26	685	290	1,920	1,640	3,710	1,500	350	155	125	890	235	735
27	290	350	2,060	1,370	6,330	1,370	235	235	590	1,120	350	735
28	235	235	1,920	1,240	4,470	1,920	290	125	420	685	235	518
29	190	190	1,780	1,640	2,830	2,210	350	155	590	590	190	320
30	235	235	1,370	2,060	.....	3,530	290	125	350	890	190	246
31	190	.....	1,920	1,640	.....	1,920	.....	125	.....	785	235	.....
1913.												
1	190	166	74	.....	562	800	905	700	1,260	98	245	124
2	162	120	94	700	605	700	750	520	700	98	198	111
3	172	100	118	605	1,020	605	700	365	480	110	158	76
4	105	67	105	700	1,140	520	440	365	440	120	141	76
5	125	48	118	905	1,080	365	520	332	365	140	98	56
6	112	76	563	1,080	700	440	520	300	480	150	87	66
7	100	108	436	4,090	365	520	440	245	562	158	76	76
8	125	3,900	563	4,670	.....	440	300	222	520	158	76	111
9	90	3,530	476	3,530	.....	700	272	222	562	198	76	198
10	83	869	436	1,080	.....	905	300	198	480	2,590	56	158
11	70	666	332	905	.....	1,260	365	158	332	1,930	87	124
12	55	444	274	700	.....	1,520	440	124	198	1,320	141	98
13	100	484	246	800	.....	1,260	905	98	198	1,520	4,870	98
14	125	618	131	700	.....	1,020	1,260	158	158	1,460	1,860	76
15	70	484	105	700	.....	2,070	2,220	198	158	1,930	750	76
16	79	444	146	800	.....	1,790	2,510	300	111	1,260	700	48
17	62	338	118	652	272	1,390	1,660	700	98	1,020	a 461	16
18	83	406	146	700	222	1,140	1,260	1,140	98	1,260	222	332
19	125	371	131	700	178	1,140	1,140	1,020	87	852	178	272
20	90	279	118	652	245	905	1,020	800	66	365	158	178
21	62	226	105	520	198	1,020	1,020	905	56	272	124	2,510
22	90	235	94	700	700	700	800	1,390	98	222	98	1,390
23	105	204	58	750	800	520	700	2,070	141	198	750	562
24	262	190	74	700	520	245	520	4,090	222	198	245	300
25	350	226	.....	700	222	700	365	1,390	272	332	158	198
26	320	204	.....	905	300	1,390	440	2,220	272	272	158	178
27	290	149	.....	800	365	6,110	700	4,000	272	198	198	141
28	90	183	.....	700	440	4,670	905	4,380	198	158	158	124
29	67	131	.....	520	.....	1,660	1,140	2,220	198	178	141	124
30	190	74	.....	605	.....	1,390	1,390	2,440	158	158	111	111
31	172	.....	.....	402	.....	800	.....	2,360	.....	480	98	.....

a Interpolated.

NOTE.—Daily discharge computed from a fairly well defined rating curve. See "Accuracy" in station description.

Discharge estimated, because of ice, from gage heights, observer's notes, and discharge of adjacent drainage areas, as follows: Dec. 3 to 23, 1910, 80 second-feet; Jan. 7 to 19, 1912, 300 second-feet; Feb. 5 to 20, 1912, 100 second-feet; Dec. 25, 1912, to Jan. 1, 1913, 400 second-feet; Feb. 8 to 16, 1913, 400 second-feet. Mean discharge, Oct. 1 to 13, 1910, estimated in order to complete the year ending Sept. 30, 1911, as 100 second-feet. Daily discharge, Nov. 18 to 23, 1911, Mar. 17 to 21, 1912, and July 3 to 6, 1913, estimated because gage was not read. Daily discharge, May 23 and Aug. 7, 1911, obtained by adding 1 foot to reported gage height before entering rating table.

Monthly discharge of Shavers Fork at Parsons, W. Va., for the years ending Sept. 30, 1911–1913.

[Drainage area, 210 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
1911.						
October	.....	.....	95.2	0.453	0.52	C.
November	1,740	58	192	.914	1.02	B.
December	3,420	.....	339	1.61	1.86	D.
January	12,300	155	1,970	9.38	10.81	C.
February	3,140	120	497	2.37	2.47	B.
March	2,300	92	754	3.59	4.14	B.
April	3,980	378	1,570	7.48	8.34	B.
May	912	38	237	1.13	1.30	B.
June	1,120	235	512	2.44	2.72	B.
July	226	34	80.7	.384	.44	C.
August	4,200	16	180	.857	.99	D.
September	4,950	54	706	3.36	3.75	C.
The year	12,300	.....	594	2.83	38.36	
1912.						
October	6,330	190	1,340	6.38	7.36	B.
November	2,670	125	505	2.40	2.68	C.
December	2,060	155	809	3.85	4.44	C.
January	2,510	.....	1,130	5.38	6.20	D.
February	6,330	.....	886	4.22	4.55	C.
March	6,110	1,370	2,420	11.5	13.26	C.
April	2,060	190	680	3.24	3.62	B.
May	5,470	125	1,060	5.05	5.82	B.
June	1,370	.....	339	1.61	1.80	C.
July	7,740	125	1,440	6.86	7.91	B.
August	785	79	186	.886	1.02	B.
September	1,920	.....	288	1.37	1.53	C.
The year	7,740	.....	929	4.42	60.19	
1913.						
October	350	55	133	.633	.73	B.
November	3,900	48	511	2.43	2.71	B.
December	563	.....	254	1.21	1.40	C.
January	4,670	402	1,040	4.95	5.71	B.
February	.....	.....	483	2.30	2.40	C.
March	6,110	245	1,250	5.95	6.86	B.
April	2,510	272	864	4.11	4.59	B.
May	4,380	98	1,150	5.48	6.32	B.
June	1,260	56	308	1.47	1.64	B.
July	2,590	98	626	2.98	3.44	B.
August	4,870	56	415	1.98	2.28	B.
September	2,510	16	267	1.27	1.42	B.
The year	6,110	.....	611	2.91	39.50	

NOTE.—See "Accuracy" in station description and footnote to table of daily discharge.

YOUGHIOGHENY RIVER AT CONFLUENCE, PA.

Location.—At highway bridge, about half a mile from the railroad station at Confluence, Pa., about half a mile above the mouth of Casselman River.

Records available.—September 15, 1904, to September 30, 1913.

Drainage area.—435 square miles.

Gage.—Chain gage attached to bridge; read once daily in the afternoon to half-tenths.

Control.—Probably permanent.

Discharge measurements.—Made from upstream side of bridge.

Winter flow.—Discharge relation occasionally affected by ice.

Accuracy.—Discharge measurements made during 1911 and 1912 indicate marked effect from backwater at this station; estimates of discharge withheld. For a statement of general conditions at this station see Water-Supply Papers 263 and 283.

Cooperation.—Station maintained by the Water Supply Commission of Pennsylvania, which supplied all records for the year ending September 30, 1913.

Discharge measurements of Youghiogheny River at Confluence, Pa., in the year ending Sept. 30, 1913.

[Hydrographer, R. A. Boehringer, an engineer of the Pennsylvania Water Supply Commission.]

Date.	Gage height.	Discharge.
	Feet.	*Sec.-ft.*
Dec. 4	2.50	414
Aug. 12	[a] 1.93	151

[a] Measurement made by wading at a section at the bridge.

Daily gage height, in feet, of Youghiogheny River at Confluence, Pa., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	3.12	2.16	2.01	4.50	3.30	3.80	3.66	2.66	4.82	2.52	2.02	1.45
2	2.92	2.16	2.06	3.80	3.10	3.40	3.51	2.61	4.42	2.62	2.02	1.40
3	2.77	2.11	2.56	5.90	3.20	3.30	3.71	2.56	3.92	2.57	1.97	1.40
4	2.62	2.11	2.46	4.80	3.80	3.20	3.81	2.51	3.52	2.47	1.92	1.40
5	2.52	2.06	2.41	4.50	3.45	3.10	3.51	2.51	3.32	2.42	1.82	1.35
6	2.42	2.06	3.80	5.00	3.20	3.00	3.26	2.51	3.17	2.37	1.82	1.35
7	2.32	3.61	3.90	8.50	3.00	2.90	3.11	2.51	3.07	2.32	1.82	1.35
8	2.22	5.16	3.40	11.70	3.00	2.85	3.01	2.46	3.42	2.27	1.77	1.40
9	2.12	4.01	3.15	7.70	2.90	2.75	2.91	2.46	3.12	2.27	1.77	1.45
10	2.12	3.31	2.95	5.10	2.90	3.00	2.71	2.41	2.92	2.22	1.72	1.40
11	2.12	3.06	2.70	5.70	3.25	4.05	2.71	2.41	2.72	2.17	1.72	1.40
12	2.12	2.96	2.50	10.00	3.80	3.80	3.01	2.41	2.57	2.17	1.92	1.45
13	2.12	2.86	2.35	6.85	3.50	3.65	3.51	2.51	2.47	2.27	2.52	1.40
14	2.07	2.96	2.35	5.20	3.25	4.50	3.71	2.91	2.37	2.72	2.36	1.40
15	2.07	2.81	2.40	4.40	3.10	4.40	4.46	3.11	2.27	3.02	2.06	1.40
16	2.07	2.71	2.40	4.35	3.00	3.90	4.26	3.41	2.27	3.82	2.01	1.35
17	2.02	2.61	2.40	4.40	2.85	3.60	3.85	3.51	2.22	2.82	1.96	1.35
18	2.02	2.56	2.50	4.50	2.75	3.40	3.56	3.11	2.22	2.72	1.91	1.40
19	2.02	2.46	2.80	4.30	2.65	3.25	3.36	3.01	2.32	2.62	1.91	1.60
20	1.97	2.41	3.00	3.90	2.65	3.15	3.11	2.91	2.27	2.52	1.86	2.00
21	1.97	2.36	2.90	3.95	2.90	3.05	2.96	3.31	2.27	2.42	1.81	2.20
22	1.97	2.31	2.80	3.70	3.40	3.00	2.91	4.01	2.22	2.37	1.76	2.35
23	2.32	2.26	2.85	3.60	3.30	3.00	2.81	7.06	2.22	2.32	1.71	2.20
24	2.72	2.21	2.50	4.65	3.20	2.95	2.76	8.21	2.22	2.27	1.66	2.00
25	2.72	2.16	2.25	4.70	3.10	3.00	2.76	5.31	2.22	2.52	1.61	1.90
26	2.82	2.11	2.00	4.25	3.00	4.70	2.71	4.21	2.17	2.42	1.56	1.80
27	2.67	2.11	2.10	3.95	3.00	6.75	2.66	7.71	2.82	2.32	1.51	1.65
28	2.52	2.06	2.40	3.70	4.75	5.50	2.61	6.41	2.72	2.22	1.51	1.55
29	2.37	2.01	2.65	3.50	.....	4.45	2.61	5.61	2.62	2.17	1.46	1.45
30	2.27	2.01	4.50	3.30	.....	3.95	2.71	5.01	2.52	2.12	1.46	1.65
31	2.17	.....	5.70	3.50	.....	3.80	.....	5.21	.....	2.07	1.46	.....

NOTE.—On Dec. 14, 1912, ice formed along the shores. Discharge relation probably not affected by ice during the year ending Sept. 30, 1913.

CASSELMAN RIVER AT MARKLETON, PA.

Location.—At highway bridge at the Baltimore & Ohio Railroad station at Markleton, Pa.

Records available.—August 25 to September 30, 1913.

Drainage area.—365 square miles (Water Supply Commission of Pennsylvania).

Gage.—Chain gage attached to bridge; read daily morning and evening to hundredths.

Control.—Bed consists of gravel and bowlders.

Discharge measurements.—Made from downstream side of bridge.
Winter flow.—Discharge relation affected by ice during short periods.
Accuracy.—Data insufficient for estimates of discharge.
Cooperation.—Station established and records furnished by Water Supply Commission of Pennsylvania.

The following discharge measurement was made by R. A. Boehringer, an engineer of the Water Supply Commission of Pennsylvania:

August 13, 1913: Gage height, 2.80 feet; discharge, 235 second-feet.

Daily gage height, in feet, of Casselman River at Markleton, Pa., for the year ending Sept. 30, 1913.

Day.	Aug.	Sept.	Day.	Aug.	Sept.	Day.	Aug.	Sept.
1		1.90	11		1.90	21		1.90
2		1.90	12		1.90	22		2.01
3		1.90	13		1.90	23		2.00
4		1.90	14		1.90	24		2.00
5		1.90	15		1.91	25	2.06	2.00
6		1.90	16		1.90	26	2.00	2.92
7		1.90	17		1.90	27	2.00	2.90
8		2.90	18		1.90	28	1.90	2.90
9		2.00	19		1.90	29	1.95	2.45
10		2.00	20		1.90	30	1.95	2.46
						31	2.00	

CASSELMAN RIVER AT CONFLUENCE, PA.

Location.—At highway bridge, about 500 yards from the railroad station and a few hundred yards above the junction of Casselman and Youghiogheny rivers.
Records available.—September 15, 1904, to August 11, 1913, when station was discontinued. See station at Markleton, Pa., established August 13, 1913.
Drainage area.—450 square miles.
Gage.—Chain gage attached to bridge; read once daily in the afternoon to half-tenths.
Control.—Probably permanent.
Discharge measurements.—Made from upstream side of bridge.
Winter flow.—Discharge relation is affected by ice at times.
Accuracy.—Estimates of discharge for the year ending September 30, 1913, are withheld. This station was located only a few hundred yards above the junction of Casselman and Youghiogheny rivers and backwater usually occurred at high stages. For discussion of the general conditions at this station, because of which it was discontinued, see Water-Supply Papers 263 and 283.
Cooperation.—Station maintained by the Water Supply Commission of Pennsylvania, which furnished all records for year ending September 30, 1913.

The following discharge measurement was made by R. A. Boehringer, an engineer of the Water Supply Commission of Pennsylvania:

December 4, 1912: Gage height, 2.48 feet; discharge, 429 second-feet.

Daily gage height, in feet, of Casselman River at Confluence, Pa., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.
1	3.80	2.20	2.10	3.63	2.77	3.46	3.20	2.49	3.63	2.27	1.81
2	3.50	2.20	2.20	3.08	2.57	3.06	3.05	2.49	3.33	2.17	1.76
3	3.10	2.15	2.60	5.28	2.72	2.86	4.05	2.34	3.13	2.07	1.66
4	2.90	2.15	2.40	4.08	2.77	2.76	3.75	2.29	2.93	1.97	1.61
5	2.70	2.15	2.40	3.78	2.57	2.81	3.45	2.24	2.78	1.87	1.61
6	2.60	2.10	3.25	4.18	2.37	2.71	3.20	2.24	2.68	1.77	1.61
7	2.50	4.10	3.10	7.73	2.22	2.61	2.95	2.24	2.63	1.72	1.56
8	2.40	4.35	2.80	11.68	2.22	2.51	2.90	2.24	2.83	1.72	1.56
9	2.30	3.40	2.55	6.88	2.17	2.46	2.85	2.19	2.73	1.72	1.56
10	2.30	3.20	2.40	4.53	2.12	2.81	2.75	2.19	2.63	1.72	1.71
11	2.30	3.00	2.30	5.28	2.67	3.81	2.80	2.14	2.53	1.62	1.91
12	2.25	2.80	2.20	9.48	2.77	3.61	3.00	2.14	2.43	1.72	.....
13	2.25	2.70	2.15	5.83	2.57	3.46	3.45	2.19	2.33	2.02	.....
14	2.20	2.90	2.25	4.38	2.57	4.06	3.70	2.34	2.28	2.52	.....
15	2.20	2.75	2.40	3.68	2.52	3.76	4.40	2.44	2.23	2.52	.....
16	2.15	2.65	2.40	3.68	2.47	3.46	4.15	2.64	2.23	2.42	.....
17	2.15	2.60	2.35	3.98	2.47	3.16	3.65	2.94	2.18	2.22	.....
18	2.10	2.55	2.35	4.08	2.42	2.96	3.45	2.64	2.18	2.17	.....
19	2.10	2.50	2.65	3.83	2.37	2.96	3.20	2.54	2.33	2.17	.....
20	2.05	2.45	2.60	3.48	2.37	2.96	2.95	2.49	2.28	2.12	.....
21	2.05	2.40	2.40	3.53	2.47	2.86	2.80	2.84	2.23	2.12	.....
22	2.05	2.35	2.25	3.23	2.97	2.86	2.75	4.14	2.18	2.07	.....
23	3.20	2.25	2.15	3.23	2.82	2.81	2.70	6.04	2.18	2.07	.....
24	2.75	2.25	2.10	4.23	2.67	2.81	2.65	6.84	2.18	2.02	.....
25	2.70	2.20	2.10	3.83	2.57	2.76	2.60	4.44	2.18	2.17	.....
26	2.60	2.20	2.20	3.48	2.47	3.81	2.60	3.94	2.13	2.12	.....
27	2.55	2.15	2.20	3.28	2.57	6.66	2.55	7.44	2.68	2.07	.....
28	2.45	2.15	2.30	3.08	4.47	4.81	2.50	5.59	2.58	2.02	.....
29	2.35	2.10	2.35	2.93	.....	3.86	2.45	4.64	2.48	1.97	.....
30	2.25	2.10	3.35	2.78	.....	3.41	2.55	3.84	2.38	1.92	.....
31	2.20	.....	4.70	2.98	.....	3.31	.....	4.04	.....	1.92	.....

NOTE.—On Dec. 14, 1912, ice was present along the shores.

LAUREL HILL CREEK AT URSINA, PA.

Location.—At highway bridge at Ursina, Pa., 2 miles above Confluence.

Records available.—August 15 to September 30, 1913.

Drainage area.—122 square miles (Water Supply Commission of Pennsylvania).

Gage.—Chain gage attached to bridge; read daily morning and evening to half-tenths.

Control.—Bed at measuring section consists of gravel.

Discharge measurements.—Made from downstream side of bridge, or, at low water, by wading.

Winter flow.—Ice may affect the discharge relation during short periods.

Accuracy.—Data insufficient for estimates of discharge.

Cooperation.—Station established and data furnished by the Water Supply Commission of Pennsylvania.

The following discharge measurement was made by R. A. Boehringer, an engineer of the Water Supply Commission of Pennsylvania:

August 12, 1913: Gage height, 2.04 feet; discharge, 81 second-feet.

Daily gage height, in feet, of Laurel Hill Creek at Ursina, Pa., for the year ending Sept. 30, 1913.

Day.	Aug.	Sept.	Day.	Aug.	Sept.	Day.	Aug.	Sept.
1	.....	1.60	11	.....	1.60	21	1.60	2.02
2	.....	1.58	12	.....	1.60	22	1.60	2.05
3	.....	1.50	13	.....	1.60	23	1.68	1.88
4	.....	1.51	14	.....	1.60	24	1.80	1.72
5	.....	1.50	15	1.72	1.58	25	1.68	1.70
6	.....	1.50	16	1.70	1.51	26	1.60	1.68
7	.....	1.51	17	1.70	1.56	27	1.60	1.65
8	.....	1.65	18	1.68	1.72	28	1.60	1.68
9	.....	1.70	19	1.65	1.90	29	1.60	1.65
10	.....	1.68	20	1.62	1.80	30	1.60	1.60
						31	1.60	.....

LAUREL HILL CREEK AT CONFLUENCE, PA.

Location.—At highway bridge, about one-fourth mile from the railroad station and only a few hundred yards above the junction of the creek with Youghiogheny River.

Records available.—September 15, 1904, to August 11, 1913, when station was discontinued. Replaced by station established at Ursina, Pa., August 12, 1913.

Drainage area.—126 square miles.

Gage.—Chain gage attached to bridge read once daily in the afternoon to half-tenths.

Control.—Bed at measuring section shifts as result of refuse dumped into the creek from a tannery a short distance above the bridge.

Discharge measurements.—Made from the downstream side of the bridge.

Winter flow.—Ice may affect discharge relation during short periods.

Accuracy.—Discharge relation is affected by backwater from the Youghiogheny and by shift of channel at bridge. Estimates of discharge for the year ending September 30, 1913, are withheld. This station was located only a few hundred yards above the junction of the creek with Youghiogheny River, and as a result backwater was present at high stages. For a discussion of general conditions at this station, because of which it was discontinued, see Water Supply Papers 263 and 283.

Cooperation.—Station maintained by the Water Supply Commission of Pennsylvania, which furnished the records for the year ending September 30, 1913.

The following discharge measurements were made by R. A. Boehringer, an engineer of the Water Supply Commission of Pennsylvania:

December 4, 1912: Gage height, 2.17 feet; discharge, 147 second-feet.

Daily gage height, in feet, of Laurel Hill Creek at Confluence, Pa., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.
1	2.88	2.27	1.87	3.21	2.61	3.22	2.93	2.28	2.99	2.00	1.66
2	2.68	2.27	1.97	2.81	2.51	3.02	2.88	2.23	2.74	1.90	1.61
3	2.53	2.22	2.32	4.01	2.66	2.97	3.68	2.23	2.64	1.85	1.61
4	2.43	2.17	2.02	3.66	2.61	2.92	3.23	2.18	2.49	1.80	1.56
5	2.38	2.12	2.20	3.46	2.51	2.82	2.93	2.18	2.49	1.75	1.56
6	2.28	2.12	3.00	3.76	2.36	2.72	2.73	2.18	2.64	1.70	1.56
7	2.23	3.27	2.80	6.11	2.26	2.62	2.58	2.18	2.74	1.65	1.56
8	2.13	3.47	2.55	9.76	2.21	2.57	2.53	2.18	2.84	1.65	1.56
9	2.03	2.82	2.40	5.01	2.21	2.52	2.48	2.18	2.64	1.65	1.56
10	2.03	2.72	2.30	3.66	2.16	2.77	2.43	2.13	2.44	1.65	1.56
11	2.03	2.62	2.15	4.01	2.76	3.47	2.53	2.13	2.34	1.65	1.66
12	2.03	2.52	2.05	7.41	2.76	3.22	2.83	2.18	2.24	1.65	.....
13	2.03	2.42	1.95	4.46	2.41	3.07	3.23	2.23	2.09	1.65	.....
14	1.98	2.57	2.15	3.51	2.41	3.32	3.13	2.38	1.99	2.30	.....
15	1.98	2.42	2.30	3.11	2.41	3.02	3.58	2.43	1.89	2.45	.....
16	1.98	2.32	2.20	3.11	2.41	2.92	3.38	3.13	1.89	2.35	.....
17	1.93	2.27	2.10	3.41	2.41	2.92	3.08	2.93	1.89	2.20	.....
18	1.93	2.22	2.10	3.51	2.36	2.87	2.88	2.48	1.89	2.15	.....
19	1.88	2.22	2.60	3.31	2.36	2.82	2.68	2.43	2.04	2.15	.....
20	1.88	2.17	2.40	3.11	2.41	2.82	2.58	2.43	1.99	2.05	.....
21	1.83	2.12	2.25	3.16	2.61	2.82	2.48	2.63	1.99	2.00	.....
22	1.83	2.12	2.15	2.91	3.11	2.77	2.43	3.03	1.94	2.00	.....
23	3.23	2.07	2.05	3.01	2.96	2.77	2.43	4.38	1.94	1.95	.....
24	2.93	2.07	2.05	4.06	2.86	2.77	2.38	3.73	1.94	1.90	.....
25	2.88	2.02	2.00	3.51	2.71	2.72	2.38	3.33	1.89	2.05	.....
26	2.83	2.02	2.00	3.21	2.61	4.17	2.33	3.13	1.89	1.95	.....
27	2.73	1.97	2.00	3.01	2.61	5.22	2.33	5.08	2.29	1.85	.....
28	2.63	1.92	2.05	2.81	3.71	3.92	2.28	4.03	2.19	1.80	.....
29	2.53	1.92	2.20	2.66	.....	3.42	2.23	3.53	2.14	1.75	.....
30	2.43	1.92	4.25	2.56	.....	3.12	2.33	3.28	2.09	1.70	.....
31	2.33	.....	3.55	2.76	.....	3.02	.....	3.43	.....	1.70	.....

NOTE.—Ice present along the shores Dec. 14, 1912.

MOHICAN RIVER BASIN.

MOHICAN RIVER AT POMERENE, OHIO.

Location.—At highway bridge at Pomerene, Ohio, 4 miles from Walhonding, Ohio, and 5 miles below the mouth of Owl Creek.

Records available.—December 1, 1910, to March 31, 1913, when station was discontinued.

Drainage area.—Not measured.

Gage.—Standard chain gage attached to bridge; read daily, morning and evening, to hundredths. Limits of use: Hundredths below 3.5, half-tenths from 3.5 to 4.5, tenths above 4.5 feet.

Control.—Apparently permanent. Bed consists of coarse gravel.

Discharge measurements.—Made from upstream side of bridge.

Winter flow.—Discharge relation sometimes affected by ice cover and by ice gorges during the winter months.

Diversions.—A feeder for the Ohio Canal formerly took water from the river at Cavallo, some distance above Pomerene, but this feeder has not been in use for some time.

Accuracy.—Data insufficient for estimates of discharge.

No discharge measurements were made at this station during the year ending September 30, 1913.

Daily gage height, in feet, of Mohican River at Pomerene, Ohio, for the year ending Sept. 30, 1913.

[F. L. Rodehaver, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	3.47	3.65	2.83	3.55	6.1	4.1	16	2.88	3.38	3.39	7.4	3.75	3.95
2	3.41	4.0	3.34	3.21	5.6	3.95	17	2.86	3.21	3.37	12.6	3.85	3.85
3	3.16	3.85	3.85	3.37	4.7	3.85	18	2.86	3.12	3.33	11.5	3.85	3.75
4	3.02	3.8	3.85	3.42	3.95	4.2	19	3.47	3.09	3.31	9.6	3.85	3.65
5	2.97	3.75	3.85	3.25	3.7	4.9	20	3.45	3.06	3.25	8.6	3.95	3.65
6	2.95	3.65	4.35	4.2	3.47	4.2	21	3.41	3.03	3.15	8.9	4.25	3.8
7	2.96	4.05	4.8	7.1	3.43	3.95	22	3.27	2.97	3.11	8.2	4.35	3.95
8	2.98	3.95	4.6	9.7	4.6	3.95	23	3.22	2.96	3.30	8.8	4.05	3.85
9	3.25	3.85	4.15	8.3	4.1	3.85	24	4.8	2.94	3.31	10.4	3.85	6.5
10	3.26	3.85	3.75	7.8	3.9	3.85	25	4.8	2.92	3.28	8.3	3.8	23.5
11	3.21	3.8	3.6	10.5	3.45	4.15	26	4.8	2.90	3.25	7.0	3.85	.....
12	3.22	3.75	3.55	12.4	3.42	4.25	27	4.6	2.90	3.20	6.6	4.2	.....
13	3.20	3.65	3.55	9.9	3.40	4.2	28	4.2	2.88	3.17	6.5	5.0	[a]18
14	3.19	3.65	3.47	8.4	3.40	4.1	29	3.85	2.87	3.13	6.4	.....	[a]15.5
15	2.93	3.6	3.43	7.3	3.40	4.4	30	3.65	2.86	3.39	6.3	.....	[a]13.5
							31	3.46	.....	4.4	5.9	.....	[a]13

[a] Gage heights estimated by observer; bridge and gage washed away.

NOTE.—On Feb. 8 observer reported backwater from ice; river frozen over Feb. 9–15. Discharge relation probably affected by ice about Feb. 8–19.

KANAWHA RIVER BASIN.

SOUTH FORK OF NEW RIVER NEAR CRUMPLER, N. C.

Location.—About 1.6 miles above the confluence of North and South forks of New River and about 4 miles from Crumpler, N. C.

Records available.—August 12, 1908, to September 30, 1913.

Drainage area.—325 square miles.

Gage.—Standard chain gage attached to trees on left bank; read daily morning and evening to hundredths. Limits of use: Hundredths below 1.5, half-tenths from 1.5 to 2.5, and tenths above 2.5 feet.

Control.—Practically permanent.

Discharge measurements.—Made from a boat at a section about half a mile below the gage or by wading at a section about 500 feet below the gage.

Winter flow.—Ice rarely forms in sufficient quantity to affect gage readings.

Accuracy.—Gage-height record considered very reliable. Data insufficient for estimates of discharge. Station not visited by Survey engineers during the year ending September 30, 1913. Station was visited December 16, 1913, and the elevations of bench marks and zero of gage were checked with a wye level and a discharge measurement was made.

Daily gage height, in feet, of South Fork of New River near Crumpler, N. C., for the year ending Sept. 30, 1913.

[J. J. Garvey, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	1.35	1.17	1.28	1.5	1.45	1.8	2.1	1.7	1.81	1.38	1.28	1.20
2	1.31	1.20	1.30	1.30	1.41	1.65	2.0	1.7	1.75	1.5	1.30	1.20
3	1.28	1.18	1.30	1.34	1.36	1.5	1.95	1.65	1.85	1.48	1.28	1.18
4	1.24	1.16	1.28	1.65	1.5	1.46	1.9	1.6	2.0	1.8	1.25	1.7
5	1.22	1.15	1.32	1.41	1.43	1.42	1.8	1.6	1.8	1.6	1.20	2.6
6	1.20	1.14	1.38	1.42	1.37	1.38	1.8	1.6	1.75	1.48	1.95	1.9
7	1.20	1.95	1.44	1.40	1.32	1.32	1.75	1.6	1.7	1.36	1.34	1.5
8	1.18	2.25	1.35	1.41	1.25	1.32	1.75	1.8	1.8	1.30	1.48	1.40
9	1.18	1.65	1.28	1.34	1.34	1.34	1.8	1.8	2.0	1.30	1.46	1.37
10	1.15	1.45	1.25	1.30	1.40	1.44	1.7	1.6	1.75	1.28	1.42	1.36
11	1.14	1.36	1.21	1.29	1.35	1.55	2.35	1.6	1.65	1.29	1.38	1.32
12	1.14	1.32	1.18	1.30	1.34	1.48	3.1	1.55	1.75	1.38	1.30	1.28
13	1.14	1.30	1.31	1.40	1.38	1.44	3.6	1.55	1.75	1.36	1.48	1.26
14	1.29	1.39	1.28	1.31	1.26	3.6	2.6	1.5	1.6	1.32	1.5	1.25
15	1.40	1.34	1.22	1.28	1.26	3.9	2.45	1.55	1.6	1.30	1.42	1.24
16	1.36	1.30	1.34	1.21	1.26	3.2	2.45	1.7	1.55	1.28	1.36	1.41
17	1.26	1.26	1.24	1.25	1.29	2.4	2.25	1.9	1.49	1.26	1.28	1.65
18	1.18	1.22	1.20	1.26	1.26	2.05	2.1	1.9	1.49	1.24	1.36	1.6
19	1.22	1.21	1.22	1.30	1.20	1.95	2.05	1.7	1.55	1.22	1.40	1.6
20	1.25	1.20	1.21	1.28	1.34	1.8	1.95	1.7	1.65	1.22	1.71	2.05
21	1.24	1.18	1.19	1.24	1.55	1.95	1.9	1.75	1.65	1.20	1.68	3.4
22	1.30	1.18	1.19	1.23	1.6	2.1	1.85	2.0	1.5	1.18	1.56	2.5
23	1.37	1.18	1.24	1.22	1.48	1.85	1.8	2.4	1.48	1.22	1.52	1.9
24	1.34	1.18	1.25	1.24	1.40	1.8	1.8	4.0	1.8	1.26	1.45	1.6
25	1.26	1.18	1.20	1.33	1.32	1.75	1.8	2.8	1.48	1.28	1.40	1.55
26	1.20	1.18	1.38	1.37	1.30	2.2	1.75	2.1	1.55	1.32	1.34	1.5
27	1.18	1.14	1.5	1.75	1.6	6.1	1.85	2.4	1.46	1.34	1.26	1.47
28	1.15	1.24	1.38	2.0	2.0	3.9	1.8	2.6	1.44	1.38	1.21	1.44
29	1.15	1.42	1.40	1.75	.....	2.8	1.75	2.15	1.41	1.40	1.19	1.44
30	1.15	1.37	1.7	1.55	.....	2.4	1.7	1.95	1.38	1.39	1.47	1.6
31	1.14	.....	1.7	1.48	.....	2.3	.....	1.9	.....	1.34	1.20	.....

NOTE.—Discharge relation probably affected by ice about Feb. 9–17, 1913. Observer reported mush ice Dec. 28, 1912, and Feb. 9, 1913.

NEW RIVER AT RADFORD, VA.

Location.—At toll highway bridge near the Norfolk & Western Railway station at Radford, Va., 1½ miles below the Norfolk & Western Railway bridge and 6 miles below the mouth of Little River.

Records available.—August 1, 1898, to July 15, 1906; May 6, 1907, to September 30, 1913.

Drainage area.—2,720 square miles.

Gage.—Standard chain gage attached to bridge; read daily, morning and evening, to hundredths. Limits of use: Hundredths below 3.5, half-tenths from 3.5 to 4.5, and tenths above 4.5 feet. The United States Weather Bureau gage was originally used at this point, but owing to its inaccessibility it was replaced by a wire gage referred to the same datum February 23, 1900. On December 1, 1903, the wire gage was replaced by a chain gage and the datum lowered 3.41 feet to avoid negative readings.

Control.—Practically permanent.

Discharge measurements.—Made from the downstream side of the highway bridge.

Floods.—Maximum gage height, according to United States Weather Bureau, was 37.4 feet September 15, 1879.

Point of zero flow.—A determination by leveling July 17, 1911, indicates that there would be no flow past the gage if the river stage were to fall to 1.0 foot ± 0.3 foot.

Winter flow.—Discharge relation only occasionally affected by ice.

Regulation.—Power plants about 50 miles above station may affect flow to a small extent.

Discharge measurements of New River at Radford, Va., in the year ending Sept. 30, 1913.

[Hydrographers, Jackson and Wallace.]

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.
	Feet.	*Sec.-ft.*		*Feet.*	*Sec.-ft.*
Mar. 28	10.71	30,800	Mar. 29	7.24	15,100
28	10.01	27,600	29	6.83	13,200

Daily gage height, in feet, of New River at Radford, Va., for the year ending Sept. 30, 1913.

[J. H. Lucas and R. B. Harvey, observers.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	3.6	3.34	3.34	4.2	4.15	5.4	5.1	4.0	4.8	3.75	3.46	3.65
2	3.55	3.34	3.20	3.95	4.05	5.3	4.8	3.95	4.5	3.7	3.43	3.5
3	3.55	3.38	3.65	3.9	4.0	4.3	4.6	3.9	4.3	4.6	3.43	3.55
4	3.55	3.12	3.6	3.9	4.05	4.05	4.5	3.9	5.2	4.8	3.23	3.9
5	3.40	3.45	3.6	3.95	4.15	3.95	4.4	3.9	4.5	4.9	3.24	4.1
6	3.38	3.37	3.85	3.9	4.2	3.9	4.25	3.9	4.35	4.3	3.28	4.1
7	3.38	3.5	3.7	4.0	3.9	3.7	4.2	3.9	4.2	3.95	3.27	4.0
8	3.47	4.5	3.65	3.9	3.5	3.65	4.2	3.85	4.3	3.75	3.55	3.7
9	3.42	4.35	3.6	3.8	3.5	3.7	4.15	3.9	4.4	3.7	3.46	3.7
10	3.36	4.05	3.55	3.65	3.6	3.7	4.1	3.85	4.4	3.6	3.44	3.6
11	3.28	3.7	3.46	3.7	3.85	4.0	4.2	3.8	4.2	3.65	3.65	3.55
12	3.29	3.65	3.42	3.75	3.75	4.0	5.8	3.8	4.3	4.0	3.7	3.5
13	3.28	3.6	3.5	3.8	3.75	4.0	8.6	3.75	4.15	3.7	4.0	3.45
14	3.41	3.55	3.55	3.8	3.5	7.9	7.2	3.75	4.1	3.6	3.7	3.42
15	3.6	3.65	3.55	3.7	3.55	9.8	5.9	3.7	3.95	3.7	3.7	3.27
16	3.6	3.7	3.26	3.7	3.5	9.0	5.5	3.85	3.9	3.65	3.6	3.55
17	3.42	3.55	3.55	3.6	3.6	6.6	5.4	4.15	3.85	3.6	3.55	3.55
18	3.42	3.28	3.55	3.6	3.49	5.2	5.1	4.4	3.8	3.6	3.32	3.55
19	3.5	3.6	3.49	3.55	3.65	5.0	4.8	4.2	3.75	3.55	3.8	3.49
20	3.42	3.6	3.36	3.5	3.9	4.8	4.6	4.0	3.8	3.42	3.8	3.6
21	3.18	3.48	3.42	3.55	3.75	4.5	4.3	4.0	3.75	3.49	4.0	5.9
22	3.5	3.30	3.47	3.55	3.9	4.7	4.4	4.3	3.75	3.55	3.85	6.0
23	3.49	3.32	3.28	3.65	3.9	4.6	4.3	7.1	4.05	3.5	3.7	4.8
24	3.38	3.38	3.55	3.49	3.85	4.4	4.25	10.0	4.1	3.43	3.65	4.2
25	3.49	3.38	3.28	3.5	3.8	4.3	4.15	7.3	4.15	3.55	3.75	4.15
26	3.45	3.38	3.20	3.6	3.65	4.45	4.1	5.6	4.45	3.34	3.6	3.8
27	3.45	3.55	3.20	3.95	3.95	12.3	4.15	5.6	4.1	3.20	3.55	3.5
28	3.36	3.40	3.31	5.1	5.1	11.3	4.25	6.8	4.0	3.24	3.5	3.5
29	3.38	3.32	3.6	5.5	.....	7.2	4.15	6.0	3.8	3.34	3.46	3.29
30	3.42	3.44	3.39	5.1	.....	6.0	4.0	5.3	3.8	3.35	3.65	3.5
31	3.41	.....	3.8	4.6	.....	5.6	.....	5.2	.....	3.45	3.7	.....

NOTE.—Observer made no notes concerning ice. Discharge relation probably not affected by ice during year ending Sept. 30, 1913.

Daily discharge, in second-feet, of New River at Radford, Va., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	2,080	1,450	1,450	3,890	3,720	8,350	6,640	3,060	5,610	2,370	1,660	2,120
2	1,950	1,450	1,150	3,080	3,400	7,950	5,610	2,920	4,610	2,240	1,590	1,750
3	1,950	1,540	2,220	2,930	3,240	4,230	4,940	2,780	3,970	4,940	1,590	1,870
4	1,950	998	2,080	2,930	3,400	3,400	4,610	2,780	7,000	5,610	1,160	2,780
5	1,580	1,700	2,080	3,080	3,720	3,080	4,280	2,780	4,610	5,950	1,180	3,360
6	1,540	1,510	2,780	2,930	3,890	2,930	3,820	2,780	4,130	3,970	1,260	3,360
7	1,540	1,820	2,350	3,240	2,930	2,350	3,660	2,780	3,660	2,920	1,240	3,060
8	1,750	4,930	2,220	2,930	1,820	2,220	3,660	2,640	3,970	2,370	1,870	2,240
9	1,630	4,400	2,080	2,630	1,820	2,350	3,510	2,780	4,280	2,240	1,660	2,240
10	1,490	3,400	1,950	2,220	2,080	2,350	3,360	2,640	4,280	1,990	1,610	1,990
11	1,320	2,350	1,720	2,350	2,780	3,240	3,660	2,500	3,660	2,120	2,120	1,870
12	1,340	2,220	1,630	2,490	2,490	3,240	9,230	2,500	3,970	3,060	2,240	1,750
13	1,320	2,080	1,820	2,630	2,490	3,240	21,000	2,370	3,510	2,240	3,060	1,640
14	1,600	1,950	1,950	2,630	1,820	19,200	14,800	2,370	3,360	1,990	2,240	1,570
15	2,080	2,220	1,950	2,350	1,950	28,300	9,620	2,240	2,920	2,240	2,240	1,240
16	2,080	2,350	1,280	2,350	1,820	24,400	8,100	2,640	2,780	2,120	1,990	1,870
17	1,630	1,950	1,950	2,080	2,080	13,400	7,720	3,510	2,640	1,990	1,870	1,870
18	1,630	1,320	1,950	2,080	1,800	7,560	6,640	4,280	2,500	1,990	1,340	1,870
19	1,820	2,080	1,800	1,950	2,220	6,780	5,610	3,660	2,370	1,870	2,500	1,730
20	1,630	2,080	1,490	1,820	2,930	6,020	4,940	3,060	2,500	1,570	2,500	1,990
21	1,110	1,770	1,630	1,950	2,490	4,930	3,970	3,060	2,370	1,730	3,060	9,620
22	1,820	1,360	1,750	1,950	2,930	5,650	4,280	3,970	2,370	1,870	2,640	10,000
23	1,800	1,400	1,320	2,220	2,930	5,290	3,970	14,400	3,210	1,750	2,240	5,610
24	1,540	1,540	1,950	1,800	2,780	4,580	3,820	27,500	3,360	1,590	2,120	3,660
25	1,800	1,540	1,320	1,820	2,630	4,230	3,510	15,300	3,510	1,870	2,370	3,510
26	1,700	1,540	1,150	2,080	2,220	4,760	3,360	8,470	4,450	1,390	1,990	2,500
27	1,700	1,950	1,150	3,080	3,080	38,400	3,510	8,470	3,360	1,100	1,870	1,750
28	1,490	1,580	1,380	7,170	7,170	33,600	3,820	13,200	3,060	1,180	1,750	1,750
29	1,540	1,400	2,080	8,750	.....	14,800	3,510	10,000	2,500	1,390	1,660	1,280
30	1,630	1,680	1,560	7,170	.....	10,000	3,060	7,360	2,500	1,410	2,120	1,750
31	1,600	.....	2,630	5,290	.....	8,470	.....	7,000	.....	1,640	2,240	.....

NOTE.—Daily discharge computed from a well-defined rating curve. New rating curve used, beginning Mar. 27, 1913, differs from the previous curve 5 to 7 per cent, the greatest difference being at high stage.

Monthly discharge of New River at Radford, Va., for the year ending Sept. 30, 1913.

[Drainage area, 2,720 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
October	2,080	1,110	1,670	0.614	0.71	B.
November	4,930	998	1,990	.732	.82	B.
December	2,780	1,150	1,800	.662	.76	B.
January	8,750	1,800	3,090	1.14	1.31	B.
February	7,170	1,800	2,810	1.03	1.07	B.
March	38,400	2,220	9,330	3.43	3.95	B.
April	21,000	3,060	5,740	2.11	2.35	A.
May	27,500	2,240	5,670	2.08	2.40	A.
June	7,000	2,370	3,570	1.31	1.46	A.
July	5,950	1,100	2,350	.864	1.00	A.
August	3,060	1,160	1,970	.724	.83	B.
September	10,000	1,280	2,790	1.03	1.15	A.
The year	38,400	998	3,570	1.31	17.81	

NEW RIVER AT FAYETTE, W. VA.

Location.—At highway bridge connecting Fayette and South Fayette, W. Va., 850 feet above the mouth of Wolf Creek.

Records available.—July 29, 1895, to May 22, 1901; August 11, 1902, to December 31, 1904; July 16, 1908, to September 30, 1913.

Drainage area.—6,800 square miles.

48520°—W S P 353—15——4

Gage.—Standard chain gage attached to bridge; gage read daily, morning and evening, to hundredths. Limits of use: Half-tenths below 0.0 and tenths above 0.0. Elevation of the zero of the gage, 838.44 feet above sea level.

Control.—Bed composed of rock strewn with large bowlders, which cause boils and eddies at high stages.

Discharge measurements.—Made from upstream side of bridge.

Floods.—The flood of 1878 reached a height of about 53 feet referred to the gage datum.

Winter flow.—Discharge relation little, if at all, affected by ice.

Accuracy.—Errors entered into many of the gage readings prior to 1908, particularly before the chain gage was installed, November 20, 1903, the original wire gage being frequently many tenths in error. Owing to this cause and to the difficulty in making accurate measurements all estimates of discharge heretofore published are only fair. Estimates of discharge for the year ending September 30, 1913, are withheld for the present.

Discharge measurements of New River at Fayette, W. Va., in the year ending Sept. 30, 1913.

Date.	Hydrographer.	Gage height.	Discharge.
1913.		*Feet.*	*Sec.-ft.*
Mar. 28	A. H. Horton	[a] 33.2	[b] 147,000
June 19	H. J. Jackson	3.10	4,690

[a] ± 0.5 foot.
[b] Velocities for this measurement determined by means of surface floats. A coefficient of 0.85 was used o reduce the observed velocities to mean velocities.

Daily gage height, in feet, of New River at Fayette, W. Va., for the year ending Sept. 30, 1913.

[C. J. Henry, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	2.5	0.7	0.8	3.0	8.9	8.4	8.9	4.5	9.6	2.3	1.0	1.2
2	2.2	.5	.9	9.4	9.4	8.7	6.3	3.8	7.6	2.7	.9	1.6
3	1.6	.5	1.0	7.4	9.3	7.6	5.8	4.0	6.4	3.0	.8	1.5
4	1.5	.5	1.0	6.9	9.0	5.9	5.0	3.9	6.2	3.1	.7	1.4
5	1.4	.6	1.7	8.2	8.8	6.0	4.8	3.7	9.0	3.1	.6	1.1
6	1.3	.6	2.0	7.9	8.3	5.9	4.9	3.5	6.8	3.1	.5	1.1
7	1.4	1.3	2.7	11.4	8.2	5.1	4.7	3.7	6.1	3.1	.5	1.1
8	1.4	3.4	3.2	17.9	7.9	4.7	4.6	3.6	6.5	3.0	.7	1.2
9	1.3	8.0	3.6	11.8	7.5	4.8	4.4	3.5	7.7	2.8	1.1	1.2
10	1.2	5.6	3.1	9.8	3.9	4.9	3.7	3.0	6.8	2.8	1.1	1.3
11	1.1	4.5	2.9	9.1	3.2	4.2	4.2	3.7	5.9	2.8	1.1	1.3
12	1.0	4.0	2.2	9.8	3.1	6.0	4.2	2.6	5.5	2.9	1.1	1.1
13	.9	2.8	2.0	6.8	3.1	6.7	13.0	2.8	4.6	3.0	1.2	1.0
14	.5	3.2	1.9	6.6	3.0	7.5	17.4	2.7	4.6	3.0	1.2	.6
15	.4	2.4	1.6	6.1	3.0	15.0	14.2	2.6	4.5	3.0	1.2	1.1
16	.5	1.9	1.5	5.3	2.7	17.2	13.6	2.7	3.3	3.0	1.1	1.1
17	.5	1.9	1.2	4.6	2.8	10.7	11.6	2.7	4.2	2.8	1.1	1.0
18	.5	1.7	1.2	4.1	2.7	8.6	9.7	3.4	3.5	2.6	1.1	1.1
19	.6	1.4	1.4	4.3	2.4	7.4	8.1	4.1	3.1	2.3	1.1	1.5
20	.8	1.4	1.4	4.1	2.2	7.0	6.8	3.9	2.9	2.2	1.1	1.6
21	.8	1.4	1.3	3.7	2.5	7.3	6.5	4.2	2.9	2.2	1.2	1.5
22	1.1	1.4	1.2	3.3	2.8	7.5	5.7	4.8	2.9	2.2	1.1	3.4
23	1.4	1.2	1.3	2.8	2.9	7.4	5.3	5.1	2.6	2.2	1.1	7.0
24	1.6	1.2	1.2	5.0	3.1	5.1	5.0	11.8	2.5	2.2	1.1	6.3
25	1.5	.9	1.2	4.8	2.9	4.7	4.7	16.3	3.0	1.9	1.1	4.7
26	1.3	.9	1.3	4.2	2.9	4.9	4.5	11.5	3.7	1.9	1.1	4.1
27	1.0	1.0	1.3	5.4	2.4	19.7	4.6	10.1	3.5	1.8	1.1	4.0
28	.8	1.0	1.5	8.2	5.4	31.0	4.7	13.7	3.8	1.7	1.1	4.2
29	.8	.9	2.0	9.6	.....	20.5	4.7	14.3	3.3	1.1	1.1	4.2
30	.8	.9	2.2	9.4	.....	11.6	4.7	10.9	3.0	1.0	1.1	4.5
31	.8	.....	.....	9.1	.....	10.2	.....	9.1	.....	1.0	1.1	.....

NOTE.—Observer made no notes concerning ice. Discharge relation probably not affected by ice during the year ending Sept. 30, 1913.

NORTH FORK OF NEW RIVER NEAR CRUMPLER, N. C.

Location.—Half a mile above the confluence of North and South Forks of New River, and about 2½ miles north of Crumpler, N. C.

Records available.—August 13, 1908, to September 30, 1913.

Drainage area.—279 square miles.

Gage.—Staff gage attached to posts on right bank, read daily, morning and evening, to hundredths. Limits of use: Hundredths below 2.0, half-tenths from 2.0 to 3.0, and tenths above 3.0 feet. Chain gage in use from August 13, 1908, was replaced by the present staff gage July 23, 1911. The staff gage is at the same location and reads to same datum as former chain gage.

Control.—Practically permanent.

Discharge measurements.—Made from a boat at a section one-eighth mile below the gage, or by wading. The boat cable section was formerly at a ford one-fourth mile above gage, but was moved July 23, 1911, to a point one-eighth mile below gage.

Floods.—The flood of April 20, 1901, reached a height of about 16.4 feet referred to datum of the present gage.

Winter flow.—Little if at all affected by ice.

Accuracy.—Gage height record is considered very reliable. Data insufficient for estimates of discharge. Station not visited by Survey engineers during the year ending September 30, 1913, but on December 17, 1913, the station was visited and the elevations of bench marks and zero of gage were checked with a wye level and a discharge measurement was made.

Daily gage height, in feet, of North Fork of New River near Crumpler, N. C., for the year ending Sept. 30, 1913.

[J. J. Garvey, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	1.66	1.47	1.66	2.25	2.45	2.9	2.7	2.0	2.5	1.78	1.41	1.57
2	1.62	1.53	1.58	1.88	2.1	2.55	2.55	1.97	2.4	1.84	2.05	1.56
3	1.59	1.47	1.72	2.0	2.25	2.3	2.45	1.89	2.3	2.95	1.58	1.55
4	1.60	1.42	1.61	2.05	2.5	2.2	2.35	1.92	2.3	2.6	1.44	1.84
5	1.56	1.46	1.78	2.25	2.5	2.2	2.3	1.88	2.2	2.25	1.39	2.85
6	1.55	1.44	1.82	2.45	2.3	2.05	2.2	1.87	2.1	1.88	2.25	2.0
7	1.52	2.15	1.75	2.45	2.0	1.86	2.15	1.92	2.05	1.74	1.54	1.78
8	1.50	2.3	1.64	2.3	2.05	2.05	2.15	2.05	2.35	1.66	2.05	1.66
9	1.48	1.83	1.60	2.3	2.1	1.91	2.3	1.95	2.2	1.64	1.66	1.66
10	1.47	1.70	1.53	2.1	2.15	2.1	2.15	1.87	2.1	1.61	1.68	1.63
11	1.46	1.65	1.56	2.05	2.05	2.35	2.5	1.81	1.97	1.63	1.54	1.55
12	1.46	1.60	1.52	2.1	2.2	2.2	3.2	1.79	2.1	1.80	1.45	1.51
13	1.46	1.60	1.33	2.4	1.80	2.2	5.0	1.75	2.1	1.70	1.95	1.49
14	1.66	1.78	1.62	2.2	1.86	5.7	3.5	1.78	1.91	1.62	2.05	1.47
15	1.87	1.67	1.54	2.1	1.82	5.6	3.4	1.78	1.83	1.60	1.83	1.50
16	1.58	1.58	1.63	2.0	1.79	4.6	3.2	2.2	1.81	1.56	1.57	1.75
17	1.52	1.54	1.43	1.95	1.82	3.5	3.0	2.1	1.78	1.52	1.48	1.94
18	1.48	1.52	1.58	1.95	1.78	3.0	2.8	2.1	1.74	1.50	1.50	1.81
19	1.58	1.50	1.56	2.0	1.74	2.75	2.6	1.86	2.35	1.46	1.89	2.25
20	1.74	1.50	1.42	1.86	1.91	2.6	2.55	1.90	1.87	1.60	3.1	1.86
21	1.57	1.49	1.46	1.82	2.4	2.7	2.4	2.65	1.78	1.52	1.93	3.45
22	1.56	1.49	1.47	1.96	2.2	2.75	2.3	2.5	1.72	1.46	1.78	2.65
23	1.61	1.49	1.50	1.86	2.1	2.4	2.25	4.0	1.84	1.42	2.5	2.2
24	1.65	1.48	1.50	1.92	1.99	2.35	2.2	4.9	1.92	1.40	2.05	1.97
25	1.54	1.48	1.64	2.35	1.94	2.6	2.15	3.4	1.72	1.40	1.80	1.86
26	1.51	1.46	1.78	2.35	1.90	2.55	2.1	2.85	2.7	1.48	1.66	1.78
27	1.48	1.48	1.98	2.9	2.5	8.2	2.3	4.0	1.84	1.48	1.58	1.72
28	1.48	1.62	2.0	3.5	3.4	5.5	2.1	4.2	1.76	1.75	1.55	1.68
29	1.48	1.96	1.98	2.9	.....	3.75	2.1	3.45	1.68	1.97	1.47	1.69
30	1.46	1.70	2.15	2.55	.....	3.3	2.15	3.0	1.76	1.64	2.55	2.0
31	1.44	.....	2.85	2.4	.....	3.0	.....	2.7	.....	1.48	1.72	.....

NOTE.—Discharge relation probably affected by ice about Feb. 8–17. Observer reported mush ice Dec. 28, 1912 and Feb. 9, 1913.

REED CREEK AT GRAHAMS FORGE, VA.

Location.—At highway bridge at Grahams Forge, Va.

Records available.—July 29, 1908, to September 30, 1913.

Drainage area.—247 square miles.

Gage.—Standard chain gage attached to bridge; read daily, morning and evening, to hundredths. Limits of use: Hundredths below 3.0, half-tenths from 3.0 to 4.5, and tenths above 4.5 feet.

Control.—Permanent; bottom solid rock.

Discharge measurements.—Made from downstream side of bridge.

Point of zero flow.—A determination by leveling, July 20, 1911, indicates that there would be no flow past the gage if the river stage were to fall to 0.6 foot, ±0.1 foot, by the gage datum.

Winter flow.—Discharge relation affected by ice for short periods.

Regulation.—Dam and gristmill just above the station. The storage is small, and the miller states that water flows over the dam at all times. The flow is therefore little, if at all, modified by the operation of the mill.

Accuracy.—Gage-height record considered accurate and reliable. Data insufficient for estimates of discharge.

No discharge measurements were made at this station during the year ending September 30, 1913.

Daily gage height, in feet, of Reed Creek at Grahams Forge, Va., for the year ending Sept. 30, 1913.

[J. T. Black, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	2.31	2.16	2.12	2.76	2.81	3.15	3.05	2.51	2.82	2.29	2.17	2.18
2	2.27	2.15	2.14	2.58	2.70	2.91	2.96	2.48	2.74	2.30	2.16	2.15
3	2.28	2.14	2.17	2.60	2.70	2.75	2.88	2.46	2.68	2.82	2.16	2.14
4	2.26	2.14	2.20	2.68	2.81	2.66	2.81	2.44	2.62	2.40	2.14	2.24
5	2.21	2.08	2.36	2.62	2.85	2.60	2.76	2.44	2.60	2.64	2.14	2.16
6	2.22	2.15	2.40	2.62	2.76	2.53	2.70	2.42	2.56	2.36	3.5	2.19
7	2.21	2.27	2.38	2.64	2.68	2.50	2.66	2.44	2.52	2.30	2.44	2.12
8	2.20	2.69	2.37	2.62	2.62	2.48	2.66	2.40	2.55	2.23	2.30	2.12
9	2.19	2.45	2.31	2.56	2.56	2.44	2.64	2.40	2.56	2.24	2.24	2.13
10	2.17	2.34	2.26	2.50	2.56	2.46	2.60	2.39	2.51	2.21	2.24	2.13
11	2.18	2.29	2.24	2.42	2.52	2.58	2.60	2.36	2.42	2.27	2.19	2.14
12	2.16	2.28	2.22	2.46	2.54	2.60	2.90	2.32	2.52	2.34	2.39	2.13
13	2.17	2.24	2.14	2.82	2.49	2.55	4.7	2.42	2.54	2.32	2.46	2.09
14	2.26	2.22	2.22	2.68	2.48	4.45	3.7	2.32	2.43	2.22	2.31	2.09
15	2.32	2.22	2.16	2.56	2.48	4.6	3.45	2.04	2.38	2.22	2.45	2.10
16	2.28	2.20	2.18	2.50	2.48	4.15	3.4	2.42	2.40	2.20	2.26	2.13
17	2.20	2.17	2.18	2.48	2.44	3.4	3.25	2.38	2.37	2.20	2.22	2.16
18	2.17	2.18	2.20	2.45	2.42	3.1	3.1	2.38	2.34	2.21	2.18	2.15
19	2.20	2.18	2.19	2.40	2.38	2.96	2.96	2.32	2.52	2.17	3.05	2.21
20	2.24	2.18	2.14	2.41	2.40	2.89	2.86	2.31	2.46	2.21	2.66	2.16
21	2.22	2.16	2.08	2.36	2.44	2.82	2.78	2.51	2.38	2.20	2.45	2.34
22	2.20	2.16	2.09	2.38	2.46	2.78	2.72	2.74	2.36	2.19	2.37	2.39
23	2.20	2.14	2.12	2.40	2.44	2.65	2.70	4.15	2.50	2.20	2.44	2.24
24	2.18	2.17	2.14	2.41	2.46	2.64	2.64	4.4	2.88	2.32	2.34	2.18
25	2.16	2.15	2.16	2.48	2.44	2.62	2.62	3.35	2.58	2.15	2.30	2.13
26	2.20	2.12	2.12	2.66	2.40	2.79	2.60	3.0	2.46	2.00	2.26	2.12
27	2.16	2.08	2.21	3.25	2.70	7.9	2.63	3.85	2.42	2.16	2.22	2.12
28	2.14	2.15	2.18	3.9	3.6	4.6	2.60	4.25	2.37	2.26	2.18	2.10
29	2.16	2.09	2.20	3.25	.....	3.7	2.59	3.45	2.34	2.56	2.18	2.12
30	2.15	2.14	2.36	2.97	.....	3.45	2.54	3.15	2.30	2.30	2.25	2.21
31	2.16	.....	3.25	2.84	.....	3.25	.....	2.98	.....	2.22	2.26	.....

NOTE.—Observer made no notes concerning ice. Discharge relation probably not materially affected by ice during the year ending Sept. 30, 1913.

BIG REED ISLAND CREEK NEAR ALLISONIA, VA.

Location.—About 1,200 feet above a suspension footbridge at J. P. Thomas's farm, 1½ miles from Allisonia, Va., and half a mile above the mouth of Little Reed Island Creek.

Records available.—July 31, 1908, to September 30, 1913.

Drainage area.—291 square miles.

Gage.—Vertical staff fastened to a tree on right bank; read once daily to hundredths; after periods of precipitation it is read twice daily. Limits of use: Hundredths below 1.0, half-tenths from 1.0 to 2.0, and tenths above 2.0 feet.

Control.—Permanent. Channel at measuring section is liable to change caused by deposits of silt from ore washing.

Discharge measurements.—Made from downstream side of suspension footbridge 1,200 feet below gage, or by wading under bridge.

Point of zero flow.—A determination by leveling, July 19, 1911, indicates that there would be no flow past the gage if the river stage were to fall to −0.7 foot, ±0.2 foot.

Winter flow.—Discharge relation is sometimes affected by ice.

Accuracy.—Records of gage height considered reliable. Data insufficient for estimates of discharge.

No discharge measurements were made at this station during the year ending September 30, 1913.

Daily gage height, in feet, of Big Reed Island Creek near Allisonia, Va., for the year ending Sept. 30, 1913.

[K. M. Thomas, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	0.50	0.47	0.57	0.75	0.81	0.94	0.95	0.85	1.0	0.66	0.56	0.50
2	.47	.75	.58	.65	.70	.81	.93	.82	.96	.70	.49	.45
3	.48	.51	.60	.65	.81	.69	.90	.80	1.7	.71	.47	.45
4	.48	.46	.54	.87	.91	.65	.86	.78	.95	.81	.44	1.7
5	.47	.48	.89	.77	.74	.64	.87	.75	.89	.79	.43	1.15
6	.46	.46	.92	.68	.66	.60	.83	.72	.85	.64	.41	.70
7	.47	2.0	.88	.64	.59	.58	.80	.74	.83	.58	.43	.56
8	.45	1.55	.70	.66	.63	.57	.81	.78	.90	.57	.50	.54
9	.43	.85	.62	.63	.83	.56	.80	.72	.96	.55	.62	.64
10	.42	.70	.58	.58	.70	.66	.80	.73	.85	.53	.57	.52
11	.43	.64	.57	.57	.62	.87	.96	.75	.81	1.5	.58	.48
12	.43	.63	.55	.59	.64	.70	3.0	.70	.93	.88	.83	.48
13	.44	.66	.50	.69	.52	.63	2.0	.70	1.05	.80	.70	.47
14	.54	.76	.49	.60	.48	4.0	1.5	.70	.92	.61	.60	.45
15	.75	.67	.51	.53	.52	2.8	1.25	.69	.72	.60	.51	.44
16	.50	.58	.60	.55	.59	1.9	1.25	.87	.75	.60	.50	.49
17	.54	.44	.45	.54	.57	1.35	1.1	1.15	.75	.50	.47	.48
18	.47	.49	.50	.56	.55	1.1	1.0	1.0	.74	.55	.54	.84
19	.50	.57	.60	.60	.51	1.0	1.05	.81	.72	.53	.60	.80
20	.70	.55	.59	.57	.60	.98	.98	.74	.70	.61	.80	1.9
21	.50	.50	.54	.56	.80	1.0	.84	1.0	.67	.53	.55	4.0
22	.48	.51	.49	.54	.74	1.25	.82	1.0	.67	.51	.54	1.8
23	.45	.51	.50	.52	.68	.98	.80	3.2	.96	.48	.60	1.1
24	.50	.52	.58	.57	.61	.92	.88	3.0	.95	.47	.55	.76
25	.49	.50	.67	.56	.59	.89	.85	1.6	1.0	.50	.49	.75
26	.47	.49	.72	.66	.58	1.1	.82	1.25	1.05	.50	.46	.75
27	.45	.50	.80	1.0	.91	3.1	1.1	1.5	.81	.57	.48	.61
28	.45	.50	.90	1.55	1.35	1.75	.93	1.5	.73	.52	.82	.60
29	.45	.54	.89	.97	.....	1.3	.91	1.2	.67	.50	.48	.63
30	.46	.50	.72	.82	.....	1.1	.88	1.1	.66	.51	1.3	.60
31	.47	.....	1.1	.77	.....	1.05	.....	1.25	.....	.63	.82	.....

NOTE.—Concerning ice, observer reported as follows: Feb. 8, 1913, "mush ice"; Feb. 9, 1913, "backwater." Discharge relation probably affected by ice about Feb. 6–15.

LITTLE RIVER NEAR COPPER VALLEY, VA.

Location.—At highway bridge, about 5 miles south of Childress and half a mile north of Copper Valley, Va., and 600 feet above the mouth of Indian Creek.

Records available.—July 25, 1908, to September 30, 1913.

Drainage area.—195 square miles.

Gage.—Standard chain gage attached to bridge; read daily, morning and evening, to hundredths. Limits of use: Hundredths below 4.0, half tenths from 4.0 to 5.0, and tenths above 5.0 feet.

Control.—Probably permanent.

Discharge measurements.—Made from downstream side of bridge.

Point of zero flow.—Determinations by leveling, July 18, 1911, and September 21, 1912, indicate that there would be no flow past the gage if the river stage were to fall to 1.8 feet, ±0.2 foot.

Winter flow.—Discharge relation affected by ice for short periods.

Accuracy.—Records of gage height are considered reliable. Sufficient data have not been obtained to permit estimates of discharge to be made.

No discharge measurements were made at this station during the year ending September 30, 1913.

Daily gage height in feet. of Little River near Copper Valley, Va., for the year ending Sept. 30, 1913.

[T. A. De Hart, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	3.28	3.26	3.38	3.72	3.58	3.75	3.66	3.48	3.56	3.45	3.21	3.18
2	3.26	3.38	3.34	3.45	3.42	3.54	3.62	3.44	3.52	3.42	3.22	3.19
3	3.25	3.32	3.34	3.90	3.42	3.42	3.59	3.40	3.54	4.6	3.21	3.15
4	3.25	3.26	3.36	3.86	3.45	3.40	3.56	3.41	3.59	3.94	3.18	4.05
5	3.28	3.22	3.62	3.58	3.45	3.39	3.48	3.39	3.58	3.88	3.15	3.88
6	3.25	3.38	3.68	3.52	3.44	3.35	3.42	3.39	3.48	3.48	3.15	3.46
7	3.20	4.75	3.58	3.48	3.32	3.25	3.40	3.41	3.58	3.42	3.18	3.39
8	3.20	4.2	3.42	3.44	3.40	3.28	3.39	3.42	3.64	3.34	3.26	3.31
9	3.20	3.64	3.34	3.39	3.55	3.36	3.40	3.40	3.65	3.32	3.21	3.58
10	3.20	3.44	3.31	3.34	3.60	3.38	3.46	3.41	3.52	3.29	3.35	3.42
11	3.20	3.42	3.30	3.30	3.42	3.75	3.60	3.38	3.48	3.58	3.49	3.30
12	3.18	3.36	3.30	3.32	3.39	3.50	4.65	3.35	3.64	3.80	3.40	3.25
13	3.20	3.38	3.31	3.34	3.32	3.40	4.35	3.34	3.86	3.44	3.42	3.24
14	3.35	3.48	3.35	3.32	3.42	8.1	3.95	3.31	3.52	3.34	3.32	3.21
15	3.62	3.42	3.52	3.30	3.46	5.3	3.78	3.32	3.96	3.39	3.29	3.18
16	3.38	3.32	3.38	3.30	3.48	4.7	3.92	3.66	3.41	3.36	3.28	3.25
17	3.25	3.31	3.38	3.34	3.35	4.05	3.76	3.80	3.40	3.29	3.20	3.29
18	3.22	3.30	3.35	3.32	3.25	3.79	3.71	3.94	3.39	3.30	3.17	3.48
19	3.28	3.29	3.36	3.36	3.24	3.74	3.62	3.46	3.39	3.30	3.65	3.54
20	3.38	3.28	3.36	3.31	3.28	3.75	3.58	3.36	3.35	3.29	3.45	3.54
21	3.32	3.29	3.36	3.30	3.62	3.78	3.50	3.06	3.34	3.30	3.38	7.0
22	3.26	3.30	3.32	3.30	3.56	3.82	3.48	4.05	3.31	3.28	3.32	4.9
23	3.40	3.29	3.32	3.29	3.42	3 64	3.46	6.5	3.75	3.26	3.39	3.75
24	3.36	3.22	3.42	3.31	3.34	3.60	3.45	6.2	3.65	3.25	3.38	3.48
25	3.26	3.24	3.54	3.35	3.30	3.65	3.45	4.5	3.60	3.26	3.24	3.42
26	3.28	3.28	3.50	3.38	3.30	3.85	3.45	4.0	4.3	3.25	3.20	3.38
27	3.24	3.28	3.62	3.72	3.75	5.5	3.62	3.95	4.0	3.26	3.15	3.34
28	3.21	3.29	3.62	4.4	4.25	4.3	3.55	4.05	3.54	3.25	3.22	3.32
29	3.22	3.36	3.62	3.85	.....	3.92	3.51	3.88	4.05	3.25	3.28	3.31
30	3.22	3.40	3.65	3.65	.....	3.79	3.52	3.68	3.65	3.28	3.32	3.35
31	3.20	.....	4.02	3.62	.....	3.74	.....	3.60	.....	3.25	3.30	.....

NOTE.—Observer reported "ice" Feb. 7-9; "ice on pond," Feb. 13-15. Discharge relation probably affected by ice about Feb. 6-15.

WALKER CREEK AT STAFFORDSVILLE, VA.

Location.—At highway bridge at Staffordsville, Va., 500 feet below the mouth of Whitley Creek.

Records available.—July 24, 1908, to September 30, 1913.

Drainage area.—277 square miles.

Gage.—Standard chain gage attached to bridge; read daily, morning and evening, to hundredths. Limits of use: Hundredths below 4.0, half-tenths from 4.0 to 5.0, and tenths above 5.0 feet.

Control.—Practically permanent.

Discharge measurements.—Made from downstream side of bridge.

Winter flow.—Discharge relation probably not affected by ice.

Regulation.—A dam and power plant 300 feet above the station may affect the flow at low water.

Accuracy.—Gage-height record considered reliable. Data insufficient for estimates of discharge.

No discharge measurements were made at this station during the year ending September 30, 1913.

Daily gage height, in feet, of Walker Creek at Staffordsville, Va., for the year ending Sept. 30, 1913.

[J. F. Durham, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	3.49	3.04	3.14	4.5	4.45	5.0	4.8	3.62	4.85	3.38	3.01	3.03
2	3.42	3.04	3.16	4.1	4.3	4.7	4.55	3.58	4.4	3.42	3.28	2.95
3	3.34	2.99	3.16	4.15	4.3	4.25	4.35	3.55	4.2	3.41	3.02	2.92
4	3.32	3.05	3.22	4.3	4.4	4.1	4.25	3.50	4.25	4.05	2.95	2.94
5	3.26	3.02	3.35	4.15	4.3	4.0	4.1	3.50	4.1	5.4	2.91	2.94
6	3.23	3.04	3.50	4.05	4.25	3.94	3.99	3.44	3.90	4.2	2.90	2.95
7	3.20	3.82	3.66	4.05	4.0	3.75	3.83	3.50	3.80	3.75	2.96	2.92
8	3.16	4.9	3.61	4.05	3.80	3.74	3.84	3.48	4.25	3.52	3.01	2.92
9	3.14	4.25	3.54	4.0	3.78	3.70	3.79	3.44	4.25	3.42	3.02	2.89
10	3.14	3.93	3.46	3.95	4.8	3.76	3.76	3.40	4.05	3.34	3.03	2.86
11	3.10	3.72	3.42	3.90	3.80	3.86	3.85	3.34	3.85	3.32	2.96	2.87
12	3.08	3.58	3.36	3.94	3.81	3.88	4.7	3.30	3.89	3.65	3.05	2.82
13	3.11	3.50	3.08	4.6	3.65	3.89	7.8	3.32	3.90	3.64	3.30	2.85
14	3.12	3.50	3.20	4.35	3.56	6.6	6.2	3.32	3.74	3.36	3.32	2.80
15	3.22	3.44	3.20	4.1	3.61	7.6	5.5	3.32	3.61	3.40	3.16	2.78
16	3.24	3.32	3.27	3.98	3.68	6.8	5.2	3.38	3.50	3.32	3.04	2.82
17	3.14	3.30	3.24	3.88	3.66	5.5	5.0	3.46	3.46	3.28	2.97	2.86
18	3.10	3.26	3.24	3.82	3.58	4.95	4.75	3.47	3.57	3.22	2.98	2.90
19	3.18	3.22	3.22	3.74	3.50	4.65	4.55	3.39	3.54	3.20	3.02	2.98
20	3.20	3.21	3.20	3.68	3.52	4.5	4.35	3.32	3.44	3.14	4.0	3.02
21	3.22	3.19	3.14	3.60	3.59	4.35	4.2	3.99	3.38	3.18	3.32	3.14
22	3.21	3.20	3.14	3.62	3.59	4.3	4.05	3.84	3.32	3.11	3.20	3.50
23	3.16	3.18	3.04	3.60	3.50	4.05	4.0	5.6	3.64	3.08	3.16	3.33
24	3.15	3.16	3.11	3.65	3.56	4.0	3.90	7.2	3.98	3.09	3.17	3.15
25	3.13	3.15	3.02	3.76	3.58	3.99	3.83	5.5	3.93	3.12	3.06	3.04
26	3.08	3.11	3.00	3.83	3.53	4.3	3.80	4.8	3.70	3.02	3.00	2.99
27	3.05	3.12	3.29	4.6	4.35	13.4	3.85	5.6	3.72	3.01	2.94	2.94
28	3.06	3.14	3.08	5.9	5.6	7.8	3.81	6.1	3.82	3.02	2.92	2.88
29	3.02	3.08	3.20	5.1	.....	6.1	3.80	5.2	3.58	3.08	2.92	2.90
30	3.06	3.08	3.66	4.7	.....	5.5	3.74	4.8	3.46	3.02	2.98	2.95
31	3.05	.....	5.20	4.5	.....	5.2	.....	5.6	.....	3.04	3.15	.....

NOTE.—Observer made no notes concerning ice. Discharge relation probably not materially affected by ice during the year ending Sept. 30, 1913.

WOLF CREEK NEAR NARROWS, VA.

Location.—At highway bridge 3 miles above Narrows, Va., 1,500 feet below the New River, Holston & Western Railroad bridge, and 2½ miles above mouth of Mill Creek.

Records available.—July 22, 1908, to September 30, 1913.

Drainage area.—223 square miles.

Gage.—Standard chain gage attached to bridge; read daily, morning and evening, to hundredths. Limits of use: Hundredths below 3.5, half tenths from 3.5 to 4.5, and tenths above 4.5 feet.

Control.—Practically permanent.

Discharge measurements.—Made from downstream side of bridge.

Floods.—A stage of approximately 15.5 feet, referred to the gage datum, has been reached at this station; date unknown.

Point of zero flow.—A determination by leveling July 15, 1911, indicates that there would be no flow past the gage if the river stage were to fall to 1.1 feet ±0.2 foot.

Winter flow.—Discharge relation not affected by ice except for short periods during extremely cold weather.

Accuracy.—Records of gage height considered reliable. Data insufficient for estimates of discharge.

No discharge measurements were made at this station during the year ending September 30, 1913.

Daily gage height, in feet, of Wolf Creek near Narrows, Va., for the year ending Sept. 30, 1913.

[J. A. Hale, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	2.82	2.68	2.75	3.95	4.1	4.4	4.1	3.19	3.9	2.90	2.55	2.61
2	2.73	2.68	2.70	3.6	3.95	4.1	3.9	3.14	3.65	2.88	2.54	2.52
3	2.69	2.68	2.69	3.6	3.9	3.9	3.75	3.10	3.45	2.86	2.51	2.50
4	2.68	2.66	2.80	3.65	4.05	3.7	3.6	3.09	3.48	2.89	2.49	2.48
5	2.66	2.61	3.02	3.55	4.0	3.6	3.5	3.01	3.35	3.44	2.48	2.46
6	2.64	2.62	3.25	3.14	3.9	3.49	3.42	3.00	3.22	3.08	2.54	2.45
7	2.64	2.98	3.36	3.85	3.7	3.39	3.34	3.00	3.19	2.92	2.66	2.44
8	2.61	3.75	3.31	3.85	3.6	3.28	3.30	3.02	3.7	2.80	2.58	2.46
9	2.60	3.45	3.20	4.35	3.48	3.25	3.26	3.00	3.7	2.74	2.58	2.46
10	2.60	3.24	3.11	4.05	3.40	3.25	3.20	2.98	3.48	2.71	2.54	2.46
11	2.74	3.12	3.06	3.9	3.42	3.38	3.27	2.94	3.36	2.72	2.58	2.42
12	2.58	3.01	3.01	4.15	3.6	3.44	4.2	2.90	3.45	3.29	2.70	2.40
13	2.58	3.00	2.90	4.8	3.45	3.42	5.2	2.88	3.38	2.95	2.67	2.43
14	2.67	3.00	2.84	4.3	3.35	4.6	4.7	2.88	3.29	2.85	2.66	2.38
15	2.84	2.96	2.83	4.0	3.28	5.8	4.35	3.02	3.14	2.79	2.66	2.34
16	2.76	2.89	2.88	3.8	3.28	5.8	4.3	2.90	3.04	2.80	2.63	2.40
17	2.70	2.86	2.83	3.65	3.32	4.8	3.7	2.94	3.11	2.72	2.56	2.46
18	2.66	2.82	2.84	3.6	3.27	4.3	4.0	2.99	3.08	2.74	2.51	2.54
19	2.69	2.78	2.84	3.48	3.19	4.1	3.9	2.90	3.25	2.82	2.48	2.62
20	2.79	2.76	2.79	3.38	3.20	3.9	3.75	2.84	3.15	2.78	2.64	2.52
21	2.86	2.72	2.78	3.39	3.25	3.8	3.55	2.93	3.00	2.70	2.64	2.76
22	2.72	2.72	2.76	3.7	3.24	3.75	3.46	3.00	2.91	2.65	2.60	3.07
23	2.76	2.70	2.72	3.6	3.20	3.55	3.40	3.32	3.15	2.59	2.62	2.86
24	2.79	2.74	2.74	3.75	3.22	3.48	3.36	5.2	3.35	2.62	2.72	2.74
25	2.80	2.70	2.66	4.05	3.22	3.46	3.29	4.3	3.30	2.70	2.63	2.62
26	2.78	2.69	2.78	4.15	3.18	3.5	3.25	3.9	3.12	2.66	2.56	2.57
27	2.74	2.69	2.90	4.35	3.85	10.2	3.35	4.6	3.04	2.64	2.50	2.52
28	2.70	2.72	2.86	4.8	4.8	7.0	3.29	5.4	3.28	2.61	2.46	2.48
29	2.69	2.70	2.90	4.35	.....	5.4	3.30	4.6	3.04	2.66	2.44	2.48
30	2.68	2.68	3.08	4.1	.....	4.8	3.27	4.15	2.94	2.62	2.74	2.49
31	2.67	.....	4.62	4.0	.....	4.4	.....	4.45	.....	2.58	2.76	.....

NOTE.—Observer made no notes concerning ice. Discharge relation probably not materially affected by ice during the year ending Sept. 30, 1913.

BLUESTONE RIVER AT LILLY, W. VA.

Location.—At Lilly, W. Va., 2,000 feet below the mouth of Little Bluestone River.
Records available.—August 22, 1908, to January 13, 1912; July 21 to November 7, 1912; January 15 to September 30, 1913.
Drainage area.—454 square miles.
Gage.—Vertical staff gage in two sections; read daily, morning and evening, to hundredths. Limits of use: Hundredths below 2.0, half-tenths from 2.0 to 3.5, and tenths above 3.5 feet.
Control.—Practically permanent.
Discharge measurements.—Made from a boat 150 feet above gage, or by wading.
Point of zero flow.—Levels taken August 24, 1910, indicate that there would be no flow past the gage if the river stage were to fall to 0.0 foot ±0.2 foot.
Winter flow.—During portions of December, January, and February the discharge relation may be affected by ice.
Accuracy.—Data insufficient for estimates of discharge.

No discharge measurements were made at this station during the year ending September 30, 1913.

Daily gage height, in feet, of Bluestone River at Lilly, W. Va., for the year ending Sept. 30, 1913.

[W. H. Lilly, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	1.41	1.23	.....	.....	3.2	4.2	2.75	1.86	2.7	1.33	1.30	1.42
2	1.34	1.19	.....	.....	3.0	3.1	2.55	1.80	2.4	1.39	1.25	1.36
3	1.27	1.18	.....	.....	2.9	2.75	2.4	1.72	2.35	1.96	1.25	1.31
4	1.23	1.17	.....	.....	3.3	2.5	2.3	1.72	3.5	2.2	1.21	1.31
5	1.21	1.23	.....	.....	3.3	2.3	2.15	1.71	4.2	2.3	1.19	1.30
6	1.15	1.30	.....	.....	2.95	2.3	2.05	1.71	3.2	2.15	1.21	1.27
7	1.13	1.35	.....	.....	2.6	2.1	2.0	1.64	2.65	2.15	1.17	1.23
8	1.11	.....	.....	.....	2.4	2.05	1.95	1.62	4.3	2.1	1.22	1.21
9	1.05	.....	.....	.....	2.6	1.92	1.98	1.65	4.5	1.99	1.20	1.27
10	1.03	.....	.....	.....	2.25	2.05	1.94	1.61	3.4	1.90	1.21	1.21
11	1.02	.....	.....	.....	2.3	3.35	1.88	1.64	2.65	1.87	1.19	1.20
12	0.99	.....	.....	.....	2.85	3.45	1.87	1.57	2.45	1.76	1.21	1.20
13	1.04	.....	.....	.....	2.75	3.0	2.45	1.42	2.3	1.59	1.25	1.24
14	1.09	.....	.....	.....	2.6	4.6	3.25	1.44	2.1	1.51	1.20	1.22
15	1.17	.....	.....	2.85	2.7	4.7	3.3	1.42	2.0	1.23	1.23	1.15
16	1.23	.....	.....	2.55	2.35	4.6	3.2	1.48	1.64	1.32	1.21	1.07
17	1.25	.....	.....	2.4	2.2	3.6	2.9	1.52	1.52	1.37	1.13	1.01
18	1.32	.....	.....	2.35	2.1	3.0	2.85	1.62	1.54	1.41	1.11	.99
19	1.38	.....	.....	2.35	1.99	2.65	2.55	1.67	1.77	1.43	1.13	.93
20	1.42	.....	.....	2.3	1.92	2.75	2.35	1.54	1.71	1.61	1.15	.85
21	1.43	.....	.....	2.35	2.05	2.65	2.1	1.44	1.59	1.63	1.23	1.35
22	1.48	.....	.....	2.8	2.3	2.35	1.94	1.62	1.53	1.59	1.33	1.63
23	1.52	.....	.....	2.95	2.1	2.2	1.92	1.90	1.56	1.51	1.41	1.53
24	1.52	.....	.....	4.6	2.0	2.1	1.90	3.6	1.49	1.47	1.41	1.47
25	1.49	.....	.....	4.4	2.0	2.05	1.88	3.1	1.53	1.43	1.45	1.36
26	1.45	.....	.....	4.0	1.92	2.2	1.84	2.45	1.60	1.40	1.41	1.31
27	1.38	.....	.....	3.9	3.9	8.2	1.88	3.05	1.69	1.35	1.33	1.27
28	1.33	.....	.....	4.0	4.9	6.6	1.91	4.1	1.56	1.31	1.29	1.20
29	1.38	.....	.....	3.5	.....	4.2	2.0	3.8	1.49	1.30	1.13	1.09
30	1.32	.....	.....	3.2	.....	3.5	1.92	3.35	1.35	1.26	1.31	.99
31	1.25	.....	.....	3.1	.....	3.05	.....	2.85	.....	1.30	1.43	.....

NOTE.—Observer made no notes concerning ice. Discharge relation probably not materially affected by ice during the year ending Sept. 30, 1913.

GREENBRIER RIVER NEAR MARLINTON, W. VA.

Location.—At Chesapeake & Ohio Railway bridge on the switch that runs to Campbell's lumber mill, 1½ miles above Marlinton, W. Va., and immediately below the mouth of Stoney Creek.

Records available.—July 9, 1908, to September 30, 1913.

Drainage area.—408 square miles.

Gage.—Standard chain gage attached to bridge; read daily, morning and evening, to hundredths. Limits of use: Hundredths below 4.5, half-tenths from 4.5 to 5.5, and tenths above 5.5 feet.

Control.—Probably not permanent. Bed at measuring section composed of coarse gravel.

Discharge measurements.—Made from downstream side of bridge.

Point of zero flow.—A determination by leveling, September 6, 1912, indicates that there would be no flow past the gage if the river were to fall to 2.7 feet, ±0.1 foot.

Winter flow.—Discharge relation may be affected by ice for short periods during December, January, and February.

Accuracy.—Data insufficient for estimates of discharge.

No discharge measurements were made at this station during the year ending September 30, 1913.

Daily gage height, in feet, of Greenbrier River near Marlinton, W. Va., for the year ending Sept. 30, 1913.

[A. N. Rudd, U. G. Simpson, and C. H. McCoy, observers.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	3.78	3.48	3.62	5.4	5.0	4.95	4.95	4.32	5.2	3.68	3.76	3.22
2	3.62	3.45	3.56	4.7	.....	4.8	4.75	4.27	4.95	3.60	3.88	3.33
3	3.64	3.45	3.64	5.3	.....	4.45	4.6	4.25	4.9	3.50	3.70	3.28
4	3.50	3.42	3.88	5.6	5.8	4.5	4.5	4.22	4.9	3.66	3.60	3.40
5	3.49	3.40	4.02	5.2	5.5	4.35	4.42	4.00	4.9	3.83	3.53	3.40
6	3.45	3.40	4.7	5.1	5.1	4.28	4.35	3.92	4.6	3.89	3.42	3.36
7	3.40	5.45	4.8	7.6	4.65	4.12	4.28	3.98	4.36	3.80	3.37	3.26
8	3.44	5.9	4.5	7.9	4.42	3.95	4.20	4.05	4.45	3.74	3.32	3.36
9	3.42	5.1	4.25	7.2	4.38	4.08	4.20	3.96	4.40	3.68	3.28	3.38
10	3.40	4.6	4.18	5.9	4.28	4.12	4.15	3.84	4.37	8.9	3.28	3.36
11	3.40	4.36	4.15	5.35	4.28	5.3	4.15	3.78	4.15	8.1	3.36	3.33
12	3.40	4.15	4.08	5.15	4.32	5.3	5.9	3.73	4.04	6.5	3.63	3.27
13	3.40	4.00	4.03	5.5	4.25	5.1	7.7	3.64	3.98	4.8	5.6	3.23
14	3.40	3.95	4.00	5.2	4.35	7.5	6.3	3.68	3.87	4.44	5.4	3.18
15	3.38	3.90	4.10	4.9	4.25	7.0	7.9	3.68	3.82	4.32	4.23	3.17
16	3.38	3.82	4.10	4.65	4.15	6.3	7.3	3.78	3.76	4.27	3.78	3.13
17	3.36	3.70	3.92	4.55	4.00	5.5	6.2	3.82	3.70	4.23	3.62	3.18
18	3.38	3.70	3.92	4.45	3.90	5.0	5.6	4.31	3.68	4.14	3.78	3.30
19	3.38	3.63	3.85	4.35	3.90	4.8	5.15	4.8	3.64	4.18	4.15	3.58
20	3.45	.....	3.85	4.30	3.90	4.65	5.0	4.7	3.63	4.26	3.93	3.86
21	3.48	3.62	3.85	4.22	3.98	4.5	4.85	4.8	3.62	4.03	3.80	4.03
22	3.48	3.61	3.80	4.20	4.22	4.40	4.6	4.7	3.62	3.86	3.80	4.09
23	3.50	3.60	3.65	4.20	4.48	4.22	4.5	5.05	3.68	3.80	4.40	3.96
24	3.60	3.56	.....	4.48	4.32	4.20	4.5	7.1	3.72	3.84	4.46	3.87
25	3.70	3.53	[a]3.8	5.0	4.22	4.18	4.42	6.6	3.76	3.82	4.33	3.80
26	3.68	3.50	.....	4.9	4.15	4.30	4.32	6.4	3.92	3.74	4.18	3.66
27	3.62	3.50	.....	4.9	4.30	11.8	4.35	7.4	4.10	3.72	3.98	3.50
28	3.60	3.58	.....	4.9	5.0	8.1	4.40	7.6	4.00	3.66	3.78	3.42
29	3.55	3.50	.....	4.75	.....	6.2	4.5	7.1	3.90	3.55	3.62	3.37
30	3.52	3.50	3.80	4.5	.....	5.5	4.38	6.2	3.86	3.48	3.46	3.34
31	3.50	.....	6.3	.....	.....	5.2	.....	5.4	.....	3.53	3.26	.....

[a] Gage height to top of ice.

NOTE.—Discharge relation probably affected by ice during most of December, 1912, and from Feb. 6–16, 1913. On Dec. 1 and 2 observer reported river frozen over; Dec. 4–6, general rain; Dec. 12, ice running; Dec. 13, river frozen over; Dec. 14, "ice gorges up sometimes"; Dec. 25, ice heavy, with snow on top of it; Dec. 30–31, cause of rise, general rain on heavy snow; Feb. 4–9, freezing weather; Feb. 13, ice flowing.

GREENBRIER RIVER AT ALDERSON, W. VA.

Location.—At highway bridge at Alderson, W. Va., half a mile above the mouth of Muddy Creek.

Records available.—August 1, 1895, to July 15, 1906; May 10, 1907, to September 30, 1913.

Drainage area.—1,340 square miles.

Gage.—Standard chain gage attached to bridge; read daily, morning and evening, to hundredths. Limits of use: Hundredths below 3.0, half-tenths from 3.0 to 4.0, and tenths above 4.0 feet.

Control.—Permanent, or nearly so; channel wide and shallow.

Discharge measurements.—Made from downstream side of bridge.

Floods.—No record of floods previous to installation of the gage. Maximum gage height since establishment of gage, 18.2 feet, November 26, 1900.

Winter flow.—Little, if any, affected by ice.

The following discharge measurement was made by H. J. Jackson:
June 20, 1913: Gage height, 2.17 feet; discharge, 459 second-feet.

Daily gage height, in feet, of Greenbrier River at Alderson, W. Va., for the year ending Sept. 30, 1913.

[W. J. Hancock, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	2.04	1.86	1.79	6.0	3.7	4.3	3.7	2.72	4.4	2.24	2.12	1.90
2	1.98	1.85	1.85	4.2	3.75	3.9	3.4	2.65	3.75	2.32	2.05	1.90
3	1.90	1.82	1.90	3.45	3.65	3.5	3.2	2.58	3.4	2.14	2.22	1.78
4	1.89	1.81	2.05	4.2	5.2	3.2	3.05	2.54	4.6	2.60	2.06	1.79
5	1.83	1.80	2.20	4.0	5.1	3.1	2.95	2.50	4.4	2.85	1.98	1.74
6	1.79	1.80	2.70	3.75	4.2	3.0	2.84	2.46	3.6	2.74	1.91	1.78
7	1.80	2.00	3.4	5.2	3.65	2.84	2.72	2.66	3.2	2.80	1.86	1.70
8	1.78	4.6	3.2	7.4	3.2	2.68	2.64	2.71	3.6	2.59	1.80	1.72
9	1.76	3.95	2.90	7.2	2.98	2.51	2.59	2.61	3.55	2.38	1.78	1.70
10	1.75	3.2	2.68	6.2	2.91	2.62	2.54	2.52	3.25	2.30	1.75	1 70
11	1.74	2.86	2.52	4.2	2.91	3.6	2.54	2.44	2.99	5.5	1.85	1.66
12	1.72	2.64	2.42	3.8	3.05	4.6	3.35	2.36	2.78	3.7	1.92	1.66
13	1.71	2.48	2.31	3.9	2.87	4.0	8.8	2.31	2.69	3.2	1.99	1.70
14	1.73	2.38	2.12	3.9	2.70	6.1	6.7	2.30	2.58	2.85	3.5	1.63
15	1.82	2.30	2.02	3.55	2.62	8.2	8.2	2.28	2.48	2.65	3.45	1.64
16	1.80	2.24	2.16	3.3	2.60	6.8	7.0	2.25	2.38	2.55	2.76	1.69
17	1.78	2.19	2.26	3.1	2.68	5.1	5.4	2.32	2.32	2.52	2.45	1.65
18	1.74	2.12	2.21	3.05	2.58	4.1	4.4	2.42	2.26	2.41	2.26	1.69
19	1.79	2.09	2.18	2.94	2.49	3.65	3.9	2.76	2.20	2.31	2.28	1.71
20	1.88	2.05	2.16	2.88	2.44	3.4	3.6	2.82	2.15	2.50	2.20	1.68
21	2.14	2.02	2.00	2.81	2.46	3.2	3.35	3.7	2.10	2.68	2.19	1.79
22	2.02	1.99	1.88	2.76	2.52	3.1	3.1	3.25	2.08	2.45	2.18	1.97
23	2.02	1.95	1.78	2.75	2.65	2.95	2.99	3.25	2.05	2.32	2.28	2.02
24	2.09	1.94	1.85	2.82	2.84	2.80	2.89	5.0	2.06	2.29	2.84	2.15
25	2.20	1.92	1.95	3.5	2.79	2.74	2.80	5.2	2.06	2.22	2.75	2.04
26	2.15	1.93	1.91	3.8	2.69	2.89	2.70	4.1	2.35	2.42	2.45	1.92
27	2.11	1.90	1.95	3.8	2.82	14.7	2.74	4.3	2.54	2.32	2.28	1.85
28	2.02	1.90	2.16	4.2	3.95	12.8	2.80	7.8	2.48	2.20	2.16	1.80
29	1.98	1.88	2.04	3.9	.....	6.2	2.82	5.9	2.32	2.14	2.09	1.79
30	1.96	1.81	2.88	3.6	.....	4.8	2.79	4.5	2.22	2.08	2.01	1.75
31	1.90	.....	7.0	3.45	.....	4.1	.....	4.8	.....	2.10	1.95	.....

NOTE.—Discharge relation probably not affected by ice during the year ending Sept. 30, 1913.

Daily discharge, in second-feet, of Greenbrier River at Alderson, W. Va., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	347	223	183	9,700	3,350	4,880	3,350	1,190	5,150	533	415	246
2	301	217	217	4,620	3,480	3,850	2,620	1,080	3,480	622	356	246
3	246	200	246	2,740	3,220	2,860	2,140	971	2,620	434	512	178
4	240	194	356	4,620	7,360	2,140	1,820	913	5,690	1,000	364	183
5	205	188	490	4,100	7,080	1,920	1,620	855	5,150	1,420	301	159
6	183	188	1,160	3,480	4,620	1,720	1,400	801	3,100	1,230	253	178
7	188	315	2,620	7,360	3,220	1,400	1,190	1,100	2,140	1,330	223	140
8	178	5,690	2,140	14,300	2,140	1,130	1,060	1,180	3,100	986	188	150
9	169	3,980	1,520	13,600	1,680	870	986	1,020	2,980	696	178	140
10	164	2,140	1,130	10,300	1,540	1,030	913	884	2,260	598	164	140
11	159	1,440	884	4,620	1,540	3,100	913	774	1,700	8,230	217	124
12	150	1,060	747	3,600	1,820	5,690	2,500	671	1,300	3,350	260	124
13	145	828	610	3,850	1,460	4,100	19,300	610	1,140	2,140	308	140
14	154	696	415	3,850	1,160	10,000	11,900	598	971	1,420	2,860	113
15	200	598	331	2,980	1,030	17,100	17,100	576	828	1,080	2,740	117
16	188	533	452	2,380	1,000	12,300	12,900	544	696	928	1,260	136
17	178	481	555	1,920	1,130	7,080	7,940	622	622	884	788	120
18	159	415	501	1,820	971	4,360	5,150	747	555	734	555	136
19	183	388	471	1,600	842	3,220	3,850	1,260	490	610	576	145
20	234	356	452	1,480	774	2,620	3,100	1,370	443	855	490	132
21	434	331	315	1,350	801	2,140	2,500	3,350	396	1,130	481	183
22	331	308	234	1,260	884	1,920	1,920	2,260	380	788	471	294
23	331	280	178	1,240	1,080	1,620	1,700	2,260	356	622	576	331
24	388	274	217	1,370	1,400	1,330	1,500	6,800	364	587	1,400	443
25	490	260	280	2,860	1,310	1,230	1,330	7,360	364	512	1,240	347
26	443	267	253	3,600	1,140	1,500	1,160	4,360	659	747	788	260
27	405	246	280	3,600	1,370	42,500	1,230	4,880	913	622	576	217
28	331	246	452	4,620	3,980	34,700	1,330	15,700	828	490	452	188
29	301	234	347	3,850	.....	10,300	1,370	9,400	622	434	388	183
30	287	194	1,480	3,100	.....	6,240	1,310	5,420	512	380	323	164
31	246	.....	12,900	2,740	.....	4,360	.....	6,240	.....	396	280	.....

NOTE.—Daily discharge computed from a rating curve well defined between 46 and 8,230 second-feet (gage heights 1.4 and 5.5 feet).

Monthly discharge of Greenbrier River at Alderson, W. Va., for the year ending Sept. 30, 1913.

[Drainage area, 1,340 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
October	490	145	257	0.192	0.22	A.
November	5,690	188	759	.566	.63	B.
December	12,900	178	1,050	.784	.90	B.
January	14,300	1,240	4,270	3.19	3.68	A.
February	7,360	774	2,190	1.63	1.70	A.
March	42,500	870	6,430	4.80	5.53	B.
April	19,300	913	3,900	2.91	3.25	B.
May	15,700	544	2,770	2.07	2.39	B.
June	5,690	356	1,660	1.24	1.38	A.
July	8,230	380	1,150	.858	.99	B.
August	2,860	164	645	.481	.55	A.
September	443	113	189	.141	.16	A.
The year	42,500	113	2,110	1.57	21.38	

GAULEY RIVER AT ALLINGDALE, W. VA.

Location.—At Baltimore & Ohio Railroad bridge, one-fourth mile south of depot at Allingdale, W. Va., and immediately below mouth of Rock Creek.

Records available.—July 3, 1908, to September 30, 1913.

Drainage area.—248 square miles.

Gage.—Standard chain gage attached to bridge; read once daily to hundredths. Limits of use: Hundredths below 5.0, half-tenths from 5.0 to 7.0, and tenths above 7.0 feet.

Control.—Probably permanent.

Discharge measurements.—Made from upstream side of bridge or from wooden bridge near depot. The bottom of the stream is rough and irregular, but with extreme care accurate measurements can be made. The measuring section at the railroad bridge is a poor one, and measurements are made at the wooden bridge near the railroad depot whenever possible.

Point of zero flow.—Levels taken August 15, 1910, indicate that there would be no flow past the gage if the river were to fall to 3.33 feet, ±0.2 foot.

Winter flow.—Ice may affect the discharge relation for short periods during December, January, and February.

Accuracy.—Data insufficient for estimates of discharge.

No discharge measurements were made at this station during the year ending September 30, 1913.

Daily gage height, in feet, of Gauley River at Allingdale, W. Va., for the year ending Sept. 30, 1913.

[Harry Jones, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	5.15	5.0	4.80	6.2	6.6	6.4	6.1	6.25	7.6	5.05	4.61	4.44
2	5.05	5.15	4.89	6.3	6.15	6.2	5.9	5.95	6.65	4.95	4.62	4.35
3	5.0	5.15	5.2	6.7	6.3	5.8	5.7	5.75	5.95	4.77	4.47	4.30
4	4.90	5.05	5.5	6.6	8.5	5.85	5.6	5.55	5.8	6.25	4.37	4.26
5	4.84	5.0	5.9	6.2	7.2	5.7	5.55	5.4	5.65	5.4	4.35	4.24
6	4.78	4.98	6.4	7.2	6.2	5.6	5.5	5.35	5.4	6.0	4.31	4.14
7	4.75	5.05	6.5	9.1	6.05	5.35	5.35	5.3	5.35	5.95	4.28	4.22
8	4.70	9.0	6.25	10.1	6.0	5.2	5.3	5.2	6.6	5.5	4.26	4.79
9	4.68	7.0	5.9	9.1	5.9	5.4	5.25	5.15	6.55	5.25	4.26	4.76
10	4.64	6.2	5.65	7.4	6.0	5.45	5.2	5.05	6.0	5.35	4.27	4.56
11	4.60	5.9	5.6	6.7	5.85	6.0	5.2	4.95	5.6	6.15	4.26	4.43
12	4.60	5.65	5.6	6.5	7.3	7.0	6.0	4.92	5.45	5.3	4.86	4.36
13	4.60	5.5	5.4	7.4	6.4	6.55	6.0	4.87	5.25	5.45	5.35	4.34
14	4.60	5.5	5.05	6.7	6.25	7.2	6.3	4.85	5.1	5.3	5.1	4.27
15	4.60	5.4	5.15	6.2	6.0	7.7	8.1	4.85	5.0	5.2	4.76	4.14
16	4.62	5.3	5.4	6.0	5.9	7.3	8.1	4.89	4.87	5.5	4.56	4.15
17	4.62	5.25	5.4	5.8	5.6	6.6	7.1	5.25	4.87	5.35	4.59	4.25
18	4.62	5.2	5.1	5.7	5.85	6.2	6.4	6.0	4.75	5.15	4.61	4.99
19	4.74	5.15	5.1	5.7	5.7	5.95	6.1	5.6	4.62	5.15	4.71	4.74
20	5.35	5.15	5.15	5.65	5.3	5.8	6.0	5.45	4.59	5.95	5.1	4.71
21	5.15	5.15	5.1	5.5	5.45	5.65	5.7	5.3	4.59	5.35	4.76	5.45
22	4.95	5.15	5.9	6.0	5.8	5.65	5.55	5.55	4.54	5.15	4.83	5.4
23	5.05	5.15	4.7	6.75	6.15	5.3	5.55	5.65	4.69	5.05	6.5	5.25
24	6.1	4.98	5.0	6.1	5.8	5.35	5.4	8.9	4.85	5.45	5.8	5.2
25	5.7	4.98	4.85	7.1	5.65	5.35	5.5	7.1	4.72	5.35	5.15	4.96
26	5.45	4.90	4.86	6.85	5.5	5.65	5.25	6.4	7.4	5.25	4.96	4.16
27	5.45	4.85	5.0	6.45	5.6	11.0	5.5	9.4	5.5	5.15	4.85	4.56
28	5.3	4.75	5.2	6.15	6.25	8.7	6.3	10.3	5.4	5.0	4.70	4.57
29	5.2	5.0	a 5.3	5.9	.....	7.2	6.2	8.1	5.05	4.86	4.75	4.65
30	5.1	4.68	5.4	5.75	.....	6.7	6.7	6.95	4.97	4.76	4.56	4.68
31	5.1	.....	8.5	5.8	.....	6.3	.....	11.2	.....	4.68	4.50	.....

a Gage height to top of ice.

NOTE.—Observer made no notes relative to ice during 1913. Discharge relation probably not materially affected by ice during the year ending Sept. 30, 1913.

GAULEY RIVER NEAR SUMMERSVILLE, W. VA.

Location.—At highway bridge known as Brock's Bridge, 2½ miles southeast of Summersville, W. Va., and one-eighth mile below mouth of Muddlety Creek.

Records available.—July 6, 1908, to September 30, 1913.

Drainage area.—686 square miles.

Gage.—Standard chain gage attached to bridge; read daily, morning and evening, to hundredths. Limits of use: Hundredths below 4.5, half-tenths from 4.5 to 6.0, and tenths above 6.0 feet.

Control.—Practically permanent.

Discharge measurements.—Made from downstream side of bridge.

Winter flow.—Discharge relation possibly affected by ice for short periods.

Accuracy.—Gage-height record considered reliable; data insufficient for estimates of discharge.

No discharge measurements were made at this station during the year ending September 30, 1913.

Daily gage height, in feet, of Gauley River near Summersville, W. Va., for the year ending Sept. 30, 1913.

[J. W. Dermody, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	5.4	4.95	4.6	9.0	7.5	7.9	7.3	7.7	9.2	5.55	4.11	4.35
2	5.7	4.42	4.65	7.7	7.3	7.2	6.9	7.1	8.1	5.35	4.65	4.15
3	5.7	5.05	5.9	7.4	7.7	6.8	6.6	6.8	7.2	4.9	4.85	3.95
4	5.6	5.2	6.2	8.2	10.5	6.3	6.4	6.5	6.3	6.7	4.6	4.08
5	4.46	4.55	7.2	7.4	9.4	6.4	5.85	5.9	6.4	6.0	3.55	3.83
6	4.36	3.87	7.8	9.3	7.8	6.2	5.65	5.8	5.95	9.3	4.08	3.53
7	4.33	7.3	8.5	12.4	7.0	6.1	5.55	5.7	5.9	7.8	3.91	3.88
8	4.5	11.4	7.4	13.9	6.0	6.2	6.1	5.5	8.2	6.2	3.93	5.5
9	4.08	9.2	6.8	13.3	6.1	5.8	5.75	5.35	8.4	5.8	3.83	5.2
10	3.83	7.8	6.4	9.7	5.7	5.75	5.55	5.25	7.5	7.0	3.58	4.9
11	4.40	7.3	6.2	8.7	6.4	8.4	6.4	5.05	6.8	7.5	4.11	4.41
12	4.30	6.3	5.65	8.3	7.7	9.1	6.5	5.0	6.3	6.4	3.93	4.35
13	3.68	5.5	5.2	9.5	8.1	7.8	7.0	4.9	5.85	6.1	5.55	4.55
14	4.02	5.75	4.8	8.4	7.5	10.3	7.3	4.9	5.6	5.8	6.2	4.04
15	4.08	5.5	4.37	7.5	6.6	10.0	12.0	4.8	5.3	5.75	5.5	4.00
16	3.81	5.4	4.02	7.1	6.3	9.5	9.9	5.05	5.1	6.7	4.48	3.97
17	3.53	4.95	4.7	6.8	6.0	8.8	9.1	6.1	5.2	6.0	4.41	4.10
18	3.99	5.2	5.2	6.5	6.0	7.4	8.2	7.5	4.9	6.0	4.08	4.55
19	4.03	5.05	5.05	6.3	6.4	7.2	7.3	6.8	4.7	5.9	4.53	5.0
20	5.75	4.85	4.8	6.3	5.9	6.6	7.0	6.3	4.55	7.0	6.4	4.37
21	4.75	5.05	5.0	6.7	6.3	6.4	6.8	6.2	4.5	7.4	5.6	6.5
22	4.5	5.05	5.05	7.2	6.5	6.2	6.4	6.8	4.65	6.3	4.55	8.2
23	5.0	4.47	5.0	7.1	7.1	6.1	6.2	6.8	5.1	6.0	4.85	7.4
24	7.2	4.95	5.2	7.8	6.2	6.4	5.95	11.0	5.0	5.75	7.4	7.2
25	6.7	4.85	5.1	9.4	6.3	5.85	5.85	9.4	5.1	7.3	6.2	6.5
26	6.1	4.55	5.3	8.8	6.1	6.0	5.6	8.1	6.6	6.6	5.75	5.15
27	5.85	4.36	5.5	8.3	6.2	10.2	6.5	10.3	6.7	5.75	5.5	4.85
28	5.25	4.5	5.7	7.8	6.6	11.5	7.8	12.6	5.9	5.6	5.1	4.27
29	5.3	4.25	5.6	7.0	.....	9.4	7.7	9.9	5.4	5.35	4.6	4.40
30	4.75	4.47	6.9	6.8	.....	8.3	8.3	8.9	5.25	5.15	4.28	4.5
31	5.0	.....	11.0	6.6	.....	7.8	.....	11.3	.....	4.85	4.38	.....

NOTE.—Observer made no notes concerning ice. Discharge relation probably not materially affected by ice during the year ending Sept. 30, 1913.

GAULEY RIVER NEAR BELVA, W. VA.

Location.—Three-fourths mile below Chesapeake & Ohio Railway bridge at Belva, W. Va., one-fourth mile below the mouth of Twentymile Creek, and about 5½ miles above the mouth of river at Gauley bridge.

Records available.—August 25, 1908, to September 30, 1913.

Drainage area.—1,420 square miles.

Gage.—Vertical staff fastened to tree on right bank; read daily, morning and evening, to hundredths. Limits of use: Hundredths below 2.0, half-tenths from 2.0 to 3.5, and tenths above 3.5 feet. Sea-level elevation of the zero of the gage, 663.53 feet.

Control.—Practically permanent.

Discharge measurements.—Made from a boat 1,000 feet above gage, or by wading.

Floods.—No records of floods previous to installation of gage are available. Maximum gage height since installation of gage was approximately 19 feet, January 30, 1911.

Winter flow.—Discharge relation may be affected by ice at intervals during December, January, and February.

Accuracy.—Records of gage height accurate and reliable. Data insufficient for estimates of discharge.

No discharge measurements were made at this station during the year ending September 30, 1913.

Daily gage height, in feet, of Gauley River near Belva, W. Va., for the year ending Sept. 30, 1913.

[C. L. Davis, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	2.95	2.55	2.2	6.9	5.2	5.4	4.9	5.0	6.4	2.55	2.3	1.99
2	2.8	2.55	2.35	5.6	5.4	5.1	4.4	4.6	5.4	2.65	2.25	1.92
3	2.65	2.6	2.5	5.3	5.4	4.7	4.1	4.2	4.5	2.55	2.15	1.82
4	2.5	2.5	3.4	5.9	8.8	4.3	3.7	3.9	4.2	3.2	2.15	1.74
5	2.4	2.4	4.4	5.4	7.6	4.1	3.7	3.6	4.4	3.6	2.05	1.68
6	2.3	2.4	5.4	6.3	6.1	3.9	3.5	3.45	4.0	4.7	1.93	1.62
7	2.2	3.5	5.6	9.6	5.3	3.7	3.4	3.35	3.8	5.3	1.84	1.59
8	2.1	9.1	5.2	14.5	4.4	3.45	3.25	3.35	5.8	4.0	1.78	1.92
9	2.05	6.8	4.6	11.7	4.2	3.4	3.1	3.2	6.4	3.25	1.72	2.6
10	2.0	5.3	4.2	7.8	3.9	3.35	3.05	3.0	5.4	3.05	1.66	2.5
11	1.95	4.4	3.8	6.5	4.0	4.3	3.05	2.9	4.5	4.6	1.69	2.2
12	1.91	4.1	3.6	5.9	6.4	6.1	3.25	2.8	4.0	3.8	1.84	2.0
13	1.85	3.9	3.2	6.8	6.0	5.9	4.3	2.7	3.6	3.25	1.79	1.92
14	1.82	3.6	2.75	6.1	5.2	7.6	4.5	2.65	3.3	3.1	2.65	1.82
15	1.78	3.6	3.1	5.3	4.7	8.4	10.7	2.6	3.0	2.95	2.85	1.75
16	1.71	3.4	3.05	4.8	4.4	7.6	9.1	2.65	2.8	3.35	2.45	1.69
17	1.75	3.1	3.0	4.3	4.0	6.4	7.0	3.0	4.8	3.6	2.2	1.65
18	1.78	3.0	2.9	4.2	3.8	5.4	5.7	4.9	3.35	3.2	2.05	1.64
19	1.78	2.95	2.9	4.1	3.6	4.8	5.0	4.4	2.75	3.35	2.3	1.72
20	1.72	2.9	2.9	3.9	3.45	4.4	4.6	3.9	2.5	6.4	2.65	2.25
21	3.0	2.85	2.7	4.1	3.5	4.1	4.2	4.0	2.35	5.2	3.0	2.2
22	2.7	2.8	2.55	4.9	3.8	3.9	3.9	4.4	2.3	4.0	2.7	5.3
23	2.55	2.7	2.4	4.8	4.3	3.7	3.7	4.9	2.65	3.45	3.6	4.1
24	3.5	2.65	2.6	5.0	4.2	3.5	3.5	9.1	2.75	3.1	4.6	3.3
25	4.4	2.6	2.5	6.2	4.0	3.4	3.45	7.4	2.75	3.8	3.6	2.9
26	3.7	2.6	3.15	6.6	3.7	3.5	3.25	5.8	3.05	3.8	3.1	2.6
27	3.4	2.6	2.65	6.2	3.7	11.3	3.45	6.9	4.15	3.25	2.7	2.4
28	3.15	2.5	3.0	5.9	4.2	10.1	4.6	10.6	3.45	2.95	2.5	2.25
29	2.95	2.4	3.4	5.3	.....	7.0	4.9	8.1	2.95	2.85	2.3	2.15
30	2.75	2.3	4.5	4.8	.....	6.3	5.2	6.6	2.7	2.6	2.15	2.15
31	2.6	.....	9.2	4.7	.....	5.5	.....	7.3	.....	2.4	2.05	.....

NOTE.—Observer made no report concerning ice. Discharge relation probably not affected by ice during the year ending Sept. 30, 1913.

CHERRY RIVER AT RICHWOOD, W. VA.

Location.—At the highway bridge at Richwood, W. Va., half a mile below junction of North and South forks.

Records available.—July 3, 1908, to September 30, 1913.

Drainage area.—Not measured.

Gage.—Standard chain gage attached to bridge; read daily, morning and evening, to half-tenths. Limits of use: Hundredths below 3.0, half-tenths from 3.0 to 4.0, and tenths above 4.0 feet.

Control.—Practically permanent. The removal of stones and bowlders from the river bed in the vicinity of the point of control has at times affected the relation of gage height to discharge. The first stones were removed during August, 1909, and more were removed during May, June, July, and August, 1911.

Discharge measurements.—Made from downstream side of bridge.

Point of zero flow.—A determination by leveling, August 16, 1910, indicates that there would be no flow past the gage if the river stage were to fall to 1.3 feet, ±0.2 foot.

Winter flow.—Discharge relation affected by ice at times during December, January, and February.

Accuracy.—See "Control." Data insufficient for estimates of discharge.

Daily gage height, in feet, of Cherry River at Richwood, W. Va., for the year ending Sept. 30, 1913.

[Floyd Artrip, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	2.40	2.38	2.22	3.05	3.05	3.2	2.94	2.97	3.45	2.76	2.19	2.12
2	2.36	2.43	2.32	2.92	2.98	3.05	2.84	2.90	3.15	2.39	2.39	2.04
3	2.33	2.36	2.82	3.05	3.15	2.86	2.71	2.77	2.90	3.1	2.26	2.04
4	2.28	2.30	2.79	3.05	3.6	2.76	2.68	2.65	2.90	2.84	2.16	2.04
5	2.23	2.28	3.05	2.95	3.25	2.74	2.61	2.57	2.70	2.49	2.12	1.99
6	2.23	2.28	3.25	3.65	3.0	2.68	2.61	2.55	2.60	3.8	2.06	1.94
7	2.20	4.6	3.2	5.1	2.88	2.51	2.56	2.55	2.87	2.96	2.04	1.96
8	2.18	4.1	3.05	5.1	2.91	2.51	2.51	2.45	3.05	2.66	2.04	2.06
9	2.16	3.4	2.82	4.0	2.81	2.54	2.46	2.40	2.95	2.52	1.99	2.19
10	2.13	3.05	2.72	3.5	2.66	2.66	2.46	2.35	2.77	3.3	1.99	2.04
11	2.08	2.89	2.67	3.35	2.94	3.75	2.48	2.30	2.67	2.86	1.96	1.94
12	2.08	2.75	2.52	3.5	3.35	3.4	3.0	2.30	2.57	2.72	2.22	1.94
13	2.06	2.67	2.47	3.3	3.0	3.25	3.0	2.25	2.47	2.59	2.76	1.94
14	2.10	2.72	2.52	3.1	2.91	4.8	2.96	2.25	2.40	2.49	2.52	1.94
15	2.08	2.65	2.47	2.95	2.76	3.9	4.6	2.27	2.35	3.0	2.26	1.94
16	2.08	2.55	2.42	2.85	2.66	3.55	3.6	2.43	2.30	2.82	2.22	1.89
17	2.03	2.52	2.37	2.75	2.61	3.2	3.25	3.05	2.25	2.59	2.14	2.21
18	2.03	2.47	2.37	2.72	2.51	2.98	3.05	2.93	2.20	2.52	2.04	2.45
19	2.63	2.47	2.39	2.67	2.48	2.84	2.95	2.75	2.15	4.6	2.69	2.21
20	2.66	2.45	2.29	2.62	2.66	2.76	2.83	2.63	2.13	3.75	2.82	2.13
21	2.46	2.42	2.27	2.79	2.91	2.74	2.70	2.67	2.15	3.05	2.49	3.8
22	2.38	2.37	2.29	2.77	3.2	2.68	2.65	2.65	2.20	2.76	3.25	3.1
23	3.1	2.37	2.35	2.75	3.15	2.58	2.57	3.45	2.45	2.64	3.65	2.68
24	2.70	2.32	2.27	3.3	2.98	2.56	2.55	3.95	2.27	2.64	2.89	2.48
25	2.66	2.32	2.32	3.35	2.76	2.56	2.50	3.3	2.25	3.1	2.66	2.33
26	2.63	2.27	2.42	3.2	2.74	2.84	2.47	3.05	3.05	2.72	2.54	2.25
27	2.63	2.27	2.37	3.1	2.88	5.7	3.05	4.6	2.57	2.56	2.39	2.23
28	2.58	2.25	2.37	2.91	3.5	3.9	3.05	4.5	2.45	2.44	2.29	2.28
29	2.53	2.19	2.39	2.78	.....	3.45	3.1	3.6	2.33	2.29	2.24	2.13
30	2.48	2.22	3.25	2.68	.....	3.2	3.25	3.35	2.25	2.29	2.19	2.21
31	2.40	.....	3.4	2.78	.....	3.05	.....	4.4	.....	2.24	2.14	.....

NOTE.—Observer made no notes concerning ice. Discharge relation probably affected by ice about Feb. 8 to 18, 1913.

MEADOW RIVER NEAR RUSSELLVILLE, W. VA.

Location.—At Bays Ferry, 3 miles below Russellville, W. Va., one-fourth mile below mouth of Youngs Creek.

Records available.—July 17, 1908, to September 30, 1913.

Drainage area.—297 square miles.

Gage.—Standard chain gage attached to trees on left bank just above the bridge near former ferry crossing; read daily, morning and evening, to hundredths. Limits of use: Hundredths below 4.5, half-tenths from 4.5 to 5.5, and tenths above 5.5 feet.

Control.—Practically permanent.

Discharge measurements.—Made from a boat or by wading.

Winter flow.—Discharge relation at times affected by ice gorges.

Accuracy.—Gage-height records considered very reliable. In the fall backwater is sometimes caused at the gage by leaves lodging at the riffle below. Data insufficient for estimates of discharge. In October and November, 1912, the observer reported that the false work for the construction of the piers of the new county highway bridge below the gage was placed about the middle of October; that the piers were started October 28 and finished November 6. The bridge was completed in the spring of 1913.

No discharge measurements were made at this station during the year ending September 30, 1913.

Daily gage height, in feet, of Meadow River near Russellville, W. Va., for the year ending Sept. 30, 1913.

[J. R. Bays, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	3.83	3.86	3.56	7.0	6.4	6.5	5.8	5.3	6.1	3.42	3.18	3.04
2	3.71	3.82	3.74	6.4	6.2	6.2	5.4	5.05	5.6	3.32	3.13	3.01
3	3.60	3.78	3.98	6.3	6.4	5.45	5.1	4.85	5.2	3.27	3.11	2.96
4	3.51	3.71	4.65	6.8	8.5	5.6	4.9	4.7	5.6	4.85	3.03	2.91
5	3.42	3.60	6.0	6.8	8.0	5.3	4.8	4.6	6.6	4.6	3.00	2.88
6	3.33	3.56	6.4	6.8	7.0	5.2	4.7	4.43	6.1	5.1	3.01	2.85
7	3.27	4.41	6.6	8.8	6.2	5.05	4.5	4.85	6.3	5.0	2.96	2.91
8	3.24	7.9	6.2	.....	7.7	4.75	4.41	4.75	7.2	4.31	2.93	2.97
9	3.19	6.9	5.6	8.9	7.4	4.65	4.32	4.6	7.2	3.91	2.90	3.07
10	3.15	5.9	5.15	7.5	6.6	4.9	4.26	4.45	6.5	3.82	2.85	3.10
11	3.12	5.45	4.9	7.2	6.5	6.6	4.22	4.33	5.7	3.82	.....	3.16
12	3.10	5.0	4.7	6.8	6.8	7.7	4.6	4.25	5.25	3.92	.....	3.10
13	3.10	4.75	4.55	6.6	7.5	7.1	5.6	4.19	4.9	3.80	3.71	3.05
14	3.12	4.65	4.35	6.4	7.5	8.3	5.6	4.12	4.6	3.63	3.40	2.97
15	3.15	4.55	4.33	6.0	7.3	10.1	[a]9.8	4.07	4.35	3.73	3.22	2.93
16	3.20	4.41	4.28	5.6	6.7	8.9	.....	4.05	4.19	3.92	3.22	2.89
17	3.27	4.29	4.23	5.35	5.3	7.5	7.4	5.0	4.14	4.10	3.18	2.91
18	3.24	4.22	4.17	5.2	4.8	6.6	6.5	5.6	4.27	3.96	3.15	2.95
19	3.44	4.14	4.14	5.1	4.7	6.0	5.9	5.2	3.81	3.89	3.22	3.23
20	4.46	4.07	4.07	5.05	4.65	5.5	5.3	4.95	3.67	6.0	3.26	3.37
21	4.41	4.02	3.97	5.2	4.75	5.3	5.1	6.8	3.59	5.6	3.11	3.71
22	4.20	3.96	3.83	5.45	5.1	5.1	4.9	6.6	3.59	5.1	3.54	5.5
23	4.41	3.93	3.80	5.4	5.3	4.85	4.75	6.8	3.63	4.28	4.29	4.7
24	5.1	3.90	3.76	6.0	5.35	4.75	4.6	.....	3.62	4.06	4.44	4.2
25	5.25	3.89	.....	6.9	5.25	4.7	4.48	7.6	3.59	3.98	3.92	3.71
26	4.85	3.87	3.79	6.8	5.0	5.15	4.43	6.7	3.90	3.80	3.60	3.61
27	4.7	3.82	3.91	6.6	5.05	8.5	4.7	8.0	3.87	3.68	3.40	3.43
28	4.26	3.70	3.98	6.5	6.05	10.4	5.2	.....	3.87	3.53	3.30	.....
29	4.20	3.46	3.96	6.3	.....	8.6	5.35	8.3	3.64	3.42	3.18	3.25
30	4.06	3.38	5.0	6.1	.....	7.4	5.4	7.3	3.53	3.35	3.10	3.40
31	3.94	.....	8.0	6.0	.....	6.5	.....	6.6	.....	3.26	3.04	.....

[a] Gage height estimated by observer.

NOTE.—Observer reported backwater from ice Feb. 8 and 9. Discharge relation affected by ice about Feb. 7 to 18, 1913.
Water too high for observer to reach gage Jan. 8 and Apr. 15–16.

ELK RIVER AT WEBSTER SPRINGS, W. VA.

Location.—At suspension bridge on the grounds of the Webster Springs Hotel at Webster Springs, W. Va., one-fourth mile above the mouth of Back Fork Creek.

Records available.—July 1, 1908, to September 30, 1913.

Drainage area.—168 square miles.

Gage.—Vertical staff attached to right abutment of bridge; gage read daily, morning and evening, to hundredths. Limits of use: Hundredths below 3.0, half-tenths from 3.0 to 5.0, and tenths above 5.0 feet.

Control.—Practically permanent.

Discharge measurements.—Made from upstream side of bridge or by wading.

Point of zero flow.—Levels taken August 13, 1910, indicate that there would be no flow past the gage at a stage of 0.95 foot, ±0.2 foot.

Winter flow.—Discharge relation sometimes affected by ice.

Accuracy.—Data insufficient for estimates of discharge.

No discharge measurements were made at this station during year ending September 30, 1913.

Daily gage height, in feet, of Elk River at Webster Springs, W. Va., for the year ending Sept. 30, 1913.

[Cherry Woodzell, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	2.32	2.06	1.96	3.75	3.3	3.4	3.05	3.0	4.0	2.02	1.86	1.82
2	2.19	2.12	2.06	3.35	3.1	3.2	2.97	2.87	3.45	1.94	2.04	1.76
3	2.09	2.07	2.51	3.45	3.25	3.0	2.87	2.75	3.1	1.84	1.96	1.73
4	2.01	2.02	2.61	3.6	4.25	2.89	2.77	2.63	2.89	1.92	1.82	1.69
5	1.97	1.96	2.91	3.55	3.7	2.77	2.75	2.51	2.69	1.94	1.75	1.65
6	1.95	1.96	3.15	4.05	3.35	2.71	2.71	2.44	2.59	3.35	1.68	1.61
7	1.93	3.85	3.25	5.3	3.1	2.63	2.66	2.40	3.0	2.82	1.64	1.65
8	1.86	4.4	3.05	5.8	2.90	2.53	2.59	2.37	3.55	2.42	1.64	1.75
9	1.83	3.6	2.91	4.75	2.75	2.49	2.51	2.27	3.4	2.19	1.63	2.08
10	1.78	3.15	2.74	3.95	2.63	2.63	2.47	2.21	3.1	6.3	1.62	1.88
11	1.75	2.84	2.67	3.6	3.25	3.55	2.46	2.19	2.82	3.7	1.68	1.75
12	1.73	2.68	2.58	3.75	3.7	3.75	3.05	2.14	2.62	3.1	2.04	1.70
13	1.71	2.58	2.41	3.85	3.3	3.5	3.6	2.09	2.49	2.82	2.89	1.72
14	1.72	2.56	2.36	3.5	3.05	4.7	3.45	2.04	2.36	2.56	2.79	1.69
15	1.68	2.48	2.35	3.25	2.90	4.25	5.1	2.06	2.26	2.54	2.44	1.65
16	1.67	2.38	2.28	3.05	2.73	3.85	4.2	2.19	2.16	2.64	2.14	1.60
17	1.67	2.35	2.24	2.85	2.65	3.45	3.7	2.44	2.06	2.56	2.02	1.75
18	1.65	2.30	2.22	2.84	2.57	3.15	3.35	2.89	1.98	2.49	1.92	2.41
19	1.71	2.26	2.26	2.81	2.51	2.97	3.15	2.69	1.95	2.44	2.22	2.08
20	2.27	2.25	2.25	2.78	2.53	2.83	3.0	2.49	1.90	2.43	2.64	1.95
21	2.12	2.21	2.22	2.98	2.63	2.75	2.87	2.36	1.86	2.36	2.42	3.1
22	1.92	2.16	2.21	3.05	2.43	2.67	2.77	2.39	1.78	2.24	2.26	3.25
23	2.02	2.16	2.16	2.96	2.53	2.57	2.63	2.86	1.89	2.12	3.8	2.85
24	2.75	2.16	2.12	3.15	2.85	2.55	2.53	4.5	1.94	2.12	3.15	2.43
25	2.62	2.16	2.04	3.75	2.80	2.45	2.47	3.65	1.94	2.34	2.78	2.21
26	2.49	2.15	1.96	3.5	2.65	2.95	2.47	3.2	2.04	2.34	2.43	2.11
27	2.38	2.14	2.51	3.3	2.85	6.0	2.80	4.95	2.04	2.14	2.24	1.98
28	2.28	2.04	2.56	3.15	3.4	4.55	2.97	5.4	1.96	2.06	2.15	1.92
29	2.20	1.96	2.61	2.94	.....	3.85	3.15	4.25	2.14	1.98	2.05	1.87
30	2.15	1.96	3.9	2.84	.....	3.45	3.2	3.65	2.06	1.95	1.95	1.83
31	2.10	.....	4.35	3.15	.....	3.25	.....	5.3	.....	1.94	1.87	.....

NOTE.—Observer reported river frozen over, ice 2 to 5 inches thick, Dec. 23 and 28, 1912; and rain, ice gone out, Dec. 30. Discharge relation probably little, if at all, affected by ice during the year ending Sept. 30, 1913.

ELK RIVER AT GASSAWAY, W. VA.

Location.—At the highway bridge immediately above the Coal & Coke Railroad bridge in the northeastern part of Gassaway, W. Va., just above the mouth of Little Otter Creek.

Records available.—July 1, 1908, to September 30, 1913.

Drainage area.—578 square miles.

Gage.—Standard chain gage attached to bridge; read daily, morning and evening, to hundredths. Limits of use: Hundredths below 3.0, half-tenths from 3.0 to 3.5, and tenths above 3.5 feet. Sea-level elevation of zero of gage, 796.31 feet. On May 5, 1913, the gage, which was then attached on the upstream side of the Coal & Coke Railroad bridge, was partly destroyed, and no gage-height records were taken until June 17, 1913, when the gage was changed to its present position, on the downstream side of the highway bridge. The datum of the gage was not changed, but on account of the slope of the water surface the gage heights at the new site are somewhat greater than the corresponding readings at the railroad bridge. It should be noted that Little Otter Creek enters between the bridges.

Control.—Probably permanent.

Discharge measurements.—Made from upstream side of bridge or by wading.

Floods.—No records of floods prior to the installation of the gage are available. The flood of January 30, 1911, reached a stage of 30.4 feet, as determined by wye levels on September 13, 1912.

Point of zero flow.—Determinations by leveling, August 12, 1910, and September 13, 1912, indicate that there would be no flow past the gage if the stage were to fall to 0.5 foot, ±0.2 foot.

Winter flow.—Ice may affect the discharge relation for short periods.

Accuracy.—Data insufficient for estimates of discharge.

Discharge measurements of Elk River at Gassaway, W. Va., in the year ending Sept. 30, 1913.

Date.	Hydrographer.	Gage height.	Discharge.
		Feet.	*Sec.-ft.*
Apr. 1	A. H. Horton	[a] 4.51	1,350
June 18	H. J. Jackson	[b] 2.14	232

[a] Gage height at old gage location. See "gage," station description.
[b] Gage height at new gage location. See "gage," station description.

Daily gage height, in feet, of Elk River at Gassaway, W. Va., for the year ending Sept. 30, 1913.

[H. A. Hays, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	3.05	1.96	1.86	7.5	3.6	3.9	4.8	5.0	.....	1.98	2.00	2.15
2	2.98	2.04	1.84	6.1	3.5	3.8	4.0	4.7	.....	1.94	2.00	2.09
3	2.80	2.31	1.84	6.4	3.7	3.7	3.8	4.1	.....	1.88	1.98	2.04
4	2.44	2.27	1.88	6.5	8.4	3.7	3.5	3.6	.....	1.85	1.95	1.80
5	2.10	2.23	2.02	6.2	7.6	3.6	3.5	.....	.....	1.90	1.86	1.74
6	2.02	2.19	3.8	6.4	6.7	3.7	3.45	.....	.....	1.98	1.78	1.62
7	1.96	2.12	3.9	11.6	5.4	3.8	3.35	.....	.....	2.29	1.70	1.63
8	1.94	5.0	3.8	17.4	4.9	3.8	3.25	.....	.....	2.46	1.67	2.19
9	1.88	6.0	3.15	13.1	3.9	3.7	3.05	.....	.....	2.58	1.66	3.2
10	1.84	5.3	2.99	8.3	3.6	3.6	2.70	.....	.....	9.9	1.64	2.90
11	1.79	3.9	3.10	6.4	4.3	4.6	2.81	.....	.....	7.8	1.70	2.54
12	1.75	3.35	2.94	5.7	9.0	6.5	3.1	.....	.....	7.7	2.51	2.09
13	1.72	3.05	2.94	4.4	6.2	7.3	4.4	.....	.....	8.1	4.7	2.08
14	1.71	2.98	2.70	3.8	5.7	8.1	4.7	.....	.....	7.2	4.6	2.32
15	1.70	2.94	2.41	3.4	5.4	8.0	5.7	.....	.....	4.4	3.5	2.39
16	1.70	2.90	2.49	3.8	4.9	7.6	7.3	.....	.....	3.9	2.72	2.12
17	1.69	2.88	2.38	4.3	4.0	7.3	6.0	.....	2.23	3.7	2.64	1.94
18	1.68	2.84	2.47	4.2	3.45	6.2	5.3	.....	2.20	3.3	2.41	2.38
19	1.70	2.81	3.7	3.9	3.35	4.5	5.1	.....	2.05	3.05	2.54	3.3
20	1.74	2.48	2.39	3.8	3.3	3.8	4.9	.....	1.98	2.96	4.7	3.7
21	1.92	2.27	2.20	4.0	3.3	3.8	4.3	.....	1.94	2.60	5.0	4.4
22	2.30	2.26	2.05	4.8	3.45	3.7	3.7	.....	1.98	2.56	5.2	6.8
23	2.48	2.24	1.98	5.6	3.45	3.6	3.5	.....	2.10	2.49	6.3	5.9
24	2.22	2.23	1.96	5.9	3.4	3.2	3.45	.....	2.02	2.46	5.7	4.8
25	2.10	2.22	1.96	6.2	3.35	2.78	3.4	.....	1.98	2.40	4.7	3.6
26	2.06	2.20	1.99	7.2	3.2	5.3	3.4	.....	2.12	2.36	3.8	2.52
27	2.04	2.18	2.12	6.9	3.1	13.9	3.5	.....	2.22	2.28	2.78	2.49
28	2.02	2.05	2.66	6.6	3.45	11.5	4.6	.....	2.14	2.22	2.44	2.46
29	2.00	1.88	3.6	6.2	.....	7.5	5.6	.....	2.08	2.10	2.39	2.40
30	2.10	1.86	5.1	5.1	.....	5.6	5.6	.....	2.02	2.07	2.30	2.30
31	2.02	.....	10.9	3.7	.....	5.2	.....	.....	.....	2.04	2.19	.....

NOTE.—Observer made no notes concerning ice. Discharge relation probably not affected by ice during year ending Sept. 30, 1913.

ELK RIVER AT CLENDENIN, W. VA.

Location.—At highway bridge in town of Clendenin, W. Va., immediately above mouth of Big Sandy Creek. Plate V, *A* (p. 94) gives a view looking upstream from the right bank just below the mouth of Big Sandy Creek; gage height, 6.0 feet; discharge about 3,400 second-feet.

Records available.—June 27, 1908, to September 30, 1913.

Drainage area.—Not measured.

Gage.—Standard chain gage attached to bridge; read daily, morning and evening, to hundredths. Limits of use: Hundredths below 3.0, half-tenths from 3.0 to 4.0, and tenths above 4.0. Sea-level elevation of zero of gage 588.69 feet.

Control.—Probably permanent.

Discharge measurements.—Made from downstream side of bridge or by wading.

Floods.—The high water of 1889 reached a stage of about 31.9 feet referred to gage datum.

Point of zero flow.—Levels taken August 11, 1910, and September 14, 1912, indicate that there would be no flow past the gage if the stage were to fall to 1.0 foot, ±0.2 foot.

Winter flow.—Ice may affect the discharge relation at times during December, January, and February.

Accuracy.—Big Sandy Creek empties into Elk River immediately below the gage and affects the gage height. This effect may be negligible during periods of low water in the Big Sandy, but at other times the flow of the creek may be a large percentage of the flow in Elk River above the Big Sandy. On November 28, 1913, the station was visited by engineers of the Survey, who measured the flow and found it to be 29 per cent of the flow in Elk River above Big Sandy. In making estimates of discharge at this station the discharge and drainage area of Big Sandy Creek should be included; that is, the Clendenin gage should be considered as an index of the flow of Elk River just below the mouth of Big Sandy Creek. Discharge measurements at this station previously published do not include the flow of the Big Sandy and should therefore be used with caution.

No discharge measurements were made at this station during the year ending September 30, 1913.

Daily gage height, in feet, of Elk River at Clendenin, W. Va., for the year ending Sept. 30, 1913.

[J. W. Riley, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	3.2	2.70	2.49	8.8	5.0	4.1	5.3	5.8	9.5	2.80	2.91	2.64
2	3.1	2.62	2.57	6.3	5.2	4.5	4.9	5.4	6.5	2.70	3.0	2.55
3	3.05	2.58	2.52	5.8	5.9	4.6	4.6	4.9	5.3	2.62	2.82	2.48
4	2.97	2.64	2.54	6.7	9.2	4.3	4.4	4.5	4.9	2.69	2.67	2.42
5	2.74	2.70	2.76	6.4	9.7	4.2	4.2	4.2	4.2	2.68	2.48	2.38
6	2.60	2.64	4.0	7.8	7.3	4.2	4.0	3.9	3.9	3.6	2.52	2.32
7	2.61	2.67	4.7	12.9	6.0	4.0	3.8	3.75	3.65	3.95	2.42	2.24
8	2.54	8.0	4.9	18.9	5.1	3.85	3.7	3.6	4.9	4.3	2.36	2.44
9	2.47	8.1	4.7	18.0	4.6	3.75	3.7	3.5	6.0	3.65	2.30	2.62
10	2.44	5.9	4.3	10.0	4.5	3.8	3.65	3.35	5.5	3.35	2.26	3.7
11	2.40	4.7	3.9	7.2	4.9	4.2	3.7	3.15	4.7	10.4	2.29	3.25
12	2.38	4.2	3.65	10.0	8.5	5.2	4.0	3.1	4.3	6.0	2.33	2.93
13	2.32	3.8	3.45	9.8	8.5	6.1	4.1	3.0	3.85	4.7	2.27	2.74
14	2.27	3.65	3.2	8.0	6.4	9.1	4.4	2.91	3.6	3.8	3.75	2.60
15	2.32	3.55	3.0	5.4	5.6	9.3	7.0	2.90	3.35	3.9	4.1	2.50
16	2.24	3.4	3.05	5.6	5.4	7.8	8.1	2.96	3.15	4.1	3.7	2.47
17	2.25	3.25	3.05	5.2	4.7	6.6	7.6	3.2	3.7	4.7	3.25	2.46
18	2.22	3.2	3.1	5.3	4.4	5.5	6.2	4.2	3.65	4.2	3.0	2.48
19	2.16	3.1	3.0	5.4	4.2	5.0	5.6	4.1	3.3	3.95	2.92	2.64
20	2.12	2.91	3.0	5.1	4.0	4.7	5.4	3.9	2.94	3.95	3.0	3.1
21	2.12	2.92	3.05	5.9	3.95	4.5	5.0	3.65	2.74	3.7	3.65	3.4
22	2.18	2.88	3.0	7.0	3.95	4.4	4.6	3.5	2.68	3.5	4.0	3.1
23	2.19	2.84	2.88	6.6	4.1	4.1	4.4	7.1	2.70	3.3	3.85	5.3
24	2.45	2.76	2.90	7.4	4.3	3.85	4.2	12.7	2.85	3.2	5.5	4.2
25	2.64	2.74	3.0	9.1	4.2	3.7	4.0	9.8	2.80	4.0	4.8	3.8
26	2.91	2.70	2.84	8.4	3.95	6.3	3.85	7.0	3.85	3.6	4.1	3.5
27	3.3	2.66	3.0	7.3	3.9	17.8	4.0	6.3	3.95	3.25	3.65	3.1
28	3.05	2.76	4.1	7.3	3.9	16.1	4.6	12.9	3.45	3.2	3.3	2.90
29	2.97	2.63	4.6	6.3	.....	9.5	5.5	11.6	3.15	3.0	3.05	2.80
30	2.84	2.55	5.7	5.6	.....	7.0	5.4	7.9	2.93	2.84	2.87	2.71
31	2.74	.....	10.7	5.2	.....	6.0	.....	7.0	.....	2.67	2.78	.....

NOTE.—Observer made no note concerning ice. Discharge relation probably not materially affected by ice during the year ending Sept. 30, 1913.

COAL RIVER AT BRUSHTON, W. VA.

Location.—At Chesapeake & Ohio Railway bridge at Brushton, W. Va., 500 feet above the mouth of Brush Creek.

Records available.—June 23, 1908, to September 30, 1913.

Drainage area.—379 square miles.

Gage.—Standard chain gage attached to bridge; read daily, morning and evening, to hundredths. Limits of use: Hundredths below 2.5, half-tenths from 2.5 to 4.0, and tenths above 4.0 feet. Sea-level elevation of the zero of the gage, 633.83 feet.

Control.—Practically permanent. A change in channel causing a change in the discharge relation is indicated by the discharge measurement made September 17, 1912.

Discharge measurements.—Made from downstream side of bridge or by wading.

Winter flow.—The discharge relation is little, if at all, affected by ice.

Accuracy.—Gage-height records considered reliable. Data insufficient for estimates of discharge.

No discharge measurements were made at this station during the year ending September 30, 1913.

Daily gage height, in feet, of Coal River at Brushton, W. Va., for the year ending Sept. 30, 1913.

[G. W. Fitzpatrick, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	1.80	1.40	1.36	4.1	3.35	3.3	3.1	2.34	2.6	1.51	1.16	1.19
2	1.69	1.40	1.36	3.1	3.25	3.1	2.85	2.33	2.38	1.45	1.14	1.14
3	1.63	1.38	1.45	2.9	3.65	2.8	2.7	2.30	2.22	1.38	1.10	1.08
4	1.56	1.38	1.64	3.1	7.4	2.65	2.55	2.23	2.5	1.50	1.10	1.00
5	1.51	1.34	2.7	3.05	5.3	2.65	2.48	2.16	2.26	1.65	1.13	.95
6	1.46	1.33	3.55	3.6	4.1	2.55	2.34	2.12	2.10	1.90	1.10	.85
7	1.92	1.41	3.3	6.1	3.4	2.46	2.24	2.08	2.17	1.69	1.10	.92
8	1.88	2.55	2.9	9.6	3.05	2.34	2.20	2.24	4.4	1.56	1.13	1.37
9	1.82	2.9	2.55	6.5	2.8	2.34	2.16	2.38	4.7	1.43	1.06	1.52
10	1.56	2.42	2.32	4.5	2.6	2.46	2.11	2.20	3.6	1.50	1.02	1.40
11	1.34	2.16	2.14	3.6	2.7	2.6	2.20	2.06	2.95	1.34	1.00	1.30
12	1.30	2.02	2.07	3.7	3.9	3.35	2.18	1.96	2.6	1.36	1.08	1.23
13	1.28	1.90	1.89	4.4	3.9	3.4	2.20	1.90	2.40	1.46	1.13	1.20
14	1.25	1.84	1.72	4.0	3.5	4.8	2.23	1.87	2.20	1.44	1.18	1.20
15	1.25	1.81	1.78	3.45	3.15	5.4	6.4	1.82	2.08	1.46	1.32	1.16
16	1.24	1.74	1.81	3.1	2.95	4.6	4.5	1.77	1.98	1.60	1.34	1.16
17	1.22	1.66	1.76	2.8	2.75	3.9	3.8	2.22	1.94	1.52	1.31	1.16
18	1.28	1.60	1.72	2.9	2.6	3.35	3.35	2.42	3.0	1.68	1.24	1.18
19	1.24	1.56	1.72	2.9	2.48	3.05	3.15	2.40	2.6	2.04	1.22	1.19
20	1.26	1.53	1.74	2.9	2.40	2.9	2.95	2.20	2.22	2.05	1.32	1.16
21	1.24	1.48	1.75	3.6	2.33	2.55	2.65	2.15	2.02	1.90	1.27	1.15
22	1.24	1.44	1.60	4.1	2.31	2.65	2.55	2.34	2.44	1.76	1.24	1.14
23	1.52	1.43	1.45	3.8	2.24	2.5	2.46	3.1	1.91	1.63	1.32	1.16
24	1.61	1.42	1.50	3.9	2.21	2.40	2.42	5.5	1.83	1.54	1.30	1.19
25	1.78	1.43	1.54	5.1	2.24	2.36	2.34	4.2	1.78	1.46	1.58	1.30
26	1.78	1.46	1.52	4.8	2.18	3.05	2.30	3.4	1.70	1.40	1.52	1.26
27	1.67	1.44	1.71	4.3	2.27	11.8	2.34	3.05	1.70	1.36	1.43	1.26
28	1.61	1.42	1.84	5.0	3.25	7.0	2.34	3.45	1.77	1.33	1.39	1.19
29	1.56	1.38	2.14	4.3	.....	4.7	2.38	3.6	1.70	1.30	1.36	1.20
30	1.48	1.38	2.8	3.75	.....	3.85	2.35	3.15	1.61	1.24	1.29	1.37
31	1.44	.....	6.0	3.4	.....	3.45	.....	2.85	.....	1.21	1.22	.....

NOTE.—Observer made no notes concerning ice. Discharge relation probably affected by ice about Dec. 26–29, 1912, and Feb. 13–17, 1913.

COAL RIVER AT FUQUA, W. VA.

Location.—At W. C. Hoy's passenger ferry, half a mile below Fuqua railroad station and 1 mile below the mouth of Fuqua Creek.

Records available.—October 12, 1911, to September 30, 1913.

Drainage area.—Not measured.

Gage.—Staff gage in two sections on right bank; read daily, morning and evening, to hundredths. Limits of use: Hundredths below 3.5, half-tenths from 3.5 to 4.0, and tenths above 4.0 feet.

Control.—Probably permanent.

Discharge measurements.—Made from boat 300 feet above gage or by wading.

Point of zero flow.—Wye levels, run September 16, 1912, indicate that there would be no flow past the gage if the river were to fall to a stage of 0.0 foot, ±0.2 foot referred to gage datum.

Winter flow.—Discharge relation probably affected by ice for short periods.

Accuracy.—Gage-height record considered reliable. Data insufficient for estimates of discharge.

No discharge measurements were made at this station during the year ending September 30, 1913.

Daily gage height, in feet, of Coal River at Fuqua, W. Va., for the year ending Sept. 30, 1913.

[W. C. Hoy, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	1.65	0.94	0.94	5.9	4.5	3.8	4.7	2.76	3.00	1.12	0.80	0.62
2	1.48	.94	1.00	3.95	4.1	3.7	4.1	2.73	2.59	1.05	.80	.59
3	1.32	.91	1.04	3.45	4.8	3.34	3.75	2.68	2.35	1.02	.76	.54
4	1.22	.92	1.10	3.65	12.8	3.05	3.5	2.58	2.88	1.06	.72	.52
5	1.14	.90	1.76	3.75	9.8	2.98	3.32	2.48	2.56	1.45	.68	.50
6	1.10	.88	4.2	4.3	6.6	2.92	3.13	2.46	2.10	1.48	.64	.48
7	1.04	.98	4.0	9.0	4.9	2.74	2.92	2.31	2.19	1.37	.64	.48
8	1.00	1.13	3.33	17.9	4.0	2.56	2.80	2.20	4.6	1.22	.62	.52
9	.95	2.67	2.80	13.7	3.6	2.46	2.70	2.50	6.5	1.12	.60	.68
10	.91	2.40	2.41	7.7	3.21	2.42	2.64	2.25	4.7	1.44	.60	.82
11	.90	1.97	2.16	5.4	3.38	2.66	2.60	2.10	3.48	1.17	.60	.74
12	.85	1.76	1.99	6.2	4.9	3.6	2.80	1.95	2.80	1.08	.58	.73
13	.83	1.60	1.95	6.9	5.6	4.0	2.90	1.85	2.48	1.04	.61	.72
14	.82	1.52	1.88	6.2	4.7	9.9	2.86	1.82	2.16	1.11	.59	.65
15	.80	1.47	1.85	4.8	4.2	10.1	9.5	1.77	1.95	1.10	.62	.62
16	.80	1.40	1.63	4.1	3.75	7.6	9.4	1.74	1.78	1.12	.72	.60
17	.79	1.34	1.56	3.6	3.40	5.7	6.7	2.11	1.70	1.27	.74	.60
18	.78	1.26	1.50	3.65	3.15	4.4	5.3	3.00	2.62	1.16	.70	.63
19	.75	1.20	1.50	3.8	2.87	3.85	4.6	2.72	2.53	1.97	.66	.66
20	.80	1.16	1.45	3.8	2.68	3.55	4.1	2.41	1.94	2.24	.62	.62
21	.80	1.12	1.40	4.9	2.59	3.42	3.6	2.30	1.66	1.70	.60	.60
22	.79	1.10	1.38	6.6	2.50	3.34	3.30	2.40	1.54	1.47	.70	.60
23	.99	1.07	1.30	5.9	2.41	2.95	3.18	5.1	1.54	1.29	.68	.58
24	1.04	1.05	1.26	6.2	2.34	2.78	3.02	9.3	1.50	1.38	.64	.58
25	1.12	1.06	1.35	8.8	2.32	2.72	2.85	7.2	1.40	1.20	.76	.58
26	1.22	1.06	1.18	8.5	2.22	6.6	2.75	5.0	1.36	1.11	.98	.62
27	1.25	1.06	1.43	6.9	2.25	18.5	2.83	4.0	1.28	1.02	.87	.61
28	1.15	1.04	1.60	8.3	3.00	14.9	2.84	3.6	1.26	.98	.80	.58
29	1.12	1.08	1.94	7.0	.....	9.0	2.86	4.5	1.26	.93	.76	.62
30	1.10	1.00	3.6	5.4	.....	6.5	2.87	4.0	1.18	.88	.70	.64
31	1.00	.....	9.2	4.5	.....	5.4	.....	3.42	.....	.84	.66	.....

NOTE.—Observer made no notes concerning ice. Discharge relation probably affected by ice about Dec. 25–29, 1912, and Feb. 13–18, 1913.

POCOTALIGO RIVER AT SISSONVILLE, W. VA.

Location.—At the highway bridge at the post office at Sissonville, W. Va., one-fourth mile below the mouth of Grapevine Creek.

Records available.—June 26, 1908, to September 30, 1913.

Drainage area.—Not measured.

Gage.—Standard chain gage attached to bridge; read daily, morning and evening, to hundredths. Limits of use: Hundredths below 2.5, half-tenths from 2.5 to 3.5, and tenths above 3.5 feet.

Control.—Practically permanent.

Discharge measurements.—Made from downstream side of bridge or by wading.

Floods.—The flood of June 27, 1910, reached a height of 33.0 feet by the gage datum. Some of the flood water passed around the gage.

Winter flow.—Discharge relation may be affected by ice for short periods in December, January, and February.

Regulation.—A dam and small power plant above the station modify the low-water flow.

Accuracy.—Data insufficient for estimates of discharge.

No discharge measurements were made at this station during the year ending September 30, 1913.

Daily gage height, in feet, of Pocotaligo River at Sissonville, W. Va., for the year ending Sept. 30, 1913.

[B. N. Sisson, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	1.89	1.39	1.38	3.7	3.45	3.8	3.1	2.44	2.33	1.59	1.31	1.28
2	1.83	1.64	1.59	3.1	3.0	3.25	2.85	2.28	2.14	1.30	1.32	1.21
3	1.66	1.55	1.80	2.85	5.8	2.9	2.75	2.16	1.95	1.35	1.26	1.18
4	1.49	1.42	1.77	3.25	8.6	2.8	2.65	2.15	2.09	3.0	1.26	1.15
5	1.43	1.38	2.29	3.5	5.4	2.9	2.47	2.15	1.97	3.6	1.12	1.05
6	1.43	1.40	4.6	7.7	4.1	2.95	2.45	2.01	1.85	3.8	1.07	.99
7	1.41	1.44	3.9	12.9	3.35	2.85	2.35	1.92	2.5	3.35	1.06	.97
8	1.56	1.50	2.95	14.1	3.3	2.65	2.25	1.72	5.4	2.40	1.12	1.10
9	1.53	1.80	2.55	8.0	3.05	2.65	2.12	1.50	3.7	2.10	1.12	2.23
10	1.47	1.80	2.34	4.3	2.65	2.75	2.31	1.54	2.75	2.85	1.14	1.63
11	1.42	1.88	2.07	3.9	5.9	3.7	2.7	1.64	2.22	3.9	1.14	1.58
12	1.43	1.55	1.97	18.3	8.3	4.2	3.9	1.54	2.10	2.5	1.16	1.45
13	1.42	1.60	1.83	8.0	4.1	3.6	4.2	1.52	1.93	2.16	1.86	1.37
14	1.40	1.85	1.64	4.4	3.45	9.3	3.7	1.54	1.83	1.96	1.32	1.31
15	1.36	1.99	1.70	3.6	3.35	6.6	6.0	1.48	1.69	1.72	1.34	1.28
16	1.34	1.80	1.62	3.4	3.1	4.2	6.2	1.58	1.70	1.84	1.28	1.25
17	1.35	1.42	1.74	3.6	2.9	3.35	4.1	2.10	1.49	5.2	1.14	1.17
18	1.38	1.62	1.67	6.1	2.75	2.95	3.4	2.11	1.39	5.5	1.34	1.25
19	1.46	1.64	1.79	4.6	2.8	2.75	3.7	1.86	1.39	3.25	1.16	1.51
20	1.39	1.56	1.89	3.7	2.7	2.7	3.8	1.80	1.37	2.85	1.15	1.88
21	1.40	1.68	1.73	6.6	2.75	2.55	3.15	1.74	1.37	2.12	1.14	1.54
22	1.40	1.49	1.74	5.8	2.8	2.55	2.9	3.4	1.37	1.96	1.84	1.55
23	1.65	1.54	1.74	4.7	2.30	2.45	2.75	9.8	1.63	1.76	2.19	1.31
24	1.54	1.44	1.69	6.7	2.6	2.32	2.6	7.6	1.61	1.82	1.62	1.27
25	1.48	1.50	1.66	6.4	2.55	2.27	2.35	4.1	2.5	2.34	1.46	1.25
26	1.42	1.53	1.59	3.7	2.38	13.8	2.38	3.15	2.10	1.94	1.36	1.33
27	1.44	1.52	2.07	4.8	2.42	20.4	2.46	3.35	1.83	1.59	1.29	1.25
28	1.41	1.39	2.7	5.2	2.47	8.2	2.5	3.9	1.87	1.42	1.35	1.08
29	1.41	1.40	3.0	4.0	.....	4.6	2.6	3.45	1.67	1.62	1.36	1.18
30	1.38	1.39	7.1	3.45	.....	3.9	2.6	2.8	1.57	1.62	1.28	1.21
31	1.40	.....	6.9	3.25	.....	3.45	.....	2.6	.....	1.42	1.23	.....

NOTE.—Observer made no notes concerning ice. Discharge relation probably not affected by ice during the year ending Sept. 30, 1913.

MILL CREEK BASIN.

MILL CREEK AT ARLINGTON HEIGHTS, OHIO.

Location.—At Arlington Heights, about 1,000 feet below confluence of East and West forks of Mill Creek.

Records available.—September 19, 1912, to September 30, 1913.

Drainage area.—109 square miles.

Gage.—Inclined staff fastened to posts on right bank; read daily, morning and evening, to half-tenths.

Control.—Probably permanent.

Discharge measurements.—Made from boat at section or at low water by wading both forks.

Winter flow.—Affected by ice during severe winters.

Accuracy.—Gage-height record considered reliable. Data insufficient for estimates of discharge.

Cooperation.—Station maintained in cooperation with the division of sewerage of the city of Cincinnati, Ohio.

The following discharge measurement was made by wading by Bailey and Root: October 16, 1912: Gage height, 1.41 feet; discharge, 18.1 second-feet.

Daily gage height, in feet, of Mill Creek at Arlington Heights, Ohio, for the year ending Sept. 30, 1913.

[H. C. Harris, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	1.52	1.55	1.42	1.72	1.95	2.70	.....	1.45	1.38	1.20	1.20	1.20
2	1.55	1.50	1.65	1.82	1.92	2.10	.....	1.40	1.30	1.20	1.20	1.20
3	1.55	1.48	1.58	2.48	1.90	2.05	.....	1.40	1.30	1.22	1.20	1.20
4	1.55	1.42	1.50	1.80	1.70	2.45	.....	1.40	1.30	1.40	1.20	1.20
5	1.55	1.42	1.55	2.40	1.48	2.20	.....	1.35	1.25	1.20	1.20	1.20
6	1.48	1.48	2.20	4.08	1.40	2.05	.....	1.32	1.28	1.20	1.20	1.20
7	1.45	2.00	1.58	3.65	1.42	1.65	.....	1.32	1.40	1.20	1.20	2.70
8	1.48	1.78	1.58	4.00	1.50	1.90	.....	1.30	1.30	1.20	1.25	1.20
9	1.50	1.70	1.52	2.55	1.60	1.98	.....	1.30	1.28	1.20	1.20	1.20
10	1.50	2.05	1.48	3.70	1.62	1.88	.....	1.25	1.30	1.25	1.40	1.20
11	1.50	1.55	1.48	7.15	1.72	1.98	.....	1.22	1.25	1.35	1.25	1.20
12	1.50	1.55	1.42	5.00	1.75	1.85	.....	1.25	1.20	1.25	1.20	1.22
13	1.45	1.58	1.32	2.80	1.68	1.80	.....	1.25	1.18	1.30	1.20	1.20
14	1.40	1.55	1.28	2.50	1.50	2.92	.....	1.75	1.20	1.20	1.20	1.20
15	1.50	1.52	1.42	3.72	1.62	2.15	.....	1.40	1.20	1.25	1.25	1.20
16	1.42	1.55	1.42	6.15	1.82	1.95	.....	2.50	1.20	1.20	1.25	1.20
17	1.42	1.60	1.72	6.55	1.72	1.85	.....	1.45	1.20	1.20	1.25	1.20
18	1.55	1.52	1.68	3.25	1.78	1.80	.....	1.35	1.20	1.20	2.80	1.18
19	1.62	1.50	1.68	2.45	1.82	1.80	.....	1.30	1.20	1.20	1.25	1.25
20	1.42	1.55	1.58	3.72	1.90	1.80	.....	1.35	1.15	1.20	1.20	1.20
21	1.45	1.52	1.48	3.85	1.95	2.12	.....	1.40	1.18	1.15	1.20	1.35
22	1.80	1.48	1.32	3.50	2.00	1.82	.....	1.40	1.15	1.20	1.20	1.18
23	1.98	1.48	1.38	5.65	1.72	1.90	.....	1.40	1.18	1.22	1.20	1.20
24	1.65	1.48	1.40	3.10	1.58	4.88	.....	1.35	1.25	1.25	1.20	1.22
25	1.60	1.42	1.38	2.55	1.70	7.40	1.50	1.40	1.20	1.20	1.20	1.20
26	1.52	1.58	1.48	2.30	1.88	.....	1.55	1.35	1.22	1.20	1.20	1.20
27	1.40	1.48	1.58	2.10	3.90	.....	1.52	1.40	1.18	1.65	1.20	1.18
28	1.40	1.40	1.48	2.00	2.85	.....	1.60	1.35	1.20	1.20	1.22	1.25
29	1.48	1.42	1.52	1.95	.....	.....	1.60	1.30	1.18	1.20	1.25	1.20
30	1.50	1.40	1.72	2.05	.....	.....	1.52	1.30	1.18	1.20	1.20	1.20
31	1.52	.....	1.82	1 95	.....	.....	.....	1.35	.....	.....	1.20	.....

NOTE.—Observer made no notes concerning ice. Discharge relation probably not materially affected by ice during the year ending Sept. 30, 1913.

MILL CREEK AT CINCINNATI, OHIO.

Location.—At the Eighth Street Viaduct, Cincinnati, Ohio, about three-eighths of a mile above mouth of Mill Creek.

Records available.—September 10, 1912, to September 30, 1913.

Drainage area.—154 square miles.

Gage.—Standard chain gage attached to bridge; read daily, morning and evening, to hundredths.

Control.—Permanent.

Discharge measurements.—Made from upstream side of bridge or by wading at the same section.

Winter flow.—Affected by ice during severe winters.

Accuracy.—For greater part of year gage heights are affected by backwater from Ohio River; therefore estimates of flow can not be made.

Cooperation.—Station maintained in cooperation with the division of sewerage of the city of Cincinnati, Ohio, for use in connection with its sewerage studies.

Discharge measurements of Mill Creek at Cincinnati, Ohio, in the year ending Sept. 30, 1913.

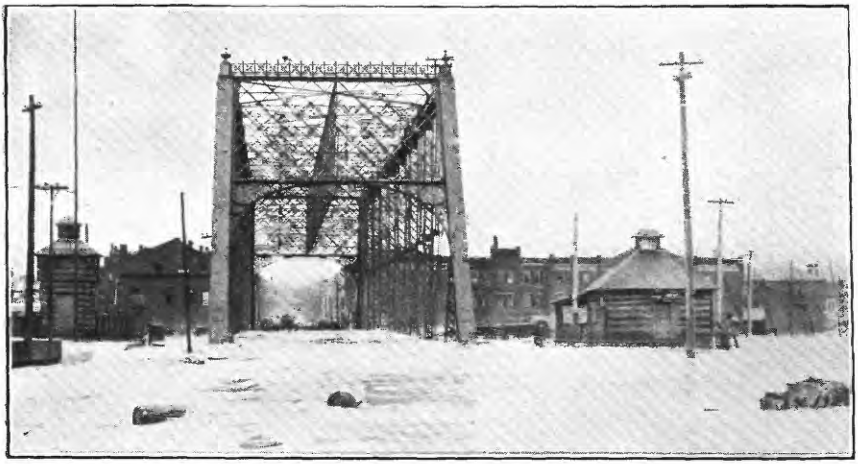
Date.	Hydrographer.	Gage height.	Discharge.
		Feet.	*Sec.-ft.*
Jan. 8	Root and Zull	27.65	1,490
23	.....do	35.71	5,170

Daily gage height, in feet, of Mill Creek at Cincinnati, Ohio, for the year ending Sept. 30, 1913.

[Wm. Manning, observer.]

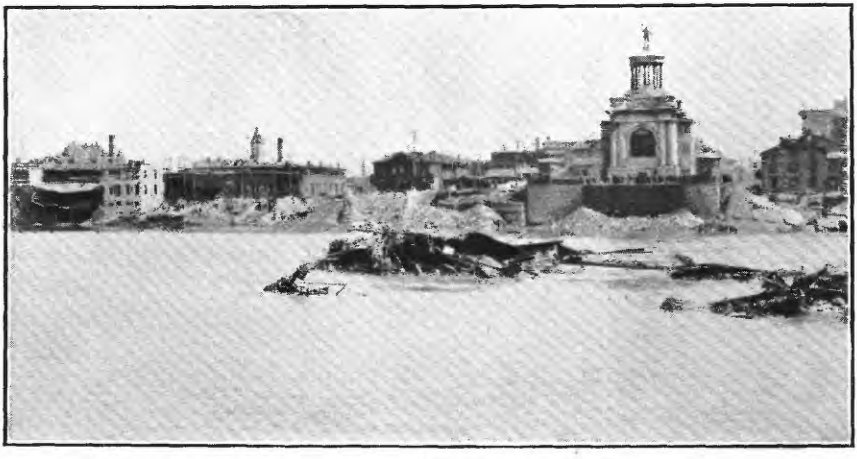
Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	5.19	6.89	2.79	2.34	26.24	10.38	.....	17.12	35.23	2.64	2.95	.....
2	5.53	5.59	2.97	3.95	20.26	12.59	.....	17.12	34.32	2.70	2.95	.....
3	4.63	3.73	2.57	8.12	27.46	16.44	.....	17.01	34.34	2.76	2.84	.....
4	3.67	2.47	2.81	9.13	26.20	17.76	.....	18.60	36.81	3.15	2.84	.....
5	2.06	1.81	3.22	21.74	24.80	18.00	.....	19.50	35.65	3.04	2.74	.....
6	1.96	2.04	3.53	22.86	23.61	17.71	41.09	18.90	33.37	3.17	2.60	.....
7	1.62	2.38	2.15	28.11	27.51	8.99	38.39	18.41	29.98	3.16	3.10	.....
8	1.74	2.18	1.95	28.05	20.07	14.29	33.78	17.88	33.98	2.98	4.63	.....
9	1.78	2.06	2.21	.....	18.77	17.17	24.07	16.96	24.01	2.79	3.91	.....
10	1.78	1.96	6.12	43.72	15.85	15.29	29.95	16.94	19.74	3.28	3.86	.....
11	1.84	2.35	9.50	40.94	18.46	8.59	28.19	15.82	19.86	3.43	3.91	.....
12	2.45	2.94	7.31	50.44	12.64	8.57	27.85	16.96	19.72	3.44	3.92	2.85
13	2.91	5.10	6.77	50.39	17.88	8.69	25.37	16.95	18.92	3.48	3.94	2.83
14	2.67	6.86	5.89	.....	18.27	9.56	33.82	16.24	19.90	3.50	3.93	2.83
15	2.67	5.51	4.81	.....	18.19	13.12	23.41	14.82	11.93	3.24	3.93	2.83
16	2.42	4.69	3.52	.....	15.47	28.88	25.16	13.22	11.93	4.82	3.93	2.84
17	2.47	3.09	2.08	.....	18.67	25.18	33.28	13.21	19.27	5.22	2.89	2.84
18	2.69	2.29	1.87	.....	18.07	30.68	35.78	14.94	11.89	5.68	3.94	2.84
19	2.31	1.89	1.81	.....	17.12	38.02	35.00	17.85	11.94	5.88	3.92	2.84
20	2.43	1.89	.94	.....	16.48	31.34	34.70	12.93	11.93	5.04	3.93	2.84
21	2.39	1.89	1.81	39.37	14.44	28.75	14.88	13.28	11.93	3.69	3.94	2.84
22	3.27	1.83	1.79	35.85	12.94	26.87	13.35	13.35	11.93	2.98	3.95	2.84
23	2.43	1.83	1.79	35.92	13.77	23.30	22.16	13.58	11.93	2.88	3.94	2.84
24	2.80	1.79	1.81	35.65	10.21	28.90	21.12	13.79	11.93	2.64	3.95	2.84
25	2.26	1.82	1.34	36.71	16.64	27.08	25.76	13.88	11.93	2.64	3.94	2.84
26	2.58	1.96	1.84	35.71	14.42	47.68	29.36	23.24	11.94	2.64	2.93	2.83
27	2.42	2.12	1.88	35.19	17.49	57.80	19.22	26.19	.....	2.95	2.93	2.83
28	3.44	2.29	1.84	34.77	21.03	66.22	18.88	26.20	.....	2.95	.....	2.84
29	4.57	2.48	1.84	30.31	.....	.....	18.20	34.64	.....	2.95	.....	2.84
30	7.29	2.58	2.67	29.34	.....	.....	17.26	36.98	2.70	2.95	.....	2.84
31	8.01	.....	2.33	27.64	.....	.....	.....	36.33	.....	2.95	.....	.....

NOTE.—Observer made no notes concerning ice. Discharge relation probably not affected by ice during the year ending Sept. 30, 1913. Backwater from Ohio River was reported by observer Sept. 10-12 and 23-30; Oct. 1-4, 12-31; Nov. 1-20, 27-30; Dec. 1-4, 10-16; Jan. 5-6, 14-21; May 26; June 1-6; July 17-22; Aug. 1-4 and 8-27.



A.

B.



C.

HIGH STREET BRIDGE OVER MIAMI RIVER AT HAMILTON, OHIO, MARCH-APRIL, 1913.

A, *B*, Before failure; *C*, View from right bank below bridge, showing part of the remains of the bridge. The United States Geological Survey gage was located near this bridge. Measurements of discharge were made from the bridge.

A. JUST BEFORE FAILURE.

B. DURING FAILURE.

C. IMMEDIATELY AFTER FAILURE.

CINCINNATI, HAMILTON, & DAYTON RAILROAD BRIDGE OVER MIAMI RIVER AT HAMILTON, OHIO, MARCH 25, 1913.

MIAMI RIVER BASIN.

MIAMI RIVER AT HAMILTON, OHIO.

Location.—A single-span highway bridge on High Street, Hamilton, Ohio.

Records available.—February 28, 1910, to September 30, 1913. Flood stages only, November 16, 1904, to February 27, 1910, reported by the United States Weather Bureau.

Drainage area.—3,580 square miles.

Gage.—Prior to the flood of March-April, 1913, a vertical staff gage in two sections fastened to the retaining wall on the left bank of the river about 100 feet above the bridge; upper section, placed by Weather Bureau in November, 1904, read from 2.5 to 25.0 feet; lower section, placed by the United States Geological Survey, extended from 0.5 to 4.0 feet. This gage was destroyed by the flood on March 26, 1913, and was replaced by the county surveyor April 22, 1913. The present gage reads from 0.0 to 9.2 feet and is attached to the south side of the temporary bridge located about 100 feet below the old gage site. Gage heights for stages above 9.2 feet are determined by measuring the distance from the water surface to a bench mark on the floor of the bridge. Gage datum has not been changed. Gage read daily, morning and evening, to half tenths. Limits of use: Hundredths below 1.5, half tenths from 1.5 to 3.0, and tenths above 3.0 feet.

Control.—Apparently permanent under ordinary conditions. The section at the bridge shifts to some extent in floods on account of the high velocity.

Discharge measurements.—Made from upstream side of bridge.

Floods.—The maximum stage on record at this station occurred at 3 a. m. March 26, 1913, at gage height 34.6 feet.[1] (See Pls. III, IV.) The highest stage prior to 1913 was 21.2 feet March 24, 1898, according to the records of the United States Weather Bureau.

Winter flow.—During very severe weather the discharge relation is at times affected by ice, but for short periods only, as factory wastes probably keep the temperature of the water above the freezing point.

Regulation.—There are several power plants in Hamilton above the station, but all the water is returned to the river above the gage.

Diversions.—The Miami & Erie Canal is fed by water taken from Miami River at Middletown and Miamisburg, Ohio. The quantity diverted is not known, but it is believed to be a considerable part of the low-water flow.

Accuracy.—Values of "discharge in second-feet per square mile" and "run-off (depth in inches)" published for this station in previous reports may be misleading and should be used with caution, if at all. See "Regulation" and "Diversions." The discharge relation was materially changed by the flood of March-April, 1913, and as no discharge measurements have been made at this station since March 11, 1913, estimates of discharge subsequent to March 25, 1913, have not been prepared.

The following discharge measurement was made by W. R. King:

March 11, 1913: Gage height, 3.42 feet; discharge, 5,300 second-feet.

[1] For information relating to this flood see U. S. Geol. Survey Water-Supply Paper 334.

Daily gage height, in feet, of Miami River at Hamilton, Ohio, for the year ending Sept. 30, 1913.

[C. A. Huber, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	1.55	1.6	1.6	2.0	3.7	5.2	.....	3.8	3.6	2.95	2.7	2.55
2	1.5	1.6	1.5	1.9	3.4	4.0	.....	3.8	3.5	2.9	2.65	2.5
3	1.5	1.5	1.5	2.4	3.2	3.3	a7.0	3.8	3.5	2.9	2.65	2.5
4	1.5	1.5	1.5	2.25	3.0	3.2	a13.0	3.8	3.6	2.9	2.6	2.5
5	1.5	1.5	1.5	2.1	2.85	3.2	11.0	3.7	3.5	2.85	2.6	2.45
6	1.5	1.5	1.5	3.2	2.65	3.4	.....	3.6	3.4	2.8	2.55	2.45
7	1.5	2.0	1.5	4.9	2.5	3.3	6.3	3.6	3.6	2.8	2.55	2.45
8	1.5	1.9	1.5	9.2	2.5	3.2	5.3	3.6	3.6	2.8	2.5	2.6
9	1.5	1.8	1.5	8.4	2.5	3.1	5.5	3.6	3.6	2.8	2.5	2.5
10	1.5	1.8	1.5	5.6	2.5	3.0	.....	3.5	3.5	2.8	2.5	2.45
11	1.5	1.7	1.5	7.8	2.5	3.3	.....	3.4	3.4	2.9	2.6	2.45
12	1.5	1.7	1.5	9.7	2.5	3.7	.....	3.3	3.2	3.0	3.0	2.45
13	1.5	1.7	1.5	8.0	2.45	3.4	.....	3.2	3.2	2.9	3.0	2.45
14	1.5	1.7	1.5	5.8	2.3	4.7	.....	3.5	3.2	2.9	2.85	2.45
15	1.5	1.7	1.5	4.4	2.3	4.4	.....	3.5	3.2	3.1	2.75	2.4
16	1.5	1.7	1.5	5.0	2.3	3.8	.....	3.5	3.1	3.1	2.7	2.4
17	1.5	1.7	1.5	10.0	2.2	3.3	.....	3.5	3.0	3.1	2.65	2.5
18	1.5	1.7	1.5	9.8	2.1	3.0	.....	3.4	3.0	3.1	2.65	2.5
19	1.5	1.7	1.5	7.2	2.25	2.95	.....	3.4	2.95	3.1	2.8	2.5
20	1.5	1.7	1.5	5.2	2.35	2.8	.....	3.3	2.9	3.1	2.8	2.5
21	1.5	1.7	1.5	8.9	2.4	3.0	.....	3.3	2.9	3.0	2.8	2.5
22	1.5	1.6	1.5	7.7	2.4	3.0	4.0	3.2	2.9	3.0	2.8	2.5
23	2.0	1.6	1.5	9.4	2.4	3.0	4.0	3.2	2.9	2.95	2.8	2.5
24	1.8	1.6	1.5	9.0	2.35	8.5	4.0	3.2	3.4	2.9	2.75	2.5
25	1.8	1.6	1.5	6.6	2.25	19.7	3.9	3.2	3.3	2.9	2.7	2.45
26	1.8	1.6	1.5	5.3	2.1	b34.6	3.9	3.2	3.1	2.85	2.7	2.45
27	1.7	1.6	1.5	4.5	3.5	25.0	3.9	3.8	3.0	2.85	2.65	2.45
28	1.7	1.6	1.5	4.0	5.8	19.2	3.9	5.8	3.0	2.85	2.65	2.45
29	1.7	1.6	1.5	3.8	.....	14.8	3.9	4.4	3.0	2.8	2.6	2.45
30	1.7	1.6	2.4	3.6	.....	.....	3.8	4.0	3.0	2.75	2.6	2.45
31	1.6	.....	2.35	3.7	.....	.....	.....	3.8	.....	2.7	2.55	.....

a Gage height approximate. b Crest stage.

NOTE.—Observer made no notes concerning ice. Discharge relation probably not affected by ice during the year ending Sept. 30, 1913. Gage heights Mar. 26–29 determined by wye levels from marks on concrete coping; Apr. 3 and 4 estimated; Apr. 5, by levels from bench mark; and Apr. 7–9, from temporary gage which was destroyed Apr. 10. See station description.

Daily discharge, in second-feet, of Miami River at Hamilton, Ohio, for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	860	920	920	1,660	6,230	11,100	16	800	1,070	800	10,400	2,330	6,540
2	800	920	800	1,450	5,330	7,160	17	800	1,070	800	29,400	2,100	5,030
3	800	800	800	2,560	4,730	5,030	18	800	1,070	800	28,500	1,880	4,150
4	800	800	800	2,220	4,150	4,730	19	800	1,070	800	18,100	2,220	4,000
5	800	800	800	1,880	3,720	4,730	20	800	1,070	800	11,100	2,440	3,580
6	800	800	800	4,730	3,180	5,330	21	800	1,070	800	24,800	2,560	4,150
7	800	1,660	800	10,100	2,800	5,030	22	800	920	800	20,000	2,560	4,150
8	800	1,450	800	26,000	2,800	4,730	23	1,660	920	800	26,900	2,560	4,150
9	800	1,250	800	22,800	2,800	4,440	24	1,250	920	800	25,200	2,440	23,200
10	800	1,250	800	12,400	2,800	4,150	25	1,250	920	800	15,900	2,220	78,800
11	800	1,070	800	20,400	2,800	5,030	26	1,250	920	800	11,400	1,880	.....
12	800	1,070	800	28,100	2,800	6,230	27	1,070	920	800	8,760	5,630	.....
13	800	1,070	800	21,200	2,680	5,330	28	1,070	920	800	7,160	13,100	.....
14	800	1,070	800	13,100	2,330	9,410	29	1,070	920	800	6,540	.....	.....
15	800	1,070	800	8,440	2,330	8,440	30	1,070	920	2,560	5,930	.....	.....
							31	920	.....	2,440	6,230	.....	.....

NOTE.—Daily discharge, Oct. 1, 1912, to Mar. 25, 1913, determined by means of a discharge rating curve that is fairly well defined below 210 second-feet (gage height, 0.6 foot), well defined between 250 and 66,500 second-feet (gage heights, 0.7 and 17.5 feet), and is a tangent above 62,600 second-feet (gage height, 16.8 feet), and extended as such above 66,500 second-feet (gage height, 17.5 feet).

Monthly discharge of Miami River at Hamilton, Ohio, for the year ending Sept. 30, 1913.

[Drainage area, 3,580 square miles.]

Month.	Discharge in second-feet.			Accuracy.
	Maximum.	Minimum.	Mean.	
October	1,660	800	912	B.
November	1,660	800	1,020	B.
December	2,560	800	914	B.
January	29,400	1,450	14,000	B.
February	13,100	1,880	3,410	B.

NOTE.—See "Accuracy" in station description.

KENTUCKY RIVER BASIN.

DIX RIVER NEAR BURGIN, KY.

Location.—At highway bridge on Burgin-Buena Vista Pike, 4 miles from Burgin, Ky.

Records available.—July 2, 1910, to July 16, 1911; October 1, 1911, to September 30, 1913.

Drainage area.—416 square miles.

Gage.—Staff gage attached to abutment of bridge; read once daily to tenths.

Control.—Probably permanent. See "Accuracy."

Discharge measurements.—See "Cooperation."

Winter flow.—Discharge relation ordinarily not affected by ice.

Accuracy.—Station has not been visited by United States Geological Survey engineers, who have, however, computed daily and monthly discharge. No discharge measurements were made during the year ending September 30, 1913. The station was last visited September 30, 1910, and the accuracy of the data published in the following tables depends upon the permanency of the gage and of the conditions of flow since that date. On January 10, 1913, the gage was washed out and was replaced by the observer on February 15. It was probably set in its original position, as the lower end rests on top of a rock ledge. On the assumption that any error in replacing the gage would not be likely to be the same as a change in the discharge relation caused by a change in the control, the soundings made by the observer on April 4, 1913, indicate that the gage is correct within a tenth of a foot and that there has been no change in the cross section of the river at the gage since July 21, 1910. These soundings indicate that there has probably been no material change in the discharge relation as expressed by the rating curve developed prior to 1911.

Cooperation.—Station was established and measurements made by representatives of the Kentucky Geological Survey and the Madison Electric & Power Co., of Richmond, Ky.

Daily gage height, in feet, of Dix River near Burgin, Ky., for the year ending Sept. 30, 1913.

[C. P. Kennedy, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	3.2	2.8	3.3	8.7	7	8.0	6.3	5.1	6.1	3.3	2.8	2.7
2	3.2	2.9	3.4	8.3	7	7.3	6.0	4.9	5.9	3.3	2.8	2.7
3	3.2	2.9	4.2	7.8	6	6.6	5.5	4.9	6.9	4.1	2.8	2.7
4	3.2	3.0	4.5	7.9	7	5.4	5.1	4.9	6.1	3.9	3.0	2.7
5	3.1	3.3	5.0	7.9	8	5.4	5.2	4.8	5.7	3.6	3.0	2.7
6	3.1	3.4	12.2	11.6	9	5.3	5.1	4.7	5.4	3.4	2.8	2.7
7	3.0	3.6	8.9	26.0	8	5.4	5.1	4.5	5.0	3.3	2.8	2.7
8	3.0	3.6	6.9	28.9	7	5.5	5.0	4.3	4.7	3.3	2.8	2.7
9	3.0	3.8	5.8	22.3	7	5.4	5.0	4.1	4.3	3.3	2.8	2.7
10	3.0	4.7	5.5	[a]17	6	5.3	5.4	4.1	4.1	3.3	2.8	2.7
11	3.0	4.6	5.4	13	8	5.2	5.5	3.9	4.0	3.2	2.8	2.7
12	3.0	4.5	5.4	26	7	5.0	5.5	3.9	4.0	3.2	2.8	2.7
13	3.0	4.4	5.2	19	6	5.7	5.3	3.9	3.8	3.1	2.8	2.7
14	3.0	4.3	5.2	13	[a]6	13.4	5.2	3.9	3.6	3.0	2.8	2.7
15	2.9	4.1	5.1	10	5.3	10.2	4.9	3.8	3.5	2.8	2.8	2.7
16	2.9	3.8	5.1	8	5.3	7.7	4.8	3.8	3.3	2.8	2.8	2.7
17	2.9	3.8	5.0	8	5.2	6.0	4.6	3.8	3.3	2.8	2.8	2.7
18	2.9	3.8	5.0	12	5.2	5.8	4.5	3.7	3.3	2.8	2.8	2.7
19	2.9	3.8	5.0	10	5.2	5.7	4.3	3.7	3.3	2.8	2.8	2.7
20	2.9	3.8	5.0	10	5.2	5.5	4.1	3.9	3.3	2.8	2.9	2.7
21	2.9	3.7	4.9	12	5.2	5.4	4.0	4.6	3.2	2.8	3.6	2.7
22	2.9	3.6	4.9	11	5.2	6.8	4.0	7.7	3.3	2.8	3.6	2.7
23	2.9	3.6	4.9	10	5.1	6.7	4.0	7.3	3.3	2.8	4.5	2.7
24	2.9	3.5	4.9	17	5.1	6.5	3.9	8.2	8.0	2.8	4.5	2.7
25	2.9	3.4	4.8	13	5.6	6.6	4.0	6.8	5.8	2.8	4.2	2.7
26	2.9	3.4	4.8	11	6.3	24.5	4.4	6.6	5.1	2.8	4.0	2.7
27	2.8	3.3	4.8	10	8.0	27.6	5.6	6.5	4.1	3.4	3.6	2.7
28	2.8	3.3	5.4	9	8.8	15.6	6.7	6.5	3.8	3.2	3.3	2.7
29	2.8	3.3	5.8	9	.....	9.8	5.7	6.5	3.5	3.0	3.0	2.7
30	2.8	3.3	5.8	8	.....	8.5	5.7	6.4	3.4	3.0	2.8	2.7
31	2.8	.....	9.2	7	.....	7.1	.....	6.4	.....	2.8	2.7	.....

[a] Gage washed out; gage heights estimated by observer Jan. 10 to Feb. 14.

NOTE.—No ice reported. Discharge relation probably not affected by ice. See "Accuracy" in station description.

Daily discharge, in second-feet, of Dix River near Burgin, Ky., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.[a]
1	41	15	50	2,500	1,300	1,950	927	452	830	50	15	.....
2	41	20	60	2,180	1,300	1,480	786	388	744	50	15	.....
3	41	20	195	1,800	786	1,080	590	388	1,240	172	15	.....
4	41	26	270	1,880	1,300	554	452	388	830	132	26	.....
5	33	50	420	1,880	1,950	554	485	357	665	84	26	.....
6	33	60	6,000	5,350	2,760	519	452	327	554	60	15	.....
7	26	84	2,670	21,700	1,950	554	452	270	420	50	15	.....
8	26	84	1,240	25,100	1,300	590	420	219	327	50	15	.....
9	26	115	704	17,500	1,300	554	420	172	219	50	15	.....
10	26	327	590	11,400	786	519	554	172	172	50	15	.....
11	26	298	554	6,880	1,950	485	590	132	151	41	15	.....
12	26	270	554	21,700	1,300	420	590	132	151	41	15	.....
13	26	244	485	13,700	786	665	519	132	115	33	15	.....
14	26	219	485	6,880	786	7,320	485	132	84	26	15	.....
15	20	172	452	3,700	519	3,900	388	115	71	15	15	.....
16	20	115	452	1,950	519	1,730	357	115	50	15	15	.....
17	20	115	420	1,950	485	786	298	115	50	15	15	.....
18	20	115	420	5,780	485	704	270	99	50	15	15	.....
19	20	115	420	3,700	485	665	219	99	50	15	15	.....
20	20	115	420	3,700	485	590	172	132	50	15	20	.....
21	20	99	388	5,780	485	554	151	298	41	15	84	.....
22	20	84	388	4,720	485	1,190	151	1,730	50	15	84	.....
23	20	84	388	3,700	452	1,140	151	1,480	50	15	270	.....
24	20	71	388	11,400	452	1,030	132	2,100	1,950	15	270	.....
25	20	60	357	6,880	627	1,080	151	1,190	704	15	195	.....
26	20	60	357	4,720	927	20,000	244	1,080	452	15	151	.....
27	15	50	357	3,700	1,950	23,600	627	1,030	172	60	84	.....
28	15	50	554	2,760	2,580	9,770	1,140	1,030	115	41	50	.....
29	15	50	704	2,760	.....	3,500	665	1,030	71	26	26	.....
30	15	50	704	1,950	.....	2,340	665	978	60	26	15	.....
31	15	.....	2,940	1,300	.....	1,360	.....	978	.....	15	11	.....

[a] Mean discharge for September estimated, 11 second-feet.

NOTE.—Daily discharge computed from a rating curve fairly well defined between 50 and 6,550 second-feet (gage heights 0.3 and 12.7 feet). Above 6,550 second-feet the rating curve is simply an extension and discharge values above that point should therefore be used with caution. See "Accuracy" in station description and footnote to table of daily gage heights.

Monthly discharge of Dix River near Burgin, Ky., for the year ending Sept. 30, 1913.

[Drainage area, 416 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).
	Maximum.	Minimum.	Mean.	Per square mile.	
October	41	15	24.3	0.058	0.07
November	327	15	108	.260	.29
December	6,000	50	787	1.89	2.18
January	25,100	1,300	6,800	16.3	18.79
February	2,760	452	1,090	2.62	2.73
March	23,600	420	2,940	7.07	8.15
April	1,140	132	450	1.08	1.20
May	2,100	99	557	1.34	1.54
June	1,950	41	350	.841	.94
July	172	15	39.9	.096	.11
August	270	11	50.5	.121	.14
September	.....	.....	11	.026	.03
The year	25,100	.....	1,110	2.67	36.17

NOTE.—See "Accuracy" in station description and footnote to table of daily gage heights.

WABASH RIVER BASIN.

WABASH RIVER AT MOUNT CARMEL, ILL.

Location.—At Southern Railway bridge at Mount Carmel, Ill., 1½ miles below mouth of White River and immediately below mouth of Patoka River.

Records available.—June 16, 1884, to November, 1904, United States Corps of Engineers; November, 1904, to September 30, 1913, United States Weather Bureau.

Drainage area.—28,600 square miles. (Revised since last report.)

Gage.—Staff gage attached to pivot pier of drawspan, read once daily to tenths.

Control.—Practically permanent.

Discharge measurements.—Made from downstream side of bridge. There are numerous overflow openings in the railroad embankment east of the railroad bridge.

Floods.—The flood of March–April, 1913, reached a height of 31.0 feet on March 30; maximum stage published by United States Weather Bureau prior to 1913, 28.3 feet August 7, 1875.

Winter flow.—The discharge relation may be affected by ice for a week or so at a time during December, January, and February.

Accuracy.—Data insufficient for estimates of discharge.

Cooperation.—Gage heights furnished by United States Weather Bureau.

No discharge measurements were made at this station during the year ending September 30, 1913.

Daily gage height, in feet, of Wabash River at Mount Carmel, Ill., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	4.4	2.2	2.3	1.9	23.8	6.3	29.2	7.1	4.2	2.6	1.9	1.8
2	4.2	2.2	2.3	1.9	23.3	9.0	28.2	7.0	4.1	2.6	1.8	1.6
3	4.1	2.9	2.3	1.9	22.8	10.0	27.2	6.9	4.6	2.6	1.8	1.5
4	3.6	3.3	2.2	1.9	21.4	10.3	26.4	6.6	4.8	2.6	1.8	1.4
5	3.1	3.5	2.1	2.0	19.4	10.3	25.7	6.3	4.6	2.6	1.8	1.3
6	2.8	3.6	2.1	2.2	16.7	10.3	24.9	6.1	4.4	2.6	1.7	1.2
7	2.6	3.7	2.3	2.9	13.4	10.0	24.2	5.8	4.1	2.5	1.7	1.2
8	2.4	3.7	2.3	6.4	10.4	9.7	23.6	5.5	3.9	2.5	1.6	1.2
9	2.2	3.7	2.2	9.9	8.3	9.3	23.0	5.3	3.7	2.4	1.6	1.2
10	1.9	3.8	2.2	12.1	7.4	9.0	22.6	5.1	3.6	2.3	1.6	1.2
11	1.8	3.8	2.2	13.6	6.9	8.7	22.3	5.0	3.4	2.3	1.6	1.2
12	1.7	3.9	2.2	15.6	6.8	8.3	22.0	4.8	3.2	2.3	1.6	1.2
13	1.7	4.0	2.2	16.7	6.7	8.6	21.7	4.6	3.2	2.3	1.6	1.2
14	1.7	4.1	2.1	17.4	6.4	10.1	21.4	4.5	3.1	2.3	1.6	1.2
15	1.7	4.1	2.1	18.0	6.2	12.7	21.1	4.4	3.1	2.3	1.6	1.3
16	1.7	4.0	2.0	18.4	6.1	13.7	21.1	4.3	3.1	2.3	2.2	1.4
17	1.6	3.8	1.9	19.5	6.0	14.2	21.2	4.3	3.0	2.3	2.5	1.4
18	1.5	3.7	1.9	20.3	6.0	14.4	21.2	5.1	2.9	2.2	2.6	1.4
19	1.4	3.5	1.9	20.8	5.9	14.2	21.1	5.3	2.8	2.1	2.7	1.4
20	1.8	3.4	1.9	21.2	5.8	13.4	20.6	5.3	2.8	2.7	2.6	1.4
21	2.0	3.3	2.0	21.8	5.8	12.2	19.6	5.3	2.7	4.0	2.7	1.6
22	2.1	3.3	2.1	22.0	6.3	11.9	17.6	5.2	2.6	4.6	2.7	1.8
23	2.2	3.1	2.2	22.3	6.5	13.4	14.2	5.2	2.6	4.6	2.7	1.8
24	2.2	3.0	2.2	22.6	6.7	13.6	11.4	4.8	2.6	4.2	2.9	1.8
25	2.2	2.9	2.2	22.9	6.7	18.3	9.9	4.5	2.8	3.7	3.6	1.8
26	2.1	2.8	2.1	23.3	6.5	21.4	8.9	4.3	2.9	3.2	3.4	1.8
27	2.1	2.7	2.0	23.5	6.4	23.0	8.3	4.2	2.9	3.0	2.7	1.8
28	2.1	2.6	1.9	23.9	6.3	24.8	7.8	4.4	2.8	2.8	2.4	1.7
29	2.1	2.5	1.8	24.2	.....	27.8	7.3	4.3	2.7	2.7	2.3	1.6
30	2.1	2.4	1.8	24.3	.....	31.0	7.2	4.2	2.6	2.3	2.2	1.5
31	2.1	.....	1.8	24.2	.....	30.2	.....	4.2	.....	2.0	2.0	.....

NOTE.—Observer made no notes concerning ice. Discharge relation probably not affected by ice during the year ending Sept. 30, 1913.

EAST BRANCH OF WHITE RIVER AT SHOALS, IND.

Location.—At highway bridge between East Shoals and West Shoals, Ind., a short distance above the Baltimore & Ohio Southwestern Railroad bridge.

Records available.—June 25, 1903, to July 21, 1906; October 12, 1908, to September 30, 1913.

Drainage area.—4,900 square miles.

Gage.—Standard chain gage attached to bridge. The gage datum was raised 61 feet on January 1, 1909, to agree with that used by the United States Weather Bureau. From January 1 to June 30, the gage was read once daily in the morning to tenths. During the remainder of the year it was read daily, morning and evening, to tenths. Limits of use: Half tenths below 4.5 and tenths above 4.5 feet.

Control.—Solid rock; permanent.

Discharge measurements.—Made from downstream side of bridge.

Floods.—The flood of March-April, 1913, reached a stage of 42.2 feet at 7 a. m. March 28. Maximum gage height as published by the United States Weather Bureau prior to 1913, 34.1 feet, March 30, 1904; flood of March, 1897, said to have been 1 to 1½ feet higher.

Winter flow.—In severe winters discharge relation affected by ice during portions of January and February; in ordinary winters there is little if any ice at the station.

Accuracy.—Station was not visited by engineers of the Geological Survey during 1912 and 1913. On December 5, 1914, the station was visited, the bench marks and elevation of the zero of the gage checked with wye level and a discharge measurement made. Because of an error in the gage, found on the above date, the daily gage height and values of daily and monthly discharge from July 1 to December 31, 1912, as published in Water Supply Paper 323 are in error. The corrected daily gage height and daily and monthly discharge are given in the following tables.

The discharge measurement (gage height 2.23 feet) made on December 5, 1914, checks the low-water portion of the rating curve, but as no discharge measurements have been made at the higher stages nothing is known as to the effect of the extreme flood of March–April, 1913, on the discharge relation at the higher stages. Consequently no estimates of discharge subsequent to March 25, 1913, have been prepared for publication.

The discharge rating table used October 1, 1912, to March 25, 1913, is based on discharge measurements made during 1909, 1910, and 1911, and the form or previous curves. The rating curve reverses at about 3,980 second-feet (gage height 4.5 feet), is drawn as a tangent above 17,000 second-feet (gage height 11 feet), and is fairly well defined throughout the range of stage over which it has been used.

Cooperation.—Gage readings are furnished by the United States Weather Bureau part of the year.

No discharge measurements have been made at this station during the year ending September 30, 1913.

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Daily gage height, in feet, of East Branch of White River at Shoals, Ind., from July 1, 1912, to Sept. 30, 1913.

[G. H. Rowe, observer.]

Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.
1912.				1912.				1912.			
1	3.45	2.7	4.1	11	4.9	2.9	3.1	21	4.6	4.8	2.95
2	3.65	2.9	4.0	12	4.7	2.7	2.9	22	5.3	5.6	2.75
3	3.5	2.75	3.65	13	4.6	3.25	2.75	23	4.9	6.3	3.15
4	3.8	2.7	3.5	14	4.5	3.6	2.7	24	4.9	6.1	3.05
5	4.15	2.75	3.3	15	4.5	3.8	2.6	25	4.7	5.4	3.1
6	4.1	2.6	3.15	16	4.6	5.0	2.4	26	4.45	4.8	3.65
7	4.15	2.75	3.1	17	4.7	5.8	2.75	27	4.1	4.45	4.1
8	5.0	2.75	2.85	18	4.35	5.4	2.7	28	3.6	4.2	3.95
9	5.7	2.35	3.0	19	4.4	4.7	2.9	29	3.5	4.1	3.65
10	5.2	2.8	3.0	20	4.45	4.15	2.95	30	3.25	4.6	3.4
								31	2.7	4.5	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1913.												
1	3.35	2.95	2.55	2.8	9.8	6.9	33.6	4.2	3.2	3.05	2.7	2.4
2	3.3	2.75	2.6	3.1	6.9	9.0	30.3	4.1	3.2	2.95	2.6	2.35
3	3.0	2.8	3.05	3.2	6.4	9.7	27.8	4.0	3.2	2.95	2.6	2.25
4	3.0	2.85	2.6	3.5	5.9	9.2	26.6	3.9	3.1	2.7	2.45	2.65
5	2.9	2.95	2.5	3.4	5.0	8.8	25.6	4.0	3.0	2.5	2.15	2.5
6	2.85	2.95	2.55	4.1	5.2	7.7	22.3	3.8	2.8	2.85	2.05	2.05
7	2.85	3.05	2.75	5.7	5.0	6.7	19.9	3.7	2.9	2.9	2.6	2.4
8	2.9	3.1	2.65	9.8	4.7	6.0	20.7	3.6	3.0	3.0	2.65	2.55
9	2.85	3.15	2.85	11.9	4.5	5.8	19.5	3.5	2.8	2.55	2.85	2.1
10	2.7	3.0	3.15	11.6	4.1	5.5	18.8	3.5	3.0	2.55	2.65	1.85
11	2.5	2.9	3.1	13.4	4.4	6.2	17.8	3.5	3.1	2.8	2.55	2.3
12	2.5	3.15	3.05	17.8	4.2	5.1	17.2	3.5	3.1	2.4	2.35	2.5
13	2.6	2.85	2.8	18.7	4.5	5.2	17.7	3.3	3.1	2.65	2.2	2.5
14	2.55	2.8	2.5	18.7	4.1	7.1	19.1	3.3	2.7	2.3	2.2	2.6
15	2.7	3.0	2.5	18.9	4.1	9.7	19.7	3.2	2.9	2.8	2.25	2.6
16	2.5	2.8	2.65	19.7	3.9	10.0	19.4	3.2	2.6	2.7	2.2	2.4
17	2.75	2.9	2.85	21.8	4.1	10.0	18.1	3.2	3.1	2.65	2.75	2.2
18	2.6	3.0	2.45	23.4	4.0	9.4	15.2	3.3	.....	2.7	2.9	2.6
19	2.65	3.1	2.55	23.0	4.1	6.3	11.9	3.6	2.8	2.65	3.1	2.45
20	2.65	3.0	2.75	22.2	4.1	6.1	8.8	3.5	2.7	2.65	2.85	2.15
21	2.45	2.95	2.75	23.3	4.4	6.0	6.9	3.4	2.7	2.75	2.9	2.4
22	2.9	2.95	2.7	24.4	4.4	7.3	6.0	3.3	2.9	3.05	4.4	2.5
23	2.6	2.85	2.65	25.1	4.6	8.0	5.5	3.3	2.7	2.9	4.5	2.25
24	2.8	2.65	2.55	26.3	4.6	8.7	5.2	3.1	2.7	2.85	3.45	2.45
25	2.9	2.6	2.5	26.3	4.5	21.6	4.9	3.1	2.6	2.8	3.8	2.2
26	2.85	2.9	2.65	25.8	4.2	29.4	4.8	3.3	2.6	2.85	3.5	2.2
27	2.6	2.9	2.7	25.3	4.2	37.0	4.7	3.2	2.9	2.65	3.15	2.1
28	2.55	2.8	2.7	25.0	4.7	42.0	4.6	3.0	3.1	2.55	2.8	2.6
29	2.85	2.55	2.55	23.8	.....	41.5	4.6	3.2	3.0	2.35	2.7	2.4
30	2.75	2.6	2.6	21.0	.....	39.4	4.2	3.2	2.5	2.35	2.6	2.15
31	2.9	.....	2.55	15.1	.....	36.6	.....	3.2	.....	2.3	2.5	.....

NOTE.—Observer made no note concerning ice. Discharge relation probably not materially affected by ice during year ending Sept. 30, 1913.

Daily discharge, in second-feet, of East Branch of White River at Shoals, Ind., from July 1, 1912, to Mar. 25, 1913.

Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.
1912.				1912.			
1	1,660	740	3,000	16	4,230	5,210	500
2	2,000	930	2,760	17	4,480	7,060	785
3	1,740	785	2,000	18	3,600	6,140	740
4	2,310	740	1,740	19	3,730	4,480	930
5	3,120	785	1,430	20	3,860	3,120	985
6	3,000	650	1,220	21	4,230	4,730	985
7	3,120	785	1,160	22	5,910	6,600	785
8	5,210	785	880	23	4,970	8,160	1,220
9	6,830	465	1,040	24	4,970	7,720	1,100
10	5,680	830	1,040	25	4,480	6,140	1,160
11	4,970	930	1,160	26	3,860	4,730	2,000
12	4,480	740	930	27	3,000	3,860	3,000
13	4,230	1,360	785	28	1,910	3,240	2,640
14	3,980	1,910	740	29	1,740	3,000	2,000
15	3,980	2,310	650	30	1,360	4,230	1,580
				31	740	3,980	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913.						
1	1,500	985	610	830	15,000	9,460
2	1,430	785	650	1,160	9,460	13,600
3	1,040	830	1,100	1,290	8,380	14,900
4	1,040	880	650	1,740	7,280	14,000
5	930	985	570	1,580	5,210	13,200
6	880	985	610	3,000	5,680	11,100
7	880	1,100	785	6,830	5,210	9,040
8	930	1,160	695	15,000	4,480	7,500
9	880	1,220	880	18,400	3,980	7,060
10	740	1,040	1,220	17,900	3,000	6,370
11	570	930	1,160	20,600	3,730	7,940
12	570	1,220	1,100	27,200	3,240	5,450
13	650	880	830	28,600	3,980	5,680
14	610	830	570	28,600	3,000	9,880
15	740	1,040	570	28,800	3,000	14,900
16	570	830	[a] 695	30,000	2,530	15,400
17	785	930	880	33,200	3,000	15,400
18	650	1,040	535	35,600	2,760	14,300
19	695	1,160	610	35,000	3,000	8,160
20	695	1,040	785	33,800	3,000	7,720
21	535	985	785	35,400	3,730	7,500
22	930	985	740	37,100	3,730	10,300
23	650	880	695	38,200	4,230	11,700
24	830	695	610	40,000	4,230	13,000
25	930	650	570	40,000	3,980	32,900
26	880	930	695	39,200	3,240	.....
27	650	930	740	38,400	3,240	.....
28	610	830	740	38,000	4,480	.....
29	880	610	610	36,200	.....	.....
30	785	650	650	32,000	.....	.....
31	930	.....	610	23,200	.....	.....

[a] Dec. 16 observer reported: "Rise evidently due to gates in dam at Williams."

NOTE.—See "Accuracy" in station description.

Monthly discharge of East Branch of White River at Shoals, Ind., for the years ending Sept. 30, 1912–13.

[Drainage area, 4,900 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
1912.						
October	19,100	1,910	7,400	1.51	1.74	B.
November	7,940	1,660	5,660	1.16	1.29	C.
December	17,000	2,880	8,560	1.75	2.02	B.
January	.....	.....	7,780	1.59	1.83	D.
February	29,200	.....	8,050	1.64	1.77	D.
March	36,000	6,830	22,000	4.49	5.18	C.
April	32,000	7,720	17,900	3.65	4.07	B.
May	26,400	3,730	14,600	2.98	3.44	A.
June	5,210	1,580	2,220	.453	.51	B.
July	6,830	740	3,660	.747	.86	A.
August	8,160	465	3,130	.639	.74	A.
September	3,000	500	1,360	.278	.31	B.
The year	36,000	465	8,550	1.74	23.76	
1913.						
October	1,500	535	819	.167	.19	A.
November	1,220	610	934	.191	.21	A.
December	1,220	535	740	.151	.17	A.
January	40,000	830	24,700	5.04	5.81	B.
February	15,000	2,530	4,640	.947	.99	B.

NOTE.—See "Accuracy" in station description. Values for months October, 1911, to June, 1912, are republished from previous reports to complete the year ending Sept. 30, 1912.

TENNESSEE RIVER BASIN.

FRENCH BROAD RIVER AT ASHEVILLE, N. C.

Location.—At highway bridge, known as Smith's bridge, about 1 mile below the Southern Railway station at Asheville, about 2 miles below the mouth of Swannanoa River. Smith's bridge is one-fourth mile above the new Southern Railway bridge and about one-fourth mile below a concrete highway bridge recently completed.

Records available.—March 19, 1903, to September 30, 1913. The United States Weather Bureau has maintained a gage at this point since March 19, 1903, and during 1904 a number of discharge measurements were made by the United States Geological Survey. Since January 1, 1905, the discharge measurements have been continued by the United States Geological Survey and the gage heights have been furnished by the United States Weather Bureau.

Drainage area.—987 square miles.

Gages.—Vertical staff attached to one of the bridge piers and an auxiliary chain gage attached to the bridge in the first panel to the left of the staff gage. The staff gage ends at zero and the chain gage is used for readings below zero. Both gages are adjusted to the same datum, which has remained unchanged since they were established. Gage read once daily to tenths.

Control.—Practically permanent. Channel at measuring section broken by three piers of the highway bridge. Bed of river is mostly rock but is not excessively rough. Current good at all points.

Discharge measurements.—Made from the downstream side of the highway bridge.

Floods.—The flood of August 31, 1910, reached a height of about 8.8 feet by the gage datum. Stage of 10.6, "date unknown," reported by the United States Weather Bureau.

Winter flow.—Not affected by ice.

Accuracy.—The construction of a new railroad bridge across the river about 1,500 feet below the gage in 1907–8, caused changes in channel necessitating revision of the discharge rating curve. The cofferdams caused temporary and variable changes during 1908, but since the completion of the work comparatively permanent conditions of flow have been reestablished. Data are considered reliable, though no discharge measurements were made during the year ending September 30, 1913.

Cooperation.—Gage heights are furnished by the United States Weather Bureau.

Daily gage height, in feet, of French Broad River at Asheville, N. C., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	0.0	−0.4	−0.3	0.2	1.0	2.3	2.0	0.6	0.4	0.1	−0.2	−0.3
2	.0	.1	− .3	.0	.4	1.5	1.6	.6	.4	.0	.4	− .4
3	− .1	− .1	.1	.0	.3	.9	1.6	.6	.3	− .1	.0	− .4
4	− .2	− .3	− .1	.2	1.1	.4	1.4	.5	.8	.1	− .1	− .4
5	− .3	− .4	.2	.0	1.0	.3	1.4	.5	.6	1.0	− .3	.3
6	− .2	− .3	.4	− .1	.8	.2	1.2	.5	.6	.5	.1	.2
7	− .2	.2	.7	− .1	.5	.2	1.1	.5	.4	.0	.1	− .2
8	− .3	1.4	.4	− .1	.3	− .1	1.0	.7	1.9	− .2	.3	− .3
9	− .3	.5	.2	.0	.2	− .1	1.0	.7	1.4	− .2	.4	− .3
10	− .3	.2	− .1	− .1	.1	.1	.9	.6	1.0	− .2	1.4	− .4
11	− .3	.0	− .2	− .1	.1	1.0	1.7	.4	.7	− .2	.6	− .5
12	− .4	− .1	− .2	− .1	.2	.8	3.7	.4	.4	− .1	.2	− .5
13	− .3	− .2	− .2	− .1	.3	.3	3.5	.3	.4	− .1	.5	− .5
14	.2	− .2	− .3	− .1	.1	4.3	2.7	.3	.3	− .2	.1	− .5
15	.0	− .3	− .3	− .2	.1	6.2	2.8	.4	.2	− .2	.2	− .1
16	− .2	− .3	− .3	− .2	.1	6.0	2.4	.4	.2	− .2	.4	.2
17	− .3	− .3	− .3.	− .2	.0	4.6	2.0	.4	.1	− .3	.0	1.0
18	− .3	− .3	− .3	− .2	.0	3.4	1.8	.4	.0	− .4	− .1	.6
19	− .3	− .4	− .3	− .2	− .1	2.1	1.5	.2	.5	− .4	− .2	.6
20	− .3	− .4	− .3	− .2	− .1	1.8	1.4	.4	.4	− .5	− .3	.4
21	− .3	− .3	− .3	− .2	1.3	1.2	1.2	.3	.2	.0	.0	1.3
22	− .2	− .3	− .3	− .1	1.1	2.4	1.1	.2	.1	− .4	− .2	1.1
23	− .2	− .4	− .3	− .1	.8	1.8	1.0	.6	.1	− .4	− .2	.4
24	− .2	− .4	− .3	.2	.4	1.5	1.0	3.2	.3	− .1	.4	.1
25	− .2	− .4	− .3	.9	.3	1.6	.9	2.5	.2	− .2	.1	.0
26	− .3	− .4	− .2	.6	.1	2.1	.8	1.2	.2	.2	− .4	− .1
27	− .3	− .4	− .2	.5	1.0	5.2	1.1	1.0	.1	.3	− .4	− .2
28	− .3	− .4	− .2	2.6	2.3	4.6	1.0	1.2	.2	.2	− .4	− .2
29	− .4	− .4	− .3	1.7	.....	4.3	.8	.8	.1	.1	− .4	− .3
30	− .4	− .4	− .3	1.0	.....	3.3	.7	.6	.5	− .2	.7	.0
31	− .4	.....	.6	.8	.....	2.5	.....	.5	.....	.1	.0	.....

Daily discharge, in second-feet, of French Broad River at Asheville, N. C., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	1,390	1,010	1,100	1,600	2,600	4,980	4,350	2,060	1,820	1,490	1,190	1,100
2	1,390	1,490	1,100	1,390	1,820	3,410	3,590	2,060	1,820	1,390	1,820	1,010
3	1,290	1,290	1,490	1,390	1,710	2,460	3,590	2,060	1,710	1,290	1,390	1,010
4	1,190	1,100	1,290	1,600	2,750	1,820	3,240	1,940	2,320	1,490	1,290	1,010
5	1,100	1,010	1,600	1,390	2,600	1,710	3,240	1,940	2,060	2,600	1,100	1,710
6	1,190	1,100	1,820	1,290	2,320	1,600	2,910	1,940	2,060	1,940	1,490	1,600
7	1,190	1,600	2,190	1,290	1,940	1,600	2,750	1,940	1,820	1,390	1,490	1,190
8	1,100	3,240	1,820	1,290	1,710	1,290	2,600	2,190	4,150	1,190	1,710	1,100
9	1,100	1,940	1,600	1,390	1,600	1,290	2,600	2,190	3,240	1,190	1,820	1,100
10	1,100	1,600	1,290	1,290	1,490	2,750	2,460	2,060	2,600	1,190	3,240	1,010
11	1,100	1,390	1,190	1,290	1,490	2,600	3,770	1,820	2,190	1,190	2,060	920
12	1,010	1,290	1,190	1,290	1,600	2,320	8,510	1,820	1,820	1,290	1,600	920
13	1,100	1,190	1,190	1,290	1,710	1,490	7,960	1,710	1,820	1,290	1,940	920
14	1,600	1,190	1,100	1,290	1,490	10,200	5,900	1,710	1,710	1,190	1,490	920
15	1,390	1,100	1,100	1,190	1,490	16,200	6,140	1,820	1,600	1,190	1,600	1,290
16	1,190	1,100	1,100	1,190	1,490	15,600	5,200	1,820	1,600	1,190	1,820	1,600
17	1,100	1,100	1,100	1,190	1,390	11,100	4,350	1,820	1,490	1,100	1,390	2,600
18	1,100	1,100	1,100	1,190	1,390	7,690	3,960	1,820	1,390	1,010	1,290	2,060
19	1,100	1,010	1,100	1,190	1,290	4,550	3,410	1,600	1,940	1,010	1,190	2,060
20	1,100	1,010	1,100	1,190	1,290	3,960	3,240	1,820	1,820	920	1,100	1,820
21	1,100	1,100	1,100	1,190	3,070	2,910	2,910	1,710	1,600	1,390	1,390	3,070
22	1,190	1,100	1,100	1,290	2,750	5,200	2,750	1,600	1,490	1,010	1,190	2,750
23	1,190	1,010	1,100	1,290	2,320	3,960	2,600	2,060	1,490	1,010	1,190	1,820
24	1,190	1,010	1,100	1,600	1,820	3,410	2,600	7,160	1,710	1,290	1,820	1,490
25	1,190	1,010	1,100	2,460	1,710	3,590	2,460	5,430	1,600	1,190	1,490	1,390
26	1,100	1,010	1,190	2,060	1,490	4,550	2,320	2,910	1,600	1,600	1,010	1,290
27	1,100	1,010	1,190	1,940	2,600	13,000	2,750	2,600	1,490	1,710	1,010	1,190
28	1,100	1,010	1,190	5,660	4,980	11,100	2,600	2,910	1,600	1,600	1,010	1,190
29	1,010	1,010	1,100	3,770	.....	10,200	2,320	2,320	1,490	1,490	1,010	1,100
30	1,010	1,010	1,100	2,600	.....	7,420	2,190	2,060	1,940	1,190	2,190	1,390
31	1,010	.....	2,060	2,320	.....	5,430	.....	1,940	.....	1,490	1,390	.....

NOTE.—Daily discharge determined by means of a discharge rating curve well defined between 920 and 10,800 second-feet (gage heights −0.5 and 4.5 feet).

Monthly discharge of French Broad River at Asheville, N. C., for the year ending Sept. 30, 1913.

[Drainage area, 987 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
October	1,600	1,010	1,160	1.18	1.36	B.
November	3,240	1,010	1,240	1.26	1.41	B.
December	2,190	1,100	1,290	1.31	1.51	B.
January	5,660	1,190	1,690	1.71	1.97	B.
February	4,980	1,290	2,000	2.03	2.11	A.
March	16,200	1,290	5,460	5.53	6.38	B.
April	8,510	2,190	3,640	3.69	4.12	A.
May	7,160	1,600	2,290	2.32	2.68	A.
June	4,150	1,390	1,900	1.93	2.15	A.
July	2,600	920	1,340	1.36	1.57	B.
August	3,240	1,010	1,510	1.53	1.76	B.
September	3,070	920	1,450	1.47	1.64	B.
The year	16,200	920	2,080	2.11	28.66	

TENNESSEE RIVER AT CHATTANOOGA, TENN., FLORENCE, ALA., AND JOHNSONVILLE, TENN.

The long-time records of gage height and discharge for Tennessee River at Chattanooga, Florence, and Johnsonville, contained in the following pages, afford a basis for estimating the flow of the river at any point on the middle and lower sections of the Tennessee by means of a study of relative drainage areas.

The discharge at Florence and Johnsonville has not been computed for the earlier years of the gage-height records for reasons stated in the descriptions of those stations. For periods for which discharge estimates are not published, information concerning the gage and daily gage-height record is given in detail to enable those so desiring to make such close study of the data for the earlier years as may be needful in connection with any problem. All such estimates should be used with due caution.

The following table shows the mean annual discharge at the three stations, derived from records extending back to 1875 at Chattanooga and to 1895 at Florence and Johnsonville. To make the results entirely comparable, the Chattanooga record has also been computed for the 19-year period 1895–1913.

Mean annual discharge and drainage areas for Tennessee River at Chattanooga, Florence, Johnsonville, and its mouth.

Station.	Distance from mouth (miles).[a]	Drainage area.		Period.		Mean annual discharge.	
		Square miles.	Per cent of drainage area at mouth.	Years ending Sept. 30.	Length (years).	Second-feet.	Per cent of estimated discharge at mouth.
Chattanooga	464	21,400	53	1875–1913	39	39,500	63
Do	464	21,400	53	1895–1913	19	37,500	60
Florence	256	30,800	76	1895–1913	19	51,600	82
Johnsonville	96	38,500	95	1895–1913	19	[b] 60,900	97
Mouth	0	40,700	100	1895–1913	19	[c] 63,000	100

[a] From results of survey by the United States Engineer Corps.
[b] Mean at Johnsonville, 1890–1913 (24 years), 62,700 second-feet.
[c] Estimated from Johnsonville discharge and fact that run-off per square mile decreases toward mouth of river.

The ratios of monthly and yearly mean discharge, given in the following table, together with the drainage area ratios afford a convenient means of comparing the published records of discharge for the three stations. Under normal conditions the ratios of discharge should always be less than unity, because in computing the ratios, the values for the station with the smaller drainage area are placed in the numerator. In general the discharge ratio is expected to be greater than

the drainage area ratio because the run-off per square mile usually decreases from the source toward the mouth of a stream.

All the ratios of mean annual discharge for the 19-year period, 1895–1913, shown by the table, are greater than the corresponding drainage area ratios, indicating that the general law holds true for Tennessee River. A very close agreement among discharge ratios for stations so widely separated as Chattanooga, Florence, and Johnsonville can not be expected because of the variable factors involved, such, for example, as the intensity and distribution of precipitation. Some seeming inconsistencies in the ratios are explained by a rise at the end of the month, which affects the upper station more than the lower station before the end of that month, as, for example, October and November, 1878. Ratios for two stations may be expected, however, to follow some general law, and in this way the ratios afford a rough check on the applicability of the rating curves for the periods over which they are used, and also a means of discovering gross errors in the data.

Ratios of discharge of Tennessee River at Chattanooga, Tenn., Florence, Ala., and Johnsonville, Tenn., for the years ending Sept. 30, 1890–1913.

[Drainage area ratios: $\frac{\text{Chattanooga}}{\text{Florence}}=.70$, $\frac{\text{Chattanooga}}{\text{Johnsonville}}=.56$, $\frac{\text{Florence}}{\text{Johnsonville}}=.80$.][a]

Month.	$\frac{\text{Chattanooga}}{\text{Florence}}$	$\frac{\text{Chattanooga}}{\text{Johnsonville}}$	$\frac{\text{Florence}}{\text{Johnsonville}}$
1890.			
October		0.67	
November		.64	
December		.62	
January		b.52	
February		b.54	
March		b.51	
April		b.54	
May		.66	
June		.64	
July		.89	
August		.81	
September		.69	
The year		.58	
1891.			
October		.89	
November		.68	
December		.96	
January		.56	
February		.57	
March		b.54	
April		b.53	
May		.69	
June		.84	
July		.81	
August		.79	
September		.78	
The year		.62	

[a] The ratios of the average mean annual discharge for the 19 years 1895–1913 given in the table on page 87 are: $\frac{\text{Chattanooga}}{\text{Florence}}=.73$, $\frac{\text{Chattanooga}}{\text{Johnsonville}}=.62$, $\frac{\text{Florence}}{\text{Johnsonville}}=.85$.

[b] Discharge at Johnsonville estimated. See "Backwater" in station description.

Ratios of discharge of Tennessee River at Chattanooga, Tenn., Florence, Ala., and Johnsonville, Tenn., for the years ending Sept. 30, 1890–1913—Continued.

Month.	Chattanooga / Florence	Chattanooga / Johnsonville	Florence / Johnsonville
1892.			
October		0.75	
November		.83	
December		.66	
January		.66	
February		.50	
March		.58	
April		a.44	
May		a.53	
June		.73	
July		.54	
August		.68	
September		.56	
The year		.56	
1893.			
October		.60	
November		.85	
December		.39	
January		.53	
February		.66	
March		.46	
April		.34	
May		.56	
June		.41	
July		.83	
August		.88	
September		.96	
The year		.54	
1894.			
October		1.00	
November		.86	
December		.76	
January		.57	
February		.45	
March		.50	
April		.47	
May		.84	
June		.80	
July		.88	
August		.85	
September		.71	
The year		.60	
1895.			
October	0.77	.80	1.03
November	.74	.79	1.07
December	.97	1.06	1.09
January	.71	.65	.92
February	.67	.61	.90
March	.68	.57	.83
April	.76	.66	.88
May	.82	.82	1.00
June	.82	.74	.90
July	.82	.79	.97
August	.85	.81	.96
September	.75	.73	.98
The year	.75	.69	.92
1896.			
October	.67	.75	1.12
November	.79	.84	1.07
December	.70	.70	1.00
January	.73	.69	.94
February	.55	.42	.76
March	.62	.46	.75
April	.72	.60	.83
May	.72	.60	.83
June	.90	.83	.92
July	1.00	.98	.98
August	.91	.79	.86
September	.82	.85	1.03
The year	.73	.62	.85

a Discharge at Johnsonville estimated. See "Backwater" in station description.

Ratios of discharge of Tennessee River at Chattanooga, Tenn., Florence, Ala., and Johnsonville, Tenn., for the years ending Sept. 30, 1890–1913—Continued.

Month.	Chattanooga / Florence	Chattanooga / Johnsonville	Florence / Johnsonville
1897.			
October	0.82	0.85	1.04
November	.87	.92	1.05
December	.80	.67	.84
January	.73	.63	.86
February	.95	.92	.97
March	.57	.50	.88
April	.68	[a].47	[a].68
May	.80	.70	.88
June	1.01	.99	.98
July	.97	.99	1.02
August	.89	.81	.91
September	.78	.75	.97
The year	.73	.63	.87
1898.			
October	.77	.86	1.11
November	.70	.73	1.05
December	.67	.58	.87
January	.65	[a].52	[a].80
February	.67	[a].47	[a].70
March	.75	[a].61	[a].82
April	.69	[a].55	[a].79
May	.82	.72	.88
June	.88	.84	.96
July	1.04	1.04	1.00
August	.92	.87	.95
September	1.01	1.06	1.05
The year	.78	.67	.86
1899.			
October	.99	1.03	1.04
November	.93	.94	1.02
December	.85	.82	.96
January	.67	.50	.75
February	.69	.62	.90
March	.67	.62	.93
April	.70	[a].50	[a].71
May	.88	.79	.90
June	.94	.96	1.02
July	.90	.93	1.03
August	.76	.75	.99
September	.84	.91	1.09
The year	.74	.66	.88
1900.			
October	.74	.83	1.13
November	.75	.85	1.14
December	.59	.56	.95
January	.63	.56	.89
February	.73	.63	.86
March	.72	.63	.87
April	.45	.37	.81
May	.71	.57	.80
June	.55	.39	.70
July	.68	.41	.61
August	.75	.68	.90
September	.89	.85	.96
The year	.64	.52	.82
1901.			
October	.75	.71	.94
November	.98	.76	.78
December	.72	.62	.86
January	.66	.56	.85
February	.63	.51	.80
March	.72	.73	1.00
April	.72	.65	.91
May	.88	.85	.96
June	.86	.74	.86
July	.90	.86	.95
August	.81	.78	.97
September	.76	.67	.88
The year	.77	.69	.90

[a] Discharge at Johnsonville estimated. See "Backwater" in station description.

Ratios of discharge of Tennessee River at Chattanooga, Tenn., Florence, Ala., and Johnsonville, Tenn., for the years ending Sept. 30, 1890–1913—Continued.

Month.	Chattanooga / Florence	Chattanooge / Johnsonville	Florence / Johnsonville
1902.			
October	0.84	0.83	0.99
November	.89	.90	1.02
December	.89	.93	1.05
January	.65	.57	.88
February	.65	.52	.80
March	.70	.61	.88
April	.63	.42	.67
May	.88	.79	.91
June	.99	.96	.97
July	.97	.97	1.00
August	.85	.84	.99
September	.94	.98	1.05
The year	.74	.64	.87
1903.			
October	.87	.81	.93
November	.96	.95	.99
December	.65	a.45	a.69
January	.68	.53	.78
February	.60	.50	.83
March	.71	a.61	a.86
April	.77	.65	.85
May	.75	.63	.85
June	.75	.60	.81
July	.84	.80	.95
August	.86	.83	.96
September	.81	.75	.93
The year	.71	.60	.84
1904.			
October	.77	.74	.96
November	.85	.81	.95
December	.81	.72	.90
January	.77	.68	.89
February	.93	.92	.99
March	.69	.64	.93
April	.62	a.43	a.68
May	.88	.84	.95
June	.80	.72	.90
July	.88	.82	.94
August	.87	.89	1.02
September	b.80	.78	b.97
The year	.77	.69	.89
1905.			
October	b.72	.69	b.97
November	b.83	.85	b 1.03
December	.84	.79	.94
January	.69	.55	.80
February	.62	.57	.93
March	.65	.48	.73
April	.84	.82	.97
May	.74	.60	.81
June	.76	.68	.89
July	.76	.70	.92
August	.94	.95	1.02
September	.75	.67	.90
The year	.73	.63	.87
1906.			
October	.77	.72	.94
November	.75	.65	.86
December	.72	.63	.88
January	.67	.58	.87
February	.78	.64	.82
March	.63	.54	.86
April	.74	a.56	a.75
May	.87	.79	.90
June	.94	.95	1.01
July	.81	.73	.90
August	.93	.87	.93
September	.84	.84	1.01
The year	.77	.68	.88

a Discharge at Johnsonville estimated. See "Backwater" in station description.
b Discharge at Florence estimated. See "Daily discharge" in station description.

Ratios of discharge of Tennessee River at Chattanooga, Tenn., Florence, Ala., and Johnsonville, Tenn., for the years ending Sept. 30, 1890–1913—Continued.

Month.	Chattanooga / Florence	Chattanooga / Johnsonville	Johnsonville / Florence
1907.			
October	0.68	0.57	0.84
November	.85	.61	.71
December	.82	.61	.74
January	.69	a.55	a.80
February	.66	a.52	a.79
March	.67	a.51	a.77
April	.89	.81	.91
May	.60	.37	.62
June	.95	.85	.90
July	.91	.78	.86
August	.97	.89	.91
September	.91	.91	1.00
The year	.76	.60	.79
1908.			
October	.86	.68	.79
November	.94	.99	1.05
December	.79	.69	.87
January	.77	.64	.83
February	.65	a.52	a.80
March	.70	a.57	a.82
April	.79	a.62	a.79
May	.81	a.60	a.74
June	.96	.74	.77
July	.94	.80	.86
August	1.08	1.00	.93
September	.83	.65	.78
The year	.79	.65	.82
1909.			
October	.98	.94	.96
November	1.03	.86	.84
December	.83	.81	.97
January	.76	.67	.87
February	.65	.59	.90
March	.65	.47	.72
April	.67	.52	.78
May	.75	.64	.86
June	.69	.60	.88
July	.80	.68	.85
August	.91	.84	.92
September	.92	.85	.92
The year	.74	.62	.84
1910.			
October	.82	.71	.86
November	.81	.68	.84
December	.78	.70	.89
January	.69	.53	.77
February	.66	.50	.76
March	.71	.55	.77
April	.78	.52	.67
May	.76	.71	.93
June	.72	.62	.86
July	.65	.52	.81
August	.87	.78	.89
September	.90	.84	.94
The year	.74	.60	.82
1911.			
October	.78	.68	.88
November	.75	.67	.90
December	.71	.68	.95
January	.64	.57	.90
February	.66	.53	.80
March	.77	.70	.91
April	.54	.43	.79
May	.80	.66	.82
June	.84	.70	.84
July	.73	.62	.85
August	.71	.55	.77
September	.98	.79	.80
The year	.67	.56	.83

[a] Discharge at Johnsonville estimated. See "Backwater" in station description.

Ratios of discharge of Tennessee River at Chattanooga, Tenn., Florence, Ala., and Johnsonville, Tenn., for the years ending Sept. 30, 1890–1913—Continued.

Month.	Chattanooga / Florence	Chattanooga / Johnsonville	Florence / Johnsonville
1912.			
October	1.02	0.94	0.93
November	.95	.85	.89
December	.51	.36	.72
January	.53	.34	.64
February	.64	.52	.82
March	.60	a.51	a.85
April	.60	a.48	a.81
May	.63	a.49	a.78
June	.77	.67	.88
July	.73	.60	.83
August	.77	.70	.91
September	.79	.75	.95
The year	.64	.51	.80
1913.			
October	.80	.66	.82
November	.87	.75	.86
December	.73	.60	.82
January	.61	a.47	a.77
February	.52	a.39	a.75
March	.67	a.55	a.83
April	.60	a.41	a.68
May	.85	.86	1.02
June	.78	.66	.85
July	.81	.70	.86
August	.80	.71	.89
September	.78	.71	.91
The year	.67	.53	.80

a Discharge at Johnsonville estimated. See "Backwater" in station description.

It will be observed that the Florence-Johnsonville ratios are greater than unity for a number of the low-water months during the earlier years of the records. This indicates that the Johnsonville rating table as applied to the observed gage heights yields discharge values that are too low at low stages prior to about 1900. There are no data upon which to base a change in either the rating table or the observed gage heights, and no change has been made, even though the comparisons with other stations indicate that the low-water record at Johnsonville may be in error. Where the ratios of the monthly means differ widely from the ratios of the average mean annual discharge the data should be used with due caution.

TENNESSEE RIVER AT CHATTANOOGA, TENN.

Location.—At Hamilton County highway bridge in the city of Chattanooga, just below Chattanooga Island, 4 miles below South Chickamauga Creek, 3 miles above Chattanooga Creek, 188 miles below the junction of French Broad and Holston Rivers, and 464 miles above the mouth of the Tennessee.

Records available.—April 1, 1874, to October 21, 1913. The records of stage kept by the United States Weather Bureau subsequent to October 21, 1913, can not be utilized for computing discharge because of the operation of the power plant at Hales Bar, 33 miles below Chattanooga. All available data are published in this report. Some of the data have previously appeared in the following reports of the Geological Survey: Part IV of the Eighteenth to Twenty-second Annual Reports, and Water-Supply Papers 11, 15, 27, 36, 39, 48, 52, 65, 75, 83, 98, 128, 169, 205, 243, 263, 283, 303, and 323.

Drainage area.—21,400 square miles (measured from topographic sheets).

Gage.—Standard gage consists of a sloping iron section (railroad T rail) bolted to rock and a vertical timber attached to the rock cliff on the left bank at the foot of Lookout Street, about 200 feet upstream from the bridge. It was erected October 31, 1884, and is owned by the United States Weather Bureau. An automatic recording gage, which makes its record in the Weather Bureau office at Chattanooga, was installed December 30, 1902 (see "Accuracy"). There is also a vertical section of brass gage attached to the pier nearest the left bank, and recently half-foot graduations have been painted on the pipe incasing the recording gage float, to be read from the bridge with the aid of a glass. The original gage was established in 1874. The datum is believed to have remained the same for all the gages. The sea-level elevation of the zero of the gage, as published by the Weather Bureau, is 617.8 feet, and is said to correspond to the low-water mark of September, 1839.

Descriptions of the gages maintained at this station are contained in "Daily river stages," published by the Weather Bureau, and "Stages of the Mississippi River and of its principal tributaries," published by the Mississippi River Commission.

Bench marks.—Following description taken from "Stages of the Mississippi River and of its principal tributaries," for 1913:

Bench mark now in use is the top of water table on southeast corner of United States post-office building on Eleventh Street, between Market and A Streets. Elevation above zero of gage, 74.37 feet.

Another bench mark is described as follows, in "Daily river stages, Part X," published in 1911:

U. S. B. M. 81, bolt on downstream side of second pier from left bank of Chattanooga highway bridge, is 6.7 feet above zero of the gage and 624.5 feet above mean sea level.

Daily gage height.—Taken from published reports of Mississippi River Commission and the original records and published reports of the United States Weather Bureau and published to tenths of a foot. The values are believed to represent one reading a day at about 7 a. m., central time, except from May 24, 1897, to July 10, 1900, during which time the values represent the mean of two readings a day, one in the morning and the other in the afternoon. See "Accuracy" for note relative to recording gage observations.

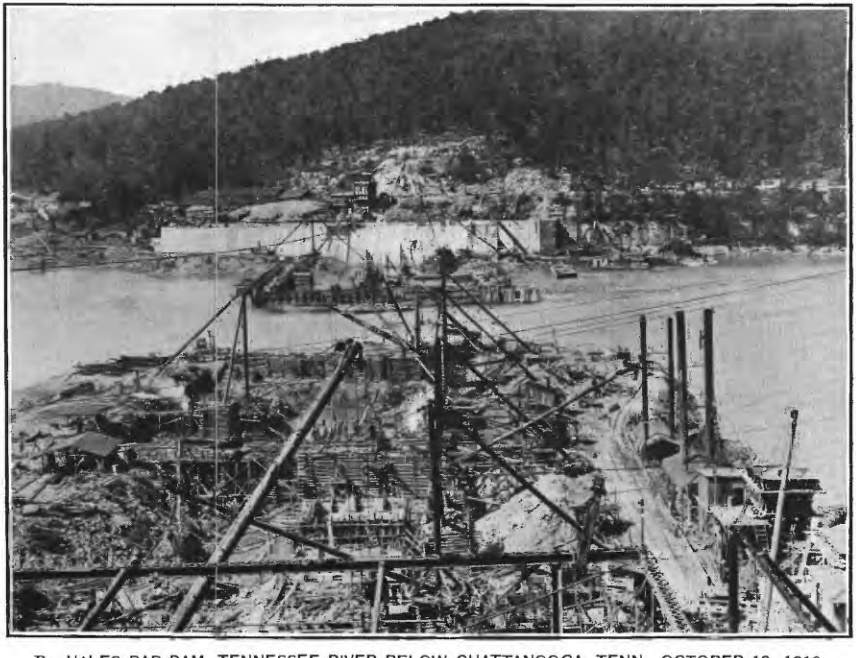
Control.—Probably permanent or nearly so during period covered by records available. Hales Bar dam, 33 miles below Chattanooga, now constitutes the control.

Discharge measurements.—Made from downstream footway of bridge; elevation about 100 feet above the water at ordinary stage. The results of the five discharge measurements, made during 1891–92, in the table on page 96, were taken from page 174 of "Discharge observations, Mississippi River and its tributaries and outlets, 1895–1897," published by the Mississippi River Commission, and reduced to three significant figures. Additional results are given by the United States Engineer Corps in a table of "discharge measurements," published on plate 182, House Document 360, Sixty-second Congress, second session, but it is believed that the heading of the table is misleading and that the results given in the table on pages 96–97 of this report are the only ones that are from field determinations of discharge.

Daily discharge.—Computed for entire period covered by daily gage-height records from discharge rating tables on pages 97–100, upon which the periods of applicability are noted. Some of the values in the following tables differ from those published in previous reports. The changes are the result of differences of interpretation, based upon more complete data than were available when the estimates of discharge for the respective years were first prepared. The same discharge rating

A. GAGING STATION ON ELK RIVER AT CLENDENIN, W. VA., MARCH 31, 1913.

View looking upstream from right bank just below mouth of Big Sandy Creek. Gage height, 6.0 feet; discharge, about 3,400 second-feet.



B. HALES BAR DAM, TENNESSEE RIVER BELOW CHATTANOOGA, TENN., OCTOBER 19, 1910.

table was used in this report from April 1, 1874, to March 15, 1909, because it is believed that, on the whole, the best results are thus obtained, although some measurements, such as those made during the calendar years 1899–1902, plot consistently about 5 to 10 per cent off the curve from which the table was prepared. The changes in the discharge relation subsequent to March 15, 1909, are believed to be due to operations in the river channel below Chattanooga. The discharge measurement made April 19, 1909, indicates a change in the discharge relation since October 17, 1906, the date of the last previous discharge measurement. March 16, 1909, was selected as the date of change.

For January 15–22, 1893, gage observer reported "frozen" and daily discharge was interpolated.

Duration of flow.—The table on pages 149–150 gives the number of days in each year that the daily discharge as given in the tables on pages 120–140 was less than certain limiting values which are given in the first column of the duration table. The theoretical horsepower corresponding to each limiting discharge is also given. By subtraction the table gives the number of days each year that the daily discharge was between the respective limits. For example, during the year ending September 30, 1904, the daily discharge was less than 12,000 second-feet and equal to or greater than 11,000 second-feet for 16 days. The table also gives, by subtraction, the number of days each year that the daily discharge was equal to or greater than the respective limiting values of discharge, and by reference to the discharge rating table the discharge for any year may be expressed in terms of gage height. During the year ending September 30, 1904, for example, the daily discharge was equal to or greater than 20,000 second-feet for 149 days, or the stage of the river was greater than 3.5 feet for that number of days.

Floods.—The flood of March 11, 1867, reached a stage of about 58.6 feet referred to gage datum, according to "Daily river stages for 1911 and 1912," published by the Weather Bureau.

Point of zero flow.—Reports of the United States engineers show that the bottom of the excavated boat channel at Ross Towhead, 2½ miles below the gage, is about 5 feet lower than gage datum, indicating that there would be no flow past the gage if the stage were to fall to about −5.0 feet.

Winter flow.—Discharge relation not appreciably affected by ice.

Regulation.—There is believed to have been no artificial regulation of the flow of the Tennessee at Chattanooga prior to October 22, 1913, at which time backwater is said to have reached the gage from the dam constructed by the Chattanooga & Tennessee River Power Co. on Tennessee River, at Hales Bar, 33 miles below Chattanooga. Beginning October 22, 1913, the flow at Chattanooga has been regulated by the operation of this great dam, and no estimates of discharge have been prepared. (See Pl. V, *B*.)

Ratios.—The table on pages 88–93 gives the ratios of monthly and yearly mean discharge of Tennessee River at Chattanooga, Florence, and Johnsonville. A discussion of the ratios accompanies the table.

Accuracy.—The ratings in the accuracy column in the tables of monthly discharge for the years ending September 30, 1895–1913, especially for the earlier years, must not be considered to indicate as closely the probable reliability of the data as the accuracy ratings outlined on page 15 for the average gaging station. A low accuracy rating in the following tables does not signify that the mean discharge is known to be in error by the amount indicated, but rather that it appears from studies of the data and comparisons with other stations that the mean discharge is doubtful to that extent. The accuracy ratings will assist those using the data in determining by brief inspection whether certain portions of the record are considered sufficiently accurate for the purpose in hand or whether they require special investigation to more closely determine their probable

reliability. The accuracy ratings given in the tables of monthly discharge for the years ending September 30, 1895–1913, are based principally on the plotting of the discharge measurements made during the different years with respect to the rating curve used for the time in question. Some weight was given to the comparison with the discharge at Florence and with the discharge at Knoxville from 1902 to 1909. No accuracy ratings are given prior to the year ending September 30, 1895, because there is nothing definite on which to base them. The number of discharge measurements prior to 1895 is not sufficient to warrant the use of the measurements for the purpose of determining to which station, if either, apparent discrepancies indicated by the ratios of discharge at Chattanooga and Florence are due. Those using these records can best determine whether or not they are sufficiently accurate for the purpose in hand by a detailed study of the data.

The following statement appears under "Accuracy," in Water-Supply Paper 303, which contains data for 1911 for the Ohio River basin:

Daily gage heights * * * are as furnished by the United States Weather Bureau and were obtained from the automatic recording gage record with corrections based on periodic readings of the gage painted on the float pipe. The reading of the automatic recording gage has been checked at various times by engineers of the Survey and found to be essentially correct, but on November 25, 1911, a discrepancy of 0.5 foot was noted, the automatic recording gage reading too high by that amount. The discharge measurements made by Survey engineers are referred to the cliff or float pipe gages, to which, therefore, the discharge rating curve refers. The accuracy of daily and monthly discharge obtained by applying this rating curve to the automatic recording gage record is questionable and these discharge values should be used with caution. It should be noted, however, that the discrepancy in the published daily discharge for November 24 and 25 (1911) as obtained from the Weather Bureau gage heights and the measured discharge on those days is due in part to the difference in the time of the gage readings.

The results published in this report are believed to be as accurate as the available base data will yield and are believed to be free from gross errors.

Cooperation.—Daily gage-height records furnished by the United States Engineer Corps and the United States Weather Bureau. Results of discharge measurements made during 1893 were furnished by the Weather Bureau, and use was made of the results obtained by the Engineer Corps noted under "Discharge measurements."

Discharge measurements of Tennessee River at Chattanooga, Tenn., during 1891–1913.

No.	Date.	Hydrographer.	Gage height.	Discharge.
	1891.		*Feet.*	*Sec.-ft.*
A	Nov. 5	D. L. Sublett[a]	1.2	8,200
	Nov. 6			
B	13	do	3.0	17,600
	1892.			
C	Jan. 15	D. L. Sublett[a]	35.0	240,000
	Jan. 16			
D	Apr. 11	do	30.0	195,000
E	Dec. 12	Capt. John Biddle[b]	2.3	13,700
	1893.			
1	Mar. 15	L. M. Pindell[c]	10.3	63,000
2	16	do	9.2	58,300
3	Apr. 3	do	5.1	32,600
4	4	do	5.1	32,600
5	May 5	do	26.0	156,000
6	8	do	26.0	152,000
7	9	do	16.0	97,000
8	17	do	9.9	65,900
9	18	do	10.4	67,900
	1897.		*Feet.*	*Sec.-ft.*
10	May 8	M. R. Hall	7.07	44,200
11	28	do	4.52	25,900
12	June 29	do	5.76	32,900
13	July 13	do	4.59	26,900
14	Sept. 7	do	1.67	10,300
15	Oct. 6	do	.48	5,970
16	Nov. 16	A. P. Davis	.83	5,550
17	Dec. 23	M. R. Hall	10.30	67,000
	1898.			
18	May 10	M. R. Hall	4.14	22,100
19	July 29	do	5.30	29,700
20	Aug. 19	do	6.37	36,700
21	Oct. 6	do	17.60	120,000
22	28	J. C. Conn	6.00	36,000
23	Nov. 29	do	4.75	29,600
24	29	do	4.70	31,300
	1899.			
25	May 3	M. R. Hall	6.71	37,800
26	26	do	4.76	25,500

[a] Assistant engineer, U. S. Engineer Corps.
[b] United States Engineer Corps.
[c] Observer in charge, U. S. Weather Bureau, Chattanooga, Tenn.

Discharge measurements of Tennessee River at Chattanooga, Tenn., during 1891–1913—Continued.

No.	Date.	Hydrographer.	Gage height.	Discharge.
	1899.		*Feet.*	*Sec.-ft.*
27	June 21	W. E. Hall	4.15	21,400
28	Sept. 15	M. R. Hall	1.90	10,800
29	Oct. 27	do	.80	6,570
	1900.			
30	Mar. 13	M. R. Hall	11.25	66,000
31	July 27	J. C. Conn	3.45	18,500
	1901.			
32	Jan. 24	M. R. Hall	5.60	30,300
33	Apr. 4	K. T. Thomas	24.20	155,000
34	July 31	do	2.80	15,400
35	Aug. 18	do	31.70	199,000
	1902.			
36	June 25	W. E. Hall	3.80	17,800
37	Oct. 9	J. C. Conn	2.00	10,700
38	Nov. 14	O. P. Hall	1.55	9,280
	1903.			
39	Mar. 26	O. P. Hall	28.85	190,000
40	July 21	M. R. Hall	3.85	20,900
41	Sept. 5	J. M. Giles	1.60	10,500
42	Oct. 21	M. R. Hall	1.10	8,060
	1904.			
43	Feb. 3	J. M. Giles	2.77	16,500
44	10	do	5.85	35,660
45	Apr. 19	do	4.30	25,000
46	July 6	do	3.18	17,600
47	Aug. 5	B. S. Drane	2.73	14,700
48	Oct. 13	do	.21	5,370
49	14	do	.22	5,560
50	22	do	.06	4,860
51	1905. May 9	W. E. Hall	6.65	40,000
52	June 13	B. S. Drane	2.92	16,200
53	29	do	6.28	35,700
54	July 22	Hall and Hoyt	5.32	29,200
55	Oct. 11	F. A. Murray	1.65	10,300
56	Dec. 28	do	7.44	43,400
57	1906. May 9	F. A. Murray	8.36	52,800
58	23	O. P. Hall	3.40	19,800
59	June 21	do	5.45	31,300
60	Oct. 17	F. A. Murray	5.59	31,900
61	1909. Apr. 19	Hall and Hoyt	6.52	36,600
62	1910. May 27	M. R. Hall	12.42	76,000
63	Sept. 24	do	2.40	13,000
64	1911. Nov. 24	R. E. Robertson	[a] 4.20	23,100
65	25	do	[b] 3.90	20,800
66	1912. Mar. 31	W. E. Hall	31.3	[c]185,000
67	1913. Oct. 21	W. E. Hall and B. M. Hall, Jr.	1.10	7,410

[a] Gage height obtained by reducing readings on Weather Bureau recording gage by 0.5 foot.
[b] Gage height as read on Weather Bureau gage on float pipe and found to be 0.5 foot less than recorded by Weather Bureau recording gage.
[c] Float measurement.

NOTE.—Measurement *A* was made at Tumbling Shoals about 10 miles below Chattanooga.
Measurement *E* was made at Soddy Shoals about 23 miles above Chattanooga.
Measurements *A*, *B*, *C*, and *D* were made with a current meter submerged at 4 or 5 points in each vertical. There is no record of the method used in taking observations for measurement *E*. See report of Chief of Engineers, U. S. Army, 1896, Part 3, page 2014.
Measurements 1 to 9 were made with a large Haskell current meter, submerged at one-half depth. See "Discharge measurements" in station description.

Discharge rating table for Tennessee River at Chattanooga, Tenn., from Apr. 1, 1874, to Mar. 15, 1909.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Sec.-ft.*	*Feet.*	*Sec.-ft.*	*Feet.*	*Sec.-ft.*	*Feet.*	*Sec.-ft.*
0.00	4,800	1.80	11,010	3.60	20,100	5.40	30,820
.10	5,060	1.90	11,450	3.70	20,660	5.50	31,470
.20	5,330	2.00	11,900	3.80	21,220	5.60	32,120
.30	5,610	2.10	12,360	3.90	21,790	5.70	32,780
.40	5,900	2.20	12,830	4.00	22,360	5.80	33,450
.50	6,200	2.30	13,310	4.10	22,940	5.90	34,120
.60	6,510	2.40	13,800	4.20	23,520	6.00	34,800
.70	6,830	2.50	14,300	4.30	24,100	6.10	35,480
.80	7,160	2.60	14,800	4.40	24,690	6.20	36,160
.90	7,500	2.70	15,310	4.50	25,280	6.30	36,840
1.00	7,850	2.80	15,820	4.60	25,870	6.40	37,520
1.10	8,210	2.90	16,340	4.70	26,470	6.50	38,200
1.20	8,580	3.00	16,860	4.80	27,070	6.60	38,880
1.30	8,960	3.10	17,390	4.90	27,680	6.70	39,560
1.40	9,350	3.20	17,920	5.00	28,300	6.80	40,240
1.50	9,750	3.30	18,460	5.10	28,920	6.90	40,920
1.60	10,160	3.40	19,000	5.20	29,550	7.00	41,600
1.70	10,580	3.50	19,550	5.30	30,180	7.10	42,280

Discharge rating table for Tennessee River, at Chattanooga, Tenn., from Apr. 1, 1874, to Mar. 15, 1909—Continued.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Sec.-ft.*	*Feet.*	*Sec.-ft.*	*Feet.*	*Sec.-ft.*	*Feet.*	*Sec.-ft.*
7.20	42,960	13.30	84,440	19.40	125,920	25.50	167,400
7.30	43,640	13.40	85,120	19.50	126,600	25.60	168,080
7.40	44,320	13.50	85,800	19.60	127,280	25.70	168,760
7.50	45,000	13.60	86,480	19.70	127,960	25.80	169,440
7.60	45,680	13.70	87,160	19.80	128,640	25.90	170,120
7.70	46,360	13.80	87,840	19.90	129,320	26.00	170,800
7.80	47,040	13.90	88,520	20.00	130,000	26.10	171,480
7.90	47,720	14.00	89,200	20.10	130,680	26.20	172,160
8.00	48,400	14.10	89,880	20.20	131,360	26.30	172,840
8.10	49,080	14.20	90,560	20.30	132,040	26.40	173,520
8.20	49,760	14.30	91,240	20.40	132,720	26.50	174,200
8.30	50,440	14.40	91,920	20.50	133,400	26.60	174,880
8.40	51,120	14.50	92,600	20.60	134,080	26.70	175,560
8.50	51,800	14.60	93,280	20.70	134,760	26.80	176,240
8.60	52,480	14.70	93,960	20.80	135,440	26.90	176,920
8.70	53,160	14.80	94,640	20.90	136,120	27.00	177,600
8.80	53,840	14.90	95,320	21.00	136,800	27.10	178,280
8.90	54,520	15.00	96,000	21.10	137,480	27.20	178,960
9.00	55,200	15.10	96,680	21.20	138,160	27.30	179,640
9.10	55,880	15.20	97,360	21.30	138,840	27.40	180,320
9.20	56,560	15.30	98,040	21.40	139,520	27.50	181,000
9.30	57,240	15.40	98,720	21.50	140,200	27.60	181,680
9.40	57,920	15.50	99,400	21.60	140,880	27.70	182,360
9.50	58,600	15.60	100,080	21.70	141,560	27.80	183,040
9.60	59,280	15.70	100,760	21.80	142,240	27.90	183,720
9.70	59,960	15.80	101,440	21.90	142,920	28.00	184,400
9.80	60,640	15.90	102,120	22.00	143,600	29.00	191,200
9.90	61,320	16.00	102,800	22.10	144,280	30.00	198,000
10.00	62,000	16.10	103,480	22.20	144,960	31.00	204,800
10.10	62,680	16.20	104,160	22.30	145,640	32.00	211,600
10.20	63,360	16.30	104,840	22.40	146,320	33.00	218,400
10.30	64,040	16.40	105,520	22.50	147,000	34.00	225,200
10.40	64,720	16.50	106,200	22.60	147,680	35.00	232,000
10.50	65,400	16.60	106,880	22.70	148,360	36.00	238,800
10.60	66,080	16.70	107,560	22.80	149,040	37.00	245,600
10.70	66,760	16.80	108,240	22.90	149,720	38.00	252,400
10.80	67,440	16.90	108,920	23.00	150,400	39.00	259,200
10.90	68,120	17.00	109,600	23.10	151,080	40.00	266,000
11.00	68,800	17.10	110,280	23.20	151,760	41.00	272,800
11.10	69,480	17.20	110,960	23.30	152,440	42.00	279,600
11.20	70,160	17.30	111,640	23.40	153,120	43.00	286,400
11.30	70,840	17.40	112,320	23.50	153,800	44.00	293,200
11.40	71,520	17.50	113,000	23.60	154,480	45.00	300,000
11.50	72,200	17.60	113,680	23.70	155,160	46.00	306,800
11.60	72,880	17.70	114,360	23.80	155,840	47.00	313,600
11.70	73,560	17.80	115,040	23.90	156,520	48.00	320,400
11.80	74,240	17.90	115,720	24.00	157,200	49.00	327,200
11.90	74,920	18.00	116,400	24.10	157,880	50.00	334,000
12.00	75,600	18.10	117,080	24.20	158,560	51.00	340,800
12.10	76,280	18.20	117,760	24.30	159,240	52.00	347,600
12.20	76,960	18.30	118,440	24.40	159,920	53.00	354,400
12.30	77,640	18.40	119,120	24.50	160,600	54.00	361,200
12.40	78,320	18.50	119,800	24.60	161,280	55.00	368,000
12.50	79,000	18.60	120,480	24.70	161,960	56.00	374,800
12.60	79,680	18.70	121,160	24.80	162,640	57.00	381,600
12.70	80,360	18.80	121,840	24.90	163,320	58.00	388,400
12.80	81,040	18.90	122,520	25.00	164,000	59.00	395,200
12.90	81,720	19.00	123,200	25.10	164,680	60.00	402,000
13.00	82,400	19.10	123,880	25.20	165,360		
13.10	83,080	19.20	124,560	25.30	166,040		
13.20	83,760	19.30	125,240	25.40	166,720		

NOTE.—Table is not applicable for periods during which ice was present or channel was otherwise obstructed. It is based on 65 discharge measurements made during 1891–1906 listed in the table on pages 96–97. The table is well defined between discharge 4,800 and 232,000 second-feet (gage heights 0.0 and 35.0 feet). Use this table to three significant figures only.

Discharge rating table for Tennessee River at Chattanooga, Tenn., from Mar. 16, 1909 to Dec. 31, 1911.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Sec.-ft.*	*Feet.*	*Sec.-ft.*	*Feet.*	*Sec.-ft.*	*Feet.*	*Sec.-ft.*
1.20	8,050	4.90	26,610	8.60	50,260	12.30	75,040
1.30	8,380	5.00	27,200	8.70	50,920	12.40	75,720
1.40	8,730	5.10	27,800	8.80	51,580	12.50	76,400
1.50	9,100	5.20	28,400	8.90	52,240	12.60	77,080
1.60	9,490	5.30	29,000	9.00	52,900	12.70	77,760
1.70	9,900	5.40	29,610	9.10	53,570	12.80	78,440
1.80	10,320	5.50	30,220	9.20	54,240	12.90	79,120
1.90	10,750	5.60	30,830	9.30	54,910	13.00	79,800
2.00	11,200	5.70	31,440	9.40	55,580	13.10	80,480
2.10	11,660	5.80	32,060	9.50	56,250	13.20	81,160
2.20	12,130	5.90	32,680	9.60	56,920	13.30	81,840
2.30	12,600	6.00	33,300	9.70	57,590	13.40	82,520
2.40	13,070	6.10	33,930	9.80	58,260	13.50	83,200
2.50	13,550	6.20	34,560	9.90	58,930	13.60	83,880
2.60	14,030	6.30	35,190	10.00	59,600	13.70	84,560
2.70	14,520	6.40	35,830	10.10	60,270	13.80	85,240
2.80	15,010	6.50	36,470	10.20	60,940	13.90	85,920
2.90	15,500	6.60	37,110	10.30	61,610	14.00	86,600
3.00	16,000	6.70	37,750	10.40	62,280	15.00	93,400
3.10	16,510	6.80	38,400	10.50	62,950	16.00	100,200
3.20	17,030	6.90	39,050	10.60	63,620	17.00	107,000
3.30	17,560	7.00	39,700	10.70	64,290	18.00	113,800
3.40	18,100	7.10	40,360	10.80	64,960	19.00	120,600
3.50	18,640	7.20	41,020	10.90	65,630	20.00	127,400
3.60	19,180	7.30	41,680	11.00	66,300	21.00	134,200
3.70	19,730	7.40	42,340	11.10	66,970	22.00	141,000
3.80	20,280	7.50	43,000	11.20	67,640	23.00	147,800
3.90	20,840	7.60	43,660	11.30	68,310	24.00	154,600
4.00	21,400	7.70	44,320	11.40	69,980	25.00	161,400
4.10	21,960	7.80	44,980	11.50	69,650	26.00	168,200
4.20	22,530	7.90	45,640	11.60	70,320	27.00	175,000
4.30	23,100	8.00	46,300	11.70	70,990	28.00	181,800
4.40	23,680	8.10	46,960	11.80	71,660	29.00	188,600
4.50	24,260	8.20	47,620	11.90	72,330	30.00	195,400
4.60	24,840	8.30	48,280	12.00	73,000	31.00	202,200
4.70	25,430	8.40	48,940	12.10	73,680	32.00	209,000
4.80	26,020	8.50	49,600	12.20	74,360		

NOTE.—Table is not applicable for periods during which ice was present or channel was obstructed. It is based on five discharge measurements made during 1909–1911, and the form of the curve from which the table applicable Apr. 1, 1874, to Mar. 15, 1909, was computed. It is well defined between discharges 11,200 and 79,800 second-feet (gage heights 2.0 and 13.0 feet). Use this table to three significant figures only.

Discharge rating table for Tennessee River at Chattanooga, Tenn., from Jan. 1, 1912, to Mar. 29, 1913.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Sec.-ft.*	*Feet.*	*Sec.-ft.*	*Feet.*	*Sec.-ft.*	*Feet.*	*Sec.-ft.*
1.20	8,050	3.40	18,100	5.60	30,830	7.80	44,460
1.30	8,380	3.50	18,640	5.70	31,440	7.90	45,080
1.40	8,730	3.60	19,180	5.80	32,060	8.00	45,700
1.50	9,100	3.70	19,730	5.90	32,680	8.10	46,320
1.60	9,490	3.80	20,280	6.00	33,300	8.20	46,940
1.70	9,900	3.90	20,840	6.10	33,920	8.30	47,560
1.80	10,320	4.00	21,400	6.20	34,540	8.40	48,180
1.90	10,750	4.10	21,960	6.30	35,160	8.50	48,800
2.00	11,200	4.20	22,530	6.40	35,780	8.60	49,420
2.10	11,660	4.30	23,100	6.50	36,400	8.70	50,040
2.20	12,130	4.40	23,680	6.60	37,020	8.80	50,660
2.30	12,600	4.50	24,260	6.70	37,640	8.90	51,280
2.40	13,070	4.60	24,840	6.80	38,260	9.00	51,900
2.50	13,550	4.70	25,430	6.90	38,880	9.10	52,520
2.60	14,030	4.80	26,020	7.00	39,500	9.20	53,140
2.70	14,520	4.90	26,610	7.10	40,120	9.30	53,760
2.80	15,010	5.00	27,200	7.20	40,740	9.40	54,380
2.90	15,500	5.10	27,800	7.30	41,360	9.50	55,000
3.00	16,000	5.20	28,400	7.40	41,980	9.60	55,620
3.10	16,510	5.30	29,000	7.50	42,600	9.70	56,240
3.20	17,030	5.40	29,610	7.60	43,220	9.80	56,860
3.30	17,560	5.50	30,220	7.70	43,840	9.90	57,480

Discharge rating table for Tennessee River at Chattanooga, Tenn., from Jan. 1, 1912, to Mar. 29, 1913—Continued.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Sec.-ft.*	*Feet.*	*Sec.-ft.*	*Feet.*	*Sec.-ft.*	*Feet.*	*Sec.-ft.*
10.00	58,100	12.50	73,600	15.00	89,100	17.50	104,600
10.10	58,720	12.60	74,220	15.10	89,720	17.60	105,220
10.20	59,340	12.70	74,840	15.20	90,340	17.70	105,840
10.30	59,960	12.80	75,460	15.30	90,960	17.80	106,460
10.40	60,580	12.90	76,080	15.40	91,580	17.90	107,080
10.50	61,200	13.00	76,700	15.50	92,200	18.00	107,700
10.60	61,820	13.10	77,320	15.60	92,820	19.00	113,900
10.70	62,440	13.20	77,940	15.70	93,440	20.00	120,100
10.80	63,060	13.30	78,560	15.80	94,060	21.00	126,300
10.90	63,680	13.40	79,180	15.90	94,680	22.00	132,500
11.00	64,300	13.50	79,800	16.00	95,300	23.00	138,700
11.10	64,920	13.60	80,420	16.10	95,920	24.00	144,900
11.20	65,540	13.70	81,040	16.20	96,540	25.00	151,100
11.30	66,160	13.80	81,660	16.30	97,160	26.00	157,300
11.40	66,780	13.90	82,280	16.40	97,780	27.00	163,500
11.50	67,400	14.00	82,900	16.50	98,400	28.00	169,700
11.60	68,020	14.10	83,520	16.60	99,020	29.00	175,900
11.70	68,640	14.20	84,140	16.70	99,640	30.00	182,100
11.80	69,260	14.30	84,760	16.80	100,260	31.00	188,300
11.90	69,880	14.40	85,380	16.90	100,880	32.00	194,500
12.00	70,500	14.50	86,000	17.00	101,500	33.00	200,700
12.10	71,120	14.60	86,620	17.10	102,120	34.00	206,900
12.20	71,740	14.70	87,240	17.20	102,740	35.00	213,100
12.30	72,360	14.80	87,860	17.30	103,360	36.00	219,300
12.40	72,980	14.90	88,480	17.40	103,980	37.00	225,500

NOTE.—Table is not applicable for periods during which ice was present or the channel was otherwise obstructed. It is based on one discharge measurement made during 1912 and the form of the curves from which the rating tables for previous years were computed. Below discharge 33,300 second-feet (gage height 6.0 feet) the table is the same as the one used from Mar. 16, 1909, to Dec. 31. 1911 which see for additional notes.

Discharge rating table for Tennessee River at Chattanooga, Tenn., from Mar. 30 to Oct. 21, 1913.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Sec.-ft.*	*Feet.*	*Sec.-ft.*	*Feet.*	*Sec.-ft.*	*Feet.*	*Sec.-ft.*
0.70	6,060	1.30	8,190	1.90	10,710	2.50	13,500
.80	6,380	1.40	8,590	2.00	11,150	2.60	13,990
.90	6,720	1.50	9,000	2.10	11,600	2.70	14,490
1.00	7,070	1.60	9,420	2.20	12,060	2.80	14,990
1.10	7,430	1.70	9,840	2.30	12,530	2.90	15,490
1.20	7,800	1.80	10,270	2.40	13,010	3.00	16,000

NOTE.—Table is not applicable for periods during which ice was present or channel was obstructed. Below discharge 16,000 second-feet (gage height 3.0 feet) it is based on one discharge measurement made during 913. Above that point the table is the same as the table used from Jan. 1, 1912, to Mar. 29, 1913, which see.
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Daily gage height, in feet, of Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874–1913.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Day.	Apr.	May.	June.	July.	Aug.	Sept.
1874.							1874.						
1	6.5	29.6	3.8	2.9	7.5	14.0	16	22.5	7.1	4.2	3.2	1.7	1.8
2	6.5	28.8	3.7	3.0	6.2	9.0	17	24.2	6.0	3.9	2.2	1.5	1.9
3	6.4	26.5	3.7	2.9	5.2	6.0	18	22.7	5.7	3.9	3.1	1.4	2.5
4	6.0	25.7	4.1	2.6	4.2	5.0	19	22.0	5.9	3.8	2.9	1.2	2.9
5	5.4	25.5	4.2	2.5	3.0	3.6	20	20.3	5.7	3.6	2.8	1.2	2.9
6	5.2	24.7	4.1	2.4	3.2	3.2	21	19.1	5.6	3.5	2.4	1.0	2.9
7	5.6	23.6	4.1	2.0	3.4	3.2	22	19.1	5.2	3.6	2.1	1.0	2.7
8	7.5	21.5	4.1	1.7	4.2	3.2	23	19.2	5.2	2.6	1.7	1.1	2.4
9	13.0	19.0	4.0	1.5	4.5	3.6	24	23.1	4.8	2.4	1.7	2.2	2.2
10	16.0	15.5	3.9	1.6	3.5	2.9	25	22.1	4.1	2.2	1.9	2.0	2.2
11	17.0	9.2	3.9	1.8	3.2	2.0	26	24.5	4.8	2.0	2.9	2.2	2.2
12	16.5	9.7	4.0	2.2	2.7	1.8	27	26.2	4.7	1.9	3.5	2.2	2.2
13	15.1	9.7	4.6	2.2	2.2	1.7	28	25.9	4.5	2.2	4.6	4.7	2.4
14	15.2	8.7	4.6	2.5	2.2	1.8	29	27.0	4.2	2.9	6.4	9.0	2.9
15	16.0	7.2	5.7	2.8	1.8	1.8	30	28.8	4.2	3.0	7.2	14.2	3.2
							31	.....	4.2	.....	8.5	14.5	.....

Daily gage height, in feet, of Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874–1918—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1875.[a]												
1	3.4	1.4	9.2	6.4	30.5	54.0	12.7	20.7	3.4	5.2	5.5	3.7
2	4.5	1.2	8.6	7.0	25.5	51.0	14.8	19.0	3.2	5.6	5.4	3.2
3	4.9	1.2	8.0	12.5	17.0	46.0	19.4	12.7	3.2	5.3	5.3	3.2
4	4.8	1.2	6.6	13.5	11.5	43.0	20.5	10.5	3.5	5.2	5.3	3.2
5	4.0	1.0	5.0	14.6	10.4	41.7	19.0	9.4	4.1	5.1	5.9	3.1
6	2.0	.8	5.0	13.0	9.5	40.2	17.0	8.6	4.8	5.0	7.5	3.0
7	2.0	.7	4.5	11.5	8.4	37.0	14.0	7.7	4.7	5.2	6.2	2.9
8	2.1	.7	4.1	13.2	8.2	32.0	11.8	7.2	4.4	5.4	5.4	2.8
9	2.0	1.0	3.7	9.8	7.1	26.5	10.4	6.7	4.8	5.9	5.0	2.6
10	2.0	1.5	3.0	9.5	6.6	22.2	9.4	6.4	4.9	5.8	4.5	2.6
11	2.0	2.8	2.9	8.9	6.4	19.8	10.0	6.2	4.5	5.6	4.4	2.6
12	1.8	4.0	2.8	6.8	6.9	16.8	12.2	6.2	4.0	6.2	4.5	2.8
13	1.7	3.9	3.7	6.2	7.4	14.2	13.2	6.0	3.7	7.5	5.0	2.7
14	1.7	3.6	3.7	6.0	7.8	12.8	12.2	5.6	3.2	9.2	5.4	2.5
15	1.7	3.4	3.8	5.8	8.8	12.5	10.5	5.4	3.1	11.6	5.9	2.6
16	1.4	3.1	8.2	5.0	9.2	21.0	9.5	5.1	3.0	20.0	7.9	2.6
17	1.2	2.9	8.2	4.9	8.4	26.8	8.7	4.8	3.8	18.4	10.8	2.6
18	1.1	2.5	8.0	4.8	7.7	28.1	8.0	4.6	3.9	13.7	12.2	2.7
19	1.6	2.0	7.9	4.7	7.2	26.0	7.5	4.5	4.7	10.6	11.2	6.4
20	2.8	2.4	6.5	4.5	7.0	22.2	7.1	4.2	4.6	8.4	10.4	11.2
21	3.0	2.6	6.2	4.3	7.6	29.2	6.9	4.3	4.7	7.7	9.0	10.0
22	2.6	2.4	6.0	4.2	8.5	32.7	7.1	4.2	4.6	6.7	7.1	7.2
23	2.2	9.0	6.4	4.1	8.5	34.0	7.8	4.1	5.2	7.2	6.1	5.8
24	2.2	9.6	7.6	5.0	18.0	33.7	8.5	4.0	5.6	9.8	5.5	5.1
25	2.2	10.7	6.9	7.9	35.5	28.0	9.8	4.0	5.6	13.0	5.2	4.5
26	2.0	10.8	6.2	9.2	44.9	18.5	8.5	3.9	5.3	12.0	5.2	4.1
27	1.8	7.2	5.2	8.4	49.5	14.5	7.7	3.9	5.0	10.7	5.2	3.7
28	1.5	7.2	4.9	7.9	53.4	12.2	9.0	4.0	4.7	9.8	5.0	3.5
29	1.5	6.2	5.7	16.5	.....	14.5	15.0	4.0	4.6	7.9	4.7	3.4
30	1.5	9.6	6.0	28.5	.....	15.6	19.5	3.8	4.7	6.8	4.2	3.5
31	2.0	.....	6.3	32.5	.....	14.5	.....	3.5	.....	5.9	4.0	.....
1876.												
1	3.5	2.3	6.2	31.1	13.7	7.0	12.2	7.6	8.1	6.8	4.4	2.5
2	3.2	2.4	5.8	23.4	13.8	6.7	13.2	9.0	7.8	6.2	4.6	2.4
3	3.2	2.4	5.7	15.6	13.8	6.4	13.5	12.2	7.7	6.4	5.2	3.0
4	3.2	2.4	5.8	12.8	12.8	6.2	12.1	13.2	8.0	6.7	4.8	2.9
5	3.0	2.4	6.5	11.1	12.5	6.0	10.8	12.1	8.2	7.0	4.6	2.5
6	3.0	2.8	7.6	10.0	11.9	5.8	9.6	10.2	8.4	7.1	6.0	2.2
7	4.1	3.2	8.9	9.0	10.2	5.6	8.8	10.0	8.4	7.7	5.7	2.1
8	5.6	4.0	8.8	8.1	10.0	5.9	8.2	11.2	7.7	7.2	5.2	2.1
9	5.2	4.7	9.1	7.5	10.2	6.9	7.7	16.4	6.9	7.0	4.9	2.0
10	4.4	5.2	9.0	7.0	10.4	8.0	7.2	20.0	6.1	6.6	4.6	2.0
11	4.0	5.6	8.7	6.8	10.2	7.8	7.0	20.0	5.6	6.3	4.4	2.2
12	3.6	6.4	8.2	6.7	10.4	7.6	6.7	18.2	5.2	6.0	4.5	2.4
13	3.4	6.7	7.6	6.2	11.2	7.1	6.4	15.2	5.0	5.6	4.2	2.5
14	3.1	6.6	7.0	6.0	12.8	7.0	6.8	12.2	4.9	5.2	4.0	2.4
15	3.0	6.4	6.4	5.7	16.8	7.3	10.2	10.4	4.8	4.8	3.7	2.2
16	2.8	6.4	5.9	5.4	20.9	11.0	13.4	9.5	5.4	4.8	3.6	2.2
17	2.8	6.8	5.5	5.2	21.9	19.8	12.1	8.8	10.8	4.8	3.7	2.2
18	2.8	6.5	5.2	5.9	18.8	21.1	11.8	8.1	13.2	4.9	3.8	2.0
19	2.8	5.8	4.8	8.4	16.0	17.8	10.2	7.7	22.0	4.8	3.6	2.0
20	2.7	5.5	4.5	12.7	12.2	14.2	9.2	7.7	23.4	5.1	3.5	1.9
21	2.6	5.2	4.2	14.5	10.4	12.2	8.7	8.0	19.2	4.9	3.4	2.0
22	2.5	6.2	4.2	14.5	9.8	11.1	8.3	7.7	11.8	5.0	3.2	2.6
23	2.5	5.6	4.0	13.1	9.8	10.1	7.2	7.7	11.0	5.2	3.0	2.5
24	2.4	6.0	4.2	11.9	9.3	9.8	6.9	7.2	9.2	4.7	2.9	2.4
25	2.2	6.6	4.9	12.5	8.7	12.8	6.7	6.7	8.1	4.2	2.8	2.4
26	2.2	7.2	7.9	15.7	8.5	16.9	6.5	7.0	8.0	4.0	2.9	2.8
27	2.2	6.8	13.0	14.4	8.0	17.2	6.2	7.2	8.5	3.8	2.9	3.4
28	2.2	6.8	19.2	12.0	7.7	15.9	6.0	8.0	8.1	3.8	2.8	3.1
29	2.2	6.8	27.4	10.6	7.2	15.7	6.2	10.8	7.9	3.6	2.8	2.6
30	2.2	6.6	33.0	12.0	.....	15.7	6.7	9.8	7.2	3.4	2.6	2.4
31	2.2	.....	34.2	14.6	.....	13.5	.....	8.8	.....	3.8	2.5	.....

[a] This and all similar headings in this paper indicate the year ending Sept. 30 (climatic year), which includes three months of the preceding calendar year.

Daily gage height, in feet, of Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1877.												
1	2.2	1.6	2.4	3.2	6.2	3.1	10.5	11.4	3.4	4.0	2.4	1.8
2	2.1	1.5	2.4	2.6	5.8	3.2	8.2	9.8	3.2	3.7	2.2	1.7
3	1.9	1.4	2.4	1.8	5.6	4.4	10.2	8.7	3.2	3.4	2.2	1.5
4	1.8	1.4	2.7	1.7	5.5	6.8	10.6	7.9	3.1	3.1	2.2	1.5
5	1.8	1.5	2.5	2.4	5.7	5.7	9.8	7.4	3.0	2.6	2.1	1.5
6	1.8	1.5	2.0	2.2	5.8	5.5	9.2	7.3	2.9	2.5	2.0	1.4
7	1.7	1.5	1.8	2.7	5.6	5.4	9.5	7.6	2.8	2.4	1.8	2.0
8	1.6	1.5	1.8	4.6	5.2	5.2	13.9	7.6	3.0	2.4	1.8	2.7
9	1.5	1.4	1.8	5.9	5.1	7.0	22.9	7.9	3.1	2.8	1.7	2.5
10	1.5	1.4	1.7	5.7	4.9	12.0	27.9	8.2	3.2	2.8	1.7	2.0
11	1.4	1.4	1.6	5.2	4.6	15.6	28.7	8.1	3.2	2.4	1.7	2.4
12	1.2	1.4	1.5	5.5	4.5	14.8	26.0	8.0	3.5	2.2	1.7	3.2
13	1.2	1.4	1.4	5.8	4.2	13.0	20.5	7.5	3.6	2.2	1.6	3.2
14	1.1	1.2	1.6	10.0	4.2	11.5	17.9	6.9	3.5	2.0	1.6	2.8
15	1.1	1.2	1.8	13.6	4.0	11.6	17.4	6.4	3.5	2.0	1.6	2.2
16	1.1	1.2	1.9	18.0	3.8	9.9	16.8	6.0	3.4	1.9	1.9	2.0
17	1.1	1.4	2.2	21.4	3.8	9.1	15.0	5.8	3.4	2.6	2.2	1.8
18	1.0	1.4	2.2	22.7	3.6	8.8	13.0	5.8	3.4	2.1	2.0	1.8
19	1.0	1.5	2.1	23.6	3.4	8.6	11.9	5.4	3.4	2.1	1.7	1.8
20	1.0	1.7	2.0	22.1	3.4	8.2	12.2	4.9	3.5	3.1	1.5	2.0
21	1.1	1.9	2.0	23.2	3.2	7.7	14.0	4.8	3.6	3.6	1.4	2.6
22	1.1	2.2	1.8	26.4	3.2	7.4	15.2	4.8	4.1	3.7	1.3	2.7
23	1.5	2.2	1.8	27.0	3.2	7.1	15.7	4.8	5.1	3.6	1.3	3.0
24	2.0	2.5	2.2	24.0	3.2	6.9	14.0	4.4	4.9	4.1	1.4	2.8
25	3.4	3.4	2.4	18.6	3.4	6.7	11.6	4.2	4.1	5.2	1.5	2.6
26	3.2	3.9	2.8	13.0	3.4	7.8	9.8	4.0	3.7	4.7	2.5	2.2
27	2.6	3.5	3.0	10.9	3.2	10.0	9.4	3.8	3.4	4.7	2.4	2.2
28	2.4	3.1	3.0	9.5	3.1	13.8	12.5	3.8	3.2	4.2	2.4	2.2
29	2.3	2.7	3.2	8.2	.....	16.7	14.4	3.6	3.5	3.6	2.1	2.2
30	1.8	2.5	3.0	7.5	.....	15.5	12.5	3.6	4.0	3.2	1.9	1.8
31	1.7	.....	3.4	6.8	.....	12.2	.....	3.5	.....	2.7	1.7	.....
1878.												
1	1.6	2.2	7.2	8.7	11.6	8.5	4.9	6.8	4.1	2.2	2.8	4.0
2	1.5	2.7	6.4	10.1	11.5	7.5	4.7	6.2	3.6	2.2	3.6	3.7
3	1.4	6.1	5.6	9.1	10.2	7.2	4.5	6.6	3.4	2.5	3.2	3.5
4	1.2	7.5	5.2	7.8	8.9	7.2	4.2	6.0	3.2	2.7	3.1	3.5
5	1.2	6.2	5.2	7.2	8.0	8.1	4.4	5.7	3.1	2.5	2.8	3.2
6	1.5	5.6	6.2	6.5	7.2	7.9	4.7	6.5	3.0	2.2	2.5	2.6
7	2.2	5.2	7.4	5.9	6.8	7.7	4.9	6.9	3.1	2.1	2.0	2.1
8	4.0	5.0	7.2	5.4	7.1	7.2	5.0	7.2	3.0	2.0	1.8	1.9
9	3.2	4.5	6.6	4.9	8.1	6.9	5.0	7.4	2.9	2.1	1.6	1.6
10	3.4	4.2	6.2	5.2	11.6	6.6	5.2	6.9	3.2	2.2	1.4	1.4
11	3.2	4.9	5.6	6.7	13.2	6.4	6.8	6.4	3.4	2.4	1.2	1.2
12	2.9	5.5	5.2	9.0	12.5	6.4	8.0	5.9	3.2	2.4	1.2	1.1
13	2.8	5.2	4.9	11.2	11.0	7.4	8.0	5.5	3.2	2.2	1.4	1.0
14	2.5	4.5	4.6	12.5	9.4	8.9	7.1	5.1	3.2	2.1	1.6	.9
15	2.2	4.1	4.2	11.4	8.2	10.1	6.5	4.9	3.2	2.1	2.1	.9
16	2.0	3.8	4.2	10.0	7.8	10.6	6.1	4.8	3.2	2.1	2.9	10.6
17	1.9	3.7	3.9	8.9	7.5	9.1	5.8	4.7	2.9	2.2	4.0	8.2
18	1.6	3.8	3.8	8.2	7.1	8.2	5.6	4.7	2.8	2.0	3.7	5.6
19	1.6	3.5	3.6	7.5	6.8	7.2	5.3	5.2	2.7	2.1	3.0	4.0
20	1.7	3.4	3.5	7.0	6.6	6.6	6.1	5.9	2.6	1.9	2.7	3.1
21	2.3	3.4	3.4	6.6	6.9	6.2	6.2	7.0	2.8	1.8	2.4	2.7
22	2.7	5.2	3.2	6.4	9.0	5.8	6.1	7.0	2.7	1.6	2.0	2.2
23	3.2	6.8	3.2	6.6	11.6	5.5	5.8	5.8	2.7	1.6	2.9	2.0
24	3.2	7.9	3.4	6.7	17.5	5.2	6.6	5.1	3.2	1.5	4.2	1.9
25	3.2	9.8	4.4	6.6	19.2	5.0	9.5	4.7	3.0	1.2	3.8	2.0
26	2.8	14.1	7.0	6.5	15.8	4.9	9.2	4.2	2.7	1.2	2.9	2.1
27	2.6	15.0	7.8	6.5	12.4	4.6	8.5	4.1	2.6	1.2	2.2	1.9
28	2.3	13.4	7.5	6.4	10.7	4.6	8.4	4.0	2.4	1.1	2.4	1.9
29	2.3	10.6	7.2	6.9	.....	4.9	8.2	4.1	2.4	1.2	2.8	1.8
30	2.3	8.6	7.8	7.2	.....	5.2	7.6	4.5	2.2	1.4	3.2	1.7
31	2.3	.....	8.5	9.7	.....	5.2	.....	4.6	.....	2.5	4.1	.....

Daily gage height, in feet, of Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874-1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1879.												
1	1.5	3.2	14.5	5.7	11.7	11.0	5.8	4.3	3.3	1.1	2.2	2.4
2	1.2	3.5	13.2	6.3	11.6	10.6	7.4	4.3	3.3	1.2	3.9	2.2
3	1.2	3.4	12.2	7.6	10.0	9.5	8.4	4.2	3.0	1.2	4.1	2.1
4	1.1	3.5	11.7	7.5	8.6	8.5	8.5	4.1	2.8	1.2	4.3	2.2
5	1.0	3.2	11.0	6.2	8.3	7.7	7.2	3.9	2.7	1.2	4.0	2.2
6	1.0	2.9	9.7	5.6	9.3	7.1	6.5	3.8	2.6	1.2	3.3	2.6
7	1.1	2.6	8.0	4.2	11.1	6.7	6.2	5.2	2.4	1.1	3.2	2.8
8	1.1	2.4	6.8	4.3	11.1	6.3	5.8	6.4	2.3	1.0	2.9	2.5
9	1.2	2.2	6.2	8.1	10.0	6.0	5.7	5.8	2.2	.9	2.9	2.1
10	1.5	2.2	7.5	20.3	10.0	5.9	6.2	4.8	2.0	.9	2.8	1.9
11	1.6	2.0	9.2	23.9	9.0	5.6	8.0	4.3	2.1	1.0	2.9	1.5
12	1.6	1.9	10.9	27.5	8.3	5.5	8.8	3.9	2.2	1.0	2.6	1.4
13	1.6	1.8	9.9	32.8	8.1	5.0	8.2	3.6	2.4	1.0	2.5	1.3
14	1.7	1.8	10.5	37.7	7.8	5.2	7.4	3.5	2.7	1.0	2.2	1.2
15	1.9	1.9	10.0	38.0	7.3	5.2	6.8	3.9	2.8	.9	1.9	1.2
16	1.9	2.0	11.0	37.6	6.8	5.0	6.7	3.9	2.7	.9	1.8	1.0
17	1.9	2.0	11.7	27.8	7.6	4.9	7.9	4.0	2.9	1.1	2.1	1.0
18	1.8	2.0	10.8	17.1	14.6	4.9	8.3	5.2	2.5	1.0	2.0	1.0
19	1.6	2.0	9.9	14.0	18.8	4.8	8.2	5.8	2.2	1.0	1.7	.9
20	1.6	2.2	8.6	14.5	17.1	4.7	8.0	6.0	2.0	1.0	1.7	.9
21	1.6	2.2	7.5	14.0	13.9	4.5	8.0	5.9	1.6	1.3	1.2	.8
22	1.6	2.4	7.6	12.8	11.5	4.7	7.4	5.8	1.5	1.2	1.3	.8
23	1.7	2.2	8.2	10.9	10.5	6.6	7.0	5.7	1.4	1.0	1.8	.7
24	1.8	2.5	8.7	9.3	10.6	6.8	6.5	4.7	1.3	.9	2.6	.6
25	2.1	2.7	9.0	8.6	12.1	6.8	6.0	4.5	1.3	1.0	2.8	.5
26	5.6	3.2	8.2	7.9	12.1	6.9	5.2	4.2	1.3	.8	3.3	.5
27	7.0	8.0	7.2	7.4	12.0	6.8	4.9	3.6	1.2	.9	4.0	.4
28	5.4	16.0	6.2	7.0	11.5	6.6	4.7	3.3	1.1	1.2	4.1	.4
29	4.4	18.0	5.5	6.9	.....	6.4	4.6	3.1	1.0	1.7	3.9	.4
30	3.7	16.0	5.1	7.6	.....	6.2	4.4	3.0	1.0	1.9	3.4	.4
31	3.2	.....	5.4	8.2	.....	5.8	.....	3.1	.....	1.8	2.8	.....
1880.												
1	.3	2.4	5.5	7.9	4.2	9.0	7.9	14.5	5.5	3.2	1.8	2.4
2	.3	2.3	4.8	7.2	4.3	8.1	7.6	14.5	5.7	3.0	1.7	2.2
3	.3	2.2	4.5	6.6	5.0	7.6	9.0	13.0	6.0	3.4	1.8	2.1
4	.3	2.0	4.0	6.0	6.2	9.3	14.5	11.7	6.2	5.3	1.9	2.4
5	.2	1.9	3.7	5.6	6.7	13.7	16.9	9.9	5.5	7.8	2.6	2.9
6	.2	1.8	3.7	5.4	6.2	17.0	15.5	8.7	5.2	6.8	2.8	3.1
7	.2	1.7	4.8	6.5	5.8	15.8	13.0	8.0	4.8	5.8	2.6	3.1
8	.2	1.6	4.8	7.8	5.4	15.6	12.3	7.5	4.4	5.6	4.3	2.9
9	.2	1.6	4.7	9.5	5.0	19.0	10.9	6.8	4.2	4.7	4.2	2.8
10	.2	1.5	4.4	10.6	4.6	24.5	9.6	6.4	4.0	4.2	4.2	2.4
11	1.3	1.6	6.9	10.0	4.4	28.0	8.6	6.0	3.7	3.9	4.6	2.8
12	1.6	2.0	14.6	9.6	4.4	28.4	8.8	5.9	3.5	3.6	3.9	3.2
13	2.2	2.1	15.0	8.9	5.4	28.7	7.8	5.8	3.5	3.3	3.7	3.7
14	1.9	2.1	12.2	8.0	12.4	28.6	7.0	5.6	3.4	3.2	3.8	3.8
15	1.7	2.1	13.8	7.6	22.9	28.6	6.5	5.4	3.2	3.0	4.3	3.5
16	1.3	2.0	17.9	7.0	26.8	31.9	8.1	5.2	3.0	2.9	3.6	3.2
17	1.3	2.1	17.8	6.5	26.8	35.0	11.1	4.8	2.9	4.4	3.7	2.9
18	1.7	2.8	15.6	6.2	19.8	38.3	12.2	4.6	2.8	3.8	3.0	2.8
19	6.4	4.3	12.4	6.0	12.0	37.6	11.5	4.3	2.8	3.8	2.8	2.2
20	13.4	4.9	9.9	5.8	9.5	35.7	10.6	4.2	2.8	2.8	2.6	2.0
21	11.0	4.6	8.0	5.6	8.6	28.0	11.3	4.2	2.7	2.4	2.4	1.8
22	9.3	4.2	7.2	5.4	7.9	21.0	11.9	4.2	2.5	2.5	3.4	1.6
23	7.4	3.4	8.6	5.6	7.4	16.6	10.6	5.1	2.4	2.6	3.6	1.4
24	5.7	3.0	17.0	5.4	6.9	13.9	9.7	5.6	2.3	2.9	3.8	1.5
25	5.7	2.7	21.2	5.2	6.4	12.0	9.0	5.8	2.3	3.2	4.0	1.4
26	4.1	2.5	21.9	4.8	6.0	10.7	10.1	7.7	2.3	3.1	4.3	1.4
27	3.8	2.3	21.6	4.6	7.5	9.7	13.0	7.4	2.2	3.0	4.6	1.5
28	3.4	2.3	17.8	4.5	9.3	9.2	14.0	6.6	2.2	2.7	4.8	2.0
29	3.0	2.9	14.4	4.3	9.2	8.8	12.6	5.9	2.2	2.4	2.8	3.1
30	2.9	4.9	11.4	4.2	.....	8.6	13.7	5.6	2.8	2.2	2.7	4.0
31	2.6	.....	9.4	4.2	.....	8.2	.....	5.6	.....	2.0	2.6	.....

Daily gage height, in feet, of Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1881.												
1	3.4	1.2	17.5	4.4	5.9	9.0	8.0	8.8	3.3	2.1	1.0	0.1
2	3.0	1.2	23.4	3.2	6.5	8.8	8.3	8.0	3.4	3.1	.9	.5
3	2.7	1.5	26.5	3.4	10.3	8.1	8.4	7.5	3.6	3.5	.8	.9
4	2.3	2.2	22.0	3.7	11.0	7.7	8.1	7.0	4.4	3.6	.7	1.1
5	2.2	2.0	15.9	4.3	10.2	7.2	7.7	6.9	4.5	3.6	.6	.9
6	1.9	2.2	15.4	6.4	8.8	7.0	7.2	7.2	4.2	3.1	.6	.
7	1.8	2.4	18.1	9.1	7.6	6.6	7.0	7.2	3.9	2.6	.8	.4
8	1.7	2.4	17.4	10.8	7.7	6.9	7.0	6.9	3.9	2.3	.9	.2
9	1.6	2.5	14.6	11.8	9.9	6.8	6.9	6.6	4.0	2.0	1.0	.1
10	1.5	2.9	11.2	11.9	13.6	6.4	7.8	6.4	5.0	1.8	1.1	.1
11	1.4	3.8	8.8	11.8	16.9	6.2	8.7	6.4	5.1	1.6	3.3	.0
12	1.4	4.2	7.5	12.6	19.7	6.1	9.9	5.8	4.6	1.4	3.0	.0
13	1.3	4.2	6.7	11.8	22.4	6.2	12.2	5.5	4.0	1.4	2.3	.0
14	1.2	4.1	6.1	11.2	21.7	6.1	15.8	5.2	3.6	1.6	2.3	.0
15	1.2	4.2	5.7	10.1	18.0	6.1	18.0	5.1	3.6	1.5	1.3	.2
16	1.0	3.7	5.5	9.7	14.7	.....	17.9	4.8	4.0	2.0	1.1	.2
17	1.2	3.4	6.0	9.3	12.0	8.9	16.0	4.6	3.9	2.0	1.0	.2
18	1.2	3.0	5.8	8.6	10.1	10.6	12.8	4.4	3.4	2.1	.6	1.4
19	1.3	2.7	7.3	8.0	10.4	13.9	10.8	4.2	3.3	2.0	1.1	5.0
20	1.2	2.4	7.2	8.6	12.4	19.3	9.7	4.1	2.8	1.8	.7	5.0
21	1.2	2.3	7.0	13.0	14.4	19.2	8.8	4.0	2.6	2.7	.8	11.5
22	1.1	2.2	6.6	17.4	14.4	15.2	8.0	3.8	2.6	2.2	.8	8.0
23	1.1	2.0	6.1	18.8	13.8	12.9	7.9	3.8	3.2	1.8	.5	5.8
24	1.0	1.8	5.8	17.4	11.2	11.4	8.0	3.9	3.0	1.4	.5	4.2
25	1.1	1.8	5.5	15.4	9.7	10.0	8.4	3.9	2.8	1.3	.6	3.4
26	1.1	1.7	5.6	11.3	8.9	9.2	9.0	4.0	2.5	1.6	.6	2.3
27	1.0	1.7	6.0	9.2	8.0	8.7	10.8	3.8	2.3	1.8	.5	2.6
28	1.0	2.3	6.0	8.0	8.7	9.0	11.8	3.6	2.2	1.7	.3	2.6
29	1.1	7.1	5.8	7.0	.....	8.8	10.5	3.4	2.2	1.7	.5	2.8
30	1.0	13.5	5.4	6.5	.....	8.3	9.0	3.3	2.2	1.4	.4	3.0
31	1.1	.....	4.6	6.1	.....	8.1	.....	3.2	.....	1.2	.2	.....
1882.												
1	2.8	6.8	5.0	15.8	29.9	13.2	11.2	6.9	8.4	4.6	4.0	5.6
2	2.7	9.8	5.0	14.1	29.4	19.1	9.9	6.5	8.8	6.0	4.3	5.9
3	2.4	9.2	6.1	11.9	20.0	22.0	8.9	6.0	10.0	6.3	4.8	6.3
4	2.2	8.4	6.1	10.1	18.2	20.0	8.4	5.6	9.1	6.1	6.2	5.4
5	1.7	6.6	5.9	8.9	22.2	17.7	7.9	5.2	8.6	5.9	6.1	5.2
6	1.3	5.3	5.8	9.4	24.4	14.8	7.4	5.0	8.0	6.9	6.3	4.8
7	1.2	4.6	5.4	13.5	23.0	13.3	7.2	5.3	7.9	6.6	6.0	4.2
8	1.1	4.6	4.9	21.5	19.6	13.4	7.4	5.2	6.5	5.6	5.4	3.8
9	1.0	4.2	4.6	26.8	18.6	15.8	8.0	5.1	5.7	4.9	4.9	4.1
10	.9	6.0	4.2	29.5	20.0	18.9	8.5	4.9	5.3	4.3	4.7	4.3
11	.9	6.2	3.8	29.8	22.7	21.1	9.7	6.2	4.9	3.9	4.4	5.4
12	.8	6.4	3.7	29.9	23.4	17.3	9.5	5.7	4.7	3.8	4.1	12.1
13	.8	6.6	3.4	30.3	23.6	15.5	8.8	5.2	4.5	3.9	3.9	21.8
14	.8	6.8	4.3	30.6	22.0	14.8	9.2	6.8	4.7	4.2	3.7	22.8
15	.7	6.6	11.8	30.3	20.5	13.5	7.6	5.9	5.0	5.0	3.4	17.2
16	.7	5.9	17.4	30.2	21.3	11.2	7.2	5.7	4.8	6.5	3.2	10.8
17	.6	5.2	16.8	33.6	22.0	9.9	7.0	5.3	4.7	5.9	3.2	7.7
18	.6	4.6	15.3	37.6	20.5	10.1	6.5	5.3	5.7	4.8	4.0	6.4
19	.5	4.0	12.0	40.2	18.2	11.5	6.1	5.0	7.9	4.1	5.2	5.5
20	.6	3.7	8.8	40.1	16.7	10.2	5.8	4.6	8.1	4.0	5.1	4.8
21	.5	3.4	7.9	39.2	15.5	9.8	5.6	4.5	7.2	4.3	4.6	4.4
22	.4	3.2	15.4	38.8	14.3	9.9	5.5	5.1	6.4	4.3	3.8	4.5
23	.8	3.4	20.2	38.8	13.6	9.8	8.1	5.6	6.0	4.2	3.2	4.0
24	1.0	6.0	18.4	37.7	12.7	9.8	10.2	5.7	6.1	4.0	2.8	3.8
25	1.0	9.8	15.6	34.5	11.6	9.4	10.1	5.8	6.2	3.7	2.5	3.6
26	.9	9.7	14.8	27.3	10.6	8.8	9.5	5.6	6.3	3.4	2.4	3.4
27	1.1	10.0	14.2	18.2	9.7	8.7	9.0	6.8	6.1	3.3	2.8	3.2
28	1.2	8.6	14.9	14.8	9.3	10.4	8.2	6.6	5.1	3.4	3.0	3.0
29	1.3	6.5	15.7	21.2	.....	13.3	7.7	7.5	5.0	3.6	3.8	2.9
30	2.0	5.6	16.9	29.5	.....	13.6	7.2	8.7	4.7	3.7	4.2	2.9
31	3.1	.....	16.6	30.3	.....	12.6	.....	8.7	.....	3.4	4.7	.....

Daily gage height, in feet, of Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1883.												
1	3.0	2.4	4.7	4.5	9.4	7.9	15.1	11.0	3.8	4.1	1.5	1.5
2	2.8	2.7	4.2	4.4	9.0	7.3	24.2	10.3	3.8	4.0	1.4	1.3
3	2.8	2.9	3.7	4.1	8.1	6.9	26.2	9.2	3.5	3.6	1.5	1.1
4	2.7	2.7	3.3	3.8	7.6	6.6	23.6	8.4	3.3	3.3	1.6	.9
5	2.6	2.5	3.0	3.9	7.5	6.2	16.8	7.8	3.2	3.0	1.9	.8
6	2.6	2.2	2.8	4.5	7.8	6.0	12.7	7.3	3.4	2.9	1.6	.7
7	2.5	2.0	2.7	7.4	9.4	6.5	13.8	6.9	3.7	2.7	1.5	.6
8	2.4	1.9	2.5	11.3	10.9	8.3	16.2	6.6	4.8	2.7	1.7	.5
9	2.2	1.8	2.2	12.8	14.8	9.7	17.0	6.2	5.4	2.8	2.0	.4
10	2.2	1.8	2.2	12.4	17.6	9.8	16.9	6.0	5.3	2.9	1.9	.4
11	2.0	1.7	2.3	11.3	16.4	9.3	17.0	5.9	5.1	2.9	1.6	.3
12	1.9	1.7	3.7	9.4	14.5	8.5	17.4	5.9	4.7	3.2	1.3	.2
13	1.8	1.8	3.4	8.3	13.3	8.2	18.3	5.8	5.6	4.0	1.2	.2
14	1.8	2.0	3.3	9.5	13.5	7.9	18.7	5.6	6.0	4.0	1.3	.1
15	1.8	2.7	3.4	14.4	13.1	7.1	17.2	5.4	6.9	3.6	1.4	.1
16	1.8	2.8	3.3	16.6	11.8	6.7	15.0	5.4	6.5	3.5	1.5	.1
17	1.8	2.7	3.1	15.8	10.8	6.4	14.0	5.4	5.8	3.2	2.4	.1
18	1.7	2.6	2.9	17.0	10.0	6.1	15.1	5.2	5.0	2.8	2.3	.1
19	1.8	2.4	2.5	19.8	9.9	5.8	15.6	4.9	4.5	3.0	2.6	.0
20	2.0	2.2	2.6	22.6	10.4	5.6	14.7	4.8	4.1	2.8	2.5	.1
21	2.9	2.3	3.4	30.1	10.4	5.5	12.6	4.5	3.7	2.3	2.1	.2
22	4.3	2.6	4.4	35.2	9.8	5.4	11.1	4.5	3.6	2.1	1.8	.5
23	4.0	2.6	6.7	38.2	9.1	5.2	17.6	4.5	3.5	1.8	1.6	.7
24	3.4	2.5	9.1	37.9	8.8	5.0	26.8	4.6	3.8	1.6	1.4	1.7
25	3.2	2.2	10.0	33.0	9.2	5.0	31.4	4.5	4.6	1.6	1.4	2.0
26	2.7	2.0	9.2	22.2	9.3	5.8	32.5	4.4	4.2	1.6	1.3	1.9
27	2.2	2.0	8.1	13.7	9.1	6.3	28.6	4.3	3.9	1.8	1.7	2.3
28	2.1	2.1	7.1	11.0	8.4	6.3	19.8	4.3	4.2	2.0	1.3	2.5
29	2.0	3.1	5.9	10.0	.....	6.4	13.8	4.3	4.1	1.8	1.3	2.2
30	1.9	4.2	5.3	9.7	.....	6.3	11.9	4.0	4.2	1.5	1.5	1.9
31	2.0	.....	4.9	9.6	.....	7.4	.....	3.9	.....	1.4	1.6	.....
1884.												
1	1.5	3.3	4.3	6.6	11.5	9.5	11.5	10.1	4.1	8.3	6.1	3.2
2	1.2	3.5	3.9	6.4	19.5	9.1	10.6	9.2	3.9	7.3	9.8	2.7
3	1.6	3.1	3.5	6.1	24.6	8.6	10.1	8.9	3.8	6.8	7.2	2.2
4	1.3	2.7	3.1	5.9	25.5	8.2	9.9	9.0	3.8	7.0	5.5	2.0
5	1.4	2.1	2.9	5.5	20.4	7.9	9.4	8.9	3.5	6.7	6.0	1.7
6	1.8	1.8	2.7	5.1	13.7	15.4	8.8	10.2	3.4	6.5	5.1	1.5
7	1.7	1.6	2.5	4.5	13.3	29.3	8.2	11.4	5.0	6.5	4.0	1.3
8	2.8	1.4	2.5	3.9	21.7	36.7	9.0	10.5	5.4	6.0	3.5	1.2
9	6.1	1.4	3.0	3.5	30.4	40.9	8.5	9.4	5.4	5.8	3.2	1.3
10	4.8	1.3	3.6	3.4	35.1	42.8	7.3	8.4	5.2	5.0	3.1	1.5
11	3.7	1.4	4.1	3.6	36.8	42.3	7.0	7.9	5.9	4.9	3.2	1.6
12	2.8	1.8	3.7	5.1	36.4	40.2	6.8	7.0	7.3	5.1	3.5	1.5
13	2.3	2.6	3.6	8.7	34.0	37.3	6.5	6.9	8.4	5.9	3.5	1.5
14	1.8	3.3	3.3	9.4	31.0	35.7	6.6	6.4	8.6	5.6	3.4	1.3
15	1.6	3.4	3.2	10.0	29.6	33.6	9.5	6.2	8.8	5.0	3.2	1.2
16	1.3	2.9	3.3	12.0	28.7	30.2	14.5	6.0	8.5	4.8	3.1	1.1
17	1.1	2.5	3.5	12.9	26.7	24.9	16.9	5.8	7.0	4.2	2.8	1.0
18	1.1	2.2	3.2	12.1	25.1	19.9	15.1	5.5	6.3	3.8	2.5	1.0
19	1.0	2.1	3.2	12.4	25.5	17.6	13.1	5.2	6.0	4.2	2.2	1.0
20	.9	1.8	3.8	13.8	27.0	18.6	11.2	5.2	5.3	4.2	2.0	.9
21	.9	1.6	5.1	14.8	26.9	22.4	10.0	4.9	4.7	4.0	1.9	.9
22	.9	2.1	5.5	13.7	23.2	25.8	11.4	5.0	4.2	3.5	2.0	.8
23	.9	6.2	5.3	12.0	18.7	27.6	13.6	5.0	4.1	3.2	1.9	.8
24	1.2	9.9	5.7	11.0	15.7	27.1	13.8	4.7	4.2	2.9	2.0	.8
25	1.5	10.9	7.0	11.2	13.3	24.0	15.1	4.8	4.1	2.6	2.2	.7
26	1.8	9.3	10.7	10.8	11.7	21.0	15.4	4.8	4.2	2.8	2.2	.7
27	1.5	7.6	12.8	9.3	10.3	20.5	13.6	4.8	5.0	3.0	2.0	.7
28	1.3	6.1	13.0	8.6	9.8	19.9	12.1	5.4	10.8	3.2	1.8	.6
29	1.5	5.3	10.3	7.9	9.6	19.2	11.6	5.2	11.4	3.9	1.8	.6
30	1.7	4.8	7.9	7.5	.....	16.0	11.4	4.6	10.0	4.1	1.9	.6
31	2.2	.....	7.0	7.5	.....	13.1	.....	4.3	.....	3.9	2.1	.....

Daily gage height, in feet, of Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1885.												
1	0.6	1.2	1.5	3.6	7.9	8.5	6.3	4.6	18.6	5.5	3.1	1.5
2	.7	1.2	1.5	3.7	7.2	8.1	6.1	4.5	16.9	4.7	3.0	1.6
3	.7	1.1	1.3	3.9	6.9	7.9	5.9	4.5	12.8	4.0	2.8	1.8
4	.6	1.1	1.2	3.9	6.7	7.8	5.9	4.5	9.5	3.6	2.9	1.8
5	.5	1.0	1.1	3.6	6.4	7.8	6.0	4.5	7.7	3.5	3.1	1.6
6	.5	1.0	1.1	3.9	6.3	7.5	6.4	4.3	6.6	3.7	3.5	1.4
7	.5	1.0	1.1	5.5	6.3	6.9	6.0	4.2	5.8	5.0	3.2	1.4
8	.4	1.0	1.2	6.8	6.5	6.3	5.8	4.0	5.8	5.4	2.9	1.5
9	.4	1.0	1.8	6.9	6.8	5.9	5.6	5.6	5.4	4.3	2.9	1.5
10	.4	.8	2.1	6.6	7.7	5.6	5.4	6.0	5.4	3.9	3.2	1.5
11	.4	.7	2.3	6.1	8.8	5.3	5.2	5.8	5.4	3.6	2.9	1.4
12	.3	.7	2.2	9.2	9.6	5.0	5.0	5.6	5.1	3.5	2.5	1.3
13	.3	.7	2.0	16.0	9.4	5.1	4.8	5.0	4.8	3.0	2.5	1.2
14	.3	.7	2.3	17.6	9.0	5.6	4.6	4.6	4.6	3.2	3.4	1.2
15	.2	.7	3.7	14.8	7.9	7.0	4.4	4.3	4.3	3.4	3.8	1.1
16	.2	.7	4.1	16.0	7.3	7.4	4.2	4.0	4.0	3.7	4.4	1.1
17	.2	.6	4.5	22.5	6.8	8.6	4.1	3.8	4.0	4.5	4.2	1.0
18	.2	.7	4.2	26.5	6.6	9.2	4.5	3.7	4.2	4.4	3.6	1.0
19	.2	.7	4.1	24.5	6.0	8.6	6.4	3.5	4.7	3.7	3.2	.9
20	.2	.8	3.6	18.4	6.0	7.8	12.7	3.4	4.6	3.1	2.8	.7
21	.2	1.0	3.5	14.4	5.8	7.1	15.5	3.5	4.6	2.8	2.6	1.8
22	.2	1.0	9.0	10.4	5.4	6.7	10.8	4.5	4.1	2.9	2.2	2.2
23	.2	1.0	12.6	8.3	5.0	6.2	8.0	4.6	4.0	2.9	2.1	2.2
24	.3	.9	12.5	8.4	5.0	6.0	6.8	5.0	4.0	2.9	1.9	2.2
25	.4	.9	10.7	11.4	6.0	5.7	6.0	5.6	3.8	2.8	1.8	1.9
26	.6	1.3	9.8	15.6	7.6	5.4	5.6	6.2	3.5	2.8	1.7	1.9
27	.7	1.8	7.0	14.9	8.4	5.2	5.2	6.8	3.4	2.8	1.6	1.6
28	.8	1.7	5.6	13.4	8.5	5.1	5.0	8.0	3.6	3.1	1.4	1.4
29	.8	1.8	4.8	11.8	.....	5.2	4.8	8.3	4.4	3.4	1.4	1.3
30	1.0	1.5	4.2	10.1	.....	5.8	4.7	10.3	4.9	3.8	1.3	1.5
31	1.0	.....	3.8	8.8	.....	6.3	.....	14.0	.....	3.4	1.3	.....
1886.												
1	2.7	16.2	5.0	5.1	10.0	10.0	47.1	6.4	7.6	7.0	4.4	3.4
2	8.6	14.0	4.6	5.2	9.3	9.4	51.0	6.5	7.8	6.8	4.2	3.3
3	7.6	11.0	5.3	8.1	8.5	9.0	52.2	6.7	8.3	9.8	5.0	3.3
4	6.1	8.2	5.8	18.0	8.0	7.5	50.3	6.7	8.0	11.6	5.6	3.2
5	5.0	6.8	6.0	22.1	7.6	7.0	45.6	7.3	8.0	11.3	6.0	3.2
6	4.6	6.5	5.8	21.8	7.2	6.8	41.4	7.8	8.3	11.0	6.6	3.2
7	3.7	11.0	5.7	20.3	7.0	6.2	39.7	8.9	8.2	12.5	7.0	3.0
8	3.0	25.0	5.4	19.5	6.2	6.0	39.3	9.0	8.0	13.0	7.1	2.9
9	2.7	30.4	6.0	14.5	5.8	5.8	38.2	9.3	9.0	13.6	6.7	2.7
10	2.3	29.0	8.7	12.3	5.5	5.5	33.9	10.0	10.1	13.8	6.4	2.6
11	2.1	25.7	10.8	8.8	6.8	5.4	24.0	10.5	10.6	11.0	6.0	2.5
12	2.0	18.4	8.2	.....	9.0	5.0	16.4	10.8	13.0	10.0	5.8	2.5
13	2.3	12.5	8.4	.....	12.6	5.2	13.9	9.5	13.6	9.4	5.5	2.5
14	3.6	9.7	15.8	.....	13.1	5.4	12.0	8.8	14.0	9.0	5.4	2.4
15	6.1	8.6	20.8	5.2	11.6	5.8	10.5	8.2	12.0	8.6	5.0	2.8
16	6.1	7.6	21.4	7.3	10.6	6.0	9.8	7.8	10.5	8.2	4.8	3.0
17	5.0	6.9	19.4	9.9	9.4	5.8	9.0	6.4	10.3	8.0	4.8	3.1
18	4.1	6.4	18.0	12.4	8.5	5.5	8.9	6.0	10.6	7.7	4.6	3.0
19	3.6	6.0	11.2	12.6	8.0	5.4	8.5	5.7	11.2	7.4	4.5	2.9
20	3.8	5.9	10.2	12.7	7.2	5.0	8.3	7.6	10.8	7.0	4.4	2.8
21	3.1	5.6	9.1	12.8	6.8	8.4	8.1	8.3	10.6	6.5	4.3	2.6
22	4.4	5.4	7.4	12.9	6.5	12.4	7.8	9.8	12.2	6.1	4.1	2.4
23	3.3	5.4	6.1	14.0	6.2	14.5	7.4	10.5	16.0	5.8	4.0	2.3
24	3.3	6.0	6.4	15.0	6.0	14.3	6.9	9.0	14.0	5.5	4.0	2.3
25	2.8	6.0	6.2	14.4	5.8	11.9	6.7	8.4	12.8	5.4	4.5	2.2
26	2.7	5.8	6.1	13.8	6.8	9.2	6.5	8.8	11.6	5.2	5.2	2.1
27	2.4	5.2	5.9	12.5	7.4	8.5	6.4	9.2	9.6	5.0	4.4	2.0
28	2.4	4.8	5.8	12.4	10.0	11.8	6.4	8.8	8.5	4.9	3.8	2.0
29	4.6	4.8	5.4	11.6	.....	17.0	6.1	8.4	8.0	4.7	3.6	2.0
30	9.9	4.4	5.1	10.4	.....	30.5	6.0	8.2	7.2	4.6	3.5	2.0
31	15.5	.....	5.0	10.3	.....	40.5	.....	7.8	.....	4.6	3.5	.....

Daily gage height, in feet, of Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1887.												
1	1.9	1.7	6.5	11.0	16.2	27.3	5.2	6.6	6.8	3.6	3.6	4.0
2	1.9	1.6	5.6	10.5	12.7	20.0	5.2	6.2	8.0	3.5	3.4	3.4
3	1.8	1.5	5.0	10.0	10.3	17.1	5.1	6.0	9.1	3.4	3.3	3.0
4	1.8	1.5	4.8	9.0	14.1	14.5	5.0	5.8	9.5	3.4	3.5	2.8
5	1.8	1.4	4.5	8.2	19.0	11.2	5.0	5.7	9.4	3.4	8.4	2.6
6	1.8	1.4	4.5	7.5	21.0	9.2	5.0	5.6	9.3	3.3	10.6	2.4
7	1.8	1.4	5.1	7.0	21.8	8.0	5.0	5.6	10.1	3.7	9.1	2.2
8	1.7	1.4	5.2	6.4	15.2	7.4	5.0	5.6	10.4	4.6	8.2	2.2
9	1.6	1.6	5.2	6.0	11.9	16.0	4.9	5.9	9.7	5.4	7.7	2.1
10	1.6	1.5	4.6	5.8	10.9	21.7	4.9	5.5	9.5	5.6	6.3	2.0
11	1.6	1.4	4.2	5.6	9.7	24.0	4.9	5.4	8.9	5.0	5.7	2.0
12	1.6	1.4	4.0	5.3	9.7	19.4	4.8	5.4	8.5	4.4	5.0	1.8
13	1.6	1.4	7.0	5.0	9.2	14.3	4.8	5.3	7.0	3.8	4.5	1.7
14	1.5	1.4	8.2	5.0	8.6	10.3	4.7	5.3	5.9	3.1	4.2	1.7
15	1.4	1.8	9.0	5.5	9.0	9.8	4.7	5.2	5.5	2.8	3.9	1.6
16	1.4	2.0	9.6	6.2	12.8	8.9	4.6	5.1	5.2	2.5	3.8	1.5
17	1.4	2.4	11.6	6.8	13.4	8.0	4.6	5.0	5.0	2.3	3.6	1.5
18	1.4	2.8	10.1	7.0	12.4	7.5	4.5	5.0	4.9	2.0	3.6	1.4
19	1.3	5.2	9.0	6.5	11.5	7.0	4.4	4.8	4.8	2.0	4.1	1.3
20	1.3	6.5	14.0	6.1	10.6	6.6	4.3	4.7	4.6	1.9	4.1	1.4
21	1.3	7.5	16.0	5.7	17.0	6.2	4.2	4.7	4.5	2.1	4.3	1.4
22	1.3	6.0	16.6	5.4	19.0	5.9	4.2	4.6	4.5	2.2	4.0	1.4
23	1.2	7.0	11.2	5.1	17.8	5.6	10.0	4.6	4.5	2.6	3.8	1.4
24	1.2	10.6	8.6	13.0	19.0	6.4	15.2	4.6	4.7	3.2	3.7	1.4
25	1.2	12.6	7.0	19.6	23.2	6.1	18.0	5.2	4.8	3.4	3.3	1.3
26	1.2	13.0	6.6	21.8	25.3	5.8	20.0	5.8	4.6	3.2	3.3	1.4
27	1.3	13.4	6.9	20.8	26.8	5.6	21.2	6.0	4.5	3.2	3.6	1.5
28	1.7	13.7	7.9	17.4	27.3	5.5	16.0	6.0	4.0	3.4	4.8	1.9
29	2.0	11.0	10.0	14.0	.....	5.4	11.0	5.5	3.8	3.4	5.8	2.2
30	2.0	10.0	10.6	13.8	.....	5.3	7.3	5.1	3.7	3.5	5.4	2.4
31	1.8	.....	10.7	15.3	.....	5.2	.....	5.0	.....	3.6	4.6	.....
1888.												
1	3.1	3.0	1.7	8.0	5.4	8.0	23.6	4.6	8.3	7.1	2.0	3.5
2	3.4	2.7	1.6	14.5	5.3	7.0	18.1	4.6	8.4	6.0	2.6	6.0
3	3.7	2.4	1.6	14.7	5.2	6.4	14.2	4.6	9.2	5.0	2.4	7.9
4	3.5	2.3	1.6	11.5	5.4	6.0	11.2	4.3	7.9	4.4	2.4	7.0
5	2.8	2.2	1.6	9.7	6.2	5.9	10.1	4.2	7.0	4.0	2.6	6.6
6	2.4	2.1	1.6	8.1	6.8	5.7	8.9	4.2	6.0	3.7	2.8	6.5
7	2.0	2.0	1.7	6.8	7.0	5.5	8.1	4.1	5.4	3.8	3.3	7.5
8	1.7	2.0	1.8	6.1	7.2	5.3	8.1	4.0	5.0	3.8	2.9	7.4
9	1.6	1.9	2.1	5.8	7.5	5.0	8.1	4.1	4.6	3.7	2.8	9.6
10	1.5	1.9	3.2	7.4	8.3	4.9	11.0	4.5	4.4	3.7	2.6	9.4
11	1.5	2.0	3.9	10.2	9.4	5.4	19.7	4.9	4.4	3.5	2.5	9.1
12	1.4	2.0	3.6	10.9	10.9	5.5	22.4	5.0	4.2	3.4	2.9	9.0
13	1.4	2.2	3.6	11.2	11.2	5.9	18.4	5.1	4.0	3.8	3.0	11.2
14	1.3	2.3	4.1	13.2	10.3	5.1	13.9	4.9	4.0	3.7	2.8	10.5
15	1.2	2.1	3.9	14.5	9.5	5.7	11.2	4.9	4.1	3.7	2.8	9.7
16	1.2	2.0	3.6	13.1	9.0	5.6	9.5	4.8	4.0	3.5	2.9	6.0
17	1.2	1.9	3.5	14.9	8.4	5.3	8.4	4.5	4.0	3.1	2.7	8.6
18	1.3	1.9	4.1	21.4	7.5	5.1	7.6	4.4	3.9	3.1	2.2	11.3
19	1.3	1.9	3.9	25.7	6.8	4.9	7.2	4.8	3.8	3.0	2.0	11.5
20	1.4	1.8	3.9	24.8	6.4	4.8	6.9	5.0	3.7	3.5	2.0	10.7
21	1.5	1.8	3.8	20.2	6.6	5.2	6.4	5.0	3.6	2.8	2.2	9.0
22	1.6	1.6	3.8	14.6	6.6	5.7	6.0	5.1	3.6	3.0	2.7	7.4
23	1.6	1.5	3.6	11.0	6.4	6.4	5.8	5.0	3.7	3.0	4.9	6.6
24	1.7	1.5	3.4	9.2	6.3	6.6	5.6	7.8	3.6	3.0	6.2	7.6
25	2.0	1.4	3.9	7.8	9.4	7.2	5.4	9.6	3.4	2.4	5.0	7.1
26	2.7	1.4	3.6	7.4	11.2	11.6	5.1	9.6	3.6	2.6	4.2	6.5
27	3.9	1.4	3.7	7.0	11.1	22.6	5.0	8.8	2.8	2.0	3.4	5.5
28	4.7	1.6	4.1	6.6	9.9	22.5	4.8	7.4	3.9	1.9	3.0	4.9
29	4.3	1.6	4.9	6.1	8.8	19.8	4.7	7.6	6.8	1.8	3.2	4.5
30	3.9	1.6	5.5	5.9	.....	24.5	4.6	7.8	7.5	2.0	2.4	4.0
31	3.4	.....	5.4	5.6	.....	27.0	.....	8.1	.....	2.0	2.6	.....

Daily gage height, in feet, of Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1889.												
1	3.8	8.4	5.5	5.5	14.6	7.7	4.7	4.6	7.6	5.0	7.6	4.2
2	3.5	6.5	5.3	5.8	13.5	7.2	5.1	4.4	8.0	5.2	8.3	4.0
3	3.4	7.4	5.1	5.6	12.8	6.9	5.5	4.5	12.4	5.6	9.7	3.8
4	3.3	7.1	4.9	6.2	11.6	6.9	5.4	4.6	11.2	6.0	10.1	3.9
5	3.1	6.7	4.7	6.3	10.5	7.6	5.1	4.5	7.8	6.8	10.1	4.0
6	4.0	6.4	4.5	8.5	9.8	7.8	4.9	4.9	7.3	8.2	9.3	6.2
7	3.2	5.9	4.4	9.4	8.9	7.3	4.6	5.0	5.6	8.0	9.2	6.9
8	2.8	5.4	4.2	10.4	7.6	6.8	4.1	4.6	5.1	7.0	8.6	5.7
9	4.6	5.8	4.0	11.3	7.5	6.3	3.9	4.2	4.7	5.9	7.4	4.6
10	5.3	13.6	4.3	12.2	8.1	5.8	3.6	3.9	4.5	5.2	6.7	4.1
11	5.7	20.9	4.5	12.4	8.8	5.4	3.3	3.7	4.4	4.6	5.7	4.0
12	5.8	21.0	4.7	11.8	8.7	4.9	3.3	3.6	4.2	4.0	5.1	3.7
13	6.0	18.5	4.9	10.9	8.0	4.5	3.2	3.4	5.0	4.0	5.0	3.6
14	4.2	17.5	5.1	9.1	6.8	4.0	3.9	3.3	5.8	3.8	5.6	3.2
15	5.5	18.0	5.6	8.1	6.2	3.7	4.6	3.2	7.2	4.2	5.6	3.0
16	5.7	15.8	5.1	7.5	6.6	3.3	5.6	3.4	10.0	5.1	6.6	2.7
17	5.3	15.4	4.2	7.9	20.0	3.2	6.4	3.3	10.6	5.3	7.4	2.4
18	4.8	15.0	4.3	8.9	29.6	3.5	7.4	3.4	10.4	6.0	6.5	7.6
19	4.4	16.1	4.5	9.6	29.2	5.9	7.9	3.8	10.7	5.8	6.4	8.0
20	4.2	16.6	4.8	10.6	27.2	7.3	8.2	3.6	10.3	5.2	5.6	7.2
21	4.0	10.8	5.5	11.3	29.0	8.9	8.1	3.4	9.0	4.6	4.9	6.4
22	4.2	10.0	6.6	12.0	27.1	9.5	7.8	3.2	8.2	4.4	4.4	4.8
23	4.9	8.6	6.9	12.3	21.0	9.3	7.2	3.0	7.4	4.0	4.1	4.3
24	5.2	7.9	6.1	12.2	16.0	8.7	5.6	2.8	6.4	3.8	3.8	4.8
25	7.6	7.2	5.7	9.8	10.1	8.0	4.1	2.8	5.6	3.6	4.3	7.4
26	10.7	7.0	5.1	8.5	8.5	7.4	4.0	2.7	4.8	3.5	4.3	7.4
27	13.4	6.6	4.6	9.2	8.3	6.9	4.0	2.7	4.0	3.6	4.5	6.7
28	20.0	6.1	4.2	10.2	8.0	6.5	3.9	2.7	4.0	4.8	4.5	6.8
29	18.5	5.9	4.7	11.6	.....	5.8	4.1	2.8	3.9	7.5	4.2	6.4
30	15.5	5.7	4.7	13.0	.....	5.1	4.4	3.0	5.2	9.0	4.1	5.5
31	11.5	.....	4.5	14.0	.....	4.6	.....	3.5	.....	9.2	4.3	.....
1890.												
1	4.8	2.7	7.7	4.9	8.0	40.2	10.0	7.5	6.1	3.2	5.8	7.6
2	4.5	2.7	7.6	5.2	7.3	42.5	9.8	7.1	5.6	2.9	5.2	5.6
3	4.3	2.8	7.4	5.1	7.3	41.0	9.4	6.7	5.3	2.9	4.7	5.7
4	3.9	4.7	6.6	5.0	7.4	34.4	9.7	6.8	5.3	3.0	4.7	4.0
5	3.6	4.3	6.0	5.0	7.2	23.0	12.2	7.0	5.2	3.0	4.8	3.6
6	3.3	5.4	5.6	4.8	7.8	15.1	14.0	7.5	5.3	3.0	4.5	3.2
7	3.1	4.8	5.4	4.7	8.3	14.2	13.6	8.9	5.2	3.0	5.2	3.6
8	2.8	4.8	5.2	4.6	11.5	14.4	13.4	9.1	4.9	2.9	5.7	3.2
9	2.7	6.6	5.0	4.7	19.3	12.8	11.9	8.7	4.7	2.8	6.6	2.8
10	2.6	8.9	4.9	4.9	20.4	11.2	10.5	8.7	4.5	2.7	7.5	2.8
11	2.5	11.3	4.7	4.7	17.8	10.0	9.6	8.1	4.5	2.7	7.2	3.0
12	2.4	10.0	4.6	4.6	14.7	9.2	8.7	7.7	4.4	3.0	6.3	3.4
13	2.4	8.7	4.4	4.6	12.0	8.6	8.0	7.2	4.0	2.7	5.8	3.6
14	2.3	9.1	4.3	4.9	10.0	8.7	7.5	6.7	3.9	2.5	5.2	4.6
15	2.2	9.5	4.2	4.6	9.8	9.7	7.1	6.6	4.0	2.3	4.8	4.0
16	2.2	8.7	4.0	5.4	9.6	13.7	6.9	7.8	4.1	2.1	4.2	4.0
17	2.3	8.5	3.9	7.2	9.0	15.1	7.1	9.3	4.0	2.0	3.8	3.7
18	2.3	10.3	3.8	9.2	9.3	14.9	9.4	8.6	3.9	3.2	3.7	4.0
19	2.3	10.5	3.7	8.2	8.5	13.0	16.6	7.9	3.7	4.7	3.3	5.3
20	2.2	10.9	3.6	7.5	7.8	11.7	20.4	8.8	3.6	4.7	3.1	3.7
21	2.2	11.3	3.6	7.0	7.3	12.4	18.2	10.7	3.7	4.1	2.6	3.7
22	2.1	9.9	3.5	9.6	7.1	14.0	14.3	11.9	3.8	3.5	2.5	5.8
23	2.2	9.5	3.5	13.0	7.2	20.0	11.3	11.9	3.7	3.2	3.8	3.5
24	2.1	10.3	3.8	12.3	7.4	25.5	9.6	11.6	3.8	3.2	4.0	3.3
25	2.2	10.0	4.0	11.7	12.1	27.2	8.7	9.2	4.0	4.1	3.3	3.4
26	2.3	9.5	4.0	10.0	18.7	26.0	8.4	7.8	4.0	5.9	3.8	4.0
27	2.4	8.0	3.8	8.3	26.4	21.4	8.4	7.4	3.9	7.5	3.6	4.3
28	2.4	7.4	3.7	7.3	34.8	15.4	8.5	8.0	3.9	7.7	3.0	4.0
29	2.4	7.4	3.6	6.6	.....	13.0	8.4	8.1	3.5	7.0	3.8	3.8
30	2.6	7.9	4.4	7.7	.....	11.9	8.1	7.4	3.1	6.3	5.4	5.3
31	2.8	.....	4.8	8.3	.....	10.7	.....	6.8	.....	6.2	6.5	.....

Daily gage height, in feet, of Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1891.												
1	9.4	6.8	2.4	7.7	9.8	18.6	15.4	5.9	5.8	3.9	8.3	5.4
2	8.1	6.6	2.4	7.8	13.2	17.5	16.3	5.7	5.6	3.8	10.3	4.7
3	7.7	5.7	2.3	9.9	16.1	15.6	16.3	5.6	5.3	3.6	15.1	4.3
4	7.2	5.3	2.3	14.1	19.8	13.3	15.7	5.5	4.8	3.6	16.4	4.2
5	6.4	5.0	2.3	15.5	22.6	15.4	15.1	5.2	4.4	3.6	12.0	5.1
6	5.7	4.6	2.5	15.2	21.6	20.0	12.6	5.1	4.1	3.6	8.7	5.1
7	5.2	4.4	2.8	10.4	18.3	23.6	11.6	4.9	3.9	3.4	6.9	5.2
8	5.2	4.3	2.9	8.2	16.9	29.1	10.8	4.7	4.1	3.2	5.8	5.2
9	5.5	4.0	7.1	7.1	14.5	34.5	9.8	4.6	4.6	3.3	5.1	5.8
10	5.3	3.9	8.1	6.3	21.0	37.5	9.6	4.5	4.7	4.5	4.6	4.9
11	4.8	3.8	8.2	6.5	27.8	38.9	9.8	4.4	5.5	5.1	4.4	4.4
12	4.6	3.6	7.7	8.9	34.3	37.6	9.9	4.3	7.0	4.4	4.0	3.9
13	4.4	3.5	7.4	10.7	36.5	33.5	10.6	4.2	6.5	3.9	4.0	3.6
14	4.2	3.4	6.4	10.0	37.5	27.0	11.3	4.1	5.7	3.5	3.9	3.5
15	3.9	3.3	3.7	9.2	35.5	22.2	12.2	4.2	5.5	3.1	3.8	3.5
16	3.7	3.2	4.2	7.3	29.0	19.8	10.8	4.2	5.7	2.9	3.6	3.5
17	3.7	3.2	3.9	7.8	21.1	18.1	9.4	4.5	5.8	2.8	3.5	3.5
18	3.7	3.0	3.9	7.5	19.7	15.3	8.4	4.7	6.1	2.7	3.4	3.2
19	4.2	3.2	4.0	7.5	18.2	13.5	8.2	4.7	6.8	4.1	3.0	2.9
20	4.0	3.1	4.0	7.6	16.5	12.3	7.9	4.6	7.3	5.0	3.0	2.7
21	4.0	3.1	3.9	7.3	15.5	11.3	7.9	4.5	6.8	4.5	3.4	2.6
22	3.8	3.1	3.9	8.2	18.8	10.8	7.6	4.3	6.8	4.0	4.0	2.5
23	5.3	2.9	3.9	12.5	24.0	10.7	7.4	4.1	6.5	3.8	4.6	2.4
24	7.2	2.8	3.9	15.3	27.7	10.8	7.4	4.0	7.1	3.6	5.5	2.3
25	8.8	2.8	4.3	14.0	29.0	10.6	7.5	3.8	7.4	3.5	5.6	2.2
26	9.2	2.7	4.6	13.6	26.7	10.4	7.5	3.9	7.6	3.5	7.7	2.2
27	9.5	2.6	9.4	11.2	20.6	10.5	7.4	4.0	6.2	3.5	8.2	2.1
28	8.6	2.6	12.5	9.7	19.0	14.1	7.2	4.1	4.9	3.6	8.1	2.0
29	7.6	2.5	12.9	7.9	.....	13.6	6.5	4.1	4.3	3.7	7.0	1.9
30	7.1	2.4	12.4	7.9	.....	13.0	6.2	4.7	4.1	3.8	6.4	1.9
31	7.0	.....	9.3	8.9	.....	13.1	.....	5.3	.....	5.7	6.1	.....
1892.												
1	1.8	1.3	3.7	6.6	6.5	5.7	9.1	8.7	5.6	6.6	4.2	2.1
2	1.9	1.3	3.2	6.6	6.2	5.6	8.3	8.2	5.4	5.6	4.1	1.8
3	1.9	1.3	2.9	8.1	6.0	5.5	7.4	7.6	5.5	5.5	4.2	1.7
4	1.8	1.2	2.8	8.8	5.8	5.3	6.8	7.3	5.8	5.4	4.0	1.5
5	1.8	1.2	5.6	8.7	5.5	5.1	6.5	7.4	8.8	6.6	4.1	1.3
6	1.7	1.2	6.1	8.4	5.4	5.0	8.5	7.0	9.2	8.9	4.9	2.2
7	1.7	1.2	6.6	9.0	5.3	4.9	21.7	6.6	9.3	11.2	4.2	2.1
8	1.6	1.2	8.6	9.8	5.8	5.0	31.6	6.3	8.7	11.8	3.8	2.0
9	1.7	1.2	10.8	10.0	8.1	6.0	34.2	6.2	8.6	10.1	3.5	2.0
10	1.7	1.2	10.9	9.3	11.5	7.1	34.3	5.9	8.3	8.6	3.3	1.9
11	1.8	1.5	10.2	8.1	11.3	8.0	31.0	5.5	7.8	9.0	3.3	2.0
12	1.8	1.7	8.5	8.3	10.5	7.9	26.6	5.7	8.0	9.5	3.1	1.8
13	1.7	2.7	6.8	11.2	8.9	7.6	18.0	5.7	8.1	9.4	3.5	2.1
14	1.7	3.6	5.7	22.9	7.7	7.6	12.9	5.5	7.8	8.9	3.6	2.1
15	1.7	4.1	5.1	32.9	7.2	6.8	11.7	5.3	6.0	8.7	3.7	2.1
16	1.6	3.5	5.0	37.1	7.4	6.2	10.9	5.2	5.3	8.5	3.5	3.1
17	1.6	2.8	5.2	37.9	8.0	5.9	10.0	5.1	4.8	8.4	3.1	4.5
18	1.5	2.5	5.3	35.2	7.9	6.5	9.4	4.8	4.4	8.1	2.9	4.1
19	1.5	2.4	4.8	26.3	7.5	7.5	8.8	5.1	4.4	7.5	2.8	3.5
20	1.5	2.5	4.5	18.7	7.7	8.2	12.3	5.5	4.3	7.2	2.8	3.0
21	1.5	2.3	4.2	19.0	7.9	8.2	16.2	6.1	7.0	6.9	3.0	2.8
22	1.5	2.4	4.0	19.0	8.9	7.8	16.3	6.5	7.8	6.2	2.9	3.0
23	1.5	3.0	3.8	17.4	8.9	7.6	15.5	6.9	7.4	5.6	2.9	2.6
24	1.5	4.6	3.7	14.9	8.7	8.4	14.8	7.1	7.1	5.4	3.0	2.3
25	1.5	6.2	4.1	12.2	7.9	9.6	13.5	7.6	6.9	5.2	2.7	2.3
26	1.5	6.7	4.9	10.5	7.5	9.5	13.7	7.8	6.8	5.0	2.8	3.6
27	1.5	6.3	8.1	9.7	6.7	10.0	13.6	6.7	6.7	4.6	3.2	3.6
28	1.5	5.6	10.2	8.5	6.4	10.6	10.4	6.2	7.3	4.5	3.6	3.1
29	1.4	4.7	9.6	7.7	5.9	10.3	9.1	5.8	7.5	4.3	4.4	2.6
30	1.4	4.0	8.4	6.9	.....	9.7	8.8	5.7	7.2	4.1	3.8	2.4
31	1.4	.....	7.8	6.8	.....	9.4	.....	5.6	.....	3.8	3.3	.....

Daily gage height, in feet, of Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1893.												
1	2.2	1.1	4.1	3.4	10.4	8.4	5.5	10.2	7.4	3.9	2.6	8.4
2	2.0	1.2	4.0	3.4	12.1	9.1	5.3	9.6	8.0	3.8	2.5	6.8
3	1.9	1.2	3.8	4.7	10.6	8.9	5.1	11.0	10.0	4.2	3.1	5.0
4	1.8	1.6	3.7	5.7	8.6	8.9	5.1	18.4	8.1	5.2	3.5	6.2
5	1.7	2.0	3.6	5.6	8.0	8.7	5.1	24.5	6.6	4.8	3.3	6.0
6	1.6	2.3	3.6	5.3	7.7	9.0	5.2	28.2	8.3	3.9	3.2	4.9
7	1.6	2.4	3.3	5.2	7.0	9.1	5.4	30.0	16.0	3.8	4.9	4.3
8	1.5	2.4	3.2	4.7	6.5	8.8	5.4	28.2	20.7	3.5	5.0	3.5
9	1.5	2.9	3.2	4.0	6.1	8.8	5.1	18.0	19.1	3.4	4.1	3.2
10	1.5	4.4	3.0	3.8	6.2	9.4	5.1	12.8	15.2	3.6	3.8	2.8
11	1.5	5.9	2.9	3.4	8.5	11.1	5.1	11.7	11.8	3.4	3.3	2.8
12	1.5	6.6	2.7	2.9	14.7	11.7	5.0	10.4	8.9	3.4	3.0	3.7
13	1.4	7.0	2.6	2.9	21.8	11.5	4.8	9.4	7.3	3.3	2.7	5.8
14	1.4	4.4	2.6	.....	23.6	12.0	10.2	8.8	6.8	3.2	2.5	10.9
15	1.4	4.2	3.3	.....	22.6	10.6	12.1	8.1	6.5	3.0	2.8	12.7
16	1.4	4.8	3.4	.....	21.3	9.5	10.4	7.8	6.2	2.8	2.9	9.6
17	1.4	5.6	5.3	.....	23.6	8.4	8.6	9.4	5.6	2.7	3.8	8.0
18	1.3	6.2	8.1	.....	29.4	7.6	7.4	10.4	5.4	2.8	5.2	7.0
19	1.3	6.4	8.7	.....	32.4	7.0	6.5	8.9	5.3	3.0	4.9	6.1
20	1.2	6.2	8.4	.....	33.4	6.7	6.4	7.7	5.2	3.2	4.0	5.1
21	1.2	5.5	9.1	.....	32.8	6.3	7.2	7.4	5.4	3.5	2.9	4.2
22	1.2	4.8	9.3	.....	28.5	6.0	7.2	6.7	5.6	3.6	2.6	3.6
23	1.2	4.4	8.9	2.9	18.2	5.8	7.1	6.1	5.7	4.6	2.4	3.4
24	1.2	4.2	7.8	3.1	12.3	5.7	6.8	5.7	5.4	5.2	2.3	3.2
25	1.2	3.9	6.7	3.1	10.4	6.4	6.7	5.4	5.9	5.5	2.2	3.0
26	1.1	3.4	5.8	3.4	9.3	6.8	6.0	5.2	5.6	3.7	1.9	2.9
27	1.1	3.1	5.2	3.7	8.4	6.8	5.7	5.0	5.2	3.4	1.8	2.7
28	1.1	3.0	4.8	3.8	8.2	6.3	7.0	4.6	5.1	2.9	1.6	2.6
29	1.1	3.0	4.3	4.4	.....	5.9	9.5	5.4	4.7	2.7	1.6	2.4
30	1.1	3.6	3.9	5.3	.....	5.8	10.4	6.5	4.1	2.6	1.7	2.5
31	1.1	.....	3.3	7.1	.....	5.7	.....	7.4	.....	2.6	1.6	.....
1894.												
1	2.6	3.1	2.5	2.9	5.1	7.7	5.0	3.9	3.8	4.4	2.9	4.0
2	2.5	3.0	3.9	3.4	5.0	8.2	4.8	3.8	3.6	4.0	2.9	3.8
3	2.4	2.8	3.7	3.8	4.9	9.4	5.4	3.7	3.5	3.7	2.9	3.0
4	2.4	2.7	4.1	3.9	5.5	9.7	5.3	3.7	3.4	4.4	2.8	2.6
5	2.6	2.6	4.3	3.5	21.9	9.5	6.8	3.6	3.3	4.2	2.9	2.1
6	2.5	2.5	4.7	3.1	25.5	9.3	6.9	3.5	3.2	3.7	3.0	2.0
7	2.9	2.4	4.7	4.9	23.9	8.5	7.2	3.4	2.9	3.2	2.9	1.8
8	3.1	2.4	4.5	6.1	19.7	8.2	7.4	3.3	2.8	3.3	2.9	1.7
9	2.9	2.3	4.1	9.5	16.1	7.9	6.6	3.4	2.6	3.1	3.0	1.5
10	2.9	2.4	4.0	9.0	16.0	7.2	5.7	3.3	2.5	3.3	2.6	1.4
11	2.6	2.5	3.7	8.5	16.7	6.9	5.9	3.2	2.5	3.7	2.3	1.4
12	2.5	4.8	3.2	7.9	15.4	6.6	7.2	4.7	2.4	3.3	2.1	1.4
13	2.4	3.8	3.1	8.3	15.2	6.7	8.5	5.1	2.3	2.7	1.9	1.3
14	2.5	3.6	3.0	8.0	14.1	7.2	7.8	4.8	2.3	2.4	1.8	1.2
15	2.0	3.5	2.9	7.8	12.2	7.0	7.2	4.3	2.2	2.1	2.0	1.5
16	1.7	3.0	3.0	7.8	10.3	6.9	6.7	4.0	2.1	1.9	3.6	1.8
17	9.6	2.8	3.2	7.1	9.5	6.8	6.3	4.1	2.0	1.8	4.6	1.8
18	6.4	2.7	3.5	7.2	8.6	7.3	5.5	5.2	2.1	2.8	3.5	2.0
19	5.7	2.5	3.8	6.3	8.4	7.4	5.0	5.0	2.4	2.4	3.0	2.0
20	5.2	2.6	3.9	6.0	8.3	7.7	5.1	5.4	2.5	2.4	3.1	1.6
21	4.1	2.6	3.9	5.3	8.5	7.1	4.9	5.6	2.6	3.3	3.6	1.5
22	3.4	2.6	3.5	5.0	8.7	8.8	4.8	6.2	2.5	3.7	3.7	1.5
23	3.1	2.5	3.3	5.0	8.8	8.7	4.7	6.8	2.3	3.8	4.0	1.8
24	2.8	2.5	3.1	5.2	8.2	8.1	4.6	6.9	2.2	3.4	3.6	1.8
25	3.1	2.4	2.9	5.3	7.9	7.7	4.5	7.1	2.2	4.0	3.0	1.6
26	3.3	2.5	2.8	5.2	7.0	7.3	4.3	6.7	2.5	4.1	2.6	1.3
27	4.9	2.6	2.7	5.4	7.7	7.0	4.2	6.0	2.6	3.9	2.2	1.1
28	4.6	2.8	2.6	5.4	7.7	6.5	4.1	5.6	2.7	3.8	2.7	1.0
29	4.0	2.7	2.5	5.1	.....	5.9	4.0	5.1	2.9	3.6	2.4	.9
30	3.5	2.5	2.7	5.0	.....	5.7	4.0	4.7	4.3	3.3	2.7	.8
31	3.2	.....	3.1	4.9	.....	5.2	.....	4.2	.....	3.3	4.3	.....

Daily gage height, in feet, of Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1895.												
1	0.9	1.4	1.0	4.7	7.6	6.8	7.8	6.0	5.6	3.2	4.4	3.3
2	.9	1.7	1.0	3.9	7.2	7.3	7.4	5.8	5.2	3.4	4.1	3.4
3	1.0	2.3	.9	3.3	7.3	12.1	6.8	5.5	4.8	3.8	3.8	3.2
4	1.5	1.6	.9	3.2	7.5	18.2	6.5	5.4	4.5	4.0	3.5	3.1
5	1.8	1.4	.9	3.1	7.6	19.9	6.3	5.7	4.2	4.5	3.4	2.9
6	1.8	1.5	.9	3.1	7.4	18.2	6.2	6.0	4.4	5.0	3.0	2.8
7	1.5	1.5	.9	3.3	6.9	13.4	6.0	6.5	4.6	5.0	3.2	2.8
8	1.3	1.3	.9	4.0	6.5	10.5	9.6	7.0	5.2	5.1	3.3	2.8
9	1.1	1.2	1.1	10.9	6.4	9.2	10.7	8.2	5.1	5.5	3.3	2.5
10	1.0	1.1	1.2	20.5	5.0	8.6	11.4	8.6	4.6	5.7	3.0	2.4
11	.8	1.0	1.6	28.5	4.0	8.1	13.0	9.0	4.2	5.1	3.0	2.3
12	.9	1.0	3.8	32.1	3.3	7.5	12.5	8.8	3.8	4.4	2.9	2.4
13	1.2	.9	8.6	31.2	4.2	7.8	10.4	8.9	3.6	3.8	3.2	2.5
14	1.9	.8	11.1	28.3	.....	8.0	8.8	9.5	3.5	3.4	2.9	2.5
15	2.4	.8	11.2	19.5	4.3	8.7	7.9	9.0	3.4	3.2	2.8	2.3
16	2.1	.8	10.8	12.3	4.7	9.4	7.4	8.2	3.4	3.2	2.7	2.2
17	1.7	.8	8.6	10.9	4.7	9.2	7.0	7.7	3.8	3.7	3.1	2.1
18	1.4	.7	6.6	10.0	4.2	9.6	9.0	7.1	3.7	3.6	4.3	2.3
19	1.1	.8	4.7	9.7	4.7	9.4	11.8	7.0	3.5	3.3	4.9	2.2
20	1.0	.9	4.2	9.1	4.6	8.9	11.8	7.2	3.2	3.0	5.7	2.0
21	.9	.9	3.6	9.6	5.1	14.3	9.9	7.1	3.1	2.7	5.3	2.1
22	.8	.9	3.2	10.2	5.6	20.6	8.6	6.7	3.2	2.7	6.1	1.9
23	.8	1.0	2.8	9.9	6.1	22.7	7.7	6.2	3.1	2.5	5.3	1.6
24	.8	1.0	2.7	9.1	6.7	22.0	7.1	5.8	3.0	2.4	4.8	1.4
25	.8	1.1	2.5	10.8	6.8	18.2	6.7	5.6	2.9	2.4	4.6	1.3
26	.8	1.2	2.4	10.8	6.5	13.0	6.3	5.6	2.9	2.9	4.7	1.3
27	.7	1.2	4.2	10.0	6.3	11.3	6.0	7.0	2.6	3.8	4.2	1.2
28	.7	1.2	6.9	9.3	6.3	10.6	6.0	7.5	2.5	10.2	3.7	1.1
29	.7	1.1	8.4	8.8	.....	9.5	5.9	7.4	2.5	10.4	3.5	1.0
30	1.0	1.1	7.9	8.6	.....	8.9	5.9	6.7	2.6	7.4	3.7	.9
31	1.1	.....	5.8	8.4	.....	8.4	.....	6.0	.....	5.3	3.4	.....
1896.												
1	.9	1.1	1.4	4.9	4.4	4.1	14.8	3.4	2.6	3.3	5.5	2.4
2	.8	1.2	1.5	5.0	6.2	3.9	27.7	3.4	3.0	3.2	5.2	2.1
3	.8	1.3	1.4	4.9	10.0	3.8	34.4	3.4	4.4	3.1	4.8	1.9
4	.8	1.6	1.4	4.9	11.6	3.7	38.8	3.5	5.7	3.2	4.6	1.8
5	.8	1.6	1.4	4.7	10.5	3.6	40.5	4.0	5.2	3.2	4.5	1.6
6	.8	1.3	1.6	4.3	9.3	3.5	36.9	4.6	4.7	3.2	4.9	1.6
7	.8	1.3	1.5	3.6	11.8	3.4	23.3	4.6	4.1	3.6	5.0	1.5
8	.9	1.2	1.4	3.3	14.0	3.5	11.6	4.3	3.5	5.0	4.2	2.0
9	.8	1.1	1.3	3.2	13.8	3.5	9.0	4.0	3.5	7.9	3.8	2.8
10	.9	1.2	1.3	3.2	13.2	3.4	8.0	3.7	4.5	14.2	3.4	2.7
11	1.0	1.3	1.4	3.1	12.8	3.6	7.2	3.4	7.0	21.1	3.3	2.4
12	1.0	1.7	1.5	3.1	11.4	3.6	6.7	3.1	6.3	21.6	3.4	2.0
13	1.0	2.1	1.8	2.9	10.1	3.8	6.2	2.9	5.1	15.6	3.2	1.8
14	1.0	2.4	1.9	2.7	11.1	3.8	5.8	2.8	4.3	11.5	3.2	1.6
15	.9	2.2	2.0	2.6	12.8	3.7	5.5	2.7	3.6	11.2	3.1	1.6
16	1.0	2.0	1.9	2.4	13.6	3.8	5.2	2.6	3.2	11.4	3.0	1.5
17	1.0	1.9	1.8	2.3	12.5	5.5	5.0	2.5	3.0	11.0	3.0	1.3
18	1.0	1.8	1.7	2.3	11.0	10.1	4.8	2.4	2.8	13.9	2.9	1.4
19	.9	1.7	1.6	2.3	9.0	13.1	4.6	2.4	2.9	12.5	2.7	1.4
20	.9	1.5	1.5	2.3	7.6	15.7	4.4	2.2	3.1	9.6	2.6	1.3
21	.8	1.3	1.6	2.3	6.7	13.8	4.2	2.1	3.7	7.6	2.4	1.2
22	.8	1.1	2.1	2.5	6.0	11.2	4.1	2.1	3.5	6.5	2.4	1.2
23	.7	1.3	3.3	3.1	5.4	9.5	4.1	2.5	3.5	8.5	2.2	1.3
24	.7	1.4	4.2	5.0	4.9	8.4	4.0	3.2	3.3	8.5	2.2	1.4
25	.7	1.3	4.6	6.5	4.7	7.9	4.0	3.6	3.1	8.6	2.8	1.6
26	.7	1.3	4.3	8.2	4.6	7.5	3.8	3.8	2.9	7.8	2.6	2.0
27	.7	1.3	4.2	8.0	4.5	7.2	3.7	3.2	2.6	11.1	2.7	1.7
28	.7	1.3	4.5	7.0	4.4	6.7	3.8	3.1	2.6	12.2	3.2	1.5
29	.7	1.3	5.2	6.0	4.2	6.2	3.8	2.8	2.8	9.3	4.0	1.5
30	.7	1.5	4.7	5.3	.....	5.8	3.6	2.7	3.0	7.2	3.6	2.7
31	1.0	.....	4.7	4.8	.....	7.7	.....	2.5	.....	6.2	2.8	.....

Daily gage height, in feet, of Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1897.												
1	2.5	1.2	11.2	2.4	3.0	12.5	8.7	5.9	4.3	4.9	4.4	2.1
2	2.3	1.2	13.6	2.5	7.0	9.6	12.2	6.3	4.2	4.4	3.8	2.2
3	2.6	1.3	13.9	2.5	10.1	8.6	15.0	7.4	4.2	3.8	3.8	1.8
4	3.0	1.5	11.1	2.6	10.5	9.0	16.0	9.6	4.1	3.4	3.6	1.8
5	2.7	1.5	8.2	2.6	9.4	9.5	26.0	9.6	4.1	3.6	3.3	1.8
6	2.6	1.6	6.5	2.7	8.3	12.1	30.4	8.5	4.1	4.0	3.4	1.7
7	2.1	2.3	5.6	2.9	8.8	19.2	29.7	7.7	4.0	3.8	4.2	1.7
8	1.7	3.5	4.9	3.0	10.7	25.1	25.4	7.2	4.4	4.0	4.2	1.6
9	1.5	4.2	4.6	2.8	14.1	24.2	20.0	6.6	4.3	4.3	4.8	1.6
10	1.4	4.1	4.4	2.8	15.5	21.3	16.0	6.2	4.1	4.0	5.5	1.4
11	1.2	3.3	4.5	2.7	13.2	22.3	14.1	6.0	5.6	4.2	5.1	1.2
12	1.2	3.2	4.7	2.6	10.8	28.4	12.6	6.2	5.8	4.7	4.4	1.2
13	1.2	5.8	4.4	2.4	9.9	34.9	11.4	7.8	4.9	4.5	4.0	1.2
14	1.2	7.3	4.5	2.6	10.0	37.9	10.3	18.4	4.2	4.1	3.4	1.0
15	1.5	6.5	4.4	4.1	10.5	37.9	9.7	22.4	3.8	3.8	3.0	1.0
16	1.7	5.5	4.1	6.5	10.7	37.0	9.8	20.3	3.6	3.7	2.8	1.0
17	1.6	4.9	3.9	6.6	9.8	36.0	10.2	16.5	3.6	4.8	2.8	.9
18	1.6	4.3	3.8	6.3	8.6	33.8	9.8	11.9	3.6	6.5	3.2	.9
19	1.7	3.8	4.2	6.4	7.6	29.6	9.3	9.1	3.3	5.8	3.3	.8
20	1.6	3.4	4.8	6.8	7.0	29.6	8.8	7.7	3.4	5.9	3.0	.8
21	1.6	3.0	4.6	7.0	7.0	32.4	8.1	6.9	4.5	6.6	3.0	.9
22	1.4	2.8	4.3	7.2	8.3	33.3	7.5	6.4	4.9	6.0	3.4	.8
23	1.2	2.5	4.0	7.3	13.2	30.9	7.0	5.9	5.0	5.8	3.4	.8
24	1.2	2.4	3.8	7.0	25.2	25.0	6.7	5.6	5.3	6.4	3.8	.9
25	1.2	2.3	3.6	6.6	31.6	18.1	6.4	5.6	5.7	8.6	3.2	.8
26	1.2	2.2	3.3	5.9	34.8	14.2	6.2	5.0	6.1	11.2	2.8	.8
27	1.2	2.1	3.1	5.3	33.8	12.2	6.0	4.8	5.2	12.2	2.8	.7
28	1.2	2.2	2.9	4.8	23.6	10.8	6.1	4.6	6.0	8.2	2.8	.7
29	1.1	5.3	2.7	4.4	.....	9.8	6.2	4.4	6.0	6.4	2.4	.7
30	1.1	9.4	2.6	3.7	.....	9.1	5.8	4.2	6.1	5.5	2.2	.8
31	1.3	.....	2.5	3.0	.....	8.6	.....	4.3	.....	4.8	2.1	.....
1898.												
1	.8	.8	1.0	3.4	7.6	3.3	17.4	6.4	3.4	2.4	8.2	3.6
2	.8	.9	1.3	3.2	6.7	3.2	17.8	5.8	3.3	2.4	7.6	4.0
3	.7	1.1	1.4	3.0	6.2	3.0	15.0	5.4	3.3	2.2	6.4	9.2
4	.6	1.2	2.2	2.9	5.4	3.0	11.4	5.0	3.3	2.0	5.4	18.5
5	.5	1.2	3.5	2.8	5.0	3.3	10.4	4.7	2.8	2.4	6.2	25.0
6	.5	1.2	3.8	2.6	4.6	3.4	12.2	4.4	2.6	2.1	11.8	22.2
7	.4	1.3	3.9	2.7	4.4	3.5	11.6	4.4	2.4	2.1	14.6	15.7
8	.4	1.3	3.4	2.8	4.4	3.4	10.3	4.1	2.2	2.2	12.6	11.2
9	.4	1.2	2.8	3.0	4.3	3.2	9.3	4.2	2.0	2.6	10.2	9.5
10	.4	1.2	2.4	3.2	4.2	3.0	8.3	4.2	2.0	3.0	8.5	8.6
11	.5	1.1	2.4	3.2	4.0	2.9	8.6	4.4	1.8	3.5	9.0	7.4
12	.6	1.0	2.0	5.5	3.9	2.8	9.5	4.6	2.0	3.4	12.3	6.4
13	1.0	1.0	1.8	13.2	3.8	2.8	9.4	4.4	1.8	3.2	14.8	5.7
14	1.4	.9	1.8	14.4	3.8	2.8	9.0	4.2	1.8	2.8	15.8	5.2
15	1.2	.8	2.6	12.2	3.8	3.2	9.0	4.0	1.6	2.8	15.0	4.8
16	1.2	.8	2.7	12.2	3.7	5.1	9.2	3.9	1.8	3.5	11.6	4.4
17	1.2	.8	2.4	12.4	3.6	5.0	8.6	3.8	2.0	4.6	8.9	4.2
18	1.2	.8	2.6	10.0	3.5	5.2	8.2	3.7	2.4	5.4	7.1	4.0
19	1.2	.8	2.7	9.2	3.3	5.5	8.0	3.7	3.5	4.6	6.4	3.8
20	1.6	.8	3.6	11.7	3.3	6.1	8.0	3.6	4.0	4.2	6.0	3.6
21	2.0	.7	4.9	13.8	3.2	5.7	7.4	3.6	5.4	4.0	4.0	3.4
22	1.8	.7	8.0	13.4	3.2	5.4	7.0	3.6	5.6	3.3	5.6	3.6
23	1.5	.7	10.2	12.6	3.4	5.2	6.6	3.5	5.0	3.3	5.4	5.0
24	1.4	.7	8.8	12.4	3.5	4.6	6.8	3.4	4.6	3.4	4.8	5.0
25	1.6	.7	7.6	12.4	3.6	4.3	6.6	3.4	3.7	3.6	4.3	6.4
26	1.4	.7	6.3	16.0	3.8	4.2	6.6	3.7	3.4	3.6	4.0	7.2
27	1.2	.7	5.5	18.2	3.5	4.4	6.4	5.0	2.9	4.6	4.0	6.2
28	1.0	.7	4.9	16.7	3.4	4.4	7.1	5.6	2.8	5.6	4.1	5.0
29	1.0	.7	4.4	14.2	.....	4.6	7.0	4.9	2.8	5.4	4.3	4.3
30	.8	.7	4.0	11.2	.....	5.6	6.8	4.2	2.6	5.9	4.1	3.8
31	.8	.....	3.8	9.0	.....	13.2	.....	3.7	.....	7.9	3.8	.....

Daily gage height, in feet, of Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1899.												
1	3.6	4.6	5.1	4.8	5.7	19.2	22.8	7.6	4.2	3.4	4.2	2.2
2	3.3	4.3	5.0	5.0	5.6	17.6	19.5	7.1	4.2	3.3	3.6	2.4
3	3.2	4.2	4.9	5.3	5.6	15.2	14.9	6.7	4.4	3.0	3.0	2.8
4	3.9	4.0	5.0	5.8	10.7	14.2	13.0	6.3	4.8	2.8	2.8	3.0
5	8.9	3.9	5.0	6.0	23.1	18.0	13.2	6.2	4.6	2.6	2.4	2.6
6	16.9	3.9	5.6	7.2	30.4	24.5	14.7	7.1	4.2	2.6	2.4	2.2
7	16.5	4.2	6.0	18.8	34.3	26.6	15.7	8.5	4.0	2.6	2.4	2.0
8	10.8	4.4	5.9	18.4	37.0	27.6	18.0	9.4	3.8	3.0	2.4	1.8
9	8.8	4.5	5.8	17.4	38.2	27.7	17.8	10.0	3.6	2.9	2.2	1.6
10	8.4	4.4	5.6	17.2	36.8	16.2	15.7	10.7	3.4	2.6	2.1	1.8
11	7.6	4.6	5.1	13.8	30.3	11.8	14.2	11.2	3.9	2.6	2.1	1.7
12	6.6	5.0	4.8	10.5	19.4	10.6	12.9	10.4	4.3	2.4	2.0	2.0
13	6.0	5.3	4.6	9.2	12.2	9.6	11.6	9.6	5.2	2.3	2.0	1.8
14	5.7	5.0	4.3	8.1	9.5	11.2	10.7	9.3	5.8	2.2	2.2	2.0
15	5.4	4.6	4.0	7.6	8.5	24.6	10.0	9.6	6.4	2.2	2.6	1.8
16	4.9	4.4	3.8	7.3	7.6	34.2	9.4	9.2	6.1	2.0	2.6	1.6
17	4.7	4.6	3.7	7.4	8.0	36.9	8.8	8.7	6.4	1.9	2.4	1.4
18	5.2	4.8	3.6	7.4	9.6	36.2	8.4	7.8	6.2	1.8	2.3	1.4
19	6.7	5.0	3.8	7.2	11.3	35.8	8.0	6.9	5.2	1.9	2.2	1.2
20	7.8	5.3	5.2	7.0	12.6	37.0	7.6	6.4	4.7	2.0	1.9	1.0
21	9.3	5.8	5.8	6.8	11.5	39.2	7.4	5.9	4.2	2.0	1.7	1.0
22	8.8	6.0	6.0	6.4	10.6	40.0	7.0	5.6	3.8	2.4	1.6	1.0
23	7.6	6.6	5.8	6.0	10.1	38.7	7.8	5.4	3.5	2.7	1.4	1.3
24	7.2	6.8	5.4	5.6	9.8	32.7	9.6	5.3	3.2	3.5	1.3	1.5
25	7.2	6.6	5.2	6.0	9.5	23.2	9.4	5.0	3.2	3.4	1.2	1.5
26	7.6	6.1	5.4	6.4	9.2	16.3	10.8	4.8	3.0	3.0	1.2	1.4
27	6.9	5.6	5.9	5.8	13.2	13.6	10.3	4.6	3.2	3.0	1.2	1.3
28	6.2	5.2	5.7	5.8	18.4	14.0	9.2	4.4	3.6	3.6	1.2	1.2
29	5.6	4.8	5.2	5.6	.....	17.3	8.4	4.3	3.5	4.2	1.5	1.2
30	5.2	5.0	4.8	5.3	.....	21.2	7.8	4.2	3.3	4.2	1.8	1.3
31	4.8	.....	4.5	5.3	.....	22.8	.....	4.2	.....	5.2	1.8	.....
1900.												
1	1.2	1.1	1.7	3.0	3.2	8.0	7.8	6.2	2.8	8.8	6.2	2.1
2	1.1	1.1	1.7	.....	3.0	8.7	7.2	5.6	2.8	8.2	5.4	2.0
3	1.0	1.0	1.7	.....	2.6	10.9	6.8	5.4	3.0	7.0	4.7	2.3
4	1.0	1.1	1.7	.....	2.5	12.5	7.2	5.2	3.2	6.3	4.2	2.5
5	.9	1.5	1.8	.....	2.9	12.8	8.0	5.0	3.2	5.8	3.6	2.3
6	.8	1.5	1.7	2.1	3.5	10.6	8.6	4.8	3.5	5.4	3.2	2.0
7	.8	1.5	1.6	2.2	4.0	10.0	7.8	4.6	5.6	5.0	2.9	1.7
8	1.0	1.4	1.5	2.3	3.9	11.6	7.0	4.4	6.6	4.5	2.6	1.6
9	1.2	1.4	1.4	2.4	5.4	14.6	6.5	4.4	6.2	4.2	2.4	1.4
10	1.6	1.2	1.4	2.4	8.4	16.5	6.1	4.4	5.3	4.2	2.3	1.3
11	1.8	1.2	1.6	3.4	9.4	16.2	6.5	4.3	5.0	4.3	2.1	1.2
12	1.8	1.1	5.2	6.0	9.0	14.2	7.5	4.3	4.9	3.8	2.0	1.1
13	1.7	1.0	6.4	8.2	13.9	11.6	7.4	4.2	4.5	3.4	1.9	1.0
14	1.6	1.0	7.4	8.7	21.6	9.8	7.0	4.0	5.2	3.3	1.9	1.1
15	1.4	1.0	7.2	8.4	24.0	8.6	6.5	3.8	5.3	3.3	2.1	1.8
16	1.2	1.0	6.2	7.8	21.4	8.0	6.3	3.8	5.2	3.3	2.2	3.1
17	1.2	1.0	5.2	6.4	17.0	7.8	8.8	3.6	5.4	3.2	2.3	4.0
18	1.2	1.0	4.2	5.5	12.0	7.6	10.6	3.5	6.2	3.1	2.3	4.1
19	1.1	1.0	3.8	5.8	9.2	7.6	9.8	3.4	8.8	3.0	2.3	4.6
20	1.1	1.0	4.2	8.5	7.7	8.6	9.4	3.4	9.2	2.9	2.2	4.7
21	1.1	.8	4.4	9.4	7.1	11.6	11.7	3.2	8.9	2.7	1.9	3.9
22	1.1	.8	4.4	8.8	7.7	15.0	12.0	3.2	7.6	2.5	1.8	3.0
23	1.0	1.0	4.2	8.0	8.5	17.4	11.4	3.0	6.4	2.5	1.7	2.6
24	1.0	1.2	5.6	7.2	8.6	16.4	10.7	3.0	6.2	2.8	1.8	2.4
25	1.0	1.3	6.2	6.2	8.6	12.6	9.8	3.2	7.2	3.0	1.9	2.7
26	.8	1.7	6.3	5.5	9.5	11.2	8.5	3.2	7.6	3.1	2.5	2.7
27	.8	1.8	5.8	5.0	9.3	10.9	7.8	3.4	8.0	3.3	3.1	2.6
28	.8	1.8	5.6	4.6	8.4	10.7	7.4	3.6	8.2	4.6	2.7	2.4
29	.9	1.8	5.1	4.2	.....	10.2	7.0	3.6	8.6	8.0	2.5	2.3
30	1.0	1.8	4.6	3.9	.....	9.4	6.6	3.4	8.7	8.2	2.3	2.2
31	1.0	.....	3.8	3.6	.....	8.5	.....	3.0	.....	7.3	2.2	.....

Daily gage height, in feet, of Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1901.												
1	2.0	2.9	8.7	5.2	6.5	3.7	12.4	10.8	12.0	6.0	2.8	9.9
2	1.8	2.6	6.5	5.7	6.7	3.7	13.2	9.3	11.1	5.9	2.8	9.8
3	1.7	2.5	5.6	5.8	7.2	3.7	19.7	8.5	9.8	6.3	2.9	9.7
4	1.5	2.9	5.1	5.6	8.7	3.7	24.1	7.6	8.5	6.4	2.8	10.3
5	1.4	3.3	5.6	5.1	10.1	3.8	23.9	7.0	7.7	6.0	2.6	9.4
6	1.3	3.7	6.9	4.7	10.0	4.0	22.4	6.7	6.9	5.2	2.6	7.9
7	1.3	4.2	8.3	4.4	9.4	4.1	18.9	6.4	6.9	5.1	3.2	6.9
8	1.6	4.2	9.2	4.1	8.9	4.1	14.2	6.2	6.9	5.4	9.1	6.4
9	1.8	3.7	8.5	3.9	8.5	4.0	11.8	5.9	6.5	5.6	12.2	5.9
10	2.1	3.2	7.0	3.8	7.7	7.0	10.3	5.6	6.9	6.3	9.9	5.5
11	2.1	3.0	6.1	6.1	7.6	9.8	9.2	5.6	8.2	6.6	7.3	5.3
12	2.5	2.7	5.4	15.4	7.0	11.2	8.4	5.4	7.4	5.6	5.8	5.1
13	3.0	2.5	4.9	26.6	7.1	9.7	7.9	5.6	6.4	5.0	5.3	5.7
14	2.5	2.3	4.5	28.1	7.2	8.2	6.8	5.5	6.1	4.4	6.5	5.9
15	1.9	2.2	4.3	25.3	7.0	7.3	9.8	5.5	6.4	4.1	14.0	6.0
16	1.8	2.1	4.2	19.5	6.4	6.4	10.3	5.4	7.5	3.6	27.3	6.1
17	1.6	2.0	4.0	12.7	5.8	5.8	10.2	5.2	8.9	3.7	32.8	6.3
18	1.5	2.0	3.6	9.7	5.3	5.4	9.6	4.9	9.8	3.9	32.6	8.8
19	1.4	1.9	3.4	8.1	5.1	5.0	10.8	5.3	9.3	3.7	28.6	9.9
20	1.3	1.9	3.3	7.2	5.0	4.7	21.1	8.0	8.9	3.7	23.4	9.3
21	1.2	2.1	3.3	6.4	4.9	4.7	26.5	10.2	8.4	4.2	18.6	8.3
22	1.2	2.2	4.0	5.9	4.7	4.8	24.7	20.2	7.7	3.9	17.0	7.4
23	1.4	2.3	4.2	5.4	4.5	5.2	23.0	26.5	10.1	3.7	16.5	6.4
24	2.2	2.8	4.7	5.6	4.4	5.0	22.2	29.7	9.5	3.5	18.5	5.6
25	4.1	3.2	5.2	5.8	4.2	5.0	19.0	32.4	7.6	3.1	16.5	5.2
26	7.0	7.8	5.4	5.8	4.1	7.7	17.1	32.5	9.6	3.0	13.1	4.9
27	7.5	13.9	5.2	5.4	3.8	15.9	14.9	23.5	9.8	2.9	11.0	4.6
28	6.0	15.6	4.6	5.2	3.7	22.3	14.9	13.5	8.4	2.9	10.3	4.4
29	4.9	15.6	4.3	5.2	.....	21.7	14.5	12.1	7.2	2.8	10.7	4.4
30	3.7	13.2	4.2	5.2	.....	18.4	13.8	11.9	6.4	2.8	10.0	4.3
31	3.4	.....	4.5	5.5	.....	14.7	.....	12.3	.....	2.8	9.8	.....
1902.												
1	4.2	2.6	2.3	40.1	20.1	24.0	30.9	5.6	4.0	9.8	2.2	1.4
2	4.5	2.6	2.2	40.8	21.8	31.9	27.0	8.5	3.8	10.2	2.0	1.2
3	4.6	2.5	2.3	37.6	23.2	35.8	18.0	9.3	3.6	8.8	2.1	1.2
4	4.5	2.5	2.5	26.8	21.7	38.0	12.3	8.0	3.5	7.5	2.4	1.5
5	4.4	2.5	2.5	15.0	18.0	35.9	10.7	6.8	3.4	6.5	2.4	1.3
6	4.8	2.5	2.5	10.9	14.5	30.3	10.0	6.0	3.4	5.5	2.8	1.4
7	4.5	2.4	3.0	9.7	11.7	25.5	9.5	5.6	3.2	4.5	2.5	1.5
8	4.1	2.4	3.2	8.9	10.0	20.7	9.8	5.6	3.2	4.0	2.1	1.5
9	3.9	2.4	3.2	8.0	8.8	17.9	9.9	5.5	3.3	3.7	1.9	1.5
10	3.7	2.4	3.5	7.7	8.1	15.6	9.5	5.2	3.4	3.5	2.2	1.5
11	3.4	2.4	3.5	7.3	7.5	14.2	8.9	5.0	3.2	3.4	2.8	1.4
12	3.4	2.4	4.0	6.9	6.9	12.9	8.4	4.8	3.4	3.4	2.7	1.5
13	3.5	2.5	4.1	6.5	6.4	12.1	8.0	4.6	3.5	3.6	2.4	1.9
14	4.0	2.5	4.7	6.2	6.0	11.2	7.5	4.5	3.3	4.8	2.0	2.1
15	4.3	2.5	17.9	5.8	6.0	10.5	7.3	4.5	3.1	5.0	1.7	2.0
16	4.1	2.5	26.8	5.5	6.1	10.0	7.1	4.6	3.0	4.2	1.6	1.9
17	4.1	2.4	28.6	5.3	6.0	12.2	6.9	4.7	3.0	3.8	1.5	1.8
18	4.0	2.4	26.7	5.1	5.8	14.5	6.8	4.5	3.0	3.3	1.5	1.5
19	3.7	2.3	19.9	5.1	5.6	14.9	6.7	4.5	4.0	3.1	1.5	1.4
20	3.3	2.3	11.4	5.2	5.5	14.1	6.6	4.4	4.5	2.9	1.4	1.4
21	3.1	2.2	8.3	5.4	5.2	12.3	6.5	4.4	4.6	2.6	1.5	1.4
22	3.1	2.1	6.6	6.2	5.7	10.6	6.3	4.5	4.4	2.7	1.6	2.0
23	3.1	2.2	5.7	6.5	6.8	9.5	6.1	4.8	4.0	2.9	1.6	2.6
24	3.0	2.5	5.8	6.7	7.9	8.9	6.0	4.6	3.9	2.6	1.5	2.6
25	3.0	2.5	6.9	6.6	8.1	8.3	5.9	4.6	3.7	2.3	1.4	2.8
26	2.9	2.5	7.9	6.1	8.5	7.8	5.7	4.5	3.5	2.0	1.4	3.3
27	2.8	2.6	10.2	6.3	8.6	7.5	5.5	4.2	4.0	2.0	1.5	3.6
28	2.7	2.5	16.0	8.5	13.3	7.2	5.4	4.0	3.9	1.9	1.5	3.6
29	2.6	2.5	24.0	12.6	.....	12.9	5.2	4.4	4.0	1.9	1.6	3.6
30	2.5	2.4	32.0	15.8	.....	26.5	5.2	4.5	5.0	2.0	1.9	3.5
31	2.5	.....	37.4	18.9	.....	30.8	.....	4.3	.....	2.3	1.7	.....

Daily gage height, in feet, of Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903.												
1	3.9	1.3	5.2	4.7	4.8	26.5	17.4	9.0	6.5	4.1	2.8	1.7
2	3.7	1.3	5.1	4.5	4.9	31.0	16.6	8.3	8.2	3.8	2.6	1.6
3	3.9	1.4	6.7	5.3	5.1	29.2	14.8	7.8	11.6	3.7	2.9	1.4
4	3.3	1.5	7.4	6.1	7.6	23.6	13.0	7.3	11.5	3.6	3.8	1.4
5	3.0	1.5	7.8	6.9	15.4	16.5	12.3	7.0	10.1	3.6	3.8	1.3
6	2.8	1.5	7.5	6.8	19.6	13.1	12.4	6.7	9.3	3.8	4.2	1.3
7	2.4	1.4	7.5	8.2	17.5	12.3	11.9	6.6	9.8	3.9	4.9	1.3
8	2.1	1.8	6.6	7.6	18.0	14.6	15.5	6.3	11.2	3.8	4.2	1.3
9	2.0	2.2	6.0	6.7	17.2	20.7	24.5	6.0	10.5	4.0	3.6	1.3
10	1.9	2.1	5.3	6.0	15.3	24.2	30.3	5.8	9.0	4.0	3.0	1.2
11	2.2	1.9	4.7	5.5	14.4	23.9	31.8	5.6	8.7	3.9	2.6	1.2
12	2.9	1.8	4.2	6.2	16.0	21.0	28.0	5.4	7.8	3.8	2.7	1.1
13	2.7	1.8	3.9	7.1	16.3	18.3	19.7	5.2	8.0	4.1	3.3	1.1
14	2.7	1.6	3.6	7.2	14.8	16.2	17.5	5.0	7.1	5.7	2.9	1.1
15	3.3	1.5	3.4	6.5	13.6	14.9	20.4	4.9	6.3	5.5	3.2	1.2
16	3.4	1.4	3.5	6.0	12.3	13.6	21.9	4.8	5.6	5.4	3.8	1.1
17	3.5	1.4	4.8	5.8	18.4	11.9	21.2	4.7	5.1	5.6	4.1	1.0
18	3.0	1.4	7.4	5.4	25.9	10.7	18.8	4.6	4.7	5.1	3.8	1.2
19	2.8	1.7	7.8	5.1	29.3	9.8	16.1	4.5	4.4	4.7	3.4	1.3
20	2.6	1.9	7.2	4.8	29.0	9.0	14.2	4.3	4.3	4.1	3.8	1.3
21	2.2	2.1	7.0	4.5	24.4	9.0	13.2	4.2	4.3	3.8	3.3	1.1
22	2.0	1.9	8.7	4.4	15.4	9.0	13.0	4.1	4.3	4.0	3.0	1.2
23	1.8	1.9	9.6	4.2	11.3	10.0	13.0	4.0	4.3	3.6	2.9	1.2
24	1.8	2.0	8.7	4.0	9.9	16.7	11.8	4.0	4.3	3.2	2.5	1.1
25	1.6	2.1	7.2	4.0	8.8	25.8	10.8	3.8	4.2	2.9	2.2	1.0
26	1.5	3.5	6.5	4.2	8.0	28.8	10.1	3.8	4.1	2.7	2.0	1.0
27	1.4	6.1	5.7	4.3	7.5	27.3	9.6	3.6	4.1	2.6	1.8	.8
28	1.4	6.3	5.1	4.4	12.7	20.1	9.2	3.5	4.5	2.4	1.7	.7
29	1.3	5.8	4.5	4.5	.....	13.8	9.2	3.5	4.7	2.3	1.6	.7
30	1.2	5.4	4.3	4.7	.....	13.1	9.6	3.8	4.5	2.3	1.6	.6
31	1.2	.....	4.6	4.8	.....	16.0	.....	4.7	.....	2.2	1.8	.....
1904.												
1	.6	.8	1.1	3.1	3.4	8.1	9.0	6.0	4.3	3.6	2.2	2.2
2	.6	.9	1.1	2.6	3.1	7.4	8.1	7.6	4.1	3.7	2.2	2.0
3	.6	1.1	1.1	2.3	2.8	7.0	7.2	6.7	4.3	4.3	2.6	1.8
4	.6	1.2	1.0	2.2	2.7	6.6	6.6	5.8	4.4	4.0	2.4	1.8
5	.6	1.8	1.0	2.0	2.5	6.1	6.0	5.4	4.9	3.9	2.6	1.7
6	.6	1.8	.9	2.0	2.4	6.2	5.6	5.2	4.9	3.4	2.9	1.7
7	.6	1.5	1.0	1.7	2.3	6.1	5.4	4.9	4.5	3.1	3.7	2.2
8	.8	1.4	.9	1.6	3.6	8.0	5.4	5.4	3.8	2.9	3.7	2.4
9	1.0	1.3	1.0	1.5	4.8	11.0	5.8	5.6	3.7	2.7	3.3	2.2
10	1.5	1.3	.9	1.6	5.9	11.3	5.9	6.4	3.7	2.9	3.3	2.0
11	1.4	1.3	.9	1.7	5.4	11.1	6.0	7.0	3.4	2.9	3.3	1.8
12	1.3	1.3	.9	1.7	5.5	10.1	5.6	7.2	3.2	3.1	3.3	1.6
13	1.2	1.3	1.0	1.9	4.9	9.0	5.3	6.6	2.8	3.1	4.1	1.4
14	1.2	1.3	.9	2.1	4.4	8.5	4.9	5.7	2.6	3.6	3.7	1.3
15	1.0	1.2	.9	2.3	3.9	9.1	4.7	5.4	2.5	3.4	3.3	1.2
16	.9	1.2	1.0	2.5	3.6	8.9	4.4	5.2	2.5	3.0	3.3	1.1
17	1.0	1.5	1.2	2.6	3.5	8.1	4.3	4.9	2.4	2.6	4.1	1.0
18	1.0	3.6	1.1	2.9	3.3	7.1	4.3	4.5	2.2	2.4	3.9	1.0
19	1.0	5.6	1.0	3.9	3.1	6.6	4.3	4.3	2.1	2.2	3.1	.9
20	.9	5.8	1.4	3.8	3.2	6.1	4.2	4.1	2.0	2.1	2.7	.9
21	.9	4.6	3.0	3.6	3.7	5.8	4.1	3.8	2.0	1.8	2.4	.9
22	.9	3.8	4.7	3.6	5.2	7.4	4.0	3.6	2.1	1.7	2.4	.8
23	.9	3.1	4.4	6.0	6.3	12.9	4.0	3.5	2.6	1.9	2.2	.8
24	.8	2.5	3.7	10.6	7.9	18.2	4.0	3.4	2.7	2.2	2.2	.8
25	.8	2.1	3.7	9.2	8.1	21.8	4.0	3.1	2.3	2.1	2.9	.8
26	.7	1.8	3.4	7.5	7.9	20.9	3.8	2.9	2.3	2.0	3.0	.7
37	.7	1.6	3.1	7.1	7.1	19.1	3.7	2.8	2.2	2.2	2.8	.6
28	.6	1.5	3.7	5.8	7.3	16.9	4.1	2.7	2.2	2.4	2.6	.6
29	.6	1.3	3.8	4.8	9.0	14.0	4.6	2.7	2.7	2.1	2.6	.6
20	.6	1.2	3.8	4.2	.....	11.8	4.7	2.6	3.4	2.6	2.5	.6
31	.7	.....	3.7	3.8	.....	10.3	.....	3.0	.....	2.9	2.3	.....

Daily gage height, in feet, of Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905.												
1	0.7	0.1	1.1	6.7	2.8	8.6	4.8	8.6	5.9	8.6	3.8	3.4
2	.7	.1	1.4	5.4	3.2	7.9	4.8	8.0	5.4	6.3	3.8	3.3
3	.6	.2	1.7	5.4	3.2	7.3	4.5	6.9	4.8	5.2	4.3	3.5
4	.5	.4	2.2	4.0	3.1	6.8	4.4	6.2	4.3	4.4	3.9	3.3
5	.4	.5	2.1	4.2	3.0	6.4	4.3	5.7	4.1	4.2	3.3	3.5
6	.5	.5	3.5	4.5	3.8	6.1	4.4	5.3	3.8	4.1	3.0	3.5
7	.4	.6	4.4	4.3	5.1	5.9	4.5	5.1	3.7	3.9	3.0	3.3
8	.3	.6	5.8	4.6	6.4	5.6	5.0	5.5	3.5	4.0	2.8	3.3
9	.2	.6	5.7	4.8	12.1	5.9	4.9	6.5	3.4	4.5	3.2	3.2
10	.3	.9	5.4	5.2	20.4	10.6	6.2	7.9	3.4	4.6	3.5	3.0
11	.3	.9	4.2	5.0	22.4	16.2	6.3	8.0	3.1	4.5	5.1	2.7
12	.3	.9	3.5	5.1	20.2	17.3	6.7	7.2	3.0	5.2	6.5	2.5
13	.3	.8	3.0	9.6	16.0	15.4	7.0	6.3	2.9	6.6	7.2	2.8
14	.2	.6	2.7	17.2	13.6	13.4	7.3	5.8	3.0	10.5	8.4	2.7
15	.2	.6	2.5	16.4	13.3	10.6	7.8	5.8	3.1	12.7	8.9	2.5
16	.2	.7	2.4	15.1	12.2	8.8	7.4	7.2	3.2	11.3	8.8	2.4
17	.2	.8	2.3	11.3	11.2	7.7	6.7	10.9	3.3	9.2	7.6	2.4
18	.2	.9	2.1	8.1	9.4	6.9	6.0	13.7	3.3	7.3	7.0	2.3
19	.2	1.0	2.0	6.6	8.3	6.4	5.5	13.5	3.1	6.2	6.4	2.2
20	.2	1.1	1.8	5.8	7.9	6.0	5.1	11.8	4.3	5.5	6.1	2.0
21	.1	1.0	1.7	5.3	14.9	6.5	4.7	9.6	4.9	5.1	5.8	2.0
22	.1	1.0	1.6	5.0	21.4	7.0	4.7	7.8	5.0	5.4	5.1	1.9
23	.1	.9	1.5	4.7	21.0	7.5	4.7	7.4	6.0	5.1	4.6	1.8
24	.1	1.0	1.4	4.4	19.4	7.0	4.7	9.5	5.9	4.7	4.2	1.7
25	.1	1.0	1.4	4.0	15.6	6.4	4.5	10.2	5.7	4.8	5.8	1.7
26	.1	1.0	2.0	3.7	13.1	6.1	4.4	8.8	5.1	5.0	7.0	1.6
27	.1	1.1	3.0	3.4	11.2	5.7	5.3	7.6	4.5	5.4	6.0	1.6
28	.1	1.0	7.3	2.9	9.7	5.4	6.2	6.8	4.4	4.8	5.4	1.5
29	.1	1.0	10.2	2.4	.....	5.2	6.4	6.1	6.0	4.2	5.0	1.4
30	.1	1.0	9.6	2.4	.....	5.1	7.6	5.8	5.6	3.8	4.5	1.4
31	.1	.....	7.6	2.7	.....	4.9	.....	5.9	.....	3.8	4.0	.....
1906.												
1	1.3	2.6	1.5	5.5	9.6	5.3	14.8	4.9	4.1	4.6	7.7	13.0
2	1.3	2.4	1.6	5.1	9.1	5.2	12.4	4.8	3.8	4.2	9.0	11.7
3	1.4	2.2	2.4	5.0	8.8	5.5	10.6	4.8	4.1	3.9	9.5	10.3
4	1.4	2.0	6.6	8.3	8.3	8.2	9.2	4.9	4.3	3.7	8.2	8.9
5	1.6	1.9	10.5	12.0	7.7	9.4	8.3	5.1	4.3	3.5	7.6	7.7
6	1.7	1.8	9.7	12.9	7.0	8.6	7.5	5.5	4.3	3.5	7.9	7.9
7	1.7	1.7	8.8	12.1	6.5	7.7	7.1	6.0	4.1	3.7	7.3	9.1
8	1.6	1.6	7.1	10.9	6.1	7.2	6.9	7.2	3.9	3.7	6.9	10.4
9	1.5	1.6	6.6	9.1	5.8	6.7	6.9	8.2	3.9	4.4	6.2	10.4
10	1.5	1.6	9.5	8.1	5.6	6.3	7.4	8.9	3.8	5.4	5.8	9.3
11	1.6	1.6	9.7	7.6	5.3	5.9	8.6	8.3	3.6	5.5	5.5	9.2
12	2.6	1.5	9.4	7.0	5.0	5.7	9.3	7.0	3.2	5.2	5.2	8.8
13	3.2	1.5	8.1	6.7	4.8	5.4	8.7	6.1	3.2	4.5	4.9	8.0
14	3.7	1.4	6.8	6.9	4.7	5.1	8.1	5.5	4.4	4.7	4.7	7.0
15	3.0	1.4	6.1	6.9	4.7	5.7	8.4	5.1	5.4	6.7	5.1	6.2
16	3.0	1.3	6.7	7.4	4.6	7.3	8.7	4.8	7.8	8.7	6.3	5.7
17	2.6	1.3	6.6	8.0	4.6	9.9	9.4	4.5	9.2	7.9	7.3	5.2
18	2.3	1.3	6.0	8.9	4.5	10.6	10.1	4.2	8.6	9.3	7.2	4.9
19	2.1	1.2	5.7	8.7	4.5	10.4	10.2	4.0	7.7	14.2	7.6	4.8
20	1.9	1.3	5.4	8.0	4.4	10.7	8.9	3.8	6.8	15.0	7.7	6.1
21	1.8	1.3	6.3	7.5	4.4	10.6	7.7	3.7	6.0	10.8	7.7	8.1
22	1.8	1.4	7.5	7.3	4.9	9.7	7.0	3.6	5.5	10.3	7.3	11.1
23	1.9	1.6	8.1	8.7	5.5	8.9	6.5	3.5	5.1	12.0	6.9	10.3
24	2.0	1.6	9.4	12.4	6.0	8.1	6.0	3.5	4.9	13.7	6.5	9.2
25	1.9	1.5	11.0	17.4	5.8	7.4	5.7	3.4	6.0	12.3	6.5	8.5
26	2.1	1.5	10.4	21.4	5.5	6.9	5.4	3.3	6.6	9.7	7.1	7.7
27	2.9	1.5	9.0	18.9	5.3	6.7	5.2	3.3	6.7	8.1	7.3	7.0
28	3.3	1.5	7.8	13.4	5.2	6.9	5.3	3.7	6.2	7.5	6.7	6.6
29	3.3	1.5	7.0	11.1	.....	7.6	5.6	3.9	5.5	7.2	6.5	5.9
30	3.0	1.5	6.4	10.2	.....	9.6	5.3	4.1	5.0	6.6	7.7	6.1
31	2.9	.....	6.0	10.1	.....	13.7	.....	4.6	.....	7.0	9.7	.....

Daily gage height, in feet, of Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907.												
1	13.9	4.5	6.3	20.5	5.0	10.4	5.6	7.0	4.5	6.3	5.8	3.0
2	19.2	4.4	6.2	19.6	9.3	12.3	6.3	6.6	5.4	5.8	5.8	2.8
3	19.3	4.3	5.7	15.4	11.2	17.2	7.0	6.2	5.9	5.6	4.5	2.6
4	17.9	4.2	5.6	12.5	10.1	18.4	6.4	6.0	6.1	5.0	4.1	2.6
5	13.8	3.9	5.5	10.7	9.1	16.9	6.1	5.9	7.9	4.6	3.6	2.8
6	13.6	3.9	5.3	9.6	9.5	14.5	5.9	6.7	8.7	4.5	3.5	2.3
7	15.3	3.9	5.3	8.7	9.9	11.2	8.6	7.9	8.4	4.3	3.5	2.4
8	15.4	3.8	5.4	7.9	9.6	9.6	11.2	9.6	7.7	3.9	3.0	2.4
9	13.4	3.7	5.5	7.4	8.7	9.5	9.8	11.8	8.1	3.8	3.0	2.4
10	11.4	3.6	5.3	6.9	7.8	9.5	9.9	12.3	9.8	3.7	2.9	2.5
11	9.9	3.5	5.2	6.6	7.1	10.0	10.0	12.5	13.0	3.6	3.0	2.9
12	8.6	3.5	5.6	6.4	6.6	12.0	9.4	12.2	13.5	3.5	3.5	4.1
13	7.6	3.5	5.6	6.3	6.2	12.3	9.0	10.0	11.4	4.2	4.1	4.6
14	7.0	3.7	5.5	6.0	5.9	11.9	8.1	8.9	9.9	5.6	3.8	4.6
15	6.4	4.0	5.4	5.8	5.6	12.1	7.1	8.2	11.2	7.4	3.5	4.3
16	6.0	4.1	5.3	5.6	5.4	12.6	6.7	8.1	10.3	7.3	3.3	3.6
17	5.7	4.4	5.1	5.4	5.3	12.2	6.5	7.5	15.3	6.3	3.5	3.1
18	5.6	4.4	5.8	5.3	5.0	11.5	6.5	6.9	15.0	6.2	3.6	2.7
19	7.0	8.2	8.5	5.1	4.9	10.6	6.5	6.4	10.4	6.2	3.6	2.6
20	7.1	22.1	9.2	5.1	4.8	9.3	6.9	5.7	8.3	4.9	3.5	2.1
21	6.9	31.6	8.9	5.6	4.7	8.4	7.9	5.5	7.5	4.6	3.4	2.1
22	7.0	33.3	9.3	6.6	4.6	7.7	7.6	5.0	7.1	4.5	4.0	2.1
23	8.9	31.0	8.4	8.0	4.5	7.1	7.4	4.7	6.7	4.2	4.2	3.7
24	8.4	22.0	7.7	7.3	4.4	6.6	8.1	4.6	6.1	3.8	4.1	8.4
25	7.4	13.0	7.3	6.6	4.8	6.1	8.5	4.5	6.1	3.8	4.1	10.2
26	6.6	9.7	6.6	6.1	6.8	5.9	8.5	4.4	6.9	3.7	3.8	10.6
27	6.0	8.6	6.1	5.8	9.2	5.7	8.5	4.4	7.0	3.6	3.9	9.3
28	5.6	7.7	5.8	5.5	10.1	5.5	8.6	4.5	7.0	3.6	3.9	6.8
29	5.2	7.2	5.9	5.3	.....	5.4	8.7	4.5	6.8	3.3	3.6	5.8
30	4.9	6.8	10.1	5.2	.....	5.2	7.6	4.4	7.1	3.4	3.2	5.8
31	4.7	.....	16.3	5.1	.....	5.0	.....	4.4	.....	4.3	3.0	.....
1908.												
1	5.6	2.1	7.0	18.6	6.8	7.4	7.8	10.3	5.4	3.1	3.3	3.8
2	4.8	2.0	5.7	17.9	8.3	7.3	7.3	9.8	5.5	2.9	3.4	3.3
3	4.6	2.2	5.3	15.6	10.2	7.5	7.3	9.6	5.5	2.8	3.4	3.2
4	3.8	2.5	4.8	12.0	9.3	8.4	7.6	9.2	5.3	3.0	3.1	3.0
5	3.5	3.6	4.5	10.7	8.6	9.8	13.4	9.5	5.7	4.5	2.8	2.6
6	3.4	3.7	4.2	13.5	8.3	10.3	14.3	9.6	6.1	5.6	3.2	3.0
7	3.6	3.7	4.0	15.5	9.9	9.5	11.0	10.0	6.1	6.6	4.1	3.7
8	3.9	3.7	3.8	13.7	8.0	8.4	9.0	10.4	6.2	6.9	4.2	4.2
9	3.8	3.2	3.5	12.2	7.5	9.6	8.0	11.2	6.2	6.4	4.7	4.5
10	3.6	2.9	3.5	10.5	8.1	9.8	7.4	11.6	6.0	7.3	5.2	4.9
11	3.3	4.6	3.7	9.5	9.4	8.4	6.9	12.2	5.8	7.3	5.5	4.2
12	3.1	6.3	4.3	9.8	9.4	7.7	6.5	12.0	5.7	6.8	5.0	3.8
13	2.9	8.4	5.0	12.1	9.0	8.4	6.1	7.0	5.6	5.6	4.5	3.3
14	2.9	10.5	5.6	17.8	11.1	10.7	5.8	6.3	5.5	4.6	4.0	2.8
15	2.7	8.1	6.2	20.3	15.7	12.2	5.8	5.9	5.3	4.2	3.6	2.5
16	2.5	6.0	6.6	18.2	21.7	12.8	6.0	5.6	5.3	4.3	3.3	2.3
17	2.2	5.1	6.6	14.2	24.7	9.4	6.3	5.2	5.5	4.5	3.0	2.0
18	2.2	4.5	6.7	12.3	23.7	8.5	6.7	4.9	5.8	4.3	2.9	2.0
19	2.1	4.6	6.4	11.4	20.0	7.9	7.8	4.8	6.1	4.0	2.9	2.0
20	2.1	4.8	5.9	10.2	15.3	7.6	8.2	5.2	6.1	3.7	2.9	1.9
21	2.0	5.3	5.6	9.2	12.0	8.1	7.7	5.6	5.9	3.7	3.4	2.0
22	2.0	6.0	5.2	8.5	10.2	9.8	7.3	6.1	5.7	3.8	4.1	2.0
23	2.0	6.7	5.1	7.7	9.2	11.5	7.0	6.1	5.6	3.5	4.4	2.0
24	2.0	9.4	5.8	7.4	8.4	13.3	6.9	6.0	3.4	3.1	7.3	1.9
25	2.0	12.3	6.5	6.7	7.8	15.9	8.0	5.8	3.4	3.0	7.7	1.8
26	2.0	13.6	7.1	6.1	7.4	16.7	9.8	5.7	3.3	3.0	5.6	1.7
27	2.0	13.3	7.8	5.8	7.5	15.2	11.9	5.5	4.4	2.9	5.6	1.6
28	2.0	12.1	7.7	5.6	7.7	12.9	13.9	5.5	4.4	2.9	5.7	1.6
29	2.0	9.3	7.0	5.6	7.6	10.8	13.8	5.3	4.0	2.8	7.1	1.6
30	2.1	7.7	7.3	6.2	.....	9.3	11.7	5.3	3.7	2.9	6.8	1.5
31	2.2	.....	14.6	6.1	.....	8.4	.....	5.2	.....	3.1	4.9	.....

Daily gage height, in feet, of Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909.												
1	1.5	6.3	2.3	7.2	6.1	13.3	16.5	14.2	6.9	7.9	6.1	3.1
2	1.4	6.1	2.4	7.9	5.9	11.1	13.2	21.4	6.8	8.2	7.6	3.1
3	1.4	5.0	3.2	7.6	5.7	9.7	11.0	24.8	7.1	8.5	8.4	3.1
4	1.4	4.5	4.8	7.2	5.6	8.8	9.5	24.1	16.2	8.2	8.9	3.1
5	1.4	4.2	5.1	7.2	5.4	8.1	8.6	20.0	23.2	7.6	9.1	2.7
6	1.4	3.4	4.9	8.5	5.6	7.7	8.1	14.5	25.3	6.9	8.8	2.7
7	1.3	3.0	6.1	9.9	6.7	8.3	7.8	11.8	23.5	6.3	7.6	2.6
8	1.3	2.8	10.3	9.9	8.1	10.6	7.9	10.7	17.2	6.8	6.8	2.6
9	1.4	2.7	14.0	9.6	8.0	11.5	8.8	8.7	13.1	11.7	6.2	2.6
10	1.5	2.6	13.1	8.5	9.6	16.0	9.1	8.1	14.6	18.5	5.5	2.9
11	1.7	2.5	11.3	7.8	13.5	20.3	8.4	8.2	13.1	17.3	5.2	3.3
12	2.1	2.4	9.0	7.1	18.0	22.8	7.7	8.9	12.4	12.5	5.0	3.2
13	2.4	2.6	7.5	6.8	17.0	21.5	7.6	10.6	11.6	9.7	4.8	3.3
14	2.4	3.4	7.6	6.6	16.3	23.3	8.1	9.8	10.5	9.4	4.4	3.2
15	2.6	3.5	7.9	6.8	13.5	24.6	8.3	8.4	11.1	12.3	4.8	3.1
16	2.4	3.4	7.6	9.5	14.5	21.7	8.3	7.5	11.7	13.2	4.9	2.9
17	2.2	3.2	6.8	12.4	19.6	17.1	8.1	7.0	11.7	11.9	4.8	2.8
18	2.0	3.0	6.0	14.2	19.9	14.7	7.7	6.6	10.8	10.3	10.5	2.7
19	1.9	2.9	5.4	16.4	16.6	12.6	7.0	6.3	9.8	8.3	13.2	2.9
20	1.9	2.9	5.0	16.1	14.5	11.5	6.2	6.1	9.7	7.1	9.0	3.0
21	1.8	2.8	4.7	12.9	12.6	11.4	6.0	7.2	9.0	6.7	7.0	3.1
22	1.7	2.8	4.6	10.0	12.0	12.2	6.2	10.6	9.2	6.4	5.8	3.0
23	1.5	2.7	7.4	8.3	17.2	12.0	6.8	19.9	8.6	6.1	5.0	3.8
24	1.4	2.7	10.7	7.5	20.2	11.1	8.2	21.4	8.0	5.8	4.8	4.0
25	1.4	2.6	12.1	6.9	21.6	10.4	9.3	15.8	8.5	6.7	4.2	4.8
26	2.2	2.5	11.8	6.4	21.3	11.8	8.7	11.2	9.3	6.1	3.8	5.5
27	3.7	2.5	10.0	6.0	18.9	14.3	8.1	9.3	8.8	5.7	3.6	5.0
28	5.0	2.4	7.9	5.7	16.3	14.7	7.9	8.2	9.5	5.4	3.5	4.0
29	3.8	2.4	7.1	5.6	.....	15.5	8.0	7.6	9.0	5.3	3.3	3.8
30	3.2	2.3	7.2	5.7	.....	17.6	8.1	7.4	8.3	4.7	3.2	3.5
31	3.5	.....	7.6	5.8	.....	18.2	.....	7.1	.....	4.8	3.2	.....
1910.												
1	3.0	2.1	1.8	2.4	5.0	7.8	3.5	6.2	7.5	6.0	7.3	2.9
2	2.8	2.1	1.8	2.3	4.9	10.8	3.4	5.6	6.8	6.3	8.1	3.7
3	2.6	2.1	1.7	2.2	4.7	13.6	3.3	5.2	6.3	6.4	6.8	9.1
4	2.4	2.0	1.7	2.9	4.5	13.2	3.2	4.9	6.2	7.0	5.9	8.7
5	2.2	2.0	1.7	3.0	4.6	11.7	3.2	4.6	5.9	7.0	5.6	7.3
6	2.2	2.0	1.7	3.6	4.8	9.9	3.1	4.4	6.9	6.8	6.2	6.8
7	2.1	2.0	1.9	6.0	5.1	8.6	3.1	4.2	8.5	7.6	6.4	6.2
8	2.0	2.0	3.5	11.6	5.1	7.6	2.9	4.2	9.3	9.3	6.2	6.2
9	2.0	1.9	4.5	11.6	5.0	6.9	2.9	6.9	8.0	11.6	6.5	5.8
10	2.0	1.9	4.6	9.8	4.7	6.5	2.8	8.4	7.4	11.1	5.6	5.3
11	2.1	1.8	4.2	9.0	4.6	6.1	2.8	8.7	7.3	10.6	5.7	5.2
12	2.3	1.8	4.0	7.3	4.5	6.1	2.8	8.7	7.1	10.4	5.4	4.9
13	2.6	1.8	3.7	6.0	4.4	6.1	2.7	8.5	6.9	8.9	4.7	4.9
14	3.0	1.8	4.3	5.3	4.4	5.9	2.7	7.4	7.2	8.1	4.3	4.7
15	4.0	1.8	4.9	4.8	4.4	5.8	2.7	6.7	7.5	8.2	3.9	4.2
16	6.1	1.7	5.4	4.5	4.3	5.7	3.0	6.1	7.4	8.5	3.8	3.8
17	5.6	1.7	5.9	4.4	4.3	5.4	3.8	6.1	7.9	8.9	3.6	3.5
18	4.7	1.7	5.5	4.3	7.3	5.1	6.2	6.2	7.9	8.6	3.5	3.3
19	4.3	1.7	5.0	4.2	12.6	4.9	8.0	7.0	7.8	8.3	3.3	3.0
20	3.7	1.7	4.2	5.1	13.9	4.7	7.5	7.6	7.2	7.5	3.3	2.9
21	3.2	1.7	3.8	6.8	12.9	4.5	6.8	8.3	7.0	6.9	3.2	2.7
22	3.1	1.7	3.6	8.1	11.7	4.4	6.2	9.2	6.7	6.5	3.7	2.6
23	2.8	1.7	3.4	9.6	10.4	4.4	5.7	9.4	6.5	6.1	3.7	2.6
24	2.7	1.7	3.1	9.4	9.9	4.1	5.2	9.1	6.0	5.7	3.4	2.5
25	2.5	1.9	2.8	9.3	9.2	4.1	4.9	11.1	5.9	5.3	3.3	2.4
26	2.4	2.0	3.0	8.2	8.2	4.1	4.9	13.4	5.9	5.2	3.2	2.3
27	2.4	2.1	3.4	7.0	7.2	4.0	4.9	12.7	5.8	5.0	3.1	2.3
28	2.4	2.0	3.4	6.3	6.8	3.8	5.1	11.8	5.6	4.8	3.0	2.4
29	2.3	1.9	3.3	5.8	.....	3.8	6.0	10.7	5.8	4.8	2.9	2.4
30	2.3	1.8	.....	5.4	.....	3.7	6.5	9.2	5.9	5.2	3.1	2.5
31	2.2	.....	.....	5.3	.....	3.6	.....	7.8	.....	5.7	3.1	.....

Daily gage height, in feet, of Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1911.												
1	2.5	1.4	1.7	4.7	6.5	5.4	7.0	6.8	3.4	3.7	2.6	1.6
2	2.6	1.4	1.8	10.7	7.4	5.2	6.3	9.9	3.3	3.1	2.5	1.6
3	2.8	1.4	1.8	20.5	9.7	5.2	5.9	11.7	3.2	2.7	2.5	2.0
4	2.8	1.4	1.8	24.2	8.5	5.2	5.6	11.6	3.2	2.6	2.5	3.1
5	2.6	1.4	2.1	24.9	7.8	5.0	14.6	9.9	3.1	2.6	3.1	2.8
6	2.4	1.4	4.8	22.9	8.7	4.8	25.3	8.4	3.1	2.3	3.5	2.6
7	2.3	1.4	8.4	18.6	9.3	4.7	28.8	7.4	3.1	2.3	3.4	2.9
8	2.3	1.4	10.6	12.9	9.5	4.7	29.8	6.9	3.0	2.3	3.3	2.9
9	2.3	1.4	8.7	9.5	15.4	11.4	29.9	6.5	3.0	2.3	3.2	3.0
10	2.4	1.4	8.0	8.1	21.7	18.2	27.3	6.0	3.0	2.3	3.2	2.8
11	2.9	1.4	6.3	7.2	23.7	20.0	21.1	5.8	3.2	2.3	3.0	2.6
12	3.1	1.3	5.0	6.5	23.9	16.4	17.0	5.6	3.2	2.9	3.0	2.5
13	3.1	1.3	4.2	6.0	20.6	11.3	15.8	5.4	2.9	3.2	2.6	2.5
14	2.9	1.3	3.7	5.6	15.0	9.1	13.8	5.1	2.5	3.2	2.6	2.3
15	2.5	1.3	3.3	5.2	11.4	7.9	12.6	4.8	2.4	3.2	2.4	2.3
16	2.3	1.2	3.0	5.0	9.7	7.2	13.9	4.6	2.3	3.5	2.4	2.2
17	2.1	1.2	2.8	4.7	8.6	6.3	14.7	4.4	2.2	3.4	2.4	2.1
18	2.0	1.2	2.6	4.6	7.7	5.6	14.8	4.4	2.2	3.4	2.4	2.0
19	2.0	1.2	2.5	4.5	7.1	5.2	14.0	4.4	2.2	3.4	2.7	2.0
20	1.9	1.2	2.4	4.5	6.7	4.9	15.6	4.4	2.2	3.3	2.8	2.1
21	1.8	1.2	2.4	4.5	6.7	4.8	15.9	4.3	2.3	2.9	2.7	2.1
22	1.7	1.2	2.4	4.5	6.7	4.9	14.3	4.3	2.3	2.7	2.4	2.0
23	1.7	1.2	2.4	4.3	6.6	4.9	12.2	4.4	2.4	2.8	2.2	2.0
24	1.6	1.2	2.4	4.3	6.4	4.9	10.7	4.9	2.4	2.9	2.0	2.0
25	1.6	1.2	2.4	4.2	6.3	4.9	9.5	4.8	2.4	5.0	1.9	2.0
26	1.6	1.2	2.6	5.1	6.0	4.9	8.7	4.6	2.4	4.8	1.8	2.0
27	1.6	1.2	3.1	6.0	5.8	5.4	8.0	4.2	2.4	4.9	1.7	2.1
28	1.6	1.3	3.3	5.8	5.6	6.7	7.5	4.0	2.4	3.8	1.6	2.9
29	1.6	1.5	3.4	5.4	.....	7.4	7.1	3.8	2.6	3.2	1.6	2.9
30	1.6	1.5	3.4	5.4	.....	7.4	6.8	3.6	3.5	2.8	1.6	2.4
31	1.5	.....	3.7	5.9	.....	7.4	.....	3.5	.....	2.7	1.6	.....
1912.												
1	2.2	2.8	4.2	12.9	14.3	14.4	29.6	25.4	8.6	6.3	4.8	3.3
2	2.0	2.7	4.0	13.5	14.2	12.3	26.1	26.0	7.4	5.8	4.8	3.1
3	2.0	2.5	3.9	12.1	12.6	10.3	26.3	22.3	6.6	5.7	4.8	2.9
4	2.0	2.4	3.7	10.7	10.4	9.1	29.3	16.7	6.0	5.6	5.2	2.8
5	2.0	2.4	3.5	9.4	7.8	8.5	30.2	12.9	5.7	5.9	4.5	2.7
6	2.0	2.3	3.3	8.2	7.3	8.4	29.2	11.5	5.6	6.2	4.3	2.6
7	2.0	2.4	3.1	7.2	6.7	8.4	22.7	10.9	5.6	7.8	4.2	2.6
8	2.1	2.9	3.0	6.4	5.7	9.2	14.9	11.7	5.8	7.8	4.2	2.5
9	2.6	3.4	2.9	6.3	5.5	10.2	12.4	12.0	5.4	7.6	4.2	2.5
10	2.6	3.9	2.8	6.4	5.2	10.9	11.1	11.0	5.3	7.0	4.1	2.4
11	2.6	4.5	2.7	6.9	5.2	12.1	10.3	10.1	5.1	6.7	4.1	2.4
12	2.7	4.8	2.7	6.7	4.9	12.5	9.5	9.5	4.8	7.9	4.1	2.4
13	3.7	5.0	2.7	6.6	4.9	12.7	8.9	8.8	4.5	8.0	4.0	2.3
14	3.9	5.7	2.9	6.3	4.9	12.0	8.4	8.3	3.9	7.7	3.8	2.2
15	3.8	6.0	3.5	5.8	4.8	13.8	7.9	7.8	3.9	6.8	3.6	2.2
16	3.8	5.6	5.3	5.8	5.5	20.0	7.8	7.5	4.3	6.3	3.6	2.1
17	4.0	5.2	6.7	4.8	6.3	23.9	8.4	7.4	4.4	6.0	3.8	2.0
18	5.6	5.0	6.5	4.6	6.4	23.8	9.4	7.3	4.6	5.7	4.1	2.0
19	6.0	5.0	5.4	4.2	6.2	21.7	9.9	7.3	4.8	5.2	4.0	2.2
20	7.0	5.1	4.8	4.4	6.1	17.5	10.0	7.7	4.6	5.2	3.9	2.4
21	7.2	5.1	4.8	4.9	6.4	13.2	9.0	7.7	4.4	5.4	3.9	2.7
22	7.7	5.0	4.8	5.6	10.9	11.1	8.5	7.0	4.0	5.5	4.0	2.7
23	6.4	5.0	6.4	5.6	14.9	9.4	11.7	6.4	3.8	6.0	4.3	3.8
24	5.0	4.8	8.0	5.9	15.6	9.1	15.5	6.0	3.6	6.0	4.4	4.5
25	4.4	4.5	9.8	5.9	15.1	12.8	14.6	5.7	3.8	5.6	5.2	6.1
26	3.9	4.4	10.2	5.4	13.8	15.5	12.1	5.5	4.9	5.5	4.9	5.0
27	3.8	4.3	14.5	5.1	14.5	13.7	10.5	5.4	5.5	5.4	4.5	4.9
28	3.6	4.3	18.5	4.9	17.6	12.8	14.8	5.2	6.2	5.8	4.1	4.9
29	3.3	4.3	18.7	5.1	16.5	20.2	20.3	5.6	6.5	6.0	3.8	4.8
30	3.0	4.3	14.6	8.8	.....	28.5	22.7	7.8	6.8	5.6	3.6	4.4
31	2.9	.....	13.1	13.5	.....	31.3	.....	9.8	.....	5.0	3.4	.....

Daily gage height, in feet, of Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1913.												
1	3.8	1.9	1.6	7.4	15.1	22.4	26.9	5.5	10.1	3.2	2.6	1.6
2	3.4	1.8	1.6	8.2	12.3	21.6	17.1	5.4	9.2	3.1	2.5	1.5
3	3.1	1.8	1.6	8.2	10.7	16.7	12.5	5.3	9.2	3.0	2.5	1.5
4	2.8	1.8	1.7	8.6	10.1	13.0	10.9	5.1	8.6	3.1	2.5	1.5
5	2.6	1.8	3.2	8.2	9.9	10.5	9.9	4.9	8.0	3.1	2.6	1.5
6	2.5	1.8	7.0	7.2	9.9	9.0	9.2	4.8	7.5	3.1	2.6	1.5
7	2.4	1.8	9.6	7.1	9.6	8.1	8.5	4.6	7.4	3.1	2.5	1.4
8	2.3	1.8	10.2	16.0	9.0	7.4	8.0	4.6	7.4	3.1	2.2	1.2
9	2.2	2.0	8.5	17.9	8.1	6.9	7.6	4.6	7.6	3.2	2.1	1.2
10	2.1	2.7	7.0	16.4	7.3	6.6	7.2	4.6	7.5	2.9	2.1	1.2
11	2.0	3.2	5.9	14.5	6.9	7.1	6.9	4.7	8.6	2.7	2.3	1.3
12	1.9	3.4	5.0	12.2	8.0	8.0	6.8	4.7	7.8	2.5	2.7	1.3
13	1.9	3.3	4.5	12.0	10.1	8.6	6.7	4.5	6.9	2.5	2.7	1.3
14	1.9	3.0	4.0	12.0	13.8	14.1	7.0	4.4	6.0	2.8	2.8	1.2
15	1.9	2.7	3.7	11.2	11.8	24.1	7.8	4.2	5.3	2.8	2.6	1.1
16	1.9	2.5	3.5	10.4	10.1	30.0	7.8	4.2	4.9	2.6	2.4	1.0
17	2.2	2.5	3.3	9.2	8.6	31.3	8.3	4.2	4.7	2.4	2.2	1.0
18	2.4	2.3	3.3	8.0	7.8	30.4	8.8	4.2	4.4	2.3	2.2	1.0
19	2.4	2.1	3.3	8.6	7.1	25.4	8.7	4.5	4.3	2.2	2.1	1.0
20	2.4	2.1	3.5	10.3	6.6	17.5	8.3	5.2	4.1	2.0	2.1	1.0
21	2.7	2.1	3.5	10.2	6.6	13.1	7.8	5.7	3.9	1.9	2.1	1.5
22	2.8	2.0	3.4	10.1	6.6	12.9	7.2	5.3	3.9	1.8	2.1	1.6
23	2.7	2.0	3.2	10.6	6.5	12.9	6.7	5.1	3.9	1.7	2.0	1.8
24	2.4	1.9	3.2	11.2	6.3	12.3	6.2	6.9	3.9	1.7	2.0	2.3
25	2.3	1.9	3.4	15.2	6.2	11.2	5.9	12.3	3.8	1.7	2.0	2.3
26	2.2	1.8	3.9	19.9	5.8	10.1	5.7	16.0	3.5	1.7	1.9	2.2
27	2.1	1.8	4.1	20.8	6.1	13.3	5.6	16.0	3.4	2.0	1.9	2.2
28	2.1	1.8	4.1	21.7	13.7	25.4	5.5	13.5	3.4	2.1	1.9	1.9
29	2.0	1.7	4.0	23.2	.....	31.2	5.5	11.4	3.4	2.1	1.9	1.7
30	2.0	1.6	4.0	22.6	.....	33.2	5.5	11.1	3.3	2.5	1.9	1.7
31	1.9	.....	5.2	19.1	.....	32.9	.....	11.5	.....	2.7	1.7	.....

Daily gage height, in feet, of Tennessee River at Chattanooga, Tenn., Oct. 1–21, 1913.

Day.	Oct.	Day.	Oct.	Day.	Oct.	Day.	Oct.
1	1.6	6	1.4	11	0.9	16	0.7
2	1.6	7	1.2	12	.8	17	.7
3	1.6	8	1.1	13	.8	18	.7
4	1.6	9	1.0	14	.8	19	.7
5	1.5	10	.9	15	.7	20	.7
						21	.9

Daily discharge, in second-feet, of Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874–1913.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Day.	Apr.	May.	June.	July.	Aug.	Sept.
1874.							1874.						
1	38,200	195,000	21,200	16,300	45,000	89,200	16	147,000	42,300	23,500	17,900	10,600	11,000
2	38,200	190,000	20,700	16,900	36,200	55,200	17	159,000	34,800	21,800	12,800	9,750	11,400
3	37,500	174,000	20,700	16,300	29,600	34,800	18	148,000	32,800	21,800	17,400	9,350	14,300
4	34,800	169,000	22,900	14,800	23,500	28,300	19	144,000	34,100	21,200	16,300	8,580	16,300
5	30,800	167,000	23,500	14,300	16,900	20,100	20	132,000	32,800	20,100	15,800	8,580	16,300
6	29,600	162,000	22,900	13,800	17,900	17,900	21	124,000	32,100	19,600	13,800	7,850	16,300
7	32,100	154,000	22,900	11,900	19,000	17,900	22	124,000	29,600	20,100	12,400	7,850	15,300
8	45,000	140,000	22,900	10,600	23,500	17,900	23	125,000	29,600	14,800	10,600	8,210	13,800
9	82,400	123,000	22,400	9,750	25,300	20,100	24	151,000	27,100	13,800	10,600	12,800	12,800
10	103,000	99,400	21,800	10,200	19,600	16,300	25	144,000	22,900	12,800	11,400	11,900	12,800
11	110,000	56,600	21,800	11,000	17,900	11,900	26	161,000	27,100	11,900	16,300	12,800	12,800
12	106,000	60,000	22,400	12,800	15,300	11,000	27	172,000	26,500	11,400	19,600	12,800	12,800
13	96,700	60,000	25,900	12,800	12,800	10,600	28	170,000	25,300	12,800	25,900	26,500	13,800
14	97,400	53,200	25,900	14,300	12,800	11,000	29	178,000	23,500	16,300	37,500	55,200	16,300
15	103,000	43,000	32,800	15,800	11,000	11,000	30	190,000	23,500	16,900	43,000	90,600	17,900
							31	.....	23,500	.....	51,800	92,600	.....

Daily discharge, in second-feet, of Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1875.												
1	19,000	9,350	56,600	37,500	201,000	361,000	80,400	135,000	19,000	29,600	31,500	20,700
2	25,300	8,580	52,500	41,600	167,000	341,000	94,600	123,000	17,900	32,100	30,800	17,900
3	27,700	8,580	48,400	79,000	110,000	307,000	126,000	80,400	17,900	30,200	30,200	17,900
4	27,100	8,580	38,900	85,800	72,200	286,000	133,000	65,400	19,600	29,600	30,200	17,900
5	22,400	7,850	28,300	93,300	64,700	278,000	123,000	57,900	22,900	28,900	34,100	17,400
6	11,900	7,160	28,300	82,400	58,600	267,000	110,000	52,500	27,100	28,300	45,000	16,900
7	11,900	6,830	25,300	72,200	51,100	246,000	89,200	46,400	26,500	29,600	36,200	16,300
8	12,400	6,830	22,900	83,800	49,800	212,000	74,200	43,000	24,700	30,800	30,800	15,800
9	11,900	7,850	20,700	60,600	42,300	174,000	64,700	39,600	27,100	34,100	28,300	14,800
10	11,900	9,750	16,900	58,600	38,900	145,000	57,900	37,500	27,700	33,400	25,300	14,800
11	11,900	15,800	16,300	54,500	37,500	129,000	62,000	36,200	25,300	32,100	24,700	14,800
12	11,000	22,400	15,800	40,200	40,900	108,000	77,000	36,200	22,400	36,200	25,300	15,800
13	10,600	21,800	20,700	36,200	44,300	90,600	83,800	34,800	20,700	45,000	28,300	15,300
14	10,600	20,100	20,700	34,800	47,000	81,000	77,000	32,100	17,900	56,600	30,800	14,300
15	10,600	19,000	21,200	33,400	53,800	79,000	65,400	30,800	17,400	72,900	34,100	14,800
16	9,350	17,400	49,800	28,300	56,600	137,000	58,600	28,900	16,900	130,000	47,700	14,800
17	8,580	16,300	49,800	27,700	51,100	176,000	53,200	27,100	21,200	119,000	67,400	14,800
18	8,210	14,300	48,400	27,100	46,400	185,000	48,400	25,900	21,800	87,200	77,000	15,300
19	10,200	11,900	47,700	26,500	43,000	171,000	45,000	25,300	26,500	66,100	70,200	37,500
20	15,800	13,800	38,200	25,300	41,600	145,000	42,300	23,500	25,900	51,100	64,700	70,200
21	16,900	14,800	36,200	24,100	45,700	193,000	40,900	24,100	26,500	46,400	55,200	62,000
22	14,800	13,800	34,800	23,500	51,800	216,000	42,300	23,500	25,900	39,600	42,300	43,000
23	12,800	55,200	37,500	22,900	51,800	225,000	47,000	22,900	29,600	43,000	35,500	33,400
24	12,800	59,300	45,700	28,300	116,000	223,000	51,800	22,400	32,100	60,600	31,500	28,900
25	12,800	66,800	40,900	47,700	235,000	184,000	60,600	22,400	32,100	82,400	29,600	25,300
26	11,900	67,400	36,200	56,600	299,000	120,000	51,800	21,800	30,200	75,600	29,600	22,900
27	11,000	43,000	29,600	51,100	331,000	92,600	46,400	21,800	28,300	66,800	29,600	20,700
28	9,750	43,000	27,700	47,700	357,000	77,000	55,200	22,400	26,500	60,600	28,300	19,600
29	9,750	36,200	32,800	106,000	.....	92,600	96,000	22,400	25,900	47,700	26,500	19,000
30	9,750	59,300	34,800	188,000	.....	100,000	127,000	21,200	26,500	40,200	23,500	19,600
31	11,900	.....	36,800	215,000	.....	92,600	.....	19,600	.....	34,100	22,400	.....
1876.												
1	19,600	13,300	36,200	205,000	87,200	41,600	77,000	45,700	49,100	40,200	24,700	14,300
2	17,900	13,800	33,400	153,000	87,800	39,600	83,800	55,200	47,000	36,200	25,900	13,800
3	17,900	13,800	32,800	100,000	87,800	37,500	85,800	77,000	46,400	37,500	29,600	16,900
4	17,900	13,800	33,400	81,000	81,000	36,200	76,300	83,800	48,400	39,600	27,100	16,300
5	16,900	13,800	38,200	69,500	79,000	34,800	67,400	76,300	49,800	41,600	25,900	14,300
6	16,900	15,800	45,700	62,000	74,900	33,400	59,300	63,400	51,100	42,300	34,800	12,800
7	22,900	17,900	54,500	55,200	63,400	32,100	53,800	62,000	51,100	46,400	32,800	12,400
8	32,100	22,400	53,800	49,100	62,000	34,100	49,800	70,200	46,400	43,000	29,600	12,400
9	29,600	26,500	55,900	45,000	63,400	40,900	46,400	106,000	40,900	41,600	27,700	11,900
10	24,700	29,600	55,200	41,600	64,700	48,400	43,000	130,000	35,500	38,900	25,900	11,900
11	22,400	32,100	53,200	40,200	63,400	47,000	41,600	130,000	32,100	36,800	24,700	12,800
12	20,100	37,500	49,800	39,600	64,700	45,700	39,600	118,000	29,600	34,800	25,300	13,800
13	19,000	39,600	45,700	36,200	70,200	42,300	37,500	97,400	28,300	32,100	23,500	14,300
14	17,400	38,900	41,600	34,800	81,000	41,600	40,200	77,000	27,700	29,600	22,400	13,800
15	16,900	37,500	37,500	32,800	108,000	43,600	63,400	64,700	27,100	27,100	20,700	12,800
16	15,800	37,500	34,100	30,800	136,000	68,800	85,100	58,600	30,800	27,100	20,100	12,800
17	15,800	40,200	31,500	29,600	143,000	129,000	76,300	53,800	67,400	27,100	20,700	12,800
18	15,800	38,200	29,600	34,100	122,000	137,000	74,200	49,100	118,000	27,700	21,200	11,900
19	15,800	33,400	27,100	51,100	103,000	115,000	63,400	46,400	144,000	27,100	20,100	11,900
20	15,300	31,500	25,300	80,400	77,000	90,600	56,600	46,400	153,000	28,900	19,600	11,400
21	14,800	29,600	23,500	92,600	64,700	77,000	53,200	48,400	125,000	27,700	19,000	11,900
22	14,300	36,200	23,500	92,600	60,600	69,500	50,400	46,400	74,200	28,300	17,900	14,800
23	14,300	32,100	22,400	83,100	60,600	62,700	48,000	46,400	68,800	29,600	16,900	14,300
24	13,800	34,800	23,500	74,900	57,200	60,600	40,900	43,000	56,600	26,500	16,300	13,800
25	12,800	38,900	27,700	79,000	53,200	81,000	39,600	39,600	49,100	23,500	15,800	13,800
26	12,800	43,000	47,700	101,000	51,800	109,000	38,200	41,600	48,400	22,400	16,300	15,800
27	12,800	40,200	82,400	91,900	48,400	111,000	36,200	43,000	51,800	21,200	16,300	19,000
28	12,800	40,200	125,000	75,600	46,400	102,000	34,800	48,400	49,100	21,200	15,800	17,400
29	12,800	40,200	180,000	66,100	43,000	101,000	36,200	67,400	47,700	20,100	15,800	14,800
30	12,800	38,900	218,000	75,600	.....	101,000	39,600	60,600	43,000	19,000	14,800	13,800
31	12,800	.....	227,000	93,300	.....	85,800	.....	53,800	.....	21,200	14,300	.....

Daily discharge, in second-feet, of Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1877.												
1	12,800	10,200	13,800	17,900	36,200	17,400	65,400	71,500	19,000	22,400	13,800	11,000
2	12,400	9,750	13,800	14,800	33,400	17,900	49,800	60,600	17,900	20,700	12,800	10,600
3	11,400	9,350	13,800	11,000	32,100	24,700	63,400	53,200	17,900	19,000	12,800	9,750
4	11,000	9,350	15,300	10,600	31,500	40,200	66,100	47,700	17,400	17,400	12,800	9,750
5	11,000	9,750	14,300	13,800	32,800	32,800	60,600	44,300	16,900	14,800	12,400	9,750
6	11,000	9,750	11,900	12,800	33,400	31,500	56,600	43,600	16,300	14,300	11,900	9,350
7	10,600	9,750	11,000	15,300	32,100	30,800	58,600	45,700	15,800	13,800	11,000	11,900
8	10,200	9,750	11,000	25,900	29,600	29,600	88,500	45,700	16,900	13,800	11,000	15,300
9	9,750	9,350	11,000	34,100	28,900	41,600	150,000	47,700	17,400	15,800	10,600	14,300
10	9,750	9,350	10,600	32,800	27,700	75,600	184,000	49,800	17,900	15,800	10,600	11,900
11	9,350	9,350	10,200	29,600	25,900	100,000	189,000	49,100	17,900	13,800	10,600	13,800
12	8,580	9,350	9,750	31,500	25,300	94,600	171,000	48,400	19,600	12,800	10,600	17,900
13	8,580	9,350	9,350	33,400	23,500	82,400	133,000	45,000	20,100	12,800	10,200	17,900
14	8,210	8,580	10,200	62,000	23,500	72,200	116,000	40,900	19,600	11,900	10,200	15,800
15	8,210	8,580	11,000	86,500	22,400	72,900	112,000	37,500	19,600	11,900	10,200	12,800
16	8,210	8,580	11,400	116,000	21,200	61,300	108,000	34,800	19,000	11,400	11,400	11,900
17	8,210	9,350	12,800	140,000	21,200	55,900	96,000	33,400	19,000	14,800	12,800	11,000
18	7,850	9,350	12,800	148,000	20,100	53,800	82,400	33,400	19,000	12,400	11,900	11,000
19	7,850	9,750	12,400	154,000	19,000	52,500	74,900	30,800	19,000	12,400	10,600	11,000
20	7,850	10,600	11,900	144,000	19,000	49,800	77,000	27,700	19,600	17,400	9,750	11,900
21	8,210	11,400	11,900	152,000	17,900	46,400	89,200	27,100	20,100	20,100	9,350	14,800
22	8,210	12,800	11,000	174,000	17,900	44,300	97,400	27,100	22,900	20,700	8,960	15,300
23	9,750	12,800	11,000	178,000	17,900	42,300	101,000	27,100	28,900	20,100	8,960	16,900
24	11,900	14,300	12,800	157,000	17,900	40,900	89,200	24,700	27,700	22,900	9,350	15,800
25	19,000	19,000	13,800	120,000	19,000	39,600	72,900	23,500	22,900	29,600	9,750	14,800
26	17,900	21,800	15,800	82,400	19,000	47,000	60,600	22,400	20,700	26,500	14,300	12,800
27	14,800	19,600	16,900	68,100	17,900	62,000	57,900	21,200	19,000	26,500	13,800	12,800
28	13,800	17,400	16,900	58,600	17,400	87,800	79,000	21,200	17,900	23,500	13,800	12,800
29	12,800	15,300	17,900	49,800	.....	108,000	91,900	20,100	19,600	20,100	12,400	12,800
30	11,000	14,300	16,900	45,000	.....	99,400	79,000	20,100	22,400	17,900	11,400	11,000
31	10,600	.....	19,000	40,200	.....	77,000	.....	19,600	.....	15,300	10,600	.....
1878.												
1	10,200	12,800	43,000	53,200	72,900	51,800	27,700	40,200	22,900	12,800	15,800	22,400
2	9,750	15,300	37,500	62,700	72,200	45,000	26,500	36,200	20,100	12,800	20,100	20,700
3	9,350	35,500	32,100	55,900	63,400	43,000	25,300	34,800	19,000	14,300	17,900	19,600
4	8,580	45,000	29,600	47,000	54,500	43,000	23,500	34,800	17,900	15,300	17,400	19,600
5	8,580	36,200	29,600	43,000	48,400	49,100	24,700	32,800	17,400	14,300	15,800	17,900
6	9,750	32,100	36,200	38,200	43,000	47,700	26,500	38,200	16,900	12,800	14,300	14,800
7	12,800	29,600	44,300	34,100	40,200	46,400	27,700	40,900	17,400	12,400	11,900	12,400
8	22,400	28,300	43,000	30,800	42,300	43,000	28,300	43,000	16,900	11,900	11,000	11,400
9	17,900	25,300	38,900	27,700	49,100	40,900	28,300	44,300	16,300	12,400	10,200	10,200
10	19,000	23,500	36,200	29,600	72,900	38,900	29,600	40,900	17,900	12,800	9,350	9,350
11	17,900	27,700	32,100	39,600	83,800	37,500	40,200	37,500	19,000	13,800	8,580	8,580
12	16,300	31,500	29,600	55,200	79,000	37,500	48,400	34,100	17,900	13,800	8,580	8,210
13	15,800	29,600	27,700	70,200	68,800	44,300	48,400	31,500	17,900	12,800	9,350	7,850
14	14,300	25,300	25,900	79,000	57,900	54,500	42,300	28,900	17,900	12,400	10,200	7,500
15	12,800	22,900	23,500	71,500	49,800	62,700	38,200	27,700	17,900	12,400	12,400	7,500
16	11,900	21,200	23,500	62,000	47,000	66,100	35,500	27,100	17,900	12,400	16,300	66,100
17	11,400	20,700	21,800	54,500	45,000	55,900	33,400	26,500	16,300	12,800	22,400	49,800
18	10,200	21,200	21,200	49,800	42,300	49,800	32,100	26,500	15,800	11,900	20,700	32,100
19	10,200	19,600	20,100	45,000	40,200	43,000	30,200	29,600	15,300	12,400	16,900	22,400
20	10,600	19,000	19,600	41,600	38,900	38,900	35,500	34,100	14,800	11,400	15,300	17,400
21	13,300	19,000	19,000	38,900	40,900	36,200	36,200	41,600	15,800	11,000	13,800	15,300
22	15,300	29,600	17,900	37,500	55,200	33,400	35,500	41,600	15,300	10,200	11,900	12,800
23	17,900	40,200	17,900	38,900	72,900	31,500	33,400	33,400	15,300	10,200	16,300	11,900
24	17,900	47,700	19,000	39,600	113,000	29,600	38,900	28,900	17,900	9,750	23,500	11,400
25	17,900	60,600	24,700	38,900	125,000	28,300	58,600	26,500	16,900	8,580	21,200	11,900
26	15,800	89,900	41,600	38,200	101,000	27,700	56,600	23,500	15,300	8,580	16,300	12,400
27	14,800	96,000	47,000	38,200	78,300	25,900	51,800	22,900	14,800	8,580	12,800	11,400
28	13,300	85,100	45,000	37,500	66,800	25,900	51,100	22,400	13,800	8,210	13,800	11,400
29	13,300	66,100	43,000	40,900	.....	27,700	49,800	22,900	13,800	8,580	15,800	11,000
30	13,300	52,500	47,000	43,000	.....	29,600	45,700	25,300	12,800	9,350	17,900	10,600
31	13,300	.....	51,800	60,000	.....	29,600	.....	25,900	.....	14,300	22,900	.....

Daily discharge, in second-feet, of Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1879.												
1	9,750	17,900	92,600	32,800	73,600	68,800	33,400	24,100	18,500	8,210	12,800	13,800
2	8,580	19,600	83,800	36,800	72,900	66,100	44,300	24,100	18,500	8,580	21,800	12,800
3	8,580	19,000	77,000	45,700	62,000	58,600	51,100	23,500	16,900	8,580	22,900	12,400
4	8,210	19,600	73,600	45,000	52,500	51,800	51,800	22,900	15,800	8,580	24,100	12,800
5	7,850	17,900	68,800	36,200	50,400	46,400	43,000	21,800	15,300	8,580	22,400	12,800
6	7,850	16,300	60,000	32,100	57,200	42,300	38,200	21,200	14,800	8,580	18,500	14,800
7	8,210	14,800	48,400	23,500	69,500	39,600	36,200	29,600	13,800	8,210	17,900	15,800
8	8,210	13,800	40,200	24,100	69,500	36,800	33,400	37,500	13,300	7,850	16,300	14,300
9	8,580	12,800	36,200	49,100	62,000	34,800	32,800	33,400	12,800	7,500	16,300	12,400
10	9,750	12,800	45,000	132,000	62,000	34,100	36,200	27,100	11,900	7,500	15,800	11,400
11	10,200	11,900	56,600	157,000	55,200	32,100	48,400	24,100	12,400	7,850	16,300	9,750
12	10,200	11,400	68,100	181,000	50,400	31,500	53,800	21,800	12,800	7,850	14,800	9,350
13	10,200	11,000	61,300	217,000	49,100	28,300	49,800	20,100	13,800	7,850	14,300	8,960
14	10,600	11,000	65,400	250,000	47,000	29,600	44,300	19,600	15,300	7,850	12,800	8,580
15	11,400	11,400	62,000	252,000	43,600	29,600	40,200	21,800	15,800	7,500	11,400	8,580
16	11,400	11,900	68,800	250,000	40,200	28,300	39,600	21,800	15,300	7,500	11,000	7,850
17	11,400	11,900	73,600	183,000	45,700	27,700	47,700	22,400	16,300	8,210	12,400	7,850
18	11,000	11,900	67,400	110,000	93,300	27,700	50,400	29,600	14,300	7,850	11,900	7,850
19	10,200	11,900	61,300	89,200	122,000	27,100	49,800	33,400	12,800	7,850	10,600	7,500
20	10,200	12,800	52,500	92,600	110,000	26,500	48,400	34,800	11,900	7,850	10,600	7,500
21	10,200	12,800	45,000	89,200	88,500	25,300	48,400	34,100	10,200	8,960	8,580	7,160
22	10,200	13,800	45,700	81,000	72,200	26,500	44,300	33,400	9,750	8,580	8,960	7,160
23	10,600	12,800	49,800	68,100	65,400	38,900	41,600	32,800	9,350	7,850	11,000	6,830
24	11,000	14,300	53,200	57,200	66,100	40,200	38,200	26,500	8,960	7,500	14,800	6,510
25	12,400	15,300	55,200	52,500	76,300	40,200	34,800	25,300	8,960	7,850	15,800	6,200
26	32,100	17,900	49,800	47,700	78,300	40,900	29,600	23,500	8,960	7,160	18,500	6,200
27	41,600	48,400	43,000	44,300	75,600	40,200	27,700	20,100	8,580	7,500	22,400	5,900
28	30,800	103,000	36,200	41,600	72,200	38,900	26,500	18,500	8,210	8,580	22,900	5,900
29	24,700	116,000	31,500	40,900	.....	37,500	25,900	17,400	7,850	10,600	21,800	5,900
30	20,700	103,000	28,900	45,700	.....	36,200	24,700	16,900	7,850	11,400	19,000	5,900
31	17,900	.....	30,800	49,800	.....	33,400	.....	17,400	.....	11,000	15,800	.....
1880.												
1	5,610	13,800	31,500	47,700	23,500	55,200	47,700	92,600	31,500	17,900	11,000	13,800
2	5,610	13,300	27,100	43,000	24,100	49,100	45,700	92,600	32,800	16,900	10,600	12,800
3	5,610	12,800	25,300	38,900	28,300	45,700	55,200	82,400	34,800	19,000	11,000	12,400
4	5,610	11,900	22,400	34,800	36,200	57,200	92,600	73,600	36,200	30,200	11,400	13,800
5	5,330	11,400	20,700	32,100	39,600	87,200	109,000	61,300	31,500	47,000	14,800	16,300
6	5,330	11,000	20,700	30,800	36,200	110,000	99,400	53,200	29,600	40,200	15,800	17,400
7	5,330	10,600	27,100	38,200	33,400	101,000	82,400	48,400	27,100	33,400	14,800	17,400
8	5,330	10,200	27,100	47,000	30,800	100,000	77,600	45,000	24,700	32,100	24,100	16,300
9	5,330	10,200	26,500	58,600	28,300	123,000	68,100	40,200	23,500	26,500	23,500	15,800
10	5,330	9,750	24,700	66,100	25,900	161,000	59,300	37,500	22,400	23,500	23,500	13,800
11	8,960	10,200	40,900	62,000	24,700	184,000	52,500	34,800	20,700	21,800	25,900	15,800
12	10,200	11,900	93,300	59,300	24,700	187,000	53,800	34,100	19,600	20,100	21,800	17,900
13	12,800	12,400	96,000	54,500	30,800	189,000	47,000	33,400	19,600	18,500	20,700	20,700
14	11,400	12,400	77,000	48,400	78,300	188,000	41,600	32,100	19,000	17,900	21,200	21,200
15	10,600	12,400	87,800	45,700	150,000	188,000	38,200	30,800	17,900	16,900	24,100	19,600
16	8,960	11,900	116,000	41,600	176,000	211,000	49,100	29,600	16,900	16,300	20,100	17,900
17	8,960	12,400	115,000	38,200	176,000	232,000	69,500	27,100	16,300	24,700	20,700	16,300
18	10,600	15,800	100,000	36,200	129,000	254,000	77,000	25,900	15,800	21,200	16,900	15,800
19	37,500	24,100	78,300	34,800	75,600	250,000	72,200	24,100	15,800	21,200	15,800	12,800
20	85,100	27,700	61,300	33,400	58,600	237,000	66,100	23,500	15,800	15,800	14,800	11,900
21	68,800	25,900	48,400	32,100	52,500	184,000	70,800	23,500	15,300	13,800	13,800	11,000
22	57,200	23,500	43,000	30,800	47,700	137,000	74,900	23,500	14,300	14,300	19,000	10,200
23	44,300	19,000	52,500	32,100	44,300	107,000	66,100	28,900	13,800	14,800	20,100	9,350
24	32,800	16,900	110,000	30,800	40,900	88,500	60,000	32,100	13,300	16,300	21,200	9,750
25	32,800	15,300	138,000	29,600	37,500	75,600	55,200	33,400	13,300	17,900	22,400	9,350
26	22,900	14,300	143,000	27,100	34,800	66,800	62,700	46,400	13,300	17,400	24,100	9,350
27	21,200	13,300	141,000	25,900	45,000	60,000	82,400	44,300	12,800	16,900	25,900	9,750
28	19,000	13,300	115,000	25,300	57,200	56,600	89,200	38,900	12,800	15,300	27,100	11,900
29	16,900	16,300	91,900	24,100	56,600	53,800	79,700	34,100	12,800	13,800	15,800	17,400
30	16,300	27,700	71,500	23,500	.....	52,500	87,200	32,100	15,800	12,800	15,300	22,400
31	14,800	.....	57,900	23,500	.....	49,800	.....	32,100	.....	11,900	14,800	.....

Daily discharge in second-feet, of Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1881.												
1	19,000	8,580	113,000	24,700	34,100	55,200	48,400	53,800	18,500	12,400	7,850	5,060
2	16,900	8,580	153,000	17,900	38,200	53,800	50,400	48,400	19,000	17,400	7,500	6,200
3	15,300	9,750	174,000	19,000	64,000	49,100	51,100	45,000	20,100	19,600	7,160	7,500
4	13,300	12,800	144,000	20,700	68,800	46,400	49,100	41,600	24,700	20,100	6,830	8,210
5	12,800	11,900	102,000	24,100	63,400	43,000	46,400	40,900	25,300	20,100	6,510	7,500
6	11,400	12,800	98,700	37,500	53,800	41,600	43,000	43,000	23,500	17,400	6,510	6,830
7	11,000	13,800	117,000	55,900	45,700	38,900	41,600	43,000	21,800	14,800	7,160	5,900
8	10,600	13,800	112,000	67,400	46,400	40,900	41,600	40,900	21,800	13,300	7,500	5,330
9	10,200	14,300	93,300	74,200	61,300	40,200	40,900	38,900	22,400	11,900	7,850	5,060
10	9,750	16,300	70,200	74,900	86,500	37,500	47,000	37,500	28,300	11,000	8,210	5,060
11	9,350	21,200	53,800	74,200	109,000	36,200	53,200	37,500	28,900	10,200	18,500	4,800
12	9,350	23,500	45,000	79,700	128,000	35,500	61,300	33,400	25,900	9,350	16,900	4,800
13	8,960	23,500	39,600	74,200	146,000	36,200	77,000	31,500	22,400	9,350	13,300	4,800
14	8,580	22,900	35,500	70,200	142,000	35,500	101,000	29,600	20,100	10,200	13,300	4,800
15	8,580	23,500	32,800	62,700	116,000	35,500	116,000	28,900	20,100	9,750	8,960	5,330
16	7,850	20,700	31,500	60,000	94,000	45,000	116,000	27,100	22,400	11,900	8,210	5,330
17	8,580	19,000	34,800	57,200	75,600	54,500	103,000	25,900	21,800	11,900	7,850	5,330
18	8,580	16,900	33,400	52,500	62,700	66,100	81,000	24,700	19,000	12,400	6,510	9,350
19	8,960	15,300	43,600	48,400	64,700	88,500	67,400	23,500	18,500	11,900	8,210	28,300
20	8,580	13,800	43,000	52,500	78,300	125,000	60,000	22,900	15,800	11,000	6,830	28,300
21	8,580	13,300	41,600	82,400	91,900	125,000	53,800	22,400	14,800	15,300	7,160	72,200
22	8,210	12,800	38,900	112,000	91,900	97,400	48,400	21,200	14,800	12,800	7,160	48,400
23	8,210	11,900	35,500	122,000	87,800	81,700	47,700	21,200	17,900	11,000	6,200	33,400
24	7,850	11,000	33,400	112,000	70,200	71,500	48,400	21,800	16,900	9,350	6,200	23,500
25	8,210	11,000	31,500	98,700	60,000	62,000	51,100	21,800	15,800	8,960	6,510	19,000
26	8,210	10,600	32,100	70,800	54,500	56,600	55,200	22,400	14,300	10,200	6,510	13,300
27	7,850	10,600	34,800	56,600	48,400	53,200	67,400	21,200	13,300	11,000	6,200	14,800
28	7,850	13,300	34,800	48,400	53,200	55,200	74,200	20,100	12,800	10,600	5,610	14,800
29	8,210	42,300	33,400	41,600	.....	53,800	65,400	19,000	12,800	10,600	6,200	15,800
30	7,850	85,800	30,800	38,200	.....	50,400	55,200	18,500	12,800	9,350	5,900	16,900
31	8,210	.....	25,900	35,500	.....	49,100	.....	17,900	.....	8,580	5,330	.....
1882.												
1	15,800	40,200	28,300	101,000	197,000	83,800	70,200	40,900	51,100	25,900	22,400	32,100
2	15,300	60,600	28,300	89,900	194,000	124,000	61,300	38,200	53,800	34,800	24,100	34,100
3	13,800	56,600	35,500	74,900	130,000	144,000	54,500	34,800	62,000	36,800	27,100	36,800
4	12,800	51,100	35,500	62,700	118,000	130,000	51,100	32,100	55,900	35,500	36,200	30,800
5	10,600	38,900	34,100	54,500	145,000	114,000	47,700	29,600	52,500	34,100	35,500	29,600
6	8,960	30,200	33,400	57,900	160,000	94,600	44,300	28,300	48,400	40,900	36,800	27,100
7	8,580	25,900	30,800	85,800	150,000	84,400	43,000	30,200	47,700	38,900	34,800	23,500
8	8,210	25,900	27,700	140,000	127,000	85,100	44,300	29,600	38,200	32,100	30,800	21,200
9	7,850	23,500	25,900	176,000	120,000	101,000	48,400	28,900	32,800	27,700	27,700	22,900
10	7,500	34,800	23,500	195,000	130,000	123,000	51,800	27,700	30,200	24,100	26,500	24,100
11	7,500	36,200	21,200	197,000	148,000	137,000	60,000	36,200	27,700	21,800	24,700	30,800
12	7,160	37,500	20,700	197,000	153,000	112,000	58,600	32,800	26,500	21,200	22,900	76,300
13	7,160	38,900	19,000	200,000	154,000	99,400	53,800	29,600	25,300	21,800	21,800	142,000
14	7,160	40,200	24,100	202,000	144,000	94,600	56,600	40,200	26,500	23,500	20,700	149,000
15	6,830	38,900	74,200	200,000	133,000	85,800	45,700	34,100	28,300	28,300	19,000	111,000
16	6,830	34,100	112,000	199,000	139,000	70,200	43,000	32,800	27,100	38,200	17,900	67,400
17	6,510	29,600	108,000	222,000	144,000	61,300	41,600	30,200	26,500	34,100	17,900	46,400
18	6,510	25,900	98,000	250,000	133,000	62,700	38,200	30,200	32,800	27,100	22,400	37,500
19	6,200	22,400	75,600	267,000	118,000	72,200	35,500	28,300	47,700	22,900	29,600	31,500
20	6,510	20,700	53,800	267,000	108,000	63,400	33,400	25,900	49,100	22,400	28,900	27,100
21	6,200	19,000	47,700	261,000	99,400	60,600	32,100	25,300	43,000	24,100	25,900	24,700
22	5,900	17,900	98,700	258,000	91,200	61,300	31,500	28,900	37,500	24,100	21,200	25,300
23	7,160	19,000	131,000	258,000	86,500	60,600	49,100	32,100	34,800	23,500	17,900	22,400
24	7,850	34,800	119,000	250,000	80,400	60,600	63,400	32,800	35,500	22,400	15,800	21,200
25	7,850	60,600	100,000	229,000	72,900	57,900	62,700	33,400	36,200	20,700	14,300	20,100
26	7,500	60,000	94,600	180,000	66,100	53,800	58,600	32,100	36,800	19,000	13,800	19,000
27	8,210	62,000	90,600	118,000	60,000	53,200	55,200	40,200	35,500	18,500	15,800	17,900
28	8,580	52,500	95,300	94,600	57,200	64,700	49,800	38,900	28,900	19,000	16,900	16,900
29	8,960	38,200	101,000	138,000	.....	84,400	46,400	45,000	28,300	20,100	21,200	16,300
30	11,900	32,100	109,000	195,000	.....	86,500	43,000	53,200	26,500	20,700	23,500	16,300
31	17,400	.....	107,000	200,000	.....	79,700	.....	53,200	.....	19,000	26,500	.....

Daily discharge, in second-feet, of Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1883.												
1	16,900	13,800	26,500	25,300	57,900	47,700	96,700	68,800	21,200	22,900	9,750	9,750
2	15,800	15,300	23,500	24,700	55,200	43,600	159,000	64,000	21,200	22,400	9,350	8,960
3	15,800	16,300	20,700	22,900	49,100	40,900	172,000	56,600	19,600	20,100	9,750	8,210
4	15,300	15,300	18,500	21,200	45,700	38,900	154,000	51,100	18,500	18,500	10,200	7,500
5	14,800	14,300	16,900	21,800	45,000	36,200	108,000	47,000	17,900	16,900	11,400	7,160
6	14,800	12,800	15,800	25,300	47,000	34,800	80,400	43,600	19,000	16,300	10,200	6,830
7	14,300	11,900	15,300	44,300	57,900	38,200	87,800	40,900	20,700	15,300	9,750	6,510
8	13,800	11,400	14,300	70,800	68,100	50,400	104,000	38,900	27,100	15,300	10,600	6,200
9	12,800	11,000	12,800	81,000	94,600	60,000	110,000	36,200	30,800	15,800	11,900	5,900
10	12,800	11,000	12,800	78,300	114,000	60,600	109,000	34,800	30,200	16,300	11,400	5,900
11	11,900	10,600	13,300	70,800	106,000	57,200	110,000	34,100	28,900	16,300	10,200	5,610
12	11,400	10,600	20,700	57,900	92,600	51,800	112,000	34,100	26,500	17,900	8,960	5,330
13	11,000	11,000	19,000	50,400	84,400	49,800	118,000	33,400	32,100	22,400	8,580	5,330
14	11,000	11,900	18,500	58,600	85,800	47,700	121,000	32,100	34,800	22,400	8,960	5,060
15	11,000	15,300	19,000	91,900	83,100	42,300	111,000	30,800	40,900	20,100	9,350	5,060
16	11,000	15,800	18,500	107,000	74,200	39,600	96,000	30,800	38,200	19,600	9,750	5,060
17	11,000	15,300	17,400	101,000	67,400	37,500	89,200	30,800	33,400	17,900	13,800	5,060
18	10,600	14,800	16,300	110,000	62,000	35,500	96,700	29,600	28,300	15,800	13,300	5,060
19	11,000	13,800	14,300	129,000	61,300	33,400	100,000	27,700	25,300	16,900	14,800	4,800
20	11,900	12,800	14,800	148,000	64,700	32,100	94,000	27,100	22,900	15,800	14,300	5,060
21	16,300	13,300	19,000	199,000	64,700	31,500	79,700	25,300	20,700	13,300	12,400	5,330
22	24,100	14,800	24,700	233,000	60,600	30,800	69,500	25,300	20,100	12,400	11,000	6,200
23	22,400	14,800	39,600	254,000	55,900	29,600	114,000	25,300	19,600	11,000	10,200	6,830
24	19,000	14,300	55,900	252,000	53,800	28,300	176,000	25,900	21,200	10,200	9,350	10,600
25	17,900	12,800	62,000	218,000	56,600	28,300	208,000	25,300	25,900	10,200	9,350	11,900
26	15,300	11,900	56,600	145,000	57,200	33,400	215,000	24,700	23,500	10,200	8,960	11,400
27	12,800	11,900	49,100	87,200	55,900	36,800	188,000	24,100	21,800	11,000	10,600	13,300
28	12,400	12,400	42,300	68,800	51,100	36,800	129,000	24,100	23,500	11,900	8,960	14,300
29	11,900	12,400	34,100	62,000	.....	37,500	87,800	24,100	22,900	11,000	8,960	12,800
30	11,400	23,500	30,200	60,000	.....	36,800	74,900	22,400	23,500	9,750	9,750	11,400
31	11,900	.....	27,700	59,300	.....	44,300	.....	21,800	.....	9,350	10,200	.....
1884.												
1	9,750	18,500	24,100	38,900	72,200	58,600	72,200	62,700	22,900	50,400	35,500	17,900
2	8,580	19,600	21,800	37,500	127,000	55,900	66,100	56,600	21,800	43,600	60,600	15,300
3	10,200	17,400	19,600	35,500	161,000	52,500	62,700	54,500	21,200	40,200	43,000	12,800
4	8,960	15,300	17,400	34,100	167,000	49,800	61,300	55,200	21,200	41,600	31,500	11,900
5	9,350	12,400	16,300	31,500	133,000	47,700	57,900	54,500	19,600	39,600	34,800	10,600
6	11,000	11,000	15,300	28,900	87,200	98,700	53,800	63,400	19,000	38,200	28,900	9,750
7	10,600	10,200	14,300	25,300	84,400	193,000	49,800	71,500	28,300	38,200	22,400	8,960
8	15,800	9,350	14,300	21,800	142,000	244,000	55,200	65,400	30,800	34,800	19,600	8,580
9	35,500	9,350	16,900	19,600	201,000	272,000	51,800	57,900	30,800	33,400	17,900	8,960
10	27,100	8,960	20,100	19,000	233,000	286,000	43,600	51,100	29,600	28,300	17,400	9,750
11	20,700	9,350	22,900	20,100	244,000	282,000	41,600	47,700	34,100	27,700	17,900	10,200
12	15,800	11,000	20,700	28,900	242,000	267,000	40,200	41,600	43,600	28,900	19,600	9,750
13	13,300	14,800	20,100	53,200	225,000	248,000	38,200	40,900	51,100	34,100	19,600	9,750
14	11,000	18,500	18,500	57,900	205,000	237,000	38,900	37,500	52,500	32,100	19,000	8,960
15	10,200	19,000	17,900	62,000	195,000	222,000	58,600	36,200	53,800	28,300	17,900	8,580
16	8,960	16,300	18,500	75,600	189,000	199,000	92,600	34,800	51,800	27,100	17,400	8,210
17	8,210	14,300	19,600	81,700	176,000	163,000	109,000	33,400	41,600	23,500	15,800	7,850
18	8,210	12,800	17,900	76,300	165,000	129,000	96,700	31,500	36,800	21,200	14,300	7,850
19	7,850	12,400	17,900	78,300	167,000	114,000	83,100	29,600	34,800	23,500	12,800	7,850
20	7,500	11,000	21,200	87,800	178,000	120,000	70,200	29,600	30,200	23,500	11,900	7,500
21	7,500	10,200	28,900	94,600	177,000	146,000	62,000	27,700	26,500	22,400	11,400	7,500
22	7,500	12,400	31,500	87,200	152,000	169,000	71,500	28,300	23,500	19,600	11,900	7,160
23	7,500	36,200	30,200	75,600	121,000	182,000	86,500	28,300	22,900	17,900	11,400	7,160
24	8,580	61,300	32,800	68,800	101,000	178,000	87,800	26,500	23,500	16,300	11,900	7,160
25	9,750	68,100	41,600	70,200	84,400	157,000	96,700	27,100	22,900	14,800	12,800	6,830
26	11,000	57,200	66,800	67,400	73,600	137,000	98,700	27,100	23,500	15,800	12,800	6,830
27	9,750	45,700	81,000	57,200	64,000	133,000	86,500	27,100	28,300	16,900	11,900	6,830
28	8,960	35,500	82,400	52,500	60,600	129,000	76,300	30,800	67,400	17,900	11,000	6,510
29	9,750	30,200	64,000	47,700	59,300	125,000	72,900	29,600	71,500	21,800	11,000	6,510
30	10,600	27,100	47,700	45,000	.....	103,000	71,500	25,900	62,000	22,900	11,400	6,510
31	12,800	.....	41,600	45,000	.....	83,100	.....	24,100	.....	21,800	12,400	.....

Daily discharge, in second-feet, of Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1885.												
1	6,510	8,580	9,750	20,100	47,700	51,800	36,800	25,900	120,000	31,500	17,400	9,750
2	6,830	8,580	9,750	20,700	43,000	49,100	35,500	25,300	109,000	26,500	16,900	10,200
3	6,830	8,210	8,960	21,800	40,900	47,700	34,100	25,300	81,000	22,400	15,800	11,000
4	6,510	8,210	8,580	21,800	39,600	47,000	34,100	25,300	58,600	20,100	16,300	11,000
5	6,200	7,850	8,210	20,100	37,500	47,000	34,800	25,300	46,400	19,600	17,400	10,200
6	6,200	7,850	8,210	21,800	36,800	45,000	37,500	24,100	38,900	20,700	19,600	9,350
7	6,200	7,850	8,210	31,500	36,800	40,900	34,800	23,500	33,400	28,300	17,900	9,350
8	5,900	7,850	8,580	40,200	38,200	36,800	33,400	22,400	33,400	30,800	16,300	9,750
9	5,900	7,850	11,000	40,900	40,200	34,100	32,100	32,100	30,800	24,100	16,300	9,750
10	5,900	7,160	12,400	38,900	46,400	32,100	30,800	34,800	30,800	21,800	17,900	9,750
11	5,900	6,830	13,300	35,500	53,800	30,200	29,600	33,400	30,800	20,100	16,300	9,350
12	5,610	6,830	12,800	56,600	59,300	28,300	28,300	32,100	28,900	19,600	14,300	8,960
13	5,610	6,830	11,900	103,000	57,900	28,900	27,100	28,300	27,100	16,900	14,300	8,580
14	5,610	6,830	13,300	114,000	55,200	32,100	25,900	25,900	25,900	17,900	19,000	8,580
15	5,330	6,830	20,700	94,600	47,700	41,600	24,700	24,100	24,100	19,000	21,200	8,210
16	5,330	6,830	22,900	103,000	43,600	44,300	23,500	22,400	22,400	20,700	24,700	8,210
17	5,330	6,510	25,300	147,000	40,200	52,500	22,900	21,200	22,400	25,300	23,500	7,850
18	5,330	6,830	23,500	174,000	38,900	56,600	25,300	20,700	23,500	24,700	20,100	7,850
19	5,330	6,830	22,900	161,000	34,800	52,500	37,500	19,600	26,500	20,700	17,900	7,500
20	5,330	7,160	20,100	119,000	34,800	47,000	80,400	19,000	25,900	17,400	15,800	6,830
21	5,330	7,850	19,600	91,900	33,400	42,300	99,400	19,600	25,900	15,800	14,800	11,000
22	5,330	7,850	55,200	64,700	30,800	39,600	67,400	25,300	22,900	16,300	12,800	12,800
23	5,330	7,850	79,700	50,400	28,300	36,200	48,400	25,900	22,400	16,300	12,400	12,800
24	5,610	7,500	79,000	51,100	28,300	34,800	40,200	28,300	22,400	16,300	11,400	12,800
25	5,900	7,500	66,800	71,500	34,800	32,800	34,800	32,100	21,200	15,800	11,000	11,400
26	6,510	8,960	60,400	100,000	45,700	30,800	32,100	36,200	19,600	15,800	10,600	11,400
27	6,830	11,000	41,600	95,300	51,100	29,600	29,600	40,200	19,000	15,800	10,200	10,200
28	7,160	10,600	32,100	85,100	51,800	28,900	28,300	48,400	20,100	17,400	9,350	9,350
29	7,160	11,000	27,100	74,200	.....	29,600	27,100	50,400	24,700	19,000	9,350	8,960
30	7,850	9,750	23,500	62,700	.....	33,400	26,500	64,000	27,700	21,200	8,960	9,750
31	7,850	.....	21,200	53,800	.....	36,800	.....	89,200	.....	19,000	8,960	.....
1886.												
1	15,300	104,000	28,300	28,900	62,000	62,000	314,000	37,500	45,700	41,600	24,700	19,000
2	52,500	89,200	25,900	29,600	57,200	57,900	341,000	38,200	47,000	40,200	23,500	18,500
3	45,700	68,800	30,200	49,100	51,800	55,200	349,000	39,600	50,400	60,600	28,300	18,500
4	35,500	49,800	33,400	116,000	48,400	45,000	336,000	39,600	48,400	72,900	32,100	17,900
5	28,300	40,200	34,800	144,000	45,700	41,600	304,000	43,600	48,400	70,800	34,800	17,900
6	25,900	38,200	33,400	142,000	43,000	40,200	276,000	47,000	50,400	68,800	38,900	17,900
7	20,700	68,800	32,800	132,000	41,600	36,200	264,000	54,500	49,800	79,000	41,600	16,900
8	16,900	164,000	30,800	127,000	36,200	34,800	261,000	55,200	48,400	82,400	42,300	16,300
9	15,300	201,000	34,800	92,600	33,400	33,400	254,000	57,200	55,200	86,500	39,600	15,300
10	13,300	191,000	53,200	77,600	31,500	31,500	225,000	62,000	62,700	87,800	37,500	14,800
11	12,400	169,000	67,400	53,800	40,200	30,800	157,000	65,400	66,100	68,800	34,800	14,300
12	11,900	119,000	49,800	47,700	55,200	28,300	106,000	67,400	82,400	62,000	33,400	14,300
13	13,300	79,000	51,100	41,700	79,700	29,600	88,500	58,600	86,500	57,900	31,500	14,300
14	20,100	60,000	101,000	35,600	83,100	30,800	75,600	53,800	89,200	55,200	30,800	13,800
15	35,500	52,500	135,000	29,600	72,900	33,400	65,400	49,800	75,600	52,500	28,300	15,800
16	35,500	45,700	140,000	43,600	66,100	34,800	60,600	47,000	65,400	49,800	27,100	16,900
17	28,300	40,900	126,000	61,300	57,900	33,400	55,200	37,500	64,000	48,400	27,100	17,400
18	22,900	37,500	116,000	78,300	51,800	31,500	54,500	34,800	66,100	46,400	25,900	16,900
19	20,100	34,800	70,200	79,700	48,400	30,800	51,800	32,800	70,200	44,300	25,300	16,300
20	21,200	34,100	63,400	80,400	43,000	28,300	50,400	45,700	67,400	41,600	24,700	15,800
21	17,400	32,100	55,900	81,000	40,200	51,100	49,100	50,400	66,100	38,200	24,100	14,800
22	24,700	30,800	44,300	81,700	38,200	78,300	47,000	60,600	77,000	35,500	22,900	13,800
23	18,500	30,800	35,500	89,200	36,200	92,600	44,300	65,400	103,000	33,400	22,400	13,300
24	18,500	34,800	37,500	96,000	34,800	91,200	40,900	55,200	89,200	31,500	22,400	13,300
25	15,800	34,800	36,200	91,900	33,400	74,900	39,600	51,100	81,000	30,800	25,300	12,800
26	15,300	33,400	35,500	87,800	40,200	56,600	38,200	53,800	72,900	29,600	29,600	12,400
27	13,800	29,600	34,100	79,000	44,300	51,800	37,500	56,600	59,300	28,300	24,700	11,900
28	13,800	27,100	33,400	78,300	62,000	74,200	37,500	53,800	51,800	27,700	21,200	11,900
29	25,900	27,100	30,800	72,900	.....	110,000	35,500	51,100	48,400	26,500	20,100	11,900
30	61,300	24,700	28,900	64,700	.....	201,000	34,800	49,800	43,000	25,900	19,600	11,900
31	99,400	.....	28,300	64,000	.....	269,000	.....	47,000	.....	25,900	19,600	.....

Daily discharge, in second-feet, of Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1887.												
1	11,400	10,600	38,200	68,800	104,000	180,000	29,600	38,900	40,200	20,100	20,100	22,400
2	11,400	10,200	32,100	65,400	80,400	130,000	29,600	36,200	48,400	19,600	19,000	19,000
3	11,000	9,750	28,300	62,000	64,000	110,000	28,900	34,800	55,900	19,000	18,500	16,900
4	11,000	9,750	27,100	55,200	89,900	92,600	28,300	33,400	58,600	19,000	19,600	15,800
5	11,000	9,350	25,300	49,800	123,000	70,200	28,300	32,800	57,900	19,000	51,100	14,800
6	11,000	9,350	25,300	45,000	137,000	56,600	28,300	32,100	57,200	18,500	66,100	13,800
7	11,000	9,350	28,900	41,600	142,000	48,400	28,300	32,100	62,700	20,700	55,900	12,800
8	10,600	9,350	29,600	37,500	97,400	44,300	28,300	32,100	64,700	25,900	49,800	12,800
9	10,200	10,200	29,600	34,800	74,900	103,000	27,700	34,100	60,000	30,800	46,400	12,400
10	10,200	9,750	25,900	33,400	68,100	142,000	27,700	31,500	58,600	32,100	36,800	11,900
11	10,200	9,350	23,500	32,100	60,000	157,000	27,700	30,800	54,500	28,300	32,800	11,900
12	10,200	9,350	22,400	30,200	60,000	126,000	27,100	30,800	51,800	24,700	28,300	11,000
13	10,200	9,350	41,600	28,300	56,600	91,200	27,100	30,200	41,600	21,200	25,300	10,600
14	9,750	9,350	49,800	28,300	52,500	64,000	26,500	30,200	34,100	17,400	23,500	10,600
15	9,350	11,000	55,200	31,500	55,200	60,600	26,500	29,600	31,500	15,800	21,800	10,200
16	9,350	11,900	59,300	36,200	81,000	54,500	25,900	28,900	29,600	14,300	21,200	9,750
17	9,350	13,800	72,900	40,200	85,100	48,400	25,900	28,300	28,300	13,300	20,100	9,750
18	9,350	15,800	62,700	41,600	78,300	45,000	25,300	28,300	27,700	11,900	20,100	9,350
19	8,960	29,600	55,200	38,200	72,200	41,600	24,700	27,100	27,100	11,900	22,900	8,960
20	8,960	38,200	89,200	35,500	66,100	38,900	24,100	26,500	25,900	11,400	22,900	9,350
21	8,960	45,000	103,000	32,800	110,000	36,200	23,500	26,500	25,300	12,400	24,100	9,350
22	8,960	34,800	107,000	30,800	123,000	34,100	23,500	25,900	25,300	12,800	22,400	9,350
23	8,580	41,600	70,200	28,900	115,000	32,100	62,000	25,900	25,300	14,800	21,200	9,350
24	8,580	66,100	52,500	82,400	123,000	37,500	97,400	25,900	26,500	17,900	20,700	9,350
25	8,580	79,700	41,600	127,000	152,000	35,500	116,000	29,600	27,100	19,000	18,500	8,960
26	8,580	82,400	38,900	142,000	166,000	33,400	130,000	33,400	25,900	17,900	18,500	9,350
27	8,960	85,100	40,900	135,000	176,000	32,100	138,000	34,800	25,300	17,900	20,100	9,750
28	10,600	87,200	47,700	112,000	180,000	31,500	103,000	34,800	22,400	19,000	27,100	11,400
29	11,900	68,800	62,000	89,200	.....	30,800	68,800	31,500	21,200	19,000	33,400	12,800
30	11,900	62,000	66,100	87,800	.....	30,200	43,600	28,900	20,700	19,600	30,800	13,800
31	11,000	.....	66,800	98,000	.....	29,600	.....	28,300	.....	20,100	25,900	.....
1888.												
1	17,400	16,900	10,600	48,400	30,800	48,400	154,000	25,900	50,400	42,300	11,900	19,600
2	19,000	15,300	10,200	92,600	30,200	41,600	117,000	25,900	51,100	34,800	14,800	34,800
3	20,700	13,800	10,200	94,000	29,600	37,500	90,600	25,900	56,600	28,300	13,800	47,700
4	19,600	13,300	10,200	72,200	30,800	34,800	70,200	24,100	47,700	24,700	13,800	41,600
5	15,800	12,800	10,200	60,000	36,200	34,100	62,700	23,500	41,600	22,400	14,800	38,900
6	13,800	12,400	10,200	49,100	40,200	32,800	54,500	23,500	34,800	20,700	15,800	38,200
7	11,900	11,900	10,600	40,200	41,600	31,500	49,100	22,900	30,800	21,200	18,500	45,000
8	10,600	11,900	11,000	35,500	43,000	30,200	49,100	22,400	28,300	21,200	16,300	44,300
9	10,200	11,400	12,400	33,400	45,000	28,300	49,100	22,900	25,900	20,700	15,800	59,300
10	9,750	11,400	17,900	44,300	50,400	27,700	68,800	25,300	24,700	20,700	14,800	57,900
11	9,750	11,900	21,800	63,400	57,900	30,800	128,000	27,700	24,700	19,600	14,300	55,900
12	9,350	11,900	20,100	68,100	68,100	31,500	146,000	28,300	23,500	19,000	16,300	55,200
13	9,350	12,800	20,100	70,200	70,200	34,100	119,000	28,900	22,400	21,200	16,900	70,200
14	8,960	13,300	22,900	83,800	64,000	28,900	88,500	27,700	22,400	20,700	15,800	65,400
15	8,580	12,400	21,800	92,600	58,600	32,800	70,200	27,700	22,900	20,700	15,800	60,000
16	8,580	11,900	20,100	83,100	55,200	32,100	58,600	27,100	22,400	19,600	16,300	34,800
17	8,580	11,400	19,600	95,300	51,100	30,200	51,100	25,300	22,400	17,400	15,300	52,500
18	8,960	11,400	22,900	140,000	45,000	28,900	45,700	24,700	21,800	17,400	12,800	70,800
19	8,960	11,400	21,800	169,000	40,200	27,700	43,000	27,100	21,200	16,900	11,900	72,200
20	9,350	11,000	21,800	163,000	37,500	27,100	40,900	28,300	20,700	19,600	11,900	66,800
21	9,750	11,000	21,200	131,000	38,900	29,600	37,500	28,300	20,100	15,800	12,800	55,200
22	10,200	10,200	21,200	93,300	38,900	32,800	34,800	28,900	20,100	16,900	15,300	44,300
23	10,200	9,750	20,100	68,800	37,500	37,500	33,400	28,300	20,700	16,900	27,700	38,900
24	10,600	9,750	19,000	56,600	36,800	38,900	32,100	47,000	20,100	16,900	36,200	45,700
25	11,900	9,350	21,800	47,000	57,900	43,000	30,800	59,300	19,000	13,800	28,300	42,300
26	15,300	9,350	20,100	44,300	70,200	72,900	28,900	59,300	20,100	14,800	23,500	38,200
27	21,800	9,350	20,700	41,600	69,500	148,000	28,300	53,800	15,800	11,900	19,000	31,500
28	26,500	10,200	22,900	38,900	61,300	147,000	27,100	44,300	21,800	11,400	16,900	27,700
29	24,100	10,200	27,700	35,500	53,800	129,000	26,500	45,700	40,200	11,000	17,900	25,300
30	21,800	10,200	31,500	34,100	.....	161,000	25,900	47,000	45,000	11,900	13,800	22,400
31	19,000	.....	30,800	32,100	.....	178,000	.....	49,100	.....	11,900	14,800	.....

Daily discharge, in second-feet, of Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1889.												
1	21,200	51,100	31,500	31,500	93,300	46,400	26,500	25,900	45,700	28,300	45,700	23,500
2	19,600	38,200	30,200	33,400	85,800	43,000	28,900	24,700	48,400	29,600	50,400	22,400
3	19,000	44,300	28,900	32,100	81,000	40,900	31,500	25,300	78,300	32,100	60,000	21,200
4	18,500	42,300	27,700	36,200	72,900	40,900	30,800	25,900	70,200	34,800	62,700	21,800
5	17,400	39,600	26,500	36,800	65,400	45,700	28,900	25,300	47,000	40,200	62,700	22,400
6	22,400	37,500	25,300	51,800	60,600	47,000	27,700	27,700	43,600	49,800	57,200	36,200
7	17,900	34,100	24,700	57,900	54,500	43,600	25,900	28,300	32,100	48,400	56,600	40,900
8	15,800	30,800	23,500	64,700	45,700	40,200	22,900	25,900	28,900	41,600	52,500	32,800
9	25,900	33,400	22,400	70,800	45,000	36,800	21,800	23,500	26,500	34,100	44,300	25,900
10	30,200	86,500	24,100	77,000	49,100	33,400	20,100	21,800	25,300	29,600	39,600	22,900
11	32,800	136,000	25,300	78,300	53,800	30,800	18,500	20,700	24,700	25,900	32,800	22,400
12	33,400	137,000	26,500	74,200	53,200	27,700	18,500	20,100	23,500	22,400	28,900	20,700
13	34,800	120,000	27,700	68,100	48,400	25,300	17,900	19,000	28,300	22,400	28,300	20,100
14	23,500	113,000	28,900	55,900	40,200	22,400	21,800	18,500	33,400	21,200	32,100	17,900
15	31,500	116,000	32,100	49,100	36,200	20,700	25,900	17,900	43,000	23,500	32,100	16,900
16	32,800	101,000	28,900	45,000	38,960	18,500	32,100	19,000	62,000	28,900	38,900	15,300
17	30,200	98,700	23,500	47,700	130,000	17,900	37,500	18,500	66,100	30,200	44,300	13,800
18	27,100	96,000	24,100	54,500	195,000	19,600	44,300	19,000	64,700	34,800	38,200	45,700
19	24,700	103,000	25,300	59,300	193,000	34,100	47,700	21,200	66,800	33,400	37,500	48,400
20	23,500	107,000	27,100	66,100	179,000	43,600	49,800	20,100	64,000	29,600	32,100	43,000
21	22,400	67,400	31,500	70,800	191,000	54,500	49,100	19,000	55,200	25,900	27,700	37,500
22	23,500	62,000	38,900	75,600	178,000	58,600	47,000	17,900	49,800	24,700	24,700	27,100
23	27,700	52,500	40,900	77,600	137,000	57,200	43,000	16,900	44,300	22,400	22,900	24,100
24	29,600	47,700	35,500	77,000	103,000	53,200	32,100	15,800	37,500	21,200	21,200	27,100
25	45,700	43,000	32,800	60,600	62,700	48,400	22,900	15,800	32,100	20,100	24,100	44,300
26	66,800	41,600	28,900	51,800	51,800	44,300	22,400	15,300	27,100	19,600	24,100	44,300
27	85,100	38,900	25,900	56,600	50,400	40,900	22,400	15,300	22,400	20,100	25,300	39,600
28	130,000	35,500	23,500	63,400	48,400	38,200	21,800	15,300	22,400	27,100	25,300	40,200
29	120,000	34,100	26,500	72,900	.....	33,400	22,900	15,800	21,800	45,000	23,500	37,500
30	99,400	32,800	26,500	82,400	.....	28,900	24,700	16,900	29,600	55,200	22,900	31,500
31	72,200	.....	25,300	89,200	.....	25,900	.....	19,600	.....	56,600	24,100	.....
1890.												
1	27,100	15,300	46,400	27,700	48,400	267,000	62,000	45,000	35,500	17,900	33,400	45,700
2	25,300	15,300	45,700	29,600	43,600	283,000	60,600	42,300	32,100	16,300	29,600	32,100
3	24,100	15,800	44,300	28,900	43,600	273,000	57,900	39,600	30,200	16,300	26,500	32,800
4	21,800	26,500	38,900	28,300	44,300	228,000	60,000	40,200	30,200	16,900	26,500	22,400
5	20,100	24,100	34,800	28,300	43,000	150,000	77,000	41,600	29,600	16,900	27,100	20,100
6	18,500	30,800	32,100	27,100	47,000	96,700	89,200	45,000	30,200	16,900	25,300	17,900
7	17,400	27,100	30,800	26,500	50,400	90,600	86,500	54,500	29,600	16,900	29,600	20,100
8	15,800	27,100	29,600	25,900	72,200	91,900	85,100	55,900	27,700	16,300	32,800	17,900
9	15,300	38,900	28,300	26,500	125,000	81,000	74,900	53,200	26,500	15,800	38,900	15,800
10	14,800	54,500	27,700	27,700	133,000	70,200	65,400	53,200	25,300	15,300	45,000	15,800
11	14,300	70,800	26,500	26,500	115,000	62,000	59,300	49,100	25,300	15,300	43,000	16,900
12	13,800	62,000	25,900	25,900	94,000	56,600	53,200	46,400	24,700	16,900	36,800	19,000
13	13,800	53,200	24,700	25,900	75,600	52,500	48,400	43,000	22,400	15,300	33,400	20,100
14	13,300	55,900	24,100	27,700	62,000	53,200	45,000	39,600	21,800	14,300	29,600	25,900
15	12,800	58,600	23,500	25,900	60,600	60,000	42,300	38,900	22,400	13,300	27,100	22,400
16	12,800	53,200	22,400	30,800	59,300	87,200	40,900	47,000	22,900	12,400	23,500	22,400
17	13,300	51,800	21,800	43,000	55,200	96,700	42,300	57,200	22,400	11,900	21,200	20,700
18	13,300	64,000	21,200	56,600	57,200	95,300	57,900	52,500	21,800	17,900	20,700	22,400
19	13,300	65,400	20,700	49,800	51,800	82,400	107,000	47,700	20,700	26,500	18,500	30,200
20	12,800	68,100	20,100	45,000	47,000	73,600	133,000	53,800	20,100	26,500	17,400	20,700
21	12,800	70,800	20,100	41,600	43,600	78,300	118,000	66,800	20,700	22,900	14,800	20,700
22	12,400	61,300	19,600	59,300	42,300	89,200	91,200	74,900	21,200	19,600	14,300	33,400
23	12,800	58,600	19,600	82,400	43,000	130,000	70,800	74,900	20,700	17,900	21,200	19,600
24	12,400	64,000	21,200	77,600	44,300	167,000	59,300	72,900	21,200	17,900	22,400	18,500
25	12,800	62,000	22,400	73,600	76,300	179,000	53,200	56,600	22,400	22,900	18,500	19,000
26	13,300	58,600	22,400	62,000	121,000	171,000	51,100	47,000	22,400	34,100	21,200	22,400
27	13,800	48,400	21,200	50,400	173,000	140,000	51,100	44,300	21,800	45,000	20,100	24,100
28	13,800	44,300	20,700	43,600	231,000	98,700	51,800	48,400	21,800	46,400	16,900	22,400
29	13,800	44,300	20,100	38,900	.....	82,400	51,100	49,100	19,600	41,600	21,200	21,200
30	14,800	47,700	24,700	46,400	.....	74,900	49,100	44,300	17,400	36,800	30,800	30,200
31	15,800	.....	27,100	50,400	.....	66,800	.....	40,200	.....	36,200	38,200	.....

Daily discharge, in second-feet, of Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1891.												
1	57,900	40,200	13,800	46,400	60,600	120,000	98,700	34,100	33,500	21,800	50,400	30,800
2	49,100	38,900	13,800	47,000	83,800	113,000	105,000	32,800	32,100	21,200	64,000	26,500
3	46,400	32,800	13,300	61,300	103,000	100,000	105,000	32,100	30,200	20,100	96,700	24,100
4	43,000	30,200	13,300	89,900	129,000	84,400	101,000	31,500	27,100	20,100	106,000	23,500
5	37,500	28,300	13,300	99,400	148,000	98,700	96,700	29,600	24,700	20,100	75,600	28,900
6	32,800	25,900	14,300	97,400	141,000	130,000	79,700	28,900	22,900	20,100	53,200	28,900
7	29,600	24,700	15,800	64,700	118,000	154,000	72,900	27,700	21,800	19,000	40,900	29,600
8	29,600	24,100	16,300	49,800	109,000	192,000	67,400	26,500	22,900	17,900	33,500	29,600
9	31,500	22,400	42,300	42,300	92,600	229,000	60,600	25,900	25,900	18,500	28,900	33,500
10	30,200	21,800	49,100	36,800	137,000	249,000	59,300	25,300	26,500	25,300	25,900	27,700
11	27,100	21,200	49,800	38,200	183,000	259,000	60,600	24,700	31,500	28,900	24,700	24,700
12	25,900	20,100	46,400	54,500	227,000	250,000	61,300	24,100	41,600	24,700	22,400	21,800
13	24,700	19,600	44,300	66,800	242,000	222,000	66,100	23,500	38,200	21,800	22,400	20,100
14	23,500	19,000	37,500	62,000	249,000	178,000	70,800	22,900	32,800	19,600	21,800	19,600
15	21,800	18,500	20,700	56,600	235,000	145,000	77,000	23,500	31,500	17,400	21,200	19,600
16	20,700	17,900	23,500	43,600	191,000	129,000	67,400	23,500	32,800	16,300	20,100	19,600
17	20,700	17,900	21,800	47,000	137,000	117,000	57,900	25,300	33,500	15,800	19,600	19,600
18	20,700	16,900	21,800	45,000	128,000	98,000	51,100	26,500	35,500	15,300	19,000	17,900
19	23,500	17,900	22,400	45,000	118,000	85,800	49,800	26,500	40,200	22,900	16,900	16,300
20	22,400	17,400	22,400	45,700	106,000	77,600	47,700	25,900	43,600	28,300	16,900	15,300
21	22,400	17,400	21,800	43,600	99,400	70,800	47,700	25,300	40,200	25,300	19,000	14,800
22	21,200	17,400	21,800	49,800	122,000	67,400	45,700	24,100	40,200	22,400	22,400	14,300
23	30,200	16,300	21,800	79,000	157,000	66,800	44,300	22,900	38,200	21,200	25,900	13,800
24	43,000	15,800	21,800	98,000	182,000	67,400	44,300	22,400	42,300	20,100	31,500	13,300
25	53,800	15,800	24,100	89,200	191,000	66,100	45,000	21,200	44,300	19,600	32,100	12,800
26	56,600	15,300	25,900	86,500	176,000	64,700	45,000	21,800	45,700	19,600	46,400	12,800
27	58,600	14,800	57,900	70,200	134,000	65,400	44,300	22,400	36,200	19,600	49,800	12,400
28	52,500	14,800	79,000	60,000	123,000	89,900	43,000	22,900	27,700	20,100	49,100	11,900
29	45,700	14,300	81,700	47,700	.....	86,500	38,200	22,900	24,100	20,100	41,600	11,500
30	42,300	13,800	78,300	47,700	.....	82,400	36,200	26,500	22,900	21,200	37,500	11,500
31	41,600	.....	57,200	54,500	.....	83,100	.....	30,200	.....	32,800	35,500	.....
1892.												
1	11,000	8,960	20,700	38,900	38,200	32,800	55,900	53,200	32,100	38,900	23,500	12,400
2	11,500	8,960	17,900	38,900	36,200	32,100	50,400	49,800	30,800	32,100	22,900	11,000
3	11,500	8,960	16,300	49,100	34,800	31,500	44,300	45,700	31,500	31,500	23,500	10,600
4	11,000	8,580	15,800	53,800	33,500	30,200	40,200	43,600	33,500	30,800	22,400	9,750
5	11,000	8,580	32,100	53,200	31,500	28,900	38,200	44,300	53,800	38,900	22,900	8,960
6	10,600	8,580	35,500	51,100	30,800	28,300	51,800	41,600	56,600	54,500	27,700	12,800
7	10,600	8,580	38,900	55,200	30,200	27,700	142,000	38,900	57,200	70,200	23,500	12,400
8	10,200	8,580	52,500	60,600	33,500	28,300	209,000	36,800	53,200	74,200	21,200	11,900
9	10,600	8,580	67,400	62,000	49,100	34,800	227,000	36,200	52,500	62,700	19,600	11,900
10	10,600	8,580	68,100	57,200	72,200	42,300	227,000	34,100	50,400	52,500	18,500	11,500
11	11,000	9,750	63,400	49,100	70,800	48,400	205,000	31,500	47,000	55,200	18,500	11,900
12	11,000	10,600	51,800	50,400	65,400	47,700	175,000	32,800	48,400	58,600	17,400	11,000
13	10,600	15,300	40,200	70,200	54,500	45,700	116,000	32,800	49,100	57,900	19,600	12,400
14	10,600	20,100	32,800	150,000	46,400	45,700	81,700	31,500	47,000	54,500	20,100	12,400
15	10,600	22,900	28,900	218,000	43,000	40,200	73,600	30,200	34,800	53,200	20,700	12,400
16	10,200	19,600	28,300	246,000	44,300	36,200	68,100	29,600	30,200	51,800	19,600	17,400
17	10,200	15,800	29,600	252,000	48,400	34,100	62,000	28,900	27,100	51,100	17,400	25,300
18	9,750	14,300	30,200	233,000	47,700	38,200	57,900	27,100	24,700	49,100	16,300	22,900
19	9,750	13,800	27,100	173,000	45,000	45,000	53,800	28,900	24,700	45,000	15,800	19,600
20	9,750	14,300	25,300	121,000	46,400	49,800	77,600	31,500	24,100	43,000	15,800	16,900
21	9,750	13,300	23,500	123,000	47,700	49,800	104,000	35,500	41,600	40,900	16,900	15,800
22	9,750	13,800	22,400	123,000	54,500	47,000	105,000	38,200	47,000	36,200	16,300	16,900
23	9,750	16,900	21,200	112,000	54,500	45,700	99,400	40,900	44,300	32,100	16,300	14,800
24	9,750	25,900	20,700	95,300	53,200	51,100	94,600	42,300	42,300	30,800	16,900	13,300
25	9,750	36,200	22,900	77,000	47,700	59,300	85,800	45,700	40,900	29,600	15,300	13,300
26	9,750	39,600	27,700	65,400	45,000	58,600	87,200	47,000	40,200	28,300	15,800	20,100
27	9,750	36,800	49,100	60,000	39,600	62,000	86,500	39,600	39,600	25,900	17,900	20,100
28	9,750	32,100	63,400	51,800	37,500	66,100	64,700	36,200	43,600	25,300	20,100	17,400
29	9,350	26,500	59,300	46,400	34,100	64,000	55,900	33,500	45,000	24,100	24,700	14,800
30	9,350	22,400	51,100	40,900	.....	60,000	53,800	32,800	43,000	22,900	21,200	13,800
31	9,350	.....	47,000	40,200	.....	57,900	.....	32,100	.....	21,200	18,500	.....

Daily discharge, in second-feet, of Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1893.												
1	12,800	8,210	22,900	19,000	64,700	51,100	31,500	63,400	44,300	21,800	14,800	51,100
2	11,900	8,580	22,400	19,000	76,300	55,900	30,200	59,300	48,400	21,200	14,300	40,200
3	11,500	8,580	21,200	26,500	66,100	54,500	28,900	68,800	62,000	23,500	17,400	28,300
4	11,000	10,200	20,700	32,800	52,500	54,500	28,900	119,000	49,100	29,600	19,600	36,200
5	10,600	11,900	20,100	32,100	48,400	53,200	28,900	161,000	38,900	27,100	18,500	34,800
6	10,200	13,300	20,100	30,200	46,400	55,200	29,600	186,000	50,400	21,800	17,900	27,700
7	10,200	13,800	18,500	29,600	41,600	55,900	30,800	198,000	103,000	21,200	27,700	24,100
8	9,750	13,800	17,900	26,500	38,200	53,800	30,800	186,000	135,000	19,600	28,300	19,600
9	9,750	16,300	17,900	22,400	35,500	53,800	28,900	116,000	124,000	19,000	22,900	17,900
10	9,750	24,700	16,900	21,200	36,200	57,900	28,900	81,000	97,400	20,100	21,200	15,800
11	9,750	34,100	16,300	19,000	51,800	69,500	28,900	73,600	74,200	19,000	18,500	15,800
12	9,750	38,900	15,300	16,300	94,000	73,600	28,300	64,700	54,500	19,000	16,900	20,700
13	9,350	41,600	14,800	16,300	142,000	72,200	27,100	57,900	43,600	18,500	15,300	33,500
14	9,350	24,700	14,800	16,300	154,000	75,600	63,400	53,800	40,200	17,900	14,300	68,100
15	9,350	23,500	18,500	16,300	148,000	66,100	76,300	49,100	38,200	16,900	15,800	80,400
16	9,350	27,100	19,000	16,300	139,000	58,600	64,700	47,000	36,200	15,800	16,300	59,300
17	9,350	32,100	30,200	16,300	154,000	51,100	52,500	57,900	32,100	15,300	21,200	48,400
18	8,960	36,200	49,100	16,300	194,000	45,700	44,300	64,700	30,800	15,800	29,600	41,600
19	8,960	37,500	53,200	16,300	214,000	41,600	38,200	54,500	30,200	16,900	27,700	35,500
20	8,580	36,200	51,100	16,300	221,000	39,600	37,500	46,400	29,600	17,900	22,400	28,900
21	8,580	31,500	55,900	16,300	217,000	36,800	43,000	44,300	30,800	19,600	16,300	23,500
22	8,580	27,100	57,200	16,300	188,000	34,800	43,000	39,600	32,100	20,100	14,800	20,100
23	8,580	24,700	54,500	16,300	118,000	33,500	42,300	35,500	32,800	25,900	13,800	19,000
24	8,580	23,500	47,000	17,400	77,600	32,800	40,200	32,800	30,800	29,600	13,300	17,900
25	8,580	21,800	39,600	17,400	64,700	37,500	39,600	30,800	34,100	31,500	12,800	16,900
26	8,210	19,000	33,500	19,000	57,200	40,200	34,800	29,600	32,100	20,700	11,500	16,300
27	8,210	17,400	29,600	20,700	51,100	40,200	32,800	28,300	29,600	19,000	11,000	15,300
28	8,210	16,900	27,100	21,200	49,800	36,800	41,600	25,900	28,900	16,300	10,200	14,800
29	8,210	16,900	24,100	24,700	.....	34,100	58,600	30,800	26,500	15,300	10,200	13,800
30	8,210	20,100	21,800	30,200	.....	33,500	64,700	38,200	22,900	14,800	10,600	14,300
31	8,210	.....	18,500	42,300	.....	32,800	.....	44,300	.....	14,800	10,200	.....
1894.												
1	14,800	17,400	14,300	16,300	28,900	46,400	28,300	21,800	21,200	24,700	16,300	22,400
2	14,300	16,900	21,800	19,000	28,300	49,800	27,100	21,200	20,100	22,400	16,300	21,200
3	13,800	15,800	20,700	21,200	27,700	57,900	30,800	20,700	19,600	20,700	16,300	16,900
4	13,800	15,300	22,900	21,800	31,500	60,000	30,200	20,700	19,000	24,700	15,800	14,800
5	14,800	14,800	24,100	19,600	143,000	58,600	40,200	20,100	18,500	23,500	16,300	12,400
6	14,300	14,300	26,500	17,400	167,000	57,200	40,900	19,600	17,900	20,700	16,900	11,900
7	16,300	13,800	26,500	27,700	157,000	51,800	43,000	19,000	16,300	17,900	16,300	11,000
8	17,400	13,800	25,300	35,500	128,000	49,800	44,300	18,500	15,800	18,500	16,300	10,600
9	16,300	13,300	22,900	58,600	103,000	47,700	38,900	19,000	14,800	17,400	16,900	9,750
10	16,300	13,800	22,400	55,200	103,000	43,000	32,800	18,500	14,300	18,500	14,800	9,350
11	14,800	14,300	20,700	51,800	108,000	40,900	34,100	17,900	14,300	20,700	13,300	9,350
12	14,300	27,100	17,900	47,700	98,700	38,900	43,000	26,500	13,800	18,500	12,400	9,350
13	13,800	21,200	17,400	50,400	97,400	39,600	51,800	28,900	13,300	15,300	11,500	8,960
14	14,300	20,100	16,900	48,400	89,900	43,000	47,000	27,100	13,300	13,800	11,000	8,580
15	11,900	19,600	16,300	47,000	77,000	41,600	43,000	24,100	12,800	12,400	11,900	9,750
16	10,600	16,900	16,900	47,000	64,000	40,900	39,600	22,400	12,400	11,500	20,100	11,000
17	59,300	15,800	17,900	42,300	58,600	40,200	36,800	22,900	11,900	11,000	25,900	11,000
18	37,500	15,300	19,600	43,000	52,500	43,600	31,500	29,600	12,400	15,800	19,600	11,900
19	32,800	14,300	21,200	36,800	51,100	44,300	28,300	28,300	13,800	13,800	16,900	11,900
20	29,600	14,800	21,800	34,800	50,400	46,400	28,900	30,800	14,300	13,800	17,400	10,200
21	22,900	14,800	21,800	30,200	51,800	42,300	27,700	32,100	14,800	18,500	20,100	9,750
22	19,000	14,800	19,600	28,300	53,200	53,800	27,100	36,200	14,300	20,700	20,700	9,750
23	17,400	14,300	18,500	28,300	53,800	53,200	26,500	40,200	13,300	21,200	22,400	11,000
24	15,800	14,300	17,400	29,600	49,800	49,100	25,900	40,900	12,800	19,000	20,100	11,000
25	17,400	13,800	16,300	30,200	47,700	46,400	25,300	42,300	12,800	22,400	16,900	10,200
26	18,500	14,300	15,800	29,600	41,600	43,600	24,100	39,600	14,300	22,900	14,800	8,960
27	27,700	14,800	15,300	30,800	46,400	41,600	23,500	34,800	14,800	21,800	12,800	8,210
28	25,900	15,800	14,800	30,800	46,400	38,200	22,900	32,100	15,300	21,200	15,300	7,850
29	22,400	15,300	14,300	28,900	.....	34,100	22,400	28,900	16,300	20,100	13,800	7,500
30	19,600	14,300	15,300	28,300	.....	32,800	22,400	26,500	24,100	18,500	15,300	7,160
31	17,900	.....	17,400	27,700	.....	29,600	.....	23,500	.....	18,500	24,100	.....

Daily discharge, in second-feet, of Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Juiy.	Aug.	Sept.
1895.												
1	7,500	9,350	7,850	26,500	45,700	40,200	47,000	34,800	32,100	17,900	24,700	18,500
2	7,500	10,600	7,850	21,800	43,000	43,600	44,300	33,500	29,600	19,000	22,900	19,000
3	7,850	13,300	7,500	18,500	43,600	76,300	40,200	31,500	27,100	21,200	21,200	17,900
4	9,750	10,200	7,500	17,900	45,000	118,000	38,200	30,800	25,300	22,400	19,600	17,400
5	11,000	9,350	7,500	17,400	45,700	129,000	36,800	32,800	23,500	25,300	19,000	16,300
6	11,000	9,750	7,500	17,400	44,300	118,000	36,200	34,800	24,700	28,300	16,900	15,800
7	9,750	9,750	7,500	18,500	40,900	85,100	34,800	38,200	25,900	28,300	17,900	15,800
8	8,960	8,960	7,500	22,400	38,200	65,400	59,300	41,600	29,600	28,900	18,500	15,800
9	8,210	8,580	8,210	68,100	37,500	56,600	66,800	49,800	28,900	31,500	18,500	14,300
10	7,850	8,210	8,580	133,000	28,300	52,500	71,500	52,500	25,900	32,800	16,900	13,800
11	7,160	7,850	10,200	188,000	22,400	49,100	82,400	55,200	23,500	28,900	16,900	13,300
12	7,500	7,850	21,200	212,000	18,500	45,000	79,000	53,800	21,200	24,700	16,300	13,800
13	8,580	7,500	52,500	206,000	23,500	47,000	64,700	54,500	20,100	21,200	17,900	14,300
14	11,500	7,160	69,500	186,000	23,800	48,400	53,800	58,600	19,600	19,000	16,300	14,300
15	13,800	7,160	70,200	127,000	24,100	53,200	47,700	55,200	19,000	17,900	15,800	13,300
16	12,400	7,160	67,400	77,600	26,500	57,900	44,300	49,800	19,000	17,900	15,300	12,800
17	10,600	7,160	52,500	68,100	26,500	56,600	41,600	46,400	21,200	20,700	17,400	12,400
18	9,350	6,830	38,900	62,000	23,500	59,300	55,200	42,300	20,700	20,100	24,100	13,300
19	8,210	7,160	26,500	60,000	26,500	57,900	74,200	41,600	19,600	18,500	27,700	12,800
20	7,850	7,500	23,500	55,900	25,900	54,500	74,200	43,000	17,900	16,900	32,800	11,900
21	7,500	7,500	20,100	59,300	28,900	91,200	61,300	42,300	17,400	15,300	30,200	12,400
22	7,160	7,500	17,900	63,400	32,100	134,000	52,500	39,600	17,900	15,300	35,500	11,500
23	7,160	7,850	15,800	61,300	35,500	148,000	46,400	36,200	17,400	14,300	30,200	10,200
24	7,160	7,850	15,300	55,900	39,600	144,000	42,300	33,500	16,900	13,800	27,100	9,350
25	7,160	8,210	14,300	67,400	40,200	118,000	39,600	32,100	16,300	13,800	25,900	8,960
26	7,160	8,580	13,800	67,400	38,200	82,400	36,800	32,100	16,300	16,300	26,500	8,960
27	6,830	8,580	23,500	62,000	36,800	70,800	34,800	41,600	14,800	21,200	23,500	8,580
28	6,830	8,580	40,900	57,200	36,800	66,100	34,800	45,000	14,300	63,400	20,700	8,210
29	6,830	8,210	51,100	53,800	.....	58,600	34,100	44,300	14,300	64,700	19,600	7,850
30	7,850	8,210	47,700	52,500	.....	54,500	34,100	39,600	14,800	44,300	20,700	7,500
31	8,210	.....	33,500	51,100	.....	51,100	.....	34,800	.....	30,200	19,000	.....
1896.												
1	7,500	8,210	9,350	27,700	24,700	22,900	94,600	19,000	14,800	18,500	31,500	13,800
2	7,160	8,580	9,750	28,300	36,200	21,800	182,000	19,000	16,900	17,900	29,600	12,400
3	7,160	8,960	9,350	27,700	62,000	21,200	228,000	19,000	24,700	17,400	27,100	11,500
4	7,160	10,200	9,350	27,700	72,900	20,700	258,000	19,600	32,800	17,900	25,900	11,000
5	7,160	10,200	9,350	26,500	65,400	20,100	269,000	22,400	29,500	17,900	25,300	10,200
6	7,160	8,960	10,200	24,100	57,200	19,600	245,000	25,900	26,500	17,900	27,700	10,200
7	7,160	8,960	9,750	20,100	74,200	19,000	152,000	25,900	22,900	20,100	28,300	9,750
8	7,500	8,580	9,350	18,500	89,200	19,600	72,900	24,100	19,600	28,300	23,500	11,900
9	7,160	8,210	8,960	17,900	87,800	19,600	55,200	22,400	19,600	47,700	21,200	15,800
10	7,500	8,580	8,960	17,900	83,800	19,000	48,400	20,700	25,300	90,600	19,000	15,300
11	7,850	8,960	9,350	17,400	81,000	20,100	43,000	19,000	41,600	137,000	18,500	13,800
12	7,850	10,600	9,750	17,400	71,500	20,100	39,600	17,400	36,800	141,000	19,000	11,900
13	7,850	12,400	11,000	15,300	62,700	21,200	36,200	16,300	28,900	100,000	17,900	11,000
14	7,850	13,800	11,500	15,300	69,500	21,200	33,500	15,800	24,100	72,200	17,900	10,200
15	7,500	12,800	11,900	14,800	81,000	20,700	31,500	15,300	20,100	70,200	17,400	10,200
16	7,850	11,900	11,500	13,800	86,500	21,200	29,600	14,800	17,900	71,500	16,900	9,750
17	7,850	11,500	11,000	13,300	79,000	31,500	28,300	14,300	16,900	68,800	16,900	8,960
18	7,850	11,000	10,600	13,300	68,800	62,700	27,100	13,800	15,800	88,500	16,300	9,350
19	7,500	10,600	10,200	13,300	55,200	83,100	25,900	13,800	16,300	79,000	15,300	9,350
20	7,500	9,750	9,750	13,300	45,700	101,000	24,700	12,800	17,400	59,300	14,800	8,960
21	7,160	8,960	10,200	13,300	39,600	87,800	23,500	12,400	20,700	45,700	13,800	8,580
22	7,160	8,210	12,400	14,300	34,800	70,200	22,900	12,400	19,600	38,200	13,800	8,580
23	6,830	8,960	18,500	17,400	30,800	58,600	22,900	14,300	19,600	51,800	12,800	8,960
24	6,830	9,350	23,500	28,300	27,700	51,100	22,400	17,900	18,500	51,800	12,800	9,350
25	6,830	8,960	25,900	38,200	26,500	47,700	22,400	20,100	17,400	52,500	15,800	10,200
26	6,830	8,960	24,100	49,800	25,900	45,000	21,200	21,200	16,300	47,000	14,800	11,900
27	6,830	8,960	23,500	48,400	25,300	43,000	20,700	17,900	14,800	69,500	15,300	10,600
28	6,830	8,960	25,300	41,600	24,700	39,600	21,200	17,400	14,800	77,000	17,900	9,750
29	6,830	8,960	29,600	34,800	23,500	36,200	21,200	15,800	15,800	57,200	22,400	9,750
30	6,830	9,750	26,500	30,200	.....	33,500	20,100	15,300	16,900	43,000	20,100	15,300
31	7,850	.....	26,500	27,100	.....	46,400	.....	14,300	.....	36,200	15,800	.....

Daily discharge, in second-feet, of Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1897.												
1	14,300	8,580	70,200	13,800	16,900	79,000	53,200	34,100	24,100	27,700	24,700	12,400
2	13,300	8,580	86,500	14,300	41,600	59,300	77,000	36,800	23,500	24,700	21,200	12,800
3	14,800	8,960	88,500	14,300	62,700	52,500	96,000	44,300	23,500	21,200	21,200	11,000
4	16,900	9,750	69,500	14,800	65,400	55,200	103,000	59,300	22,900	19,000	20,100	11,000
5	15,300	9,750	49,800	14,800	57,900	58,600	171,000	59,300	22,900	20,100	18,500	11,000
6	14,800	10,200	38,200	15,300	50,400	76,300	201,000	51,800	22,900	22,400	19,000	10,600
7	12,400	13,300	32,100	16,300	53,800	125,000	196,000	46,400	22,400	21,200	23,500	10,600
8	10,600	19,600	27,700	16,900	66,800	165,000	167,000	43,000	24,700	22,400	23,500	10,200
9	9,750	23,500	25,900	15,800	89,900	159,000	130,000	38,900	24,100	24,100	27,100	10,200
10	9,350	22,900	24,700	15,800	99,000	139,000	103,000	36,200	22,900	22,400	31,500	9,350
11	8,580	18,500	25,300	15,300	83,800	146,000	89,900	34,800	32,100	23,500	28,900	8,580
12	8,580	17,900	26,500	14,800	67,400	187,000	79,700	36,200	33,400	26,500	24,700	8,580
13	8,580	33,500	24,700	13,800	61,300	231,000	71,500	47,000	27,700	25,300	22,400	8,580
14	8,580	43,600	25,300	14,800	62,000	252,000	64,000	119,000	23,500	22,900	19,000	7,850
15	9,750	38,200	24,700	22,900	65,400	252,000	60,000	146,000	21,200	21,200	16,900	7,850
16	10,600	31,500	22,900	38,200	66,800	246,000	60,600	132,000	20,100	20,700	15,800	7,850
17	10,200	27,700	21,800	38,900	60,600	239,000	63,400	106,000	20,100	27,100	15,800	7,500
18	10,200	24,100	21,200	36,800	52,500	224,000	60,600	74,900	20,100	38,200	17,900	7,500
19	10,600	21,200	23,500	37,500	45,700	195,000	57,200	55,900	18,500	33,400	18,500	7,160
20	10,200	19,000	27,100	40,200	41,600	195,000	53,800	46,400	19,000	34,100	16,900	7,160
21	10,200	16,900	25,900	41,600	41,600	214,000	49,100	40,900	25,300	38,900	16,900	7,500
22	9,350	15,800	24,100	43,000	50,400	220,000	45,000	37,500	27,700	34,800	19,000	7,160
23	8,580	14,300	22,400	43,600	83,800	204,000	41,600	34,100	28,300	33,400	19,000	7,160
24	8,580	13,800	21,200	41,600	165,000	164,000	39,600	32,100	30,200	37,500	21,200	7,500
25	8,580	13,300	20,100	38,900	209,000	117,000	37,500	32,100	32,800	52,500	17,900	7,160
26	8,580	12,800	18,500	34,100	231,000	91,000	36,200	28,300	35,500	70,200	15,800	7,160
27	8,580	12,400	17,400	30,200	224,000	77,000	34,800	27,100	29,600	77,000	15,800	6,830
28	8,580	12,800	16,300	27,100	154,000	67,400	35,500	25,900	34,800	49,800	15,800	6,830
29	8,210	30,200	15,300	24,700	.....	60,600	36,200	24,700	34,800	37,500	13,800	6,830
30	8,210	57,900	14,800	20,700	.....	55,900	33,500	23,500	35,500	31,500	12,800	7,160
31	8,960	.....	14,300	16,900	.....	52,500	.....	24,100	.....	27,100	12,400	.....
1898.												
1	7,160	7,160	7,850	19,000	45,700	18,500	112,000	37,500	19,000	13,800	49,800	20,100
2	7,160	7,500	8,960	17,900	39,600	17,900	115,000	33,400	18,500	13,800	45,700	22,400
3	6,830	8,210	9,350	16,900	36,200	16,900	96,000	30,800	18,500	12,800	37,500	56,600
4	6,510	8,580	12,800	16,300	30,800	16,900	71,500	28,300	18,500	11,900	30,800	120,000
5	6,200	8,580	19,600	15,800	28,300	18,500	64,700	26,500	15,800	13,800	36,200	164,000
6	6,200	8,580	21,200	14,800	25,900	19,000	77,000	24,700	14,800	12,400	74,200	145,000
7	5,900	8,960	21,800	15,300	24,700	19,600	72,900	24,700	13,800	12,400	93,300	101,000
8	5,900	8,960	19,000	15,800	24,700	19,000	64,000	22,900	12,800	12,800	79,700	70,200
9	5,900	8,580	15,800	16,900	24,100	17,900	57,200	23,500	11,900	14,800	63,400	58,600
10	5,900	8,580	13,800	17,900	23,500	16,900	50,400	23,500	11,900	16,900	51,800	52,500
11	6,200	8,210	13,800	17,900	22,400	16,300	52,500	24,700	11,000	19,600	55,200	44,300
12	6,510	7,850	11,900	31,500	21,800	15,800	58,600	25,900	11,900	19,000	77,600	37,500
13	7,850	7,850	11,000	83,800	21,200	15,800	57,900	24,700	11,000	17,900	94,600	32,800
14	9,350	7,500	11,000	91,900	21,200	15,800	55,200	23,500	11,000	15,800	101,000	29,600
15	8,580	7,160	14,800	77,000	21,200	17,900	55,200	22,400	10,200	15,800	96,000	27,100
16	8,580	7,160	15,300	77,000	20,700	28,900	56,600	21,800	11,000	19,600	72,900	24,700
17	8,580	7,160	13,800	78,300	20,100	28,300	52,500	21,200	11,900	25,900	54,500	23,500
18	8,580	7,160	14,800	62,000	19,500	29,600	49,800	20,700	13,800	30,800	42,300	22,400
19	8,580	7,160	15,300	56,600	18,500	31,500	48,400	20,700	19,600	25,900	37,500	21,200
20	10,200	7,160	20,100	73,600	18,500	35,500	48,400	20,100	22,400	23,500	34,800	20,100
21	11,900	6,830	27,700	87,800	17,900	32,800	44,300	20,100	30,800	22,400	22,400	19,000
22	11,000	6,830	48,400	85,100	17,900	30,800	41,600	20,100	32,100	18,500	32,100	20,100
23	9,750	6,830	63,400	79,700	19,000	29,600	38,900	19,600	28,300	18,500	30,800	28,300
24	9,350	6,830	53,800	78,300	19,600	25,900	40,200	19,000	25,900	19,000	27,100	28,300
25	10,200	6,830	45,700	78,300	20,100	24,100	39,900	19,000	20,700	20,100	24,100	37,500
26	9,350	6,830	36,800	103,000	21,200	23,500	38,900	20,700	19,000	20,100	22,400	43,000
27	8,580	6,830	31,500	118,000	19,500	24,700	37,500	28,300	16,300	25,900	22,400	36,200
28	7,850	6,830	27,700	108,000	19,000	24,700	42,300	32,100	15,800	32,100	22,900	28,300
29	7,850	6,830	24,700	90,600	.....	25,900	41,600	27,700	15,800	30,800	24,100	24,100
30	7,160	6,830	22,400	70,600	.....	32,100	40,200	23,500	14,800	34,100	22,900	21,200
31	7,160	.....	21,200	55,200	.....	83,800	.....	20,700	.....	47,700	21,200	.....

Daily discharge, in second-feet, of Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1899.												
1	20,100	25,900	28,900	27,100	32,800	125,000	149,000	45,700	23,500	19,000	23,500	12,800
2	18,500	24,100	28,300	28,300	32,100	114,000	127,000	42,300	23,500	18,500	20,100	13,800
3	17,900	23,500	27,700	30,200	32,100	97,400	95,300	39,600	24,700	16,900	16,900	15,800
4	21,800	22,400	28,300	33,400	66,800	90,600	82,400	36,800	27,100	15,800	15,800	16,900
5	54,500	21,800	28,300	34,800	151,000	116,000	83,800	36,200	25,900	14,800	13,800	14,800
6	109,000	21,800	32,100	43,000	201,000	161,000	94,000	42,300	23,500	14,800	13,800	12,800
7	106,000	23,500	34,800	122,000	227,000	175,000	101,000	51,800	22,400	14,800	13,800	11,900
8	67,400	24,700	34,100	119,000	246,000	182,000	116,000	57,900	21,200	16,900	13,800	11,000
9	53,800	25,300	33,400	112,000	254,000	182,000	115,000	62,000	20,100	16,300	12,800	10,200
10	51,100	24,700	32,100	111,000	244,000	104,000	101,000	66,800	19,000	14,800	12,400	11,000
11	45,700	25,900	28,900	87,800	200,000	74,200	90,600	70,200	21,800	14,800	12,400	10,600
12	38,900	28,300	27,100	65,400	126,000	66,100	81,700	64,700	24,100	13,800	11,900	11,900
13	34,800	30,200	25,900	56,600	77,000	59,300	72,900	59,300	29,600	13,300	11,900	11,000
14	32,800	28,300	24,100	49,100	58,600	70,200	66,800	57,200	33,400	12,800	12,800	11,900
15	30,800	25,900	22,400	45,700	51,800	161,000	62,000	59,300	37,500	12,800	14,800	11,000
16	27,700	24,700	21,200	43,600	45,700	227,000	57,900	56,600	35,500	11,900	14,800	10,200
17	26,500	25,900	20,700	44,300	48,400	245,000	53,800	53,200	37,500	11,400	13,800	9,350
18	29,600	27,100	20,100	44,300	59,300	240,000	51,100	47,000	36,200	11,000	13,300	9,350
19	39,600	28,300	21,200	43,000	70,800	237,000	48,400	40,900	29,600	11,400	12,800	8,580
20	47,000	30,200	29,600	41,600	79,700	246,000	45,700	37,500	26,500	11,900	11,400	7,850
21	57,200	33,400	33,400	40,200	72,200	261,000	44,300	34,100	23,500	11,900	10,600	7,850
22	53,800	34,800	34,800	37,500	66,100	266,000	41,600	32,100	21,200	13,800	10,200	7,850
23	45,700	38,900	33,400	34,800	62,700	257,000	47,000	30,800	19,600	15,300	9,350	8,960
24	43,000	40,200	30,800	32,100	60,600	216,000	59,300	30,200	17,900	19,600	8,960	9,750
25	43,000	38,900	29,600	34,800	58,600	152,000	57,900	28,300	17,900	19,000	8,580	9,750
26	45,700	35,500	30,800	37,500	56,600	105,000	67,400	27,100	16,900	16,900	8,580	9,350
27	40,900	32,100	34,100	33,400	83,800	86,500	64,000	25,900	17,900	16,900	8,580	8,960
28	36,200	29,600	32,800	33,400	119,000	89,200	56,600	24,700	20,100	20,100	8,580	8,580
29	32,100	27,100	29,600	32,100	.....	112,000	51,100	24,100	19,600	23,500	9,750	8,580
30	29,600	28,300	27,100	30,200	.....	138,000	47,000	23,500	18,500	23,500	11,000	8,960
31	27,100	.....	25,300	30,200	.....	149,000	.....	23,500	.....	29,600	11,000	.....
1900.												
1	8,580	8,210	10,600	16,900	17,900	48,400	47,000	36,200	15,800	53,800	36,200	12,400
2	8,210	8,210	10,600	16,000	16,900	53,200	43,000	32,100	15,800	49,800	30,800	11,900
3	7,850	7,850	10,600	15,100	14,800	68,100	40,200	30,800	16,900	41,600	26,500	13,300
4	7,850	8,210	10,600	14,200	14,300	79,000	43,000	29,600	17,900	36,800	23,500	14,300
5	7,500	9,750	11,000	13,300	16,300	81,000	48,400	28,300	17,900	33,400	20,100	13,300
6	7,160	9,750	10,600	12,400	19,600	66,100	52,500	27,100	19,600	30,800	17,900	11,900
7	7,160	9,750	10,200	12,800	22,400	62,000	47,000	25,900	32,100	28,300	16,300	10,600
8	7,850	9,350	9,750	13,300	21,800	72,900	41,600	24,700	38,900	25,300	14,800	10,200
9	8,580	9,350	9,350	13,800	30,800	93,300	38,200	24,700	36,200	23,500	13,800	9,350
10	10,200	8,580	9,350	13,800	51,100	106,000	35,500	24,700	30,200	23,500	13,300	8,960
11	11,000	8,580	10,200	19,000	57,900	104,000	38,200	24,100	28,300	24,100	12,400	8,580
12	11,000	8,210	29,600	34,800	55,200	90,600	45,000	24,100	27,700	21,200	11,900	8,210
13	10,600	7,850	37,500	49,800	88,500	72,900	44,300	23,500	25,300	19,000	11,400	7,850
14	10,200	7,850	44,300	53,200	141,000	60,600	41,600	22,400	29,600	18,500	11,400	8,210
15	9,350	7,850	43,000	51,100	157,000	52,500	38,200	21,200	30,200	18,500	12,400	11,000
16	8,580	7,850	36,200	47,000	140,000	48,400	36,800	21,200	29,600	18,500	12,800	17,400
17	8,580	7,850	29,600	37,500	110,000	47,000	53,800	20,100	30,800	17,900	13,300	22,400
18	8,580	7,850	23,500	31,500	75,600	45,700	66,100	19,600	36,200	17,400	13,300	22,900
19	8,210	7,850	21,200	33,400	56,600	45,700	60,600	19,000	53,800	16,900	13,300	25,900
20	8,210	7,850	23,500	51,800	46,400	52,500	57,900	19,000	56,600	16,300	12,800	26,500
21	8,210	7,160	24,700	57,900	42,300	72,900	73,600	17,900	54,500	15,300	11,400	21,800
22	8,210	7,160	24,700	53,800	46,400	96,000	75,600	17,900	45,700	14,300	11,000	16,900
23	7,850	7,850	23,500	48,400	51,800	112,000	71,500	16,900	37,500	14,300	10,600	14,800
24	7,850	8,580	32,100	43,000	52,500	106,000	66,800	16,900	36,200	15,800	11,000	13,800
25	7,850	8,960	36,200	36,200	52,500	79,700	60,600	17,900	43,000	16,900	11,400	15,300
26	7,160	10,600	36,800	31,500	58,600	70,200	51,800	17,900	45,700	17,400	14,300	15,300
27	7,160	11,000	33,400	28,300	57,200	68,100	47,000	19,000	48,400	18,500	17,400	14,800
28	7,160	11,000	32,100	25,900	51,100	66,800	44,300	20,100	49,800	25,900	15,300	13,800
29	7,500	11,000	28,900	23,500	.....	63,400	41,600	20,100	52,500	48,400	14,300	13,300
30	7,850	11,000	25,900	21,800	.....	57,900	38,900	19,000	53,200	49,800	13,300	12,800
31	7,850	.....	21,200	20,100	.....	51,800	.....	16,900	.....	43,600	12,800	.....

Daily discharge, in second-feet, of Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1901.												
1	11,900	16,300	53,200	29,600	38,200	20,700	78,300	67,400	75,600	34,800	15,800	61,300
2	11,000	14,800	38,200	32,800	39,600	20,700	83,800	57,200	69,500	34,100	15,800	60,600
3	10,600	14,300	32,100	33,400	43,000	20,700	128,000	51,800	60,600	36,800	16,300	60,000
4	9,750	16,300	28,900	32,100	53,200	20,700	158,000	45,700	51,800	37,500	15,800	64,000
5	9,350	18,500	32,100	28,900	62,700	21,200	157,000	41,600	46,400	34,800	14,800	57,900
6	8,960	20,700	40,900	26,500	62,000	22,400	146,000	39,600	40,900	29,600	14,800	47,700
7	8,960	23,500	50,400	24,700	57,900	22,900	123,000	37,500	40,900	28,900	17,900	40,900
8	10,200	23,500	56,600	22,900	54,500	22,900	90,600	36,200	40,900	30,800	55,900	37,500
9	11,000	20,700	51,800	21,800	51,800	22,400	74,200	34,100	38,200	32,100	77,000	34,100
10	12,400	17,900	41,600	21,200	46,400	41,600	64,000	32,100	40,900	36,800	61,300	31,500
11	12,400	16,900	35,500	35,500	45,700	60,600	56,600	32,100	49,800	38,900	43,600	30,200
12	14,300	15,300	30,800	98,700	41,600	70,200	51,100	30,800	44,300	32,100	33,400	28,900
13	16,900	14,300	27,700	175,000	42,300	60,000	47,700	32,100	37,500	28,300	30,200	32,800
14	14,300	13,300	25,300	185,000	43,000	49,800	40,200	31,500	35,500	24,700	38,200	34,100
15	11,400	12,800	24,100	166,000	41,600	43,600	60,600	31,500	37,500	22,900	89,200	34,800
16	11,000	12,400	23,500	127,000	37,500	37,500	64,000	30,800	45,000	20,100	180,000	35,500
17	10,200	11,900	22,400	80,400	33,400	33,400	63,400	29,600	54,500	20,700	217,000	36,800
18	9,750	11,900	20,100	60,000	30,200	30,800	59,300	27,700	60,600	21,800	216,000	53,800
19	9,350	11,400	19,000	49,100	28,900	28,300	67,400	30,200	57,200	20,700	188,000	61,300
20	8,960	11,400	18,500	43,000	28,300	26,500	137,000	48,400	54,500	20,700	153,000	57,200
21	8,580	12,400	18,500	37,500	27,700	26,500	174,000	63,400	51,100	23,500	120,000	50,400
22	8,580	12,800	22,400	34,100	26,500	27,100	162,000	131,000	46,400	21,800	110,000	44,300
23	9,350	13,300	23,500	30,800	25,300	29,600	150,000	174,000	62,700	20,700	106,000	37,500
24	12,800	15,800	26,500	32,100	24,700	28,300	145,000	196,000	58,600	19,600	120,000	32,100
25	22,900	17,900	29,600	33,400	23,500	28,300	123,000	214,000	45,700	17,400	106,000	29,600
26	41,600	47,000	30,800	33,400	22,900	46,400	110,000	215,000	59,300	16,900	83,100	27,700
27	45,000	88,500	29,600	30,800	21,200	102,000	95,300	154,000	60,600	16,300	68,800	25,900
28	34,800	100,000	25,900	29,600	20,700	146,000	95,300	85,800	51,100	16,300	64,000	24,700
29	27,700	100,000	24,100	29,600	.....	142,000	92,600	76,300	43,000	15,800	66,800	24,700
30	20,700	83,800	23,500	29,600	.....	119,000	87,800	74,900	37,500	15,800	62,000	24,100
31	19,000	.....	25,300	31,500	.....	94,000	.....	77,600	.....	15,800	60,600	.....
1902.												
1	23,500	14,800	13,300	267,000	131,000	157,000	204,000	32,100	22,400	60,600	12,800	9,350
2	25,300	14,800	12,800	271,000	142,000	211,000	178,000	51,800	21,200	63,400	11,900	8,580
3	25,900	14,300	13,300	250,000	152,000	237,000	116,000	57,200	20,100	53,800	12,400	8,580
4	25,300	14,300	14,300	176,000	141,000	252,100	77,600	48,400	19,600	45,000	13,800	9,750
5	24,700	14,300	14,300	96,000	116,000	238,000	66,800	40,200	19,000	38,200	13,800	8,960
6	27,100	14,300	14,300	68,100	92,600	200,000	62,000	34,800	19,000	31,500	15,800	9,350
7	25,300	13,800	16,900	60,000	73,600	167,000	58,600	32,100	17,900	25,300	14,300	9,750
8	22,900	13,800	17,900	54,500	62,000	135,000	60,600	32,100	17,900	22,400	12,400	9,750
9	21,800	13,800	17,900	48,400	53,800	116,000	61,300	31,500	18,500	20,700	11,400	9,750
10	20,700	13,800	19,600	46,400	49,100	110,000	58,600	29,600	19,000	19,600	12,800	9,750
11	19,000	13,800	19,600	43,600	45,000	90,600	54,500	28,300	17,900	19,000	15,800	9,350
12	19,000	13,800	22,400	40,900	40,900	81,700	51,100	27,100	19,000	19,000	15,300	9,750
13	19,600	14,300	22,900	38,200	37,500	76,300	48,400	25,900	19,600	20,100	13,800	11,400
14	22,400	14,300	26,500	36,200	34,800	70,200	45,000	25,300	18,500	27,100	11,900	12,400
15	24,100	14,300	116,000	33,400	34,800	65,400	43,600	25,300	17,400	28,300	10,600	11,900
16	22,900	14,300	176,000	31,500	35,500	62,000	42,300	25,900	16,900	23,500	10,200	11,400
17	22,900	13,800	190,000	30,200	34,800	77,000	40,900	26,500	16,900	21,200	9,750	11,000
18	22,400	13,800	176,000	28,900	33,400	92,600	40,200	25,300	16,900	18,500	9,750	9,750
19	20,700	13,300	129,000	28,900	32,100	95,300	39,600	25,300	22,400	17,400	9,750	9,350
20	18,500	13,300	71,500	29,600	31,500	89,900	38,900	24,700	25,300	16,300	9,350	9,350
21	17,400	12,800	50,400	30,800	29,600	77,600	38,200	24,700	25,900	14,800	9,750	9,350
22	17,400	12,400	38,900	36,200	32,800	66,100	36,800	25,300	24,700	15,300	10,200	11,900
23	17,400	12,800	32,800	38,200	40,200	58,600	35,500	27,100	22,400	16,300	10,200	14,800
24	16,900	14,300	33,400	39,600	47,700	54,500	34,800	25,900	21,800	14,800	9,750	14,800
25	16,900	14,300	40,900	38,900	49,100	50,400	34,100	25,900	20,700	13,300	9,350	15,800
26	16,300	14,300	47,700	35,500	51,800	47,000	32,800	25,300	19,600	11,900	9,350	18,500
27	15,800	14,800	63,400	36,800	52,500	45,000	31,500	23,500	22,400	11,900	9,750	20,100
28	15,300	14,300	103,000	51,800	84,400	43,000	30,800	22,400	21,800	11,400	9,750	20,100
29	14,800	14,300	157,000	79,700	.....	81,700	29,600	24,700	22,400	11,400	10,200	20,100
30	14,300	13,800	212,000	101,000	.....	174,000	29,600	25,300	28,300	11,900	11,400	19,600
31	14,300	.....	248,000	123,000	.....	205,000	.....	24,100	.....	13,300	10,600	.....

Daily discharge, in second-feet, of Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903.												
1	21,800	8,960	29,600	26,500	27,100	174,000	112,000	55,200	38,200	22,900	15,800	10,600
2	20,700	8,960	28,900	25,300	27,700	205,000	107,000	50,400	49,800	21,200	14,800	10,200
3	21,800	9,350	39,600	30,200	28,900	193,000	94,600	47,000	72,900	20,700	16,300	9,350
4	18,500	9,750	44,300	35,500	45,700	154,000	82,400	43,600	72,200	20,100	21,200	9,350
5	16,900	9,750	47,000	40,900	98,700	106,000	77,600	41,600	62,700	20,100	21,200	8,960
6	15,800	9,750	45,000	40,200	127,000	83,100	78,300	39,600	57,200	21,200	23,500	8,960
7	13,800	9,350	45,000	49,800	113,000	77,600	74,900	38,900	60,600	21,800	27,700	8,960
8	12,400	11,000	38,900	45,700	116,000	93,300	99,400	36,800	70,200	21,200	23,500	8,960
9	11,900	12,800	34,800	39,600	111,000	135,000	161,000	34,800	65,400	22,400	20,100	8,960
10	11,400	12,400	30,200	34,800	98,000	159,000	200,000	33,400	55,200	22,400	16,900	8,580
11	12,800	11,400	26,500	31,500	91,900	157,000	210,000	32,100	53,200	21,800	14,800	8,580
12	16,300	11,000	23,500	36,200	103,000	137,000	184,000	30,800	47,000	21,200	15,300	8,210
13	15,300	11,000	21,800	42,300	105,000	118,000	128,000	29,600	48,400	22,900	18,500	8,210
14	15,300	10,200	20,100	43,000	94,600	104,000	113,000	28,300	42,300	32,800	16,300	8,210
15	18,500	9,750	19,000	38,200	86,500	95,300	133,000	27,700	36,800	31,500	17,900	8,580
16	19,000	9,350	19,600	34,800	77,600	86,500	143,000	27,100	32,100	30,800	21,200	8,210
17	19,600	9,350	27,100	33,400	119,000	74,900	138,000	26,500	28,900	32,100	22,900	7,850
18	16,900	9,350	44,300	30,800	170,000	66,800	122,000	25,900	26,500	28,900	21,200	8,580
19	15,800	10,600	47,000	28,900	193,000	60,600	103,000	25,300	24,700	26,500	19,000	8,960
20	14,800	11,400	43,000	27,100	191,000	55,200	90,600	24,100	24,100	22,900	21,200	8,960
21	12,800	12,400	41,600	25,300	160,000	55,200	83,800	23,500	24,100	21,200	18,500	8,210
22	11,900	11,400	53,200	24,700	98,700	55,200	82,400	22,900	24,100	22,400	16,900	8,580
23	11,000	11,400	59,300	23,500	70,800	62,000	82,400	22,400	24,100	20,100	16,300	8,580
24	11,000	11,900	53,200	22,400	61,300	108,000	74,200	22,400	24,100	17,900	14,300	8,210
25	10,200	12,400	43,000	22,400	53,800	169,000	67,400	21,200	23,500	16,300	12,800	7,850
26	9,750	19,600	38,200	23,500	48,400	190,000	62,700	21,200	22,900	15,300	11,900	7,850
27	9,350	35,500	32,800	24,100	45,000	180,000	59,300	20,100	22,900	14,800	11,000	7,160
28	9,350	36,800	28,900	24,700	80,400	131,000	56,600	19,600	25,300	13,800	10,600	6,830
29	8,960	33,400	25,300	25,300	.....	87,800	56,600	19,600	26,500	13,300	10,200	6,830
30	8,580	30,800	24,100	26,500	.....	83,100	59,300	21,200	25,300	13,300	10,200	6,510
31	8,580	.....	25,900	27,100	.....	103,000	.....	26,500	.....	12,800	11,000	.....
1904.												
1	6,510	7,160	8,210	17,400	19,000	49,100	55,200	34,800	24,100	20,100	12,800	12,800
2	6,510	7,500	8,210	14,800	17,400	44,300	49,100	45,700	22,900	20,700	12,800	11,900
3	6,510	8,210	8,210	13,300	15,800	41,600	43,000	39,600	24,100	24,100	14,800	11,000
4	6,510	8,580	7,850	12,800	15,300	38,900	38,900	33,400	24,700	22,400	13,800	11,000
5	6,510	11,000	7,850	11,900	14,300	35,500	34,800	30,800	27,700	21,800	14,800	10,600
6	6,510	11,000	7,500	11,900	13,800	36,200	32,100	29,600	27,700	19,000	16,300	10,600
7	6,510	9,750	7,850	10,600	13,300	35,500	30,800	27,700	25,300	17,400	20,700	12,800
8	7,160	9,350	7,500	10,200	20,100	48,400	30,800	30,800	21,200	16,300	20,700	13,800
9	7,850	8,960	7,850	9,750	27,100	68,800	33,400	32,100	20,700	15,300	18,500	12,800
10	9,750	8,960	7,500	10,200	34,100	70,800	34,100	37,500	20,700	16,300	18,500	11,900
11	9,350	8,960	7,500	10,600	30,800	69,500	34,800	41,600	19,000	16,300	18,500	11,000
12	8,960	8,960	7,500	10,600	31,500	62,700	32,100	43,000	17,900	17,400	18,500	10,200
13	8,580	8,960	7,850	11,400	27,700	55,200	30,200	38,900	15,800	17,400	22,900	9,350
14	8,580	8,960	7,500	12,400	24,700	51,800	27,700	32,800	14,800	20,100	20,700	8,960
15	7,850	8,580	7,500	13,300	21,800	55,900	26,500	30,800	14,300	19,000	18,500	8,580
16	7,500	8,580	7,850	14,300	20,100	54,500	24,700	29,600	14,300	16,900	18,500	8,210
17	7,850	9,750	8,580	14,800	19,600	49,100	24,100	27,700	13,800	14,800	22,900	7,850
18	7,850	20,100	8,210	16,300	18,500	42,300	24,100	25,300	12,800	13,800	21,800	7,850
19	7,850	32,100	7,850	21,800	17,400	38,900	24,100	24,100	12,400	12,800	17,400	7,500
20	7,500	33,400	9,350	21,200	17,900	35,500	23,500	22,900	11,900	12,400	15,300	7,500
21	7,500	25,900	16,900	20,100	20,700	33,400	22,900	21,200	11,900	11,000	13,800	7,500
22	7,500	21,200	26,500	20,100	29,600	44,300	22,400	20,100	12,400	10,600	13,800	7,160
23	7,500	17,400	24,700	34,800	36,800	81,700	22,400	19,600	14,800	11,400	12,800	7,160
24	7,160	14,300	20,700	66,100	47,700	118,000	22,400	19,000	15,300	12,800	12,800	7,160
25	7,160	12,400	20,700	56,600	49,100	142,000	22,400	17,400	13,300	12,400	16,300	7,160
26	6,830	11,000	19,000	45,000	47,700	136,000	21,200	16,300	13,300	11,900	16,900	6,830
27	6,830	10,200	17,400	42,300	42,300	124,000	20,700	15,800	12,800	12,800	15,800	6,510
28	6,510	9,750	20,700	33,400	43,600	109,000	22,900	15,300	12,800	13,800	14,800	6,510
29	6,510	8,960	21,200	27,100	55,200	89,200	25,900	15,300	15,300	12,400	14,800	6,510
30	6,510	8,580	21,200	23,500	.....	74,200	26,500	14,800	19,000	14,800	14,300	6,510
31	6,830	.....	20,700	21,200	.....	64,000	.....	16,900	.....	16,300	13,300	.....

Daily discharge, in second-feet, of Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905.												
1	6,830	5,060	8,210	39,600	15,800	52,500	27,100	52,500	34,100	52,500	21,200	19,000
2	6,830	5,060	9,350	30,800	17,900	47,700	27,100	48,400	30,800	36,800	21,200	18,500
3	6,510	5,330	10,600	30,800	17,900	43,600	25,300	40,900	27,100	29,600	24,100	19,600
4	6,200	5,900	12,800	22,400	17,400	40,200	24,700	36,200	24,100	24,700	21,800	18,500
5	5,900	6,200	12,400	23,500	16,900	37,500	24,100	32,800	22,900	23,500	18,500	19,600
6	6,200	6,200	19,600	25,300	21,200	35,500	24,700	30,200	21,200	22,900	16,900	19,600
7	5,900	6,510	24,700	24,100	28,900	34,100	25,300	28,900	20,700	21,800	16,900	18,500
8	5,610	6,510	33,400	25,900	37,500	32,100	28,300	31,500	19,600	22,400	15,800	18,500
9	5,330	6,510	32,800	27,100	76,300	34,100	27,700	38,200	19,000	25,300	17,900	17,900
10	5,610	7,500	30,800	29,600	133,000	66,100	36,200	47,700	19,000	25,900	19,600	16,900
11	5,610	7,500	23,500	28,300	146,000	104,000	36,800	48,400	17,400	25,300	28,900	15,300
12	5,610	7,500	19,600	28,900	131,000	112,000	39,600	43,000	16,900	29,600	38,200	14,300
13	5,610	7,160	16,900	59,300	103,000	98,700	41,600	36,800	16,300	38,900	43,000	15,800
14	5,330	6,510	15,300	111,000	86,500	85,100	43,600	33,400	16,900	65,400	51,100	15,300
15	5,330	6,510	14,300	106,000	84,400	66,100	47,000	33,400	17,400	80,400	54,500	14,300
16	5,330	6,830	13,800	96,700	77,000	53,800	44,300	43,000	17,900	70,800	53,800	13,800
17	5,330	7,160	13,300	70,800	70,200	46,400	39,600	68,100	18,500	56,600	45,700	13,800
18	5,330	7,500	12,400	49,100	57,900	40,900	34,800	87,200	18,500	43,600	41,600	13,300
19	5,330	7,850	11,900	38,900	50,400	37,500	31,500	85,800	17,400	36,200	37,500	12,800
20	5,330	8,210	11,000	33,400	47,700	34,800	28,900	74,200	24,100	31,500	35,500	11,900
21	5,060	7,850	10,600	30,200	95,300	38,200	26,500	59,300	27,700	28,900	33,400	11,900
22	5,060	7,850	10,200	28,300	140,000	41,600	26,500	47,000	28,300	30,800	28,900	11,400
23	5,060	7,500	9,750	26,500	137,000	45,000	26,500	44,300	34,800	28,900	25,900	11,000
24	5,060	7,850	9,350	24,700	126,000	41,600	26,500	58,600	34,100	26,500	23,500	10,600
25	5,060	7,850	9,350	22,400	100,000	37,500	25,300	63,400	32,800	27,100	33,400	10,600
26	5,060	7,850	11,900	20,700	83,100	35,500	24,700	53,800	28,900	28,300	41,600	10,200
27	5,060	8,210	16,900	19,000	70,200	32,800	30,200	45,700	25,300	30,800	34,800	10,200
28	5,060	7,850	43,600	16,300	60,000	30,800	36,200	40,200	24,700	27,100	30,800	9,750
29	5,060	7,850	63,400	13,800	.....	29,600	37,500	35,500	34,800	23,500	28,300	9,350
30	5,060	7,850	59,300	13,800	.....	28,900	45,700	33,400	32,100	21,200	25,300	9,350
31	5,060	.....	45,700	15,300	.....	27,700	.....	34,100	.....	21,200	22,400	.....
1906.												
1	8,960	14,800	9,750	31,500	59,300	30,200	94,600	27,700	22,900	25,900	46,400	82,400
2	8,960	13,800	10,200	28,900	55,900	29,600	78,300	27,100	21,200	23,500	55,200	73,600
3	9,350	12,800	13,800	28,300	53,800	31,500	66,100	27,100	22,900	21,800	58,600	64,000
4	9,350	11,900	38,900	50,400	50,400	49,800	56,600	27,700	24,100	20,700	49,800	54,500
5	10,200	11,400	65,400	75,600	46,400	57,900	50,400	28,900	24,100	19,600	45,700	46,400
6	10,600	11,000	60,000	81,700	41,600	52,500	45,000	31,500	24,100	19,600	47,700	47,700
7	10,600	10,600	53,800	76,300	38,200	46,400	42,300	34,800	22,900	20,700	43,600	55,900
8	10,200	10,200	42,300	68,100	35,500	43,000	40,900	43,000	21,800	20,700	40,900	64,700
9	9,750	10,200	38,900	55,900	33,400	39,600	40,900	49,800	21,800	24,700	36,200	64,700
10	9,750	10,200	58,600	49,100	32,100	36,800	44,300	54,500	21,200	30,800	33,400	57,200
11	10,200	10,200	60,000	45,700	30,200	34,100	52,500	50,400	20,100	31,500	31,500	56,600
12	14,800	9,750	57,900	41,600	28,300	32,800	57,200	41,600	17,900	29,600	29,600	53,800
13	17,900	9,750	49,100	39,600	27,100	30,800	53,200	35,500	17,900	25,300	27,700	48,400
14	20,700	9,350	40,200	40,900	26,500	28,900	49,100	31,500	24,700	26,500	26,500	41,600
15	16,900	9,350	35,500	40,900	26,500	32,800	51,100	28,900	30,800	39,600	28,900	36,200
16	16,900	8,960	39,600	44,300	25,900	43,600	53,200	27,100	47,000	53,200	36,800	32,800
17	14,800	8,960	38,900	48,400	25,900	61,300	57,900	25,300	56,600	47,700	43,600	29,600
18	13,300	8,960	34,800	54,500	25,300	66,100	62,700	23,500	52,500	57,200	43,000	27,700
19	12,400	8,580	32,800	53,200	25,300	64,700	63,400	22,400	46,400	90,600	45,700	27,100
20	11,400	8,960	30,800	48,400	24,700	66,800	54,500	21,200	40,200	96,000	46,400	35,500
21	11,000	8,960	36,800	45,000	24,700	66,100	46,400	20,700	34,800	67,400	46,400	49,100
22	11,000	9,350	45,000	43,600	27,700	60,000	41,600	20,100	31,500	64,000	43,600	69,500
23	11,400	10,200	49,100	53,200	31,500	54,500	38,200	19,600	28,900	75,600	40,900	64,000
24	11,900	10,200	57,900	78,300	34,800	49,100	34,800	19,600	27,700	87,200	38,200	56,600
25	11,400	9,750	68,800	112,000	33,400	44,300	32,800	19,000	34,800	77,600	38,200	51,800
26	12,400	9,750	64,700	140,000	31,500	40,900	30,800	18,500	38,900	60,000	42,300	46,400
27	16,300	9,750	55,200	123,000	30,200	39,600	29,600	18,500	39,600	49,100	43,600	41,600
28	18,500	9,750	47,000	85,100	29,600	40,900	30,200	20,700	36,200	45,000	39,600	38,900
29	18,500	9,750	41,600	69,500	.....	45,700	32,100	21,800	31,500	43,000	38,200	34,100
30	16,900	9,750	37,500	63,400	.....	59,300	30,200	22,900	28,300	38,900	46,400	35,500
31	16,300	.....	34,800	62,700	.....	87,200	.....	25,900	.....	41,600	60,000	.....

Daily discharge, in second-feet, of Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907.												
1	88,500	25,300	36,800	133,000	28,300	64,700	32,100	41,600	25,300	36,800	33,400	16,900
2	125,000	24,700	36,200	127,000	57,200	77,600	36,800	38,900	30,800	33,400	33,400	15,800
3	125,000	24,100	32,800	98,700	70,200	111,000	41,600	36,200	34,100	32,100	25,300	14,800
4	116,000	23,500	32,100	79,000	62,700	119,000	37,500	34,800	35,500	28,300	22,900	14,800
5	87,800	21,800	31,500	66,800	55,900	109,000	35,500	34,100	47,700	25,900	20,100	13,300
6	86,500	21,800	30,200	59,300	58,600	92,600	34,100	39,600	53,200	25,300	19,600	13,300
7	98,000	21,800	30,200	53,200	61,300	70,200	52,500	47,700	51,100	24,100	19,600	13,800
8	98,700	21,200	30,800	47,700	59,300	59,300	70,200	59,300	46,400	21,800	16,900	13,800
9	85,100	20,700	31,500	44,300	53,200	58,600	60,600	74,200	49,100	21,200	16,900	13,800
10	71,500	20,100	30,200	40,900	47,000	58,600	61,300	77,600	60,600	20,700	16,300	14,300
11	61,300	19,600	29,600	38,900	42,300	62,000	62,000	79,000	82,400	20,100	16,900	16,300
12	52,500	19,600	32,100	37,500	38,900	75,600	57,900	77,000	85,800	19,600	19,600	22,900
13	45,700	19,600	32,100	36,800	36,200	77,600	55,200	62,000	71,500	23,500	22,900	25,900
14	41,600	20,700	31,500	34,800	34,100	74,900	49,100	54,500	61,300	32,100	21,200	25,900
15	37,600	22,400	30,800	33,400	32,100	76,300	42,300	49,800	70,200	44,300	19,600	24,100
16	34,800	22,900	30,200	32,100	30,800	79,700	39,600	49,100	64,000	43,600	18,500	20,100
17	32,800	24,700	28,900	30,800	30,200	77,000	38,200	45,000	98,000	36,800	19,600	17,400
18	32,100	24,700	33,400	30,200	28,300	72,200	38,200	40,900	96,000	36,200	20,100	15,300
19	41,600	49,800	51,800	28,900	27,700	66,100	38,200	37,500	64,700	36,200	20,100	14,800
20	42,300	144,000	56,600	28,900	27,100	57,200	40,900	32,800	50,400	27,700	19,600	12,400
21	40,900	202,000	54,500	32,100	26,500	51,100	47,700	31,500	45,000	25,900	19,000	12,400
22	41,600	220,000	57,200	38,900	25,900	46,400	45,700	28,300	42,300	25,300	22,400	12,400
23	54,500	205,000	51,100	48,400	25,300	45,700	44,300	26,500	39,600	23,500	23,500	20,700
24	51,100	144,000	46,400	43,600	24,700	38,900	49,100	25,900	35,500	21,200	22,900	51,100
25	44,300	82,400	43,600	38,900	27,100	35,500	51,800	25,300	35,500	21,200	22,900	63,400
26	38,900	60,000	38,900	35,500	40,200	34,100	51,800	24,700	40,900	20,700	21,200	66,100
27	34,800	52,500	35,500	33,400	56,600	32,800	51,800	24,700	41,600	20,100	21,800	57,200
28	32,100	46,400	33,400	31,500	62,700	31,500	52,500	25,300	41,600	20,100	21,800	40,200
29	29,600	43,000	34,100	30,200	.....	30,800	53,200	25,300	40,200	18,500	20,100	33,400
30	27,700	40,200	62,700	29,600	.....	29,600	45,700	24,700	42,300	19,000	17,900	33,400
31	26,500	.....	105,000	28,900	.....	28,300	.....	24,700	.....	24,100	16,900	.....
1908.												
1	32,100	12,400	41,600	120,000	40,200	44,300	47,000	64,000	30,800	17,400	18,500	21,200
2	27,100	11,900	32,800	116,000	50,400	43,600	43,600	60,600	31,500	16,300	19,000	18,500
3	25,900	12,800	30,200	100,000	63,400	45,000	43,600	59,300	31,500	15,800	19,000	17,900
4	21,200	14,300	27,100	75,600	57,200	51,100	45,700	56,600	30,200	16,900	17,400	16,900
5	19,600	20,100	25,300	66,800	52,500	60,600	85,100	58,600	32,800	25,300	15,800	14,800
6	19,000	20,700	23,500	85,800	50,400	64,000	91,200	59,300	35,500	32,100	17,900	16,900
7	20,100	20,700	22,400	99,400	61,300	58,600	68,800	62,000	35,500	38,900	22,900	20,700
8	21,800	20,700	21,200	87,200	48,400	51,100	55,200	64,700	36,200	40,900	23,500	23,500
9	21,200	17,900	19,600	77,000	45,000	59,300	48,400	70,200	36,200	37,500	26,500	25,300
10	20,100	16,300	19,600	65,400	49,100	60,600	44,300	72,900	34,800	43,600	29,600	27,700
11	18,500	25,900	20,700	58,600	57,900	51,100	40,900	77,000	33,400	43,600	31,500	23,500
12	17,400	36,800	24,100	60,600	57,900	46,400	38,200	75,600	32,800	40,200	28,300	21,200
13	16,300	51,100	28,300	76,300	55,200	51,100	35,500	41,600	32,100	32,100	25,300	18,500
14	16,300	65,400	32,100	115,000	69,500	66,800	33,400	36,800	31,500	25,900	22,400	15,800
15	15,300	49,100	36,200	132,000	101,000	77,000	33,400	34,100	30,200	23,500	20,100	14,300
16	14,300	34,800	38,900	118,000	142,000	81,000	34,800	32,100	30,200	24,100	18,500	13,300
17	12,800	28,900	38,900	90,600	162,000	57,900	36,800	29,600	31,500	25,300	16,900	11,900
18	12,800	25,300	39,600	77,600	155,000	51,800	39,600	27,700	33,400	24,100	16,300	11,900
19	12,400	25,900	37,500	71,500	130,000	47,700	47,000	27,100	35,500	22,400	16,300	11,900
20	12,400	27,100	34,100	63,400	98,000	45,700	49,800	29,600	35,500	20,700	16,300	11,400
21	11,900	30,200	32,100	56,600	75,600	49,100	46,400	32,100	34,100	20,700	19,000	11,900
22	11,900	34,800	29,600	51,800	63,400	60,600	43,600	35,500	32,800	21,200	22,900	11,900
23	11,900	39,600	28,900	46,400	56,600	72,200	41,600	35,500	32,100	19,600	24,700	11,900
24	11,900	57,900	33,400	44,300	51,100	84,400	40,900	34,800	19,000	17,400	43,600	11,400
25	11,900	77,600	38,200	39,600	47,000	102,000	48,400	33,400	19,000	16,900	46,400	11,000
26	11,900	86,500	42,300	35,500	44,300	108,000	60,600	32,800	18,500	16,900	32,100	10,600
27	11,900	84,400	47,000	33,400	45,000	97,400	74,900	31,500	24,700	16,300	32,100	10,200
28	11,900	76,300	46,400	32,100	46,400	81,700	88,500	31,500	24,700	16,300	32,800	10,200
29	11,900	57,200	41,600	32,100	45,700	67,400	87,800	30,200	22,400	15,800	42,300	10,200
30	12,400	46,400	43,600	36,200	.....	57,200	73,600	30,200	20,700	16,300	40,200	9,750
31	12,800	.....	93,300	35,500	.....	51,100	.....	29,600	.....	17,400	27,700	.....

Daily discharge, in second-feet, of Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909.												
1	9,750	36,800	13,300	43,000	35,500	84,400	104,000	88,000	39,000	45,600	33,900	16,500
2	9,350	35,500	13,800	47,700	34,100	69,500	81,200	137,000	38,400	47,600	43,700	16,500
3	9,350	28,300	17,900	45,700	32,800	60,000	66,300	160,000	40,400	49,600	48,900	16,500
4	9,350	25,300	27,100	43,000	32,100	53,800	56,200	155,000	102,000	47,600	52,200	16,500
5	9,350	23,500	28,900	43,000	30,800	49,100	50,300	127,000	149,000	43,700	53,600	14,500
6	9,350	19,000	27,700	51,800	32,100	46,400	47,000	90,000	163,000	39,000	51,600	14,500
7	8,960	16,900	35,500	61,300	39,600	50,400	45,000	71,700	151,000	35,200	43,700	14,000
8	8,960	15,800	64,000	61,300	49,100	66,100	45,600	64,300	108,000	38,400	38,400	14,000
9	9,350	15,300	89,200	59,300	48,400	72,200	51,600	50,900	80,500	71,000	34,600	14,000
10	9,750	14,800	83,100	51,800	59,300	103,000	53,600	47,000	90,700	117,000	30,200	15,500
11	10,600	14,300	70,800	47,000	85,800	132,000	48,900	47,600	80,500	109,000	28,400	17,600
12	12,400	13,800	55,200	42,300	116,000	149,000	44,300	52,200	75,700	76,400	27,200	17,000
13	13,800	14,800	45,000	40,200	110,000	140,000	43,700	63,600	70,300	57,600	26,000	17,600
14	13,800	19,000	45,700	38,900	105,000	152,000	47,000	58,300	63,000	55,600	23,700	17,000
15	14,800	19,600	47,700	40,200	85,800	161,000	48,300	48,900	67,000	75,000	26,000	16,500
16	13,800	19,000	45,700	58,600	92,600	139,000	48,300	43,000	71,000	81,200	26,600	15,500
17	12,800	17,900	40,200	78,300	127,000	108,000	47,000	39,700	71,000	72,300	26,000	15,000
18	11,900	16,900	34,800	90,600	129,000	91,400	44,300	37,100	65,000	61,600	63,000	14,500
19	11,400	16,300	30,800	103,000	107,000	77,100	39,700	35,200	58,300	48,300	81,200	15,500
20	11,400	16,300	28,300	106,000	92,600	69,600	34,600	33,900	57,600	40,400	52,900	16,000
21	11,000	15,800	26,500	81,700	79,700	69,000	33,300	41,000	52,900	37,800	39,700	16,500
22	10,600	15,800	25,900	62,000	75,600	74,400	34,600	63,600	54,200	35,800	32,100	16,000
23	9,750	15,300	44,300	50,400	111,000	73,000	38,400	127,000	50,300	33,900	27,200	20,300
24	9,350	15,300	66,800	45,000	131,000	67,000	47,600	137,000	46,300	32,100	26,000	21,400
25	9,350	14,800	76,300	40,900	141,000	62,300	54,900	98,800	49,600	37,800	22,500	26,000
26	12,800	14,300	74,200	37,500	139,000	71,700	50,900	67,600	54,900	33,900	20,300	30,200
27	20,700	14,300	62,000	34,800	123,000	88,600	47,000	54,900	51,600	31,400	19,200	27,200
28	28,300	13,800	47,700	32,800	105,000	91,400	45,600	47,600	56,200	29,600	18,600	21,400
29	21,200	13,800	42,300	32,100	.....	96,800	46,300	43,700	52,900	29,000	17,600	20,300
30	17,900	13,300	43,000	32,800	.....	111,000	47,000	42,300	48,300	25,400	17,000	18,600
31	19,600	.....	45,700	33,400	.....	115,000	.....	40,400	.....	26,000	17,000	.....
1910.												
1	16,000	11,700	10,300	13,100	27,200	45,000	18,600	34,600	43,000	33,300	41,700	15,500
2	15,000	11,700	10,300	12,600	26,600	65,000	18,100	30,800	38,400	35,200	47,000	19,700
3	14,000	11,700	9,900	12,100	25,400	83,900	17,600	28,400	35,200	35,800	38,400	53,600
4	13,100	11,200	9,900	15,500	24,300	81,200	17,000	26,600	34,600	39,700	32,700	50,900
5	12,100	11,200	9,900	16,000	24,800	71,000	17,000	24,800	32,700	39,700	30,800	41,700
6	12,100	11,200	9,900	19,200	26,000	58,900	16,500	23,700	32,700	38,400	34,600	38,400
7	11,700	11,200	10,800	33,300	27,800	50,300	16,500	22,500	49,600	43,700	35,800	34,600
8	11,200	11,200	18,600	70,300	27,800	43,700	15,500	22,500	54,900	54,900	34,600	34,600
9	11,200	10,800	24,300	70,300	27,200	39,000	15,500	39,000	46,300	70,300	36,500	32,100
10	11,200	10,800	24,800	58,300	25,400	36,500	15,000	48,900	42,300	67,000	30,800	29,000
11	11,700	10,300	22,500	52,900	24,800	33,900	15,000	50,900	41,700	63,600	31,400	28,400
12	12,600	10,300	21,400	41,700	24,300	33,900	15,000	50,900	40,400	62,300	29,600	26,600
13	14,000	10,300	19,700	33,300	23,700	33,900	14,500	49,600	39,000	52,200	25,400	26,600
14	16,000	10,300	23,100	29,000	23,700	32,700	14,500	42,300	41,000	47,000	23,100	25,400
15	21,400	10,300	26,600	26,000	23,700	32,100	14,500	37,800	43,000	47,600	20,800	22,500
16	33,900	9,900	29,600	24,300	23,100	31,400	16,000	33,900	42,300	49,600	20,300	20,300
17	30,800	9,900	32,700	23,700	23,100	29,600	20,300	33,900	45,600	52,200	19,200	18,600
18	25,400	9,900	30,200	23,100	41,700	27,800	34,600	34,600	45,600	50,300	18,600	17,600
19	23,100	9,900	27,200	22,500	77,100	26,600	46,300	39,700	45,000	48,300	17,600	16,000
20	19,700	9,900	22,500	27,800	85,900	25,400	43,000	43,700	41,000	43,000	17,600	15,500
21	17,000	9,900	20,300	38,400	79,100	24,300	38,400	48,300	39,700	39,000	17,000	14,500
22	16,500	9,900	19,200	47,000	71,000	23,700	34,600	54,200	37,800	36,500	19,700	14,000
23	15,000	9,900	18,100	56,900	62,300	23,700	31,400	55,600	36,500	33,900	19,700	14,000
24	14,500	9,900	16,500	55,600	58,900	22,000	28,400	53,600	33,300	31,400	18,100	13,600
25	13,600	10,800	15,000	54,900	54,200	22,000	26,600	67,000	32,700	29,000	17,600	13,100
26	13,100	11,200	16,000	47,600	47,600	22,000	26,600	82,500	32,700	28,400	17,000	12,600
27	13,100	11,700	18,100	39,700	41,000	21,400	26,600	77,800	32,100	27,200	16,500	12,600
28	13,100	11,200	18,100	35,200	38,400	20,300	27,800	71,700	30,800	26,000	16,000	13,100
29	12,600	10,800	17,600	32,100	.....	20,300	33,300	64,300	32,100	26,000	15,500	13,100
30	12,600	10,300	16,500	29,600	.....	19,700	36,500	54,200	32,700	28,400	16,500	13,600
31	12,100	.....	15,000	29,000	.....	19,200	.....	45,000	.....	31,400	16,500	.....

Daily discharge, in second-feet, of Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1911.												
1	13,600	8,730	9,900	25,400	36,500	29,600	39,700	38,400	18,100	19,700	14,000	9,490
2	14,000	8,730	10,300	64,300	42,300	28,400	35,200	58,900	17,600	16,500	13,600	9,490
3	15,000	8,730	10,300	131,000	57,600	28,400	32,700	71,000	17,000	14,500	13,600	11,200
4	15,000	8,730	10,300	156,000	49,600	28,400	30,800	70,300	17,000	14,000	13,600	16,500
5	14,000	8,730	11,700	161,000	45,000	27,200	90,700	58,900	16,500	14,000	16,500	15,000
6	13,100	8,730	26,000	147,000	50,900	26,000	163,000	48,900	16,500	12,600	18,600	14,000
7	12,600	8,730	48,900	118,000	54,900	25,400	187,000	42,300	16,500	12,600	18,100	15,500
8	12,600	8,730	63,600	79,100	56,200	25,400	194,000	39,000	16,000	12,600	17,600	15,500
9	12,600	8,730	50,900	56,200	96,100	69,000	195,000	36,500	16,000	12,600	17,000	16,000
10	13,100	8,730	46,300	47,000	139,000	115,000	177,000	33,300	16,000	12,600	17,000	15,000
11	15,500	8,730	35,200	41,000	153,000	127,000	135,000	32,100	17,000	12,600	16,000	14,000
12	16,500	8,380	27,200	36,500	154,000	103,000	107,000	30,800	17,000	15,500	16,000	13,600
13	16,500	8,380	22,500	33,300	131,000	68,300	98,800	29,600	15,500	17,000	14,000	13,600
14	15,500	8,380	19,700	30,800	93,400	53,600	85,200	27,800	13,600	17,000	14,000	12,600
15	13,600	8,380	17,600	28,400	69,000	45,600	77,100	26,000	13,100	17,000	13,100	12,600
16	12,600	8,050	16,000	27,200	57,600	41,000	85,900	24,800	12,600	18,600	13,100	12,100
17	11,700	8,050	15,000	25,400	50,300	35,200	91,400	23,700	12,100	18,100	13,100	11,700
18	11,200	8,050	14,000	24,800	44,300	30,800	92,000	23,700	12,100	18,100	13,100	11,200
19	11,200	8,050	13,600	24,300	40,400	28,400	86,600	23,700	12,100	18,100	14,500	11,200
20	10,800	8,050	13,100	24,300	37,800	26,600	97,500	23,700	12,100	17,600	15,000	11,700
21	10,300	8,050	13,100	24,300	37,800	26,000	99,500	23,100	12,600	15,500	14,500	11,700
22	9,900	8,050	13,100	24,300	37,800	26,600	88,600	23,100	12,600	14,500	13,100	11,200
23	9,900	8,050	13,100	23,100	37,100	26,600	74,400	23,700	13,100	15,000	12,100	11,200
24	9,490	8,050	13,100	23,100	35,800	26,600	64,300	26,600	13,100	15,500	11,200	11,200
25	9,490	8,050	13,100	22,500	35,200	26,600	56,200	26,000	13,100	27,200	10,800	11,200
26	9,490	8,050	14,000	27,800	33,300	26,600	50,900	24,800	13,100	26,000	10,300	11,200
27	9,490	8,050	16,500	33,300	32,100	29,600	46,300	22,500	13,100	26,600	9,900	11,700
28	9,490	8,380	17,600	32,100	30,800	37,800	43,000	21,400	13,100	20,300	9,490	15,500
29	9,490	9,100	18,100	29,600	.....	42,300	40,400	20,300	14,000	17,000	9,490	15,500
30	9,490	9,100	18,100	29,600	.....	42,300	38,400	19,200	18,600	15,000	9,490	13,100
31	9,100	.....	19,700	32,700	.....	42,300	.....	18,600	.....	14,500	9,490	.....
1912.												
1	12,100	15,000	22,500	76,100	84,800	85,400	180,000	154,000	49,400	35,200	26,000	17,600
2	11,200	14,500	21,400	79,800	84,100	72,400	158,000	157,000	42,000	32,100	26,000	16,500
3	11,200	13,600	20,800	71,100	74,200	60,000	159,000	134,000	37,000	31,400	26,000	15,500
4	11,200	13,100	19,700	62,400	60,600	52,500	178,000	99,600	33,300	30,800	28,400	15,000
5	11,200	13,100	18,600	54,400	44,500	48,800	183,000	76,100	31,400	32,700	24,300	14,500
6	11,200	12,600	17,600	46,900	41,400	48,200	177,000	67,400	30,800	34,500	23,100	14,000
7	11,200	13,100	16,500	40,700	37,600	48,200	137,000	63,700	30,800	44,500	22,500	14,000
8	11,700	15,500	16,000	35,800	31,400	53,100	88,500	68,600	32,100	44,500	22,500	13,600
9	14,000	18,100	15,500	35,200	30,200	59,300	73,000	70,500	29,600	43,200	22,500	13,600
10	14,000	20,800	15,000	35,800	28,400	63,700	64,900	64,300	29,000	39,500	22,000	13,100
11	14,000	24,300	14,500	38,900	28,400	71,100	60,000	58,700	27,800	37,600	22,000	13,100
12	14,500	26,000	14,500	37,600	26,600	73,600	55,000	55,000	26,000	45,100	22,000	13,100
13	19,700	27,200	14,500	37,000	26,600	74,800	51,300	50,700	24,300	45,700	21,400	12,600
14	20,800	31,400	15,500	35,200	26,600	70,500	48,200	47,600	20,800	43,800	20,300	12,100
15	20,300	33,300	18,600	32,100	26,000	81,700	45,100	44,500	20,800	38,300	19,200	12,100
16	20,300	30,800	29,000	32,100	30,200	120,000	44,500	42,600	23,100	35,200	19,200	11,700
17	21,400	28,400	37,800	26,000	35,200	144,000	48,200	42,000	23,700	33,300	20,300	11,200
18	30,800	27,200	36,500	24,800	35,800	144,000	54,400	41,400	24,800	31,400	22,000	11,200
19	33,300	27,200	29,600	22,500	34,500	131,000	57,500	41,400	26,000	28,400	21,400	12,100
20	39,700	27,800	26,000	23,700	33,900	105,000	58,100	43,800	24,800	28,400	20,800	13,100
21	41,000	27,800	26,000	26,600	35,800	77,900	51,900	43,800	23,700	29,600	20,800	14,500
22	44,300	27,200	26,000	30,800	63,700	64,900	48,800	39,500	21,400	30,200	21,400	14,500
23	35,800	27,200	35,800	30,800	88,500	54,400	68,600	35,800	20,300	33,300	23,100	20,300
24	27,200	26,000	46,300	32,700	92,800	52,500	92,200	33,300	19,200	33,300	23,700	24,300
25	23,700	24,300	58,300	32,700	89,700	75,500	86,600	31,400	20,300	30,800	28,400	33,900
26	20,800	23,700	60,900	29,600	81,700	92,200	71,100	30,200	26,600	30,200	26,600	27,200
27	20,300	23,100	90,000	27,800	86,000	81,000	61,200	29,600	30,200	29,600	24,300	26,600
28	19,200	23,100	117,000	26,600	105,000	75,500	87,900	28,400	34,500	32,100	22,000	26,600
29	17,600	23,100	118,000	27,800	98,400	121,000	122,000	30,800	36,400	33,300	20,300	26,000
30	16,000	23,100	90,700	50,700	.....	173,000	137,000	44,500	38,300	30,800	19,200	23,700
31	15,500	.....	80,500	79,800	.....	190,000	.....	56,900	.....	27,200	18,100	.....

Daily discharge, in second-feet, of Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1913.												
1	20,300	10,800	9,490	42,000	89,700	135,000	163,000	30,200	58,700	17,000	14,000	9,420
2	18,100	10,300	9,490	46,900	72,400	130,000	102,000	29,600	53,100	16,500	13,500	9,000
3	16,500	10,300	9,490	46,900	62,400	99,600	73,600	29,000	53,100	16,000	13,500	9,000
4	15,000	10,300	9,900	49,400	58,700	76,700	63,700	27,800	49,400	16,500	13,500	9,000
5	14,000	10,300	17,000	46,900	57,500	61,200	57,500	26,600	45,700	16,500	14,000	9,000
6	13,600	10,300	39,500	40,700	57,500	51,900	53,100	26,000	42,600	16,500	14,000	9,000
7	13,100	10,300	55,600	40,100	55,600	46,300	48,800	24,800	42,000	16,500	13,500	8,590
8	12,600	10,300	59,300	95,300	51,900	42,000	45,700	24,800	42,000	16,500	12,100	7,800
9	12,100	11,200	48,800	107,000	46,300	38,900	43,200	24,800	43,200	17,000	11,600	7,800
10	11,700	14,500	39,500	97,800	41,400	37,000	40,700	24,800	42,600	15,500	11,600	7,800
11	11,200	17,000	32,700	86,000	38,900	40,100	38,900	25,400	49,400	14,500	12,500	8,190
12	10,800	18,100	27,200	71,700	45,700	45,700	38,300	25,400	44,500	13,500	14,500	8,190
13	10,800	17,600	24,300	70,500	58,700	49,400	37,600	24,300	38,900	13,500	14,500	8,190
14	10,800	16,000	21,400	70,500	81,700	83,500	39,500	23,700	33,300	15,000	15,000	7,800
15	10,800	14,500	19,700	65,500	69,300	146,000	44,500	22,500	29,000	15,000	14,000	7,430
16	10,800	13,600	18,600	60,600	58,700	182,000	44,500	22,500	26,600	14,000	13,000	7,070
17	12,100	13,600	17,600	53,100	49,400	190,000	47,600	22,500	25,400	13,000	12,100	7,070
18	13,100	12,600	17,600	45,700	44,500	185,000	50,700	22,500	23,700	12,500	12,100	7,070
19	13,100	11,700	17,600	49,400	40,100	154,000	50,000	24,300	23,100	12,100	11,600	7,070
20	13,100	11,700	18,600	60,000	37,000	105,000	47,600	28,400	22,000	11,200	11,600	7,070
21	14,500	11,700	18,600	59,300	37,000	77,300	44,500	31,400	20,800	10,700	11,600	9,000
22	15,000	11,200	18,100	58,700	37,000	76,100	40,700	29,000	20,800	10,300	11,600	9,420
23	14,500	11,200	17,000	61,800	36,400	76,100	37,600	27,800	20,800	9,840	11,200	10,300
24	13,100	10,800	17,000	65,500	35,200	72,400	34,500	38,900	20,800	9,840	11,200	12,500
25	12,600	10,800	18,100	90,300	34,500	65,500	32,700	72,400	20,300	9,840	11,200	12,500
26	12,100	10,300	20,800	119,000	32,100	58,700	31,400	95,300	18,600	9,840	10,700	12,100
27	11,700	10,300	22,000	125,000	33,900	78,600	30,800	95,300	18,100	11,200	10,700	12,100
28	11,700	10,300	22,000	131,000	81,000	154,000	30,200	79,800	18,100	11,600	10,700	10,700
29	11,200	9,900	21,400	140,000	.....	190,000	30,200	66,800	18,100	11,600	10,700	9,840
30	11,200	9,490	21,400	136,000	.....	202,000	30,200	64,900	17,600	13,500	10,700	9,840
31	10,800	.....	28,400	115,000	.....	200,000	.....	67,400	.....	14,500	9,840	.....

Daily discharge, in second-feet, of Tennessee River at Chattanooga, Tenn., Oct. 1–21, 1913.

Day.	Oct.	Day.	Oct.	Day.	Oct.	Day.	Oct.
1	9,420	6	8,590	11	6,720	16	6,060
2	9,420	7	7,800	12	6,380	17	6,060
3	9,420	8	7,430	13	6,380	18	6,060
4	9,420	9	7,070	14	6,380	19	6,060
5	9,000	10	6,720	15	6,060	20	6,060
						21	6,720

Monthly discharge of Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874–1913.

[Drainage area, 21,400 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.[a]
	Maximum.	Minimum.	Mean.	Per square mile.		
1874.						
April	190,000	29,600	108,000	5.05	5.63	
May	195,000	22,900	74,600	3.49	4.02	
June	32,800	11,400	20,300	.949	1.06	
July	51,800	9,750	17,200	.804	.93	
August	92,600	7,850	23,000	1.07	1.23	
September	89,200	10,600	19,600	.916	1.02	
The period	195,000	7,850	43,800	2.05	13.89	

[a] See "Accuracy" in station description.

Monthly discharge of Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874–1913—Continued.

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
1875.						
October	27,700	8,210	13,600	0.636	0.73	
November	67,400	6,830	23,800	1.11	1.24	
December	56,600	15,800	34,200	1.60	1.84	
January	215,000	22,900	59,300	2.77	3.19	
February	357,000	37,500	100,000	4.67	4.86	
March	361,000	77,000	179,000	8.36	9.64	
April	133,000	40,900	72,800	3.40	3.79	
May	135,000	19,600	39,500	1.85	2.13	
June	32,100	16,900	24,300	1.14	1.27	
July	130,000	28,300	51,600	2.41	2.78	
August	77,000	22,400	37,000	1.73	1.99	
September	70,200	14,300	23,100	1.08	1.20	
The year	361,000	6,830	54,700	2.56	34.66	
1876.						
October	32,100	12,800	17,300	.808	.93	
November	43,000	13,300	30,700	1.43	1.60	
December	227,000	22,400	58,600	2.74	3.16	
January	205,000	29,600	70,900	3.31	3.82	
February	143,000	43,000	76,000	3.55	3.83	
March	137,000	32,100	67,700	3.16	3.64	
April	85,800	34,800	54,400	2.54	2.83	
May	130,000	39,600	66,100	3.09	3.56	
June	153,000	27,100	57,900	2.71	3.02	
July	46,400	19,000	31,200	1.46	1.68	
August	34,800	14,300	22,000	1.03	1.19	
September	19,000	11,400	13,800	.645	.72	
The year	227,000	11,400	47,200	2.21	29.98	
1877.						
October	19,000	7,850	10,700	.500	.58	
November	21,800	8,580	11,600	.542	.60	
December	19,000	9,350	13,000	.607	.70	
January	178,000	10,600	72,900	3.41	3.93	
February	36,200	17,400	24,400	1.14	1.19	
March	108,000	17,400	55,900	2.61	3.01	
April	189,000	49,800	94,000	4.39	4.90	
May	71,500	19,600	36,900	1.72	1.98	
June	28,900	15,800	19,600	.916	1.02	
July	29,600	11,400	17,500	.818	.94	
August	14,300	8,960	11,300	.528	.61	
September	17,900	9,350	12,900	.603	.67	
The year	189,000	7,850	31,800	1.49	20.13	
1878.						
October	22,400	8,580	13,700	.640	.74	
November	96,000	12,800	37,000	1.73	1.93	
December	51,800	17,900	31,900	1.49	1.72	
January	79,000	27,700	46,500	2.17	2.50	
February	125,000	38,900	63,000	2.94	3.06	
March	66,100	25,900	40,800	1.91	2.20	
April	58,600	23,500	37,000	1.73	1.93	
May	44,300	22,400	32,400	1.51	1.74	
June	22,900	12,800	16,800	.785	.88	
July	15,300	8,210	11,800	.551	.64	
August	23,500	8,580	15,200	.710	.82	
September	66,100	7,500	16,900	.790	.88	
The year	125,000	7,500	30,000	1.40	19.04	
1879.						
October	41,600	7,850	13,400	.626	.72	
November	116,000	11,000	24,600	1.15	1.28	
December	92,600	28,900	55,900	2.61	3.01	
January	252,000	23,500	92,200	4.31	4.97	
February	122,000	40,200	67,200	3.14	3.27	
March	68,800	25,300	37,600	1.76	2.03	
April	53,800	24,700	40,500	1.89	2.11	
May	37,500	16,900	25,200	1.18	1.36	
June	18,500	7,850	12,700	.593	.66	
July	11,400	7,160	8,300	.388	.45	
August	24,100	8,580	15,900	.743	.86	
September	15,800	5,900	9,360	.437	.49	
The year	252,000	5,900	33,400	1.56	21.21	

Monthly discharge of Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874–1913—Continued.

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
1880.						
October	85,100	5,330	19,600	0.916	1.06	
November	27,700	9,750	15,100	.706	.79	
December	143,000	20,700	68,700	3.21	3.70	
January	66,100	23,500	38,600	1.80	2.08	
February	176,000	23,500	56,800	2.65	2.86	
March	254,000	45,700	127,000	5.93	6.84	
April	109,000	38,200	67,700	3.16	3.53	
May	92,600	23,500	41,700	1.95	2.25	
June	36,200	12,800	20,300	.949	1.06	
July	47,000	11,900	20,800	.972	1.12	
August	27,100	10,600	18,800	.879	1.01	
September	22,400	9,350	14,700	.687	.77	
The year	254,000	5,330	42,600	1.99	27.07	
1881.						
October	19,000	7,850	9,900	.463	.53	
November	85,800	8,580	18,200	.850	.95	
December	174,000	25,900	62,700	2.93	3.38	
January	122,000	17,900	60,200	2.81	3.24	
February	146,000	34,100	76,300	3.57	3.72	
March	125,000	35,500	56,800	2.65	3.06	
April	116,000	40,900	62,100	2.90	3.24	
May	53,800	17,900	30,500	1.43	1.65	
June	28,900	12,800	19,600	.916	1.02	
July	20,100	8,580	12,400	.579	.67	
August	18,500	5,330	8,080	.378	.44	
September	72,200	4,800	14,500	.678	.76	
The year	174,000	4,800	35,700	1.67	22.66	
1882.						
October	17,400	5,900	8,880	.415	.48	
November	62,000	17,900	36,900	1.72	1.92	
December	131,000	19,000	64,600	3.02	3.48	
January	267,000	54,500	175,000	8.18	9.43	
February	197,000	57,200	124,000	5.79	6.03	
March	144,000	53,200	86,000	4.02	4.64	
April	70,200	31,500	49,200	2.30	2.57	
May	53,200	25,300	34,100	1.59	1.83	
June	62,000	25,300	37,800	1.77	1.98	
July	40,900	18,500	26,600	1.24	1.43	
August	36,800	13,800	23,900	1.12	1.29	
September	149,000	16,300	40,000	1.87	2.09	
The year	267,000	5,900	58,500	2.73	37.17	
1883.						
October	24,100	10,600	14,000	.654	.75	
November	23,500	10,600	13,600	.636	.71	
December	62,000	12,800	25,500	1.19	1.37	
January	254,000	21,200	96,100	4.49	5.18	
February	114,000	45,000	66,800	3.12	3.25	
March	60,600	28,300	40,400	1.89	2.18	
April	215,000	69,500	119,000	5.56	6.20	
May	68,800	21,800	34,200	1.60	1.84	
June	40,900	17,900	25,300	1.18	1.32	
July	22,900	9,350	15,700	.734	.85	
August	14,800	8,580	10,500	.491	.57	
September	14,300	4,800	7,610	.356	.40	
The year	254,000	4,800	38,800	1.81	24.62	
1884.						
October	35,500	7,500	11,700	.547	.63	
November	68,100	8,960	21,800	1.02	1.14	
December	82,400	14,300	29,800	1.39	1.60	
January	94,600	19,000	52,400	2.45	2.82	
February	244,000	59,300	148,000	6.92	7.46	
March	285,000	47,700	157,000	7.34	8.46	
April	109,000	38,200	68,500	3.20	3.57	
May	71,500	24,100	40,600	1.90	2.19	
June	71,500	19,000	34,900	1.63	1.82	
July	50,400	14,800	27,900	1.30	1.50	
August	60,600	11,000	19,600	.916	1.06	
September	17,900	6,510	9,000	.421	.47	
The year	285,000	6,510	51,500	2.41	32.72	

Monthly discharge of Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874–1913—Continued.

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
1885.						
October	7,850	5,330	6,080	0.284	0.33	
November	11,000	6,510	7,940	.371	.41	
December	79,700	8,210	25,400	1.19	1.37	
January	174,000	20,100	70,500	3.29	3.79	
February	59,300	28,300	42,100	1.97	2.05	
March	56,600	28,300	39,400	1.84	2.12	
April	99,400	22,900	36,800	1.72	1.92	
May	89,200	19,000	31,300	1.46	1.68	
June	120,000	19,000	35,500	1.66	1.85	
July	31,500	15,800	20,500	.958	1.10	
August	24,700	8,960	15,400	.720	.83	
September	12,800	6,830	9,750	.456	.51	
The year	174,000	5,330	28,300	1.32	17.96	
1886.						
October	99,400	11,900	26,300	1.23	1.42	
November	201,000	24,700	66,400	3.10	3.46	
December	140,000	25,900	53,500	2.50	2.88	
January	144,000	28,900	76,700	3.58	4.13	
February	83,100	31,500	49,200	2.30	2.40	
March	269,000	28,300	61,300	2.86	3.30	
April	349,000	34,800	136,000	6.36	7.10	
May	67,400	32,800	50,400	2.36	2.72	
June	103,000	43,000	64,400	3.01	3.36	
July	87,800	25,900	50,000	2.34	2.70	
August	42,300	19,600	28,500	1.33	1.53	
September	19,000	11,900	15,200	.710	.79	
The year	349,000	11,900	56,400	2.64	35.79	
1887.						
October	11,900	8,580	10,000	.467	.54	
November	87,200	9,350	30,300	1.42	1.58	
December	107,000	22,400	49,000	2.29	2.64	
January	142,000	28,300	58,100	2.71	3.12	
February	180,000	52,500	99,700	4.66	4.85	
March	180,000	29,600	66,700	3.12	3.60	
April	138,000	23,500	45,100	2.11	2.35	
May	38,900	25,900	30,800	1.44	1.66	
June	64,700	20,700	38,700	1.81	2.02	
July	32,100	11,400	18,900	.883	1.02	
August	66,100	18,500	27,800	1.30	1.50	
September	22,400	8,960	11,900	.556	.62	
The year	180,000	8,580	40,200	1.88	25.50	
1888.						
October	26,500	8,580	13,600	.636	.73	
November	16,900	9,350	11,700	.547	.61	
December	31,500	10,200	18,800	.879	1.01	
January	169,000	32,100	71,700	3.35	3.86	
February	70,200	29,600	47,900	2.24	2.42	
March	178,000	27,100	53,800	2.51	2.89	
April	154,000	25,900	62,000	2.90	3.24	
May	59,300	22,400	32,500	1.52	1.75	
June	56,600	15,800	28,600	1.34	1.50	
July	42,300	11,000	19,400	.907	1.04	
August	36,200	11,900	16,900	.790	.91	
September	72,200	19,600	46,800	2.19	2.44	
The year	178,000	8,580	35,200	1.64	22.40	
1889.						
October	130,000	15,800	39,500	1.85	2.13	
November	137,000	30,800	67,400	3.15	3.51	
December	40,900	22,400	28,100	1.31	1.51	
January	89,200	31,500	60,300	2.82	3.25	
February	195,000	36,200	87,300	4.08	4.25	
March	58,600	17,900	37,500	1.75	2.02	
April	49,800	17,900	29,600	1.38	1.54	
May	28,300	15,300	20,400	.953	1.10	
June	78,300	21,800	42,200	1.97	2.20	
July	56,600	19,600	31,600	1.48	1.71	
August	62,700	21,200	36,900	1.72	1.98	
September	48,400	13,800	29,600	1.38	1.54	
The year	195,000	13,800	42,100	1.97	26.74	

Monthly discharge of Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874–1913—Continued.

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
1890.						
October	27,100	12,400	15,100	0.706	0.81	
November	70,800	15,300	47,900	2.24	2.50	
December	46,400	19,600	26,700	1.25	1.44	
January	82,400	25,900	40,600	1.90	2.19	
February	231,000	42,300	75,100	3.51	3.66	
March	283,000	52,500	117,000	5.47	6.31	
April	133,000	40,900	66,500	3.11	3.47	
May	74,900	38,900	50,500	2.36	2.72	
June	35,500	17,400	24,400	1.14	1.27	
July	46,400	11,900	21,800	1.02	1.18	
August	45,000	14,300	26,600	1.24	1.43	
September	45,700	15,800	23,100	1.08	1.20	
The year	283,000	11,900	44,400	2.07	28.18	
1891.						
October	58,600	20,700	35,000	1.64	1.89	
November	40,200	13,800	21,000	.981	1.09	
December	81,700	13,300	32,500	1.52	1.75	
January	99,400	36,800	60,200	2.81	3.24	
February	249,000	60,600	147,000	6.87	7.15	
March	259,000	64,700	124,000	5.79	6.68	
April	105,000	36,200	63,300	2.96	3.30	
May	34,100	21,200	25,900	1.21	1.40	
June	45,700	21,800	33,000	1.54	1.72	
July	32,800	15,300	21,200	.991	1.14	
August	106,000	16,900	37,800	1.77	2.04	
September	33,500	11,500	20,200	.944	1.05	
The year	259,000	11,500	51,200	2.39	32.45	
1892.						
October	11,500	9,350	10,300	.481	.55	
November	39,600	8,580	16,900	.789	.88	
December	68,100	15,800	36,500	1.71	1.97	
January	252,000	38,900	94,100	4.40	5.07	
February	72,200	30,200	45,400	2.12	2.29	
March	66,100	28,300	44,200	2.07	2.39	
April	227,000	38,200	96,400	4.51	5.03	
May	53,200	27,100	37,200	1.74	2.01	
June	57,200	24,100	41,200	1.93	2.15	
July	74,200	21,200	42,700	1.99	2.29	
August	27,700	15,300	19,600	.916	1.06	
September	25,300	8,960	14,500	.678	.76	
The year	252,000	8,580	41,500	1.94	26.45	
1893.						
October	12,800	8,210	9,430	.441	.51	
November	41,600	8,210	22,700	1.06	1.18	
December	57,200	14,800	28,700	1.34	1.54	
January	42,300	16,300	21,500	1.00	1.15	
February	221,000	35,000	101,000	4.72	4.92	
March	75,600	32,800	49,400	2.31	2.66	
April	76,300	27,100	40,000	1.87	2.09	
May	198,000	25,900	70,600	3.30	3.80	
June	135,000	22,900	48,800	2.28	2.54	
July	31,500	14,800	20,200	.944	1.09	
August	29,600	10,200	17,300	.808	.93	
September	80,400	13,800	30,000	1.41	1.57	
The year	221,000	8,210	37,800	1.77	23.98	
1894.						
October	59,300	10,600	19,900	.930	1.07	
November	27,100	13,300	15,800	.738	.82	
December	26,500	14,300	19,400	.907	1.05	
January	58,600	16,300	34,300	1.61	1.86	
February	167,000	27,700	73,400	3.43	3.57	
March	60,000	29,600	45,400	2.12	2.44	
April	51,800	22,400	32,900	1.54	1.72	
May	42,300	17,900	26,900	1.26	1.45	
June	24,100	11,900	15,400	.720	.80	
July	24,700	11,000	18,700	.874	1.01	
August	25,900	11,000	16,700	.781	.90	
September	22,400	7,160	11,100	.519	.58	
The year	167,000	7,160	27,200	1.27	17.27	

Monthly discharge of Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874–1913—Continued.

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
1895.						
October	13,800	6,830	8,590	0.401	0.46	B.
November	13,300	6,830	8,420	.393	.44	B.
December	70,200	7,500	25,900	1.21	1.40	C.
January	212,000	17,400	72,800	3.40	3.92	B.
February	45,700	18,500	33,600	1.57	1.64	B.
March	148,000	40,200	75,200	3.51	4.05	B.
April	82,400	34,100	50,300	2.35	2.62	B.
May	58,600	30,800	42,000	1.96	2.26	B.
June	32,100	14,300	21,200	.991	1.10	B.
July	64,700	13,800	25,000	1.17	1.35	B.
August	35,500	15,300	21,800	1.02	1.18	B.
September	19,000	7,500	13,000	.608	.68	B.
The year	212,000	6,830	33,300	1.56	21.10	
1896.						
October	7,850	6,830	7,320	.342	.39	C.
November	13,800	8,210	9,760	.456	.51	B.
December	29,600	8,960	14,400	.673	.78	B.
January	49,800	13,300	23,500	1.10	1.27	B.
February	89,200	23,500	55,400	2.59	2.79	B.
March	101,000	19,000	37,600	1.76	2.03	B.
April	269,000	20,100	71,400	3.34	3.73	B.
May	25,900	12,400	17,800	.832	.96	B.
June	41,600	14,800	21,400	1.00	1.12	B.
July	141,000	17,400	56,500	2.64	3.04	B.
August	31,500	12,800	19,500	.911	1.05	B.
September	15,800	8,580	10,900	.509	.57	B.
The year	269,000	6,830	28,700	1.34	18.24	
1897.						
October	16,900	8,210	10,400	.486	.56	B.
November	57,900	8,580	20,400	.953	1.06	B.
December	88,500	14,300	31,200	1.46	1.68	B.
January	43,600	13,800	25,400	1.19	1.37	B.
February	231,000	16,900	84,600	3.95	4.11	C.
March	252,000	52,500	144,000	6.75	7.78	C.
April	201,000	33,500	78,200	3.65	4.07	B.
May	146,000	23,500	50,900	2.38	2.74	B.
June	35,500	18,500	26,100	1.22	1.36	A.
July	77,000	19,000	31,900	1.49	1.72	A.
August	31,500	12,400	19,600	.916	1.06	A.
September	12,800	6,830	8,640	.404	.45	A.
The year	252,000	6,830	44,100	2.06	27.96	
1898.						
October	11,900	5,900	7,960	.372	.43	B.
November	8,960	6,830	7,550	.353	.39	C.
December	63,400	7,850	22,400	1.05	1.21	B.
January	118,000	14,800	57,100	2.67	3.08	B.
February	45,700	17,900	23,700	1.11	1.16	B.
March	83,800	15,800	25,000	1.17	1.35	B.
April	115,000	37,500	57,300	2.68	2.99	B.
May	37,500	19,000	24,300	1.14	1.31	B.
June	32,100	10,200	17,000	.794	.88	B.
July	47,700	11,900	20,600	.963	1.11	A.
August	101,000	21,200	48,400	2.26	2.61	A.
September	164,000	19,000	46,000	2.15	2.40	B.
The year	164,000	5,900	29,800	1.39	18.92	
1899.						
October	109,000	17,900	42,800	2.00	2.31	A.
November	40,200	21,800	28,400	1.33	1.48	C.
December	34,800	20,100	28,700	1.34	1.54	B.
January	122,000	27,100	50,300	2.35	2.71	B.
February	254,000	32,100	103,000	4.81	5.01	B.
March	266,000	59,300	155,000	7.24	8.35	B.
April	149,000	41,600	74,400	3.48	3.88	B.
May	70,200	23,500	43,000	2.01	2.32	B.
June	37,500	16,900	24,500	1.14	1.27	C.
July	29,600	11,000	16,100	.752	.87	B.
August	23,500	8,580	12,600	.589	.68	B.
September	16,900	7,850	10,700	.500	.56	B.
The year	266,000	7,850	48,800	2.28	30.98	

Monthly discharge of Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874–1913—Continued.

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
1900.						
October	11,000	7,160	8,380	0.392	0.45	B.
November	11,000	7,160	8,760	.409	.46	B.
December	44,300	9,350	23,200	1.08	1.24	B.
January	57,900	12,400	30,400	1.42	1.64	B.
February	157,000	14,300	55,900	2.61	2.72	B.
March	112,000	45,700	70,800	3.31	3.82	B.
April	75,600	35,500	49,700	2.32	2.59	C.
May	36,200	16,900	22,500	1.05	1.21	B.
June	56,600	15,800	35,200	1.64	1.83	C.
July	53,800	14,300	26,300	1.23	1.42	B.
August	36,200	10,600	15,500	.724	.83	B.
September	26,500	7,850	14,300	.668	.75	B.
The year	157,000	7,160	29,900	1.40	18.96	
1901.						
October	45,000	8,580	15,300	.715	.82	B.
November	100,000	11,400	27,000	1.26	1.41	B.
December	56,600	18,500	30,700	1.43	1.65	B.
January	185,000	21,200	53,100	2.48	2.86	B.
February	62,700	20,700	38,400	1.79	1.86	B.
March	146,000	20,700	47,300	2.21	2.55	B.
April	174,000	40,200	99,500	4.65	5.19	A.
May	215,000	27,700	71,900	3.36	3.87	B.
June	75,600	35,500	49,900	2.33	2.60	A.
July	38,900	15,800	25,400	1.19	1.37	A.
August	217,000	14,800	79,400	3.71	4.28	A.
September	64,000	24,100	40,700	1.91	2.13	A.
The year	217,000	8,580	48,200	2.25	30.59	
1902.						
October	27,100	14,300	20,400	.953	1.10	B.
November	14,800	12,400	14,000	.654	.73	B.
December	248,000	12,800	68,800	3.22	3.71	B.
January	271,000	28,900	73,900	3.45	3.98	B.
February	152,000	29,600	62,900	2.94	3.06	B.
March	252,000	43,000	113,000	5.28	6.09	B.
April	204,000	29,600	57,400	2.68	2.99	B.
May	57,200	22,400	29,800	1.39	1.60	B.
June	28,300	16,900	20,500	.958	1.07	C.
July	63,400	11,400	23,800	1.11	1.28	C.
August	15,800	9,350	11,500	.537	.62	C.
September	20,100	8,580	12,100	.565	.63	C.
The year	271,000	8,580	42,400	1.98	26.86	
1903.						
October	21,800	8,580	14,200	.664	.77	B.
November	36,800	8,960	14,000	.654	.73	B.
December	59,300	19,000	35,500	1.66	1.91	B.
January	49,800	22,400	31,700	1.48	1.71	A.
February	193,000	27,100	94,400	4.41	4.59	B.
March	205,000	55,200	115,000	5.37	6.19	A.
April	210,000	56,600	105,000	4.91	5.48	A.
May	55,200	19,600	30,300	1.42	1.64	A.
June	72,900	22,900	40,400	1.89	2.11	A.
July	32,800	12,800	21,500	1.01	1.16	A.
August	27,700	10,200	17,200	.804	.93	A.
September	10,600	6,510	8,460	.395	.44	A.
The year	210,000	6,510	43,500	2.03	27.66	
1904.						
October	9,750	6,510	7,390	.345	.40	A.
November	33,400	7,160	12,600	.589	.66	A.
December	26,500	7,500	12,500	.584	.67	A.
January	66,100	9,750	21,300	.995	1.15	A.
February	55,200	13,300	28,300	1.32	1.38	B.
March	142,000	33,400	64,500	3.01	3.47	B.
April	55,200	20,700	29,500	1.38	1.54	B.
May	45,700	14,800	27,400	1.28	1.48	B.
June	27,700	11,900	17,600	.822	.92	A.
July	24,100	10,600	15,900	.743	.86	A.
August	22,900	12,800	16,700	.780	.90	A.
September	13,800	6,510	9,170	.429	.48	A.
The year	142,000	6,510	21,900	1.02	13.91	

Monthly discharge of Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874–1913—Continued.

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
1905.						
October	6,830	5,060	5,510	0.257	0.30	A.
November	8,210	5,060	7,070	.330	.37	A.
December	63,400	8,210	20,500	.958	1.10	B.
January	111,000	13,800	36,500	1.71	1.97	B.
February	146,000	15,800	73,200	3.42	3.56	B.
March	112,000	27,700	48,100	2.25	2.59	A.
April	47,000	24,100	32,100	1.50	1.67	A.
May	87,200	28,900	46,900	2.19	2.52	A.
June	34,800	16,300	24,100	1.13	1.26	A.
July	80,400	21,200	34,100	1.59	1.83	B.
August	54,500	15,800	30,700	1.43	1.65	B.
September	19,600	9,350	14,400	.673	.75	A.
The year	146,000	5,060	30,900	1.44	19.57	
1906.						
October	20,700	8,960	13,100	.612	.71	A.
November	14,800	8,580	10,200	.477	.53	A.
December	68,800	9,750	43,500	2.03	2.34	A.
January	140,000	28,300	60,600	2.83	3.26	B.
February	59,300	24,700	34,100	1.59	1.66	A.
March	87,200	28,900	47,300	2.21	2.55	B.
April	94,600	29,600	48,700	2.28	2.54	A.
May	54,500	18,500	28,600	1.34	1.54	A.
June	56,600	17,900	30,400	1.42	1.58	A.
July	96,000	19,600	44,300	2.07	2.39	A.
August	60,000	26,500	41,800	1.95	2.25	B.
September	82,400	27,100	49,600	2.32	2.59	A.
The year	140,000	8,580	37,800	1.77	23.94	
1907.						
October	125,000	26,500	58,900	2.75	3.17	A.
November	220,000	19,600	56,300	2.63	2.93	B.
December	105,000	28,900	40,100	1.87	2.16	B.
January	133,000	28,900	47,500	2.22	2.56	B.
February	70,200	24,700	41,800	1.95	2.03	B.
March	119,000	28,300	62,700	2.93	3.38	B.
April	70,200	32,100	47,200	2.21	2.47	B.
May	79,000	24,700	41,900	1.96	2.26	B.
June	98,000	25,300	52,800	2.47	2.76	B.
July	44,300	18,500	26,800	1.25	1.44	B.
August	33,400	16,300	21,100	.986	1.14	B.
September	66,100	12,400	23,900	1.12	1.25	B.
The year	220,000	12,400	43,400	2.03	27.55	
1908.						
October	32,100	11,900	16,400	.766	.88	B.
November	86,500	11,900	37,600	1.76	1.96	B.
December	93,300	19,600	34,500	1.61	1.86	A.
January	132,000	32,100	71,000	3.32	3.83	B.
February	162,000	40,200	69,700	3.26	3.52	B.
March	108,000	43,600	62,800	2.93	3.38	A.
April	91,200	33,400	52,300	2.44	2.72	A.
May	77,000	27,100	45,000	2.10	2.42	B.
June	36,200	18,500	30,300	1.42	1.58	B.
July	43,600	15,800	24,600	1.15	1.33	B.
August	46,400	15,800	25,300	1.18	1.36	C.
September	27,700	9,750	15,500	.724	.81	B.
The year	162,000	9,750	40,300	1.88	25.65	
1909.						
October	28,300	8,960	12,600	.589	.68	B.
November	36,800	13,300	18,200	.850	.95	C.
December	89,200	13,300	45,100	2.11	2.43	B.
January	106,000	32,100	52,800	2.47	2.85	B.
February	141,000	30,800	83,900	3.92	4.08	B.
March	161,000	46,400	90,100	4.21	4.85	B.
April	104,000	33,300	49,800	2.33	2.60	A.
May	160,000	33,900	71,400	3.34	3.85	A.
June	163,000	38,400	72,000	3.36	3.75	A.
July	117,000	25,400	50,500	2.36	2.72	A.
August	81,200	17,000	34,500	1.61	1.86	B.
September	30,200	14,000	17,800	.832	.93	B.
The year	163,000	8,960	49,700	2.32	31.55	

Monthly discharge of Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874–1913—Continued.

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
1910.						
October	33,900	11,200	15,800	0.738	0.85	A.
November	11,700	9,900	10,600	.495	.55	B.
December	32,700	9,900	18,900	.883	1.02	B.
January	70,300	12,100	35,200	1.64	1.89	A.
February	85,900	23,100	38,800	1.81	1.88	A.
March	83,900	19,200	36,100	1.69	1.95	A.
April	46,300	14,500	23,700	1.11	1.24	A.
May	82,500	22,500	44,900	2.10	2.42	A.
June	54,900	30,800	39,200	1.83	2.04	A.
July	70,300	26,000	42,300	1.98	2.28	A.
August	47,000	15,500	25,100	1.17	1.35	A.
September	53,600	12,600	23,400	1.09	1.22	A.
The year	85,900	9,900	29,500	1.38	18.69	
1911.						
October	16,500	9,100	12,100	.565	.65	A.
November	9,100	8,050	8,420	.393	.44	A.
December	63,600	9,900	21,000	.981	1.13	A.
January	161,000	22,500	51,100	2.39	2.76	C.
February	154,000	30,800	62,100	2.90	3.02	C.
March	127,000	25,400	42,400	1.98	2.28	B.
April	195,000	30,800	90,100	4.21	4.70	C.
May	71,000	18,600	32,700	1.53	1.76	B.
June	18,600	12,100	14,700	.687	.77	B.
July	27,200	12,600	16,700	.780	.90	B.
August	18,600	9,490	13,600	.636	.73	B.
September	16,500	9,490	12,800	.598	.67	C.
The year	195,000	8,050	31,200	1.46	19.81	
1912.						
October	44,300	11,200	20,500	.958	1.10	C.
November	33,300	12,600	22,700	1.06	1.18	B.
December	118,000	14,500	37,700	1.76	2.03	C.
January	79,800	22,500	40,100	1.87	2.16	B.
February	105,000	26,000	53,900	2.52	2.72	B.
March	190,000	48,200	86,000	4.02	4.64	B.
April	183,000	44,500	91,600	4.28	4.78	B.
May	157,000	28,400	58,900	2.75	3.17	B.
June	49,400	19,200	28,600	1.34	1.50	B.
July	45,700	27,200	34,700	1.62	1.87	B.
August	28,400	18,100	22,600	1.06	1.22	B.
September	33,900	11,200	16,900	.790	.88	B.
The year	190,000	11,200	42,800	2.00	27.25	
1913.						
October	20,300	10,800	13,000	.607	.70	B.
November	18,100	9,490	12,000	.561	.63	B.
December	59,300	9,490	23,800	1.11	1.28	B.
January	140,000	40,100	75,700	3.54	4.08	B.
February	89,700	32,100	51,600	2.41	2.51	C.
March	202,000	37,000	102,000	4.77	5.50	B.
April	163,000	30,200	49,100	2.29	2.56	B.
May	95,300	22,500	38,000	1.78	2.05	B.
June	58,700	17,600	32,700	1.53	1.71	B.
July	17,000	9,840	13,600	.636	.73	B.
August	15,000	9,840	12,300	.575	.66	B.
September	12,500	7,070	9,000	.421	.47	B.
The year	202,000	7,070	36,000	1.68	22.88	

Discharge and horsepower table for Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874–1913.

Discharge in second-feet.	Theoretical horsepower per foot of fall.	Days of deficient discharge.									
		1874 [a]	1875	1876	1877	1878	1879	1880	1881	1882	1883
4,800	545	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
5,000	568	.....	.....	.....	.....	.....	.....	.....	4	.....	1
5,200	591	.....	.....	.....	.....	.....	.....	.....	7	.....	7
5,400	614	.....	.....	.....	.....	.....	.....	6	12	.....	10
5,600	636	.....	.....	.....	.....	.....	.....	6	12	.....	10
5,800	659	.....	.....	.....	.....	.....	.....	10	13	.....	11
6,000	682	.....	.....	.....	.....	.....	4	10	15	1	13
6,200	705	.....	.....	.....	.....	.....	4	10	15	1	13
6,400	727	.....	.....	.....	.....	.....	6	10	20	3	15
6,600	750	.....	.....	.....	.....	.....	7	10	25	6	16
6,800	773	.....	.....	.....	.....	.....	7	10	25	6	16
7,000	795	.....	2	.....	.....	.....	8	10	28	8	18
7,300	830	.....	3	.....	.....	.....	11	10	32	12	19
7,600	864	.....	3	.....	.....	2	19	10	36	15	20
8,000	909	2	5	.....	3	3	36	10	44	18	20
8,500	966	3	6	.....	9	5	43	10	54	20	21
9,000	1,020	5	10	.....	16	14	63	13	67	24	28
9,500	1,080	6	12	.....	30	19	65	16	74	24	33
10,000	1,140	8	16	.....	45	22	69	19	77	24	40
11,000	1,250	14	20	.....	64	32	82	28	86	25	54
12,000	1,360	27	30	6	100	48	105	41	100	26	85
14,000	1,590	47	36	32	138	80	129	68	121	29	108
16,000	1,820	56	53	53	162	105	148	93	134	34	138
20,000	2,270	81	77	75	214	148	172	127	157	53	166
25,000	2,840	107	112	99	243	177	198	172	191	92	201
30,000	3,410	121	160	131	260	217	218	197	202	135	222
35,000	3,980	131	188	157	277	237	239	230	217	173	243
40,000	4,550	136	208	188	280	268	255	243	235	201	257
50,000	5,680	141	248	249	303	322	297	272	273	227	275
Over 50,000	Over 5,680	183	365	366	365	365	365	366	365	365	365

Discharge in second-feet.	Theoretical horsepower per foot of fall.	Days of deficient discharge.									
		1884	1885	1886	1887	1888	1889	1890	1891	1892	1893
4,800	545	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
5,000	568	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
5,200	591	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
5,400	614	.....	9	.....	.....	.....	.....	.....	.....	.....	.....
5,600	636	.....	9	.....	.....	.....	.....	.....	.....	.....	.....
5,800	659	.....	13	.....	.....	.....	.....	.....	.....	.....	.....
6,000	682	.....	18	.....	.....	.....	.....	.....	.....	.....	.....
6,200	705	.....	18	.....	.....	.....	.....	.....	.....	.....	.....
6,400	727	.....	21	.....	.....	.....	.....	.....	.....	.....	.....
6,600	750	3	25	.....	.....	.....	.....	.....	.....	.....	.....
6,800	773	3	25	.....	.....	.....	.....	.....	.....	.....	.....
7,000	795	6	37	.....	.....	.....	.....	.....	.....	.....	.....
7,300	830	9	41	.....	.....	.....	.....	.....	.....	.....	.....
7,600	864	15	44	.....	.....	.....	.....	.....	.....	.....	.....
8,000	909	19	56	.....	.....	.....	.....	.....	.....	.....	.....
8,500	966	22	63	.....	.....	.....	.....	.....	.....	.....	7
9,000	1,020	33	75	.....	11	6	.....	.....	.....	11	17
9,500	1,080	37	81	.....	30	12	.....	.....	.....	14	22
10,000	1,140	45	89	.....	37	17	.....	.....	.....	27	27
11,000	1,250	53	95	.....	50	33	.....	.....	.....	39	35
12,000	1,360	69	106	5	69	56	.....	1	3	52	41
14,000	1,590	80	115	16	79	71	1	21	14	64	49
16,000	1,820	93	124	28	85	91	9	39	27	76	69
20,000	2,270	128	154	46	105	132	34	69	59	99	126
25,000	2,840	157	201	63	133	173	99	130	133	129	163
30,000	3,410	184	239	94	195	212	158	173	169	152	197
35,000	3,980	205	275	138	234	240	201	192	194	190	233
40,000	4,550	220	293	167	248	258	229	204	207	215	256
50,000	5,680	242	320	219	271	297	282	256	256	273	287
Over 50,000	Over 5,680	366	365	365	365	366	365	365	365	366	365

[a] Apr. 1 to Sept. 30.

Discharge and horsepower table for Tennessee River at Chattanooga, Tenn., for the years ending Sept. 30, 1874–1913—Continued.

Discharge in second-feet.	Theoretical horsepower per foot of fall.	Days of deficient discharge.									
		1894	1895	1896	1897	1898	1899	1900	1901	1902	1903
4,800	545	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
5,000	568	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
5,200	591	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
5,400	614	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
5,600	636	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
5,800	659	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
6,000	682	.....	.....	.....	.....	4	.....	.....	.....	.....	.....
6,200	705	.....	.....	.....	.....	4	.....	.....	.....	.....	.....
6,400	727	.....	.....	.....	.....	7	.....	.....	.....	.....	.....
6,600	750	.....	.....	.....	.....	9	.....	.....	.....	.....	1
6,800	773	.....	.....	.....	.....	9	.....	.....	.....	.....	1
7,000	795	.....	4	8	3	20	.....	.....	.....	.....	3
7,300	830	1	15	17	10	31	.....	7	.....	.....	4
7,600	864	2	30	23	14	33	.....	9	.....	.....	4
8,000	909	3	41	31	17	39	3	28	.....	.....	7
8,500	966	4	50	34	19	41	3	39	.....	.....	13
9,000	1,020	7	61	55	36	55	14	50	5	3	31
9,500	1,080	10	65	65	39	59	18	56	8	12	40
10,000	1,140	14	69	75	43	60	21	60	10	26	45
11,000	1,250	18	74	89	55	63	26	74	13	32	53
12,000	1,360	33	79	103	58	77	44	91	22	46	69
14,000	1,590	60	94	125	73	91	63	115	31	73	82
16,000	1,820	110	112	150	97	111	75	134	46	107	94
20,000	2,270	174	157	202	124	160	96	173	64	147	117
25,000	2,840	229	189	248	181	226	134	206	109	185	175
30,000	3,410	265	213	281	205	252	175	227	145	219	209
35,000	3,980	283	237	291	230	273	215	244	188	243	229
40,000	4,550	294	255	301	253	288	231	264	213	260	243
50,000	5,680	333	291	316	274	306	261	301	251	284	268
Over 50,000	Over 5,680	365	365	366	365	365	365	365	365	365	365

Discharge in second-feet.	Theoretical horsepower per foot of fall.	Days of deficient discharge.									
		1904	1905	1906	1907	1908	1909	1910	1911	1912	1913
4,800	545	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
5,000	568	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
5,200	591	.....	13	.....	.....	.....	.....	.....	.....	.....	.....
5,400	614	.....	22	.....	.....	.....	.....	.....	.....	.....	.....
5,600	636	.....	22	.....	.....	.....	.....	.....	.....	.....	.....
5,800	659	.....	27	.....	.....	.....	.....	.....	.....	.....	.....
6,000	682	.....	30	.....	.....	.....	.....	.....	.....	.....	.....
6,200	705	.....	30	.....	.....	.....	.....	.....	.....	.....	.....
6,400	727	.....	34	.....	.....	.....	.....	.....	.....	.....	.....
6,600	750	14	40	.....	.....	.....	.....	.....	.....	.....	.....
6,800	773	14	40	.....	.....	.....	.....	.....	.....	.....	.....
7,000	795	18	43	.....	.....	.....	.....	.....	.....	.....	.....
7,300	830	26	45	.....	.....	.....	.....	.....	.....	.....	5
7,600	864	42	50	.....	.....	.....	.....	.....	.....	.....	6
8,000	909	56	59	.....	.....	.....	.....	.....	.....	.....	10
8,500	966	62	62	.....	.....	.....	.....	.....	17	.....	13
9,000	1,020	79	62	8	.....	.....	2	.....	28	.....	14
9,500	1,080	83	67	13	.....	.....	10	.....	44	.....	26
10,000	1,140	88	69	24	.....	1	13	13	48	.....	35
11,000	1,250	98	76	37	.....	5	15	26	55	.....	63
12,000	1,360	114	83	46	.....	24	19	42	72	10	88
14,000	1,590	149	94	52	8	33	31	63	123	26	121
16,000	1,820	177	104	55	14	42	54	85	158	47	141
20,000	2,270	217	141	72	37	82	84	130	204	65	173
25,000	2,840	273	174	101	87	118	94	171	226	121	200
30,000	3,410	291	220	139	123	145	117	212	260	172	215
35,000	3,980	315	257	178	176	194	144	257	274	215	229
40,000	4,550	326	282	208	211	221	164	285	291	241	246
50,000	5,680	345	314	278	262	270	228	323	310	273	286
Over 50,000	Over 5,680	366	365	365	365	366	365	365	365	366	365

NOTE.—The above table gives the theoretical horsepower per foot fall that may be developed at different rates of discharge, and shows the number of days on which the discharge and corresponding horse power were respectively less than the amounts given in the columns for discharge and horsepower. In using this table, allowance should be made for the various losses, the principal ones being the wheel loss, which may be as large as 20 per cent, and the head loss, which may be as large as 5 per cent.

TENNESSEE RIVER AT FLORENCE, ALA.

Location.—At Southern Railway bridge about 1 mile south of Florence, Ala., just below foot of Little Muscle Shoals and lower end of Patton's Island; 8 miles below mouth of Shoal Creek, about 3 miles above upper end of Seven Mile Island, 208 miles below Chattanooga, Tenn., and 256 miles above mouth of the Tennessee.

Records available.—November 7, 1871, to September 30, 1913. Data relating to the shoals in Tennessee River near Florence are given in U. S. Geol. Survey, Twenty-second Ann. Rept., pt. 4, pp. 229–230.

Drainage area.—30,800 square miles.

Gage.—Present gage consists of four sections of steel, three-eighths inch by 7¼ inches, attached to face of stone draw pier, which has a batter of 1 inch to the foot. These sections form one continuous gage, graduated from −1.92 to 33.5 feet. The zero of the gage is 400.85 feet above sea level.

Descriptions of the gages maintained at Florence and notes of inspections are given in "Stages of the Mississippi River and of its principal tributaries," published by the Mississippi River Commission. Descriptions of the station appear also in "Daily river stages," published by the United States Weather Bureau.

The gage at Florence was established November 6, 1871, and the zero set at the level of the low water of 1871, said to have occurred during October, elevation 30.19 feet below Merrill B. M. No. 1, the same elevation as the zero of the present gage. (For later information from Mississippi River Commission see pages 259–261.)

"Stages of the Mississippi River and of its principal tributaries" for 1892 states: "Gage is vertical type, located on the downstream face of approach wall, Florence side, of the Memphis & Charleston Railroad bridge." The report for 1893 states: "Vertical gage in three sections, located at Florence end railroad bridge; sections 1 and 2 (34 to 18, 19 to 9.1) are attached to lower face of rock approach to bridge. Section 3 (10.0 to 0.0) is driven in the ground on upper side of approach to which sections 1 and 2 are fastened."

These descriptions of the gage are the first published and no doubt refer to the same gage, for there is no record of an inspection during 1892 or 1893, but this gage is evidently not the one established November 6, 1871, although the elevation of the zero is the same in all cases.

The gage observer's record contains the following notes:

September 16, 1879: Lower section of gage torn out by Government barge.
September 23, 1879: Replaced by Mr. Turtle, United States engineer. Mr. Turtle says gage "0" was high about one-half inch.
November 19, 1880: Gage rebuilt by W. M. Reese. Gage below 3 feet reads −0.04 too high.
June 21, 1881: Lower section knocked out at 9 a. m. by Government barge.
June 25, 1881: Replaced by man from Memphis.
June 19, 1882: Lower section of gage knocked out at 7.30 a. m.
June 26, 1882: Replaced by man from Memphis.
November 1, 1882: Emmet Coburn, gage reader.

The following statements are taken from the record of inspections:

January 26, 1887: Gage intact, old, and needs rebuilding.
March 22, 1887: Gage of two sections—vertical 19 to 34 feet, inclined 19 to 0 feet. Error in vertical portion—0.84 feet, i. e., gage too high. Various errors of equal amount found in inclined portion of gage. "John Ewens, U. S. Asst. Engineer." Note.—L. L. Wheeler thinks Ewens used wrong B. M.
July 14, 1887: Inspected gage and records and find all in good condition, except gage is old and will need replacing by new structure. Inclined portion of gage averages 0.1 too low. (Corrections were made in record before printing.)
December 20, 1887: Inspected gage and records; found both in good condition. "C. W. Clark, U. S. Army Engineer."

August 18, 1889: Gage rebuilt; vertical type, in four sections, 34.0 to 18 feet, 19 to 9 feet, 10 to 6.2 feet, 6.2 to 0 feet. The following elevations of marks on original inclined section, referred to B. M. No. 1, were found:

Mark.	Elevation.	Mark.	Elevation.
15.00	14.73	6.00	5.94
11.00	10.90	4.30	4.41
8.00	7.97	31.00	31.01

April 19, 1890: Gage inspected; no errors found.

It should be noted that the stage of the river at the time of this inspection was greater than 6.0 feet.

"Stages of the Mississippi River and of its principal tributaries" for 1894 states:

Inspected October 23. * * * It was found that the readings on low-water section below 6 feet were unduly affected by bridge approach piling put in since previous inspection, hence the new low-water section was put in about 50 feet downstream and is on line with higher portions of gage. Water surface at former location was found to be 0.83 foot too high as compared with present location.

This correction was not made in the published records of the Mississippi River Commission.

The inspection record states:

October 23, 1894: Gage keeper's record for October found to be in error, due to his assuming that the gage zero began at +0.76 foot reading in stage, and recorded all readings below that mark as negative. For example, on October 3, when the gage actually read +0.7 foot, which was +0.06 foot below +0.76, he read it (−0.06 foot). He was instructed in the matter. All negative readings to this date should be corrected by subtracting them from +0.76 foot.

This correction was made in the published records of the Mississippi River Commission.

October 23, 1894: Water surface by gage +0.75 foot.

Gage.	Elevation.	Section.
31.52	31.52	18–34
9.0	9.04	6–10
5.0	5.06	2–6
2.0	2.09	0–2

Gage disturbed by heavy drift and boats. Disturbed portions, 9.1 to 0.0; rebuilt, −2.0 to 21.0; section 18–34 was rebraced.

Records of inspections subsequent to 1894 can be found in "Stages of the Mississippi River and of its principal tributaries." See below for corrections applied to daily gage height.

The records, as shown by the extracts given above, indicate the following: The original gage was of the inclined type from 0 to 19 feet and of the vertical type from 19 to 34 feet; this gage was maintained within 0.1 foot of its proper elevation (disregarding the results of the inspection of March 22, 1887, which seem unquestionably to be in error) until August 18, 1889, when it was replaced by a gage of the vertical type in four sections. This vertical gage appears to have remained intact until October 23, 1894, when the portion below 10 feet was removed and the low-water portion of gage rebuilt 50 feet downstream at its present location. On October 28, 1896, the gage was rebuilt in one section from −2.0 to 32.5 feet in the form of a 2 by 4 inch wooden scantling attached to crib work of draw "on downstream face of face facing Florence." During 1897–1900 the gage was corrected upon each visit because of the settling of the crib which was said to be due to the addition of rock ballast. On November 15, 1901, the gage was rebuilt in its present condition. The gage was finally hung on February 14, and the first regular reading made upon it on February 16, 1902. The section from −1.92 to 7.58 was immediately knocked off by a boat, but was not reset until August 23, 1902. This low-water section was again knocked off and replaced during 1910. This gage has remained at the correct elevation.

Gage observers: W. P. Stradford, November 7, 1871, to July, 1882; W. E. Manley, July to November, 1882; Robert Emmet Coburn, November, 1882, to September 30, 1913.

Bench marks.—B. M. No. 1 [1] (Merrill, 1871). Southwest corner of top of fourth small pier north of bridge; elevation above gage datum, 30.19 feet; above sea-level datum, 431.04 feet. (Elevation above mean sea level given as 431.044 feet in Appendix 3 to Annual Report of United States Coast and Geodetic Survey, 1903).

P. B. M. No. 12.[1]—Top of copper bolt leaded vertically into northwest corner of east pedestal stone of the second pier north of the north abutment of the Florence bridge. Elevation above gage datum, 31.20 feet.

B. M. A. (Ewens, 1894).[2]—Cross, cut on top northeast corner of upstream end of first abutment pier from Florence side of Memphis & Charleston Railroad bridge, 1 foot from upstream face and 0.7 foot from northeast corner; elevation above zero of gage 34.67 feet. This bench mark has not been used for years; on November 19, 1914, it was not accessible, as the part of the pier mentioned was covered by a coal house.

B. M. No. 2.—Top of copper plug marked U. S. P. B. M., set in top, on upstream side, of stone foundation of second leg of steel railroad trestle from right abutment of wagon bridge; elevation above gage datum, 27.22 feet; above sea-level datum, 428.07 feet.

B. M. No. 3.—Cross mark, with letters U. S. B. M. around it, on top of downstream side of stone foundation of fourth bent of steel railroad trestle from right abutment of wagon bridge; elevation above gage datum, 31.08 feet; above sea-level datum, 431.93 feet.

Daily gage height.—The following tables contain gage heights as furnished by the Mississippi River Commission, with differences as noted. Where gage-height records are kept in such a way that all possible corrections are supposed to have been made by those charged with the maintenance of the gage, as is true of the Florence record, such records should be accepted as correct unless there is some tangible basis for additional corrections. Those maintaining a gage have first-hand information, and it is reasonable to assume that their values are the most probable ones, even though opinions may differ as to certain corrections. This point of view has been taken in preparing the records for the station at Florence. When the gage heights appeared erroneous but there were no data upon which to base a correction, the gage heights were published as read and adjustments made in the discharge computed therefrom as noted under "Daily discharge."

From November 7, 1871, to January 31, 1887, daily gage height in following tables is one reading per day at about 8 a. m., and from February 1, 1887, to September 30, 1913, the mean of two readings per day at about 8 a. m. and 4 p. m. From November 7, 1871, to October 23, 1894, the gage heights in the following tables are as published by the Mississippi River Commission, except that prior to January 1, 1890, they have been reduced to the nearest tenth of a foot, and that from January 9 to 22, 1881, the 8 a. m. readings are given, whereas for that period the Mississippi River Commission published the mean of 6 a. m., 12 m., and 6 p. m. readings. It appears that some of the gage heights prior to October 24, 1894, are subject to error, as pointed out under "Daily discharge" below. From October 24, 1894, to September 30, 1913, the gage heights are taken from the original records of the Mississippi River Commission at St. Louis with corrections, based upon the results of inspections, as follows:

June 1, 1895, to March 31, 1896, subtracted 0.1 foot; April 1 to October 27, 1896, subtracted 0.2 foot; April 10 to September 14, 1897, subtracted 0.1 foot; February 1 to July 31, 1898, subtracted 0.1 foot; August 1 to November 5, 1898, subtracted 0.2 foot; January 1 to January 20, 1900, subtracted 0.1 foot; January 21 to November 13, 1900, subtracted 0.2 foot; May 16 to November 15, 1901,

[1] Stages of the Mississippi River and of its principal tributaries for 1913.
[2] Stages of the Mississippi River and of its principal tributaries for 1903.

subtracted 0.1 foot; November 16, 1901, to February 15, 1902, subtracted 0.2 foot; February 16 to May 6, 1902, subtracted 0.2 feet (below 7.58 feet); May 7 to August 23, 1902, subtracted 0.3 foot (below 7.58 feet); September 15 to November 5, 1904, added 0.4 foot.

The corrections subsequent to 1896 were made in the values published by the Mississippi River Commission, although some of the periods differ slightly from those noted above.

The gage heights between the inspections of May 18 and November 5, 1904, are open to question. The inspection record states: "November 5, 1904, gage found correct but could not be read below 2.0 feet because the paint was washed off. Temporary gage put in by observer 300 meters above permanent gage on railroad bridge has been read by him since June 19, 1904. Temporary gage set correctly but observer reported readings 0.4 foot too low." Records have been corrected as noted above, but it is not clear why September 15 was selected except that a sudden drop would otherwise appear in the record. Either the stated distance, 300 meters, is in error or the temporary gage was set to read same as the regular gage rather than at the same elevation. The inspection record further states that a new temporary section was set November 5 on right bank directly opposite the permanent gage.

Readings published by Mississippi River Commission October 2 to 7, 1908, should read —0.1 instead of 0.0 foot.

Control.—Rocky and probably permanent.

Discharge measurements.—Made by United States Geological Survey from downstream side of 17-span combined railway and highway bridge. Lower level is a through highway bridge and from this level the discharge measurements are now made. Several discharge measurements have been made about 2 miles downstream by the United States Engineer Corps.

A table of 22 discharge measurements for Tennessee River at Florence, Ala., has been published by the United States Engineer Corps on plate 182, House Document 360, Sixty-second Congress, second session, but this table is misleading in that only 7 of the tabulated discharge values are the results of field determinations of discharge at Florence and the dates of the other values, which are calculated from observations at other points on the river, are the dates when the calculations were made, not when the observations were taken. The table on page 157, furnished by Maj. H. Burgess, Corps of Engineers, Nashville, Tenn., takes the place of the one on plate 182 referred to above and explains the authority for the results.

The table of eight discharge measurements on page 157 gives the results of all field determinations of discharge known to have been made at or near Florence. The values for the first seven measurements are from the table furnished by Maj. Burgess.

An additional discharge measurement is referred to on pages 2014 and 2016 of the Annual Report of the Chief of Engineers, United States Army, for 1896, as follows: "On September 25, 1891, an observation was made about 1 mile below Florence Bridge. The only record of this observation to be found is contained in a letter dated April 12, 1892, written by Capt. G. W. Goethals, Corps of Engineers, United States Army, to the Chief of Engineers, United States Army. * * * Other observations have been made at Florence, but no record of same can be found except the letter of Capt. Goethals before referred to, which gives the discharge for a 1.4-foot stage, as 22,444 cubic feet at a section 5,875 feet below the Florence Bridge. This result is undoubtedly wrong."

Daily discharge.—Published only for the years ending September 30, 1895–1913, computed from discharge rating table on pages 158–159. Discharge prior to October 1, 1894, is withheld from publication because of the uncertainty as to the corrections necessary to the published gage heights to render the rating table on pages 158–159 applicable to them. This uncertainty is due to the error of 0.83 foot found October 23, 1894, in the reading of the old gage as compared to the new gage, and to the lack of information as to the length of the period over which the error extends.

Field investigations made in August to November, 1914, under the direction of Maj. H. Burgess, Corps of Engineers, United States Army, show that the greater part of the error was due to the slope of the water surface between the locations of the old and new gages. A temporary gage was established in August, 1914, at the location of the old gage, with its zero at the same elevation as that of the new gage at Florence, and comparative readings on the two gages were taken. From a curve of relation of these gage readings there has been derived the following table of corrections which should be applied to readings made at the old location 50 feet upstream from the present gage:

Readings on temporary gage.	Correction (subtract).	Readings on temporary gage.	Correction (subtract).
Feet.	*Foot.*	*Feet.*	*Foot.*
0.0 to 0.1	1.0	1.2 to 1.4	0.5
.2 to .4	.9	1.5 to 1.7	.4
.5 to .6	.8	1.8 to 2.1	.3
.7 to .8	.7	2.2 to 2.9	.2
.9 to 1.1	.6	Above 2.9 feet.	.1

The above results were not available until after the computations for this report were completed, and the computations of daily discharge October 1 to 23, 1894, have not been revised because there is comparatively little difference between the corrections applied and those given above.

In computing daily discharge October 1 to 23, 1894, the following reductions were made in the published daily gage height before entering the discharge rating table: October 1–17, 21, and 22, 0.8 foot; October 18–20, 0.7 foot; and October 23, 0.4 foot.

Discharge July to November, 1898, appears low as compared to Chattanooga, but since there is no other reason to question the reduction in daily gage height noted on page 153, the discharge has been computed from the gage heights as published by the Mississippi River Commission. It should be noted that the distribution of precipitation during this period appears to warrant a high comparative ratio.

Discharge September to November, 1904, estimated by comparison with Chattanooga and Johnsonville because discharge computed from published gage heights seems too great as compared to these stations. See "Daily gage height" above.

Discharge August 26 to September 10, 1911, seems low compared to the discharge at Chattanooga, the ratio for the period being 1.01. There is nothing in addition to this upon which to base a correction at Florence, and hence none has been made. The data for the period should, however, be used with caution.

Duration of flow.—The table on page 194–195 gives the number of days in each year that the daily discharge as given in the tables on pages 181–190 was less than the limiting values of discharge given in the first column of the duration table. For a more complete explanation of the duration table see description of the Chattanooga station on page 95.

Floods.—The highest flood on record at Florence occurred March 16–20, 1897, maximum stage 32.5 feet. The following table gives hourly stages during the crest period of this flood:

Date.	Time.	Gage height.	Date.	Time.	Gage height.	Date.	Time.	Gage height.
Mar. 16	8 a. m.	23.9	Mar. 17	6 p. m.	25.2	Mar. 19	6 p. m.	32.3
	9 a. m.	24.0	18	8 a. m.	25.8		9 p. m.	32.45
	10 a. m.	24.1		9 a. m.	26.0		10 p. m.	32.5
	11 a. m.	24.2		10 a. m.	26.1		12 p. m.	32.5
	12 m.	24.3		11 a. m.	26.2	20	5 a. m.	32.0
	3 p. m.	24.4		12 m.	26.3		7 a. m.	31.7
	4 p. m.	24.5		3 p. m.	26.7		8 a. m.	31.6
	8 p. m.	24.6	19	8 a. m.	31.1		9 a. m.	31.5
17	8 a. m.	25.00		9 a. m.	31.2		10 a. m.	31.4
	9 a. m.	25.05		10 a. m.	31.5		11 a. m.	31.2
	10 a. m.	25.07		11 a. m.	31.6		12 m.	31.1
	11 a. m.	25.08		12 m.	31.7		1 p. m.	30.0
	12 m.	25.10		2 p. m.	31.8		2 p. m.	29.9
	3 p. m.	25.2		3 p. m.	32.0		3 p. m.	29.8
	4 p. m.	25.2		5 p. m.	32.2		4 p. m.	29.7

It is stated that during this flood 75 feet of levee near the bridge and the Memphis & Charleston Railroad approach was washed out, that 300 feet of the railroad track was inundated, that the water was 2½ feet deep in the railroad station, and that four bridges over tributaries between Florence and Riverton were washed out.

The flood of 1867 reached a stage of 31.1 feet at Florence, according to the United States Weather Bureau, and it is stated that the Memphis & Charleston Railroad station then had about 2.7 feet of water on the floor, and that a place known as Mound Garden had about 4 feet on the floor.

Winter flow.—Discharge relation not materially affected by ice.

Regulation.—Until November, 1913, there was very little artificial regulation of the flow at Florence. Filling of the reservoir behind the Hale's Bar dam of the Chattanooga & Tennessee River Power Co., about 175 miles above Florence, was begun about October 10, 1913. Data in this report, therefore, are not affected by the operation of the power plant at this dam.

Ratios.—The ratios of monthly and yearly mean discharge of Tennessee River at Chattanooga, Florence, and Johnsonville are given in the table on pages 88–93. See discussion which accompanies table.

Accuracy.—The accuracy ratings given in the tables of monthly discharge, especially for the earlier years, must not be considered to indicate as closely the probable reliability of the data as the accuracy ratings outlined on page 15 for the average gaging station. A low accuracy rating in the following tables does not signify that the mean discharge is known to be in error by the amount indicated, but rather that it appears from studies of the data and comparisons with other stations that the mean discharge is doubtful to that extent. The accuracy ratings will assist those using the data in determining by brief inspection whether certain portions of the record are considered sufficiently accurate for the purpose in hand or whether they require special investigation to more closely determine their probable reliability.

In marking the accuracy ratings considerable weight was given to the ratios of discharge at Chattanooga, Florence, and Johnsonville, especially the Chattanooga-Florence comparison. Some of the more pronounced inconsistencies have been pointed out under "Daily gage height" and "Daily discharge." When the comparisons indicated that the records were in error, the data were investigated and corrections made as noted under "Daily gage height" and "Daily discharge."

The records presented in the following tables are believed to be as accurate and reliable as the obtainable base data will yield and they are believed to be free from gross errors.

Cooperation.—The gage height record, as noted above, was furnished by the Mississippi River Commission. Discharge measurements prior to 1913 were made by the United States Engineer Corps.

Special acknowledgment is due to Maj. H. Burgess, Corps of Engineers, United States Army, Nashville, Tenn., and Mr. Kivas Tully, assistant engineer, Mississippi River Commission, St. Louis, Mo., for assistance rendered in interpreting questionable portions of the data.

Discharge measurements of Tennessee River at Florence, Ala., during 1888–1913.

No.[a]	Date.	Hydrographer.	Gage height.	Discharge.[b]
	1888.		*Feet.*	*Sec.-ft.*
21	Mar. 30.....	Lieut. H. E. Waterman [c]	20.0	250,000
	1901.			
20	Aug. 21.....	W. S. Winn [c]	18.6	[d] 252,000
15	Aug. 26.....	.....do	14.9	[d] 168,000
14	Aug. 29.....	.....do	9.5	[d] 92,800
13	Aug. 30.....	.....do	8.0	[d] 78,000
5	Sept. 27.....	.....do	3.6	[d] 36,000
	1908.			
4	Sept. 25–26..	F. I. Louckes [c]	.2	12,000
	1913.			
	Aug. 21.....	Warren E. Hall [e]	.55	13,500

[a] See discharge table on this page.
[b] Reduced to three significant figures.
[c] Corps of Engineers, U. S. Army.
[d] Section at Sheffield Landing.
[e] U. S. Geological Survey.

NOTE.—See "Discharge measurements" in station description.

Discharge table for Tennessee River at Florence, Ala., furnished by Maj. H. Burgess, Corps of Engineers, U. S. Army.[a]

No.	Date.	Gage height.	Discharge.	Authority.
		Feet.	*Sec.-ft.*	
1	Sept., 1891.....	−0.8	6,500	Calculated; see An. Rep., Chief of Engrs., 1896, pp. 2014, 2016, and 2020.
2	Oct., 1890.....	− .8	8,000	Calculated for Colbert Shoals section; same pages 1896 report given above.
3	Oct., 1894.....	− .2	10,000	Reduced from Brown's Riverton discharge.
4	Sept. 25–26, 1908...	+ .2	12,000	F. I. Louckes.
5	Sept. 27, 1901.....	3.6	36,000	W. S. Winn; section at Sheffield Landing.
6	1899.....	4.2	43,200	Reduced from Winn's Riverton discharge.
7	1899.....	5.0	51,000	Do.
8	1899.....	5.95	59,750	Do.
9	1899.....	6.35	60,300	Do.
10	1899.....	6.8	60,750	Do.
11	1899.....	7.1	64,000	Do.
12	1899.....	7.4	68,200	Do.
13	Aug. 30, 1901.....	8.0	78,000	W. S. Winn; section at Sheffield Landing.
14	Aug. 29, 1901.....	9.5	92,800	Do.
15	Aug. 26, 1901.....	14.9	167,500	Do.
16	1899.....	15.3	192,300	Reduced from Winn's Riverton discharge.
17	1899.....	15.7	191,750	Do.
18	1899.....	17.2	192,000	Do.
19	1899.....	17.3	216,000	Do.
20	Aug. 21, 1901.....	18.6	251,800	W. S. Winn; section at Sheffield Landing.
21	Mar., 1888.....	20.0	250,000	Lieut. H. E. Waterman; see An. Rep., Chief of Engineers, 1896, pp. 2014, 2015, 2016, and 2020.
22	1899.....	20.0	264,000	Reduced from Winn's Riverton discharge.

[a] See "Discharge measurements" in station description.

NOTES.—1. This is a corrected table, to take the place of that given for the Florence rating curve on plate 182, House Document No. 360, Sixty-second Congress, second session. The 22 discharges given in the table (except 1, 2, and 21) are those referred to on page 12, House Document No. 14, Committee on Rivers and Harbors, Sixtieth Congress, second session, in the following words:

"*Discharge.*—Careful discharge observations were made in the river just below Florence. The cross section adopted was subdivided, and in each division there were read with a current meter the top, bottom,

and intermediate velocities. The average velocity was taken as the mean velocity of the section, and the discharge in each section computed. The sum of these gave the river discharge. From these observations it was determined that the flow of the river at a 0.2 stage on the gage at Florence was 12,063 cubic feet per second.

"In 1902 (should be 1901) a number of similar discharge observations were taken for the Engineer Department by Mr. W. S. Winn, assistant engineer, about 2 miles below this cross section, where the area corresponded fairly well with the one observed and where the discharge would not likely vary considerably from that of the section examined, since no important streams enter between. It is considered safe, therefore, to include these observations as indicating the discharge of the river for the corresponding gage readings (as they were referenced to the Florence gage), and they have accordingly been platted in the same curve. A number of discharge observations were also taken several years ago at Riverton (about 30 miles below Florence), for higher stages. Inasmuch as the streams entering the river in the intervening stretch are comparatively small, it is assumed that at high stages the error in taking these readings as applicable to the Florence cross section would be comparatively slight, and they are likewise platted in the same curve.

"There is, therefore, submitted a curve which is believed to show approximately and within the limits of reasonable error the discharge of the river at Florence, it being more especially useful for low readings of the gage. From this the discharge of the Tennessee River at Florence is seen to be about 10,650 cubic feet per second when the gage reads zero. Extreme low water is −0.8 on the Florence gage, from which it appears that the corresponding discharge would be 7,200 cubic feet per second."

2. Nos. 1 and 2 are calculated, in the manner described on pages 2014 and 2016, Annual Report Chief of Engineers, 1896, and are believed to be of no great value.

No. 4 is a field observation by F. I. Louckes on September 25–26, 1908.

Nos. 5, 13, 14, 15, and 20 are from field observations by W. S. Winn in August and September, 1901, worked up by F. I. Louckes in 1908, and were made at a section about 2½ miles below the Florence gage; no streams of importance entering between the gage and the discharge section. Description of method of taking these discharges has never been published.

No. 21 is a field observation made March, 1888, by Lieut. Waterman. Method used is described on pages 2014, 2015, and 2016, Annual Report Chief of Engineers for 1896.

No. 3 is a reduced Riverton discharge observation made by G. W. Brown in October, 1894, and described on page 2016, Annual Report Chief of Engineers, 1896. Nos. 6, 7, 8, 9, 10, 11, 12, 16, 17, 18, 19, and 22 are reduced Riverton measurements made by W. S. Winn and calculated by Nelles in 1899. Methods of making Riverton measurements are described on pages 2274–2280, Annual Report Chief of Engineers, 1899. Reductions for use at Florence were made in 1908 by F. I. Louckes (see above quotation).

3. The Florence rating curve given on plate 182 is essentially a replotting of that prepared by Louckes in 1908, and about corresponds to the table as given above.

Discharge rating table for Tennessee River at Florence, Ala., from Oct. 1, 1894, to Sept. 30, 1913.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Sec.-ft.*	*Feet.*	*Sec.-ft.*	*Feet.*	*Sec.-ft.*	*Feet.*	*Sec.-ft.*
−1.00	6,400	2.90	30,200	6.80	66,650	10.70	113,230
− .90	6,810	3.00	31,000	6.90	67,720	10.80	114,550
− .80	7,230	3.10	31,810	7.00	68,800	10.90	115,870
− .70	7,660	3.20	32,630	7.10	69,890	11.00	117,200
− .60	8,100	3.30	33,450	7.20	70,990	11.10	118,540
− .50	8,550	3.40	34,280	7.30	72,090	11.20	119,880
− .40	9,020	3.50	35,120	7.40	73,200	11.30	121,230
− .30	9,500	3.60	35,960	7.50	74,320	11.40	122,580
− .20	9,990	3.70	36,810	7.60	75,440	11.50	123,940
− .10	10,490	3.80	37,670	7.70	76,570	11.60	125,300
.00	11,000	3.90	38,530	7.80	77,710	11.70	126,670
.10	11,520	4.00	39,400	7.90	78,850	11.80	128,040
.20	12,050	4.10	40,280	8.00	80,000	11.90	129,420
.30	12,590	4.20	41,170	8.10	81,150	12.00	130,800
.40	13,140	4.30	42,060	8.20	82,310	12.10	132,190
.50	13,700	4.40	42,960	8.30	83,470	12.20	133,580
.60	14,280	4.50	43,870	8.40	84,640	12.30	134,980
.70	14,870	4.60	44,780	8.50	85,820	12.40	136,380
.80	15,470	4.70	45,700	8.60	87,000	12.50	137,790
.90	16,080	4.80	46,630	8.70	88,190	12.60	139,200
1.00	16,700	4.90	47,560	8.80	89,390	12.70	140,620
1.10	17,330	5.00	48,500	8.90	90,590	12.80	142,040
1.20	17,970	5.10	49,450	9.00	91,800	12.90	143,470
1.30	18,620	5.20	50,410	9.10	93,010	13.00	144,900
1.40	19,280	5.30	51,370	9.20	94,230	13.10	146,340
1.50	19,950	5.40	52,340	9.30	95,450	13.20	147,780
1.60	20,620	5.50	53,320	9.40	96,680	13.30	149,230
1.70	21,300	5.60	54,300	9.50	97,920	13.40	150,680
1.80	21,990	5.70	55,290	9.60	99,160	13.50	152,140
1.90	22,690	5.80	56,290	9.70	100,410	13.60	153,600
2.00	23,400	5.90	57,290	9.80	101,670	13.70	155,070
2.10	24,120	6.00	58,300	9.90	102,930	13.80	156,540
2.20	24,850	6.10	59,320	10.00	104,200	13.90	158,020
2.30	25,590	6.20	60,350	10.10	105,470	14.00	159,500
2.40	26,340	6.30	61,380	10.20	106,750	14.10	160,990
2.50	27,100	6.40	62,420	10.30	108,030	14.20	162,480
2.60	27,860	6.50	63,470	10.40	109,320	14.30	163,980
2.70	28,630	6.60	64,520	10.50	110,620	14.40	165,480
2.80	29,410	6.70	65,580	10.60	111,920	14.50	166,990

Discharge rating table for Tennessee River at Florence, Ala., from Oct. 1, 1894, to Sept. 30, 1913—Continued.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Sec.-ft.*	*Feet.*	*Sec.-ft.*	*Feet.*	*Sec.-ft.*	*Feet.*	*Sec.-ft.*
14.60	168,500	20.30	262,600	26.00	369,000	31.70	482,820
14.70	170,020	20.40	264,370	26.10	370,940	31.80	484,880
14.80	171,540	20.50	266,150	26.20	372,880	31.90	486,940
14.90	173,070	20.60	267,930	26.30	374,820	32.00	489,000
15.00	174,600	20.70	269,720	26.40	376,770	32.10	491,060
15.10	176,140	20.80	271,510	26.50	378,720	32.20	493,120
15.20	177,680	20.90	273,300	26.60	380,670	32.30	495,190
15.30	179,230	21.00	275,100	26.70	382,620	32.40	497,260
15.40	180,780	21.10	276,900	26.80	384,580	32.50	499,330
15.50	182,340	21.20	278,710	26.90	386,540	32.60	501,400
15.60	183,900	21.30	280,520	27.00	388,500	32.70	503,470
15.70	185,470	21.40	282,330	27.10	390,460	32.80	505,540
15.80	187,040	21.50	284,150	27.20	392,420	32.90	507,620
15.90	188,620	21.60	285,970	27.30	394,380	33.00	509,700
16.00	190,200	21.70	287,800	27.40	396,350	33.10	511,780
16.10	191,790	21.80	289,630	27.50	398,320	33.20	513,860
16.20	193,380	21.90	291,460	27.60	400,290	33.30	515,940
16.30	194,980	22.00	293,300	27.70	402,260	33.40	518,020
16.40	196,580	22.10	295,140	27.80	404,240	33.50	520,100
16.50	198,190	22.20	296,980	27.90	406,220	33.60	522,180
16.60	199,800	22.30	298,820	28.00	408,200	33.70	524,260
16.70	201,420	22.40	300,670	28.10	410,180	33.80	526,340
16.80	203,040	22.50	302,520	28.20	412,160	33.90	528,420
16.90	204,670	22.60	304,370	28.30	414,140	34.00	530,500
17.00	206,300	22.70	306,220	28.40	416,130	34.10	532,590
17.10	207,940	22.80	308,080	28.50	418,120	34.20	534,680
17.20	209,580	22.90	309,940	28.60	420,110	34.30	536,770
17.30	211,230	23.00	311,800	28.70	422,100	34.40	538,860
17.40	212,880	23.10	313,670	28.80	424,100	34.50	540,950
17.50	214,540	23.20	315,540	28.90	426,100	34.60	543,040
17.60	216,200	23.30	317,410	29.00	428,100	34.70	545,130
17.70	217,870	23.40	319,290	29.10	430,100	34.80	547,220
17.80	219,540	23.50	321,170	29.20	432,100	34.90	549,310
17.90	221,220	23.60	323,050	29.30	434,100	35.00	551,400
18.00	222,900	23.70	324,930	29.40	436,110	35.10	553,500
18.10	224,580	23.80	326,820	29.50	438,120	35.20	555,600
18.20	226,270	23.90	328,710	29.60	440,130	35.30	557,700
18.30	227,960	24.00	330,600	29.70	442,140	35.40	559,800
18.40	229,650	24.10	332,500	29.80	444,160	35.50	561,900
18.50	231,350	24.20	334,400	29.90	446,180	35.60	564,000
18.60	233,050	24.30	336,300	30.00	448,200	35.70	566,100
18.70	234,760	24.40	338,210	30.10	450,220	35.80	568,200
18.80	236,470	24.50	340,120	30.20	452,240	35.90	570,300
18.90	238,180	24.60	342,030	30.30	454,260	36.00	572,400
19.00	239,900	24.70	343,940	30.40	456,290	36.10	574,510
19.10	241,620	24.80	345,860	30.50	458,320	36.20	576,620
19.20	243,350	24.90	347,780	30.60	460,350	36.30	578,730
19.30	245,080	25.00	349,700	30.70	462,380	36.40	580,840
19.40	246,810	25.10	351,620	30.80	464,420	36.50	582,950
19.50	248,550	25.20	353,540	30.90	466,460	36.60	585,060
19.60	250,290	25.30	355,470	31.00	468,500	36.70	587,170
19.70	252,040	25.40	357,400	31.10	470,540	36.80	589,280
19.80	253,790	25.50	359,330	31.20	472,580	36.90	591,390
19.90	255,540	25.60	361,260	31.30	474,620	37.00	593,500
20.00	257,300	25.70	363,190	31.40	476,670	38.00	614,700
20.10	259,060	25.80	365,120	31.50	478,720	39.00	636,000
20.20	260,830	25.90	367,060	31.60	480,770	40.00	657,400

NOTE.—The above table is not applicable for periods during which ice was present or channel was obstructed. It is based on eight discharge measurements listed in the table on page 157 and upon the other discharge figures listed in the lower table on page 157. The rating table is well defined between discharges 11,000 and 275,000 second-feet (gage heights 0.0 and 21.0 feet.) Use this table to three significant figures only.

Daily gage height, in feet, of Tennessee River at Florence, Ala., for the years ending Sept. 30, 1872–1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1872.												
1	.....	.....	1.2	1.9	1.9	3.3	4.6	3.8	2.4	4.0	1.0	0.3
2	.....	.....	1.2	2.6	2.0	3.2	4.3	3.5	2.2	3.4	1.0	.3
3	.....	.....	1.3	3.3	1.8	3.2	4.0	3.3	1.9	2.8	.9	.3
4	.....	.....	1.3	4.5	1.5	3.4	3.7	3.0	1.5	2.2	.7	.3
5	.....	.....	1.2	5.8	1.3	3.7	3.7	2.9	1.2	1.8	.5	.4
6	.....	.....	1.3	6.2	1.7	4.0	4.1	2.7	1.0	1.5	.4	.4
7	.....	2.5	1.2	6.1	1.9	4.2	5.2	2.6	.8	1.3	.3	.2
8	.....	2.2	1.1	5.9	2.9	4.5	6.2	2.5	.8	1.2	.2	.1
9	.....	2.0	1.0	5.5	3.2	4.8	9.7	2.4	.7	1.3	.2	.0
10	.....	1.7	.9	5.0	3.5	5.5	11.3	2.2	2.8	1.2	.2	— .1
11	.....	1.4	.8	4.5	4.0	5.6	10.9	2.0	4.0	1.0	.2	— .3
12	.....	1.2	.6	4.1	4.4	6.5	10.3	1.8	3.4	.9	.4	— .3
13	.....	1.0	.6	3.6	4.6	8.4	11.0	1.7	2.8	1.0	.2	— .5
14	.....	.9	.6	3.2	4.6	9.4	11.5	1.5	3.3	7.7	.2	— .5
15	.....	.7	.6	3.0	4.7	9.9	10.9	1.4	4.3	10.8	.3	— .5
16	.....	.7	.6	2.7	4.6	9.5	10.4	1.3	4.0	9.6	.3	— .4
17	.....	.9	.5	2.4	4.5	8.4	9.7	1.3	3.6	7.5	.4	— .4
18	.....	1.3	.5	2.2	5.0	7.2	9.2	1.2	3.0	5.9	.4	— .2
19	.....	1.8	.3	2.2	5.5	6.6	8.6	1.2	2.5	5.8	.4	— .1
20	.....	1.8	.2	1.8	6.1	6.2	8.0	1.1	2.0	6.5	1.4	.0
21	.....	1.8	.2	1.8	6.4	6.1	7.2	1.1	1.6	5.9	2.7	— .1
22	.....	1.8	.2	1.8	5.8	5.9	6.8	1.1	1.4	5.2	2.7	— .2
23	.....	1.5	.4	1.8	5.3	5.4	6.8	1.1	1.3	4.5	2.6	— .3
24	.....	1.4	.2	1.8	4.8	5.2	7.6	1.3	1.1	3.7	2.5	— .4
25	.....	1.1	.3	1.9	4.3	5.2	7.8	3.2	1.0	3.1	2.0	— .2
26	.....	1.0	.4	1.8	4.0	5.4	7.0	3.8	.8	2.6	1.5	— .4
27	.....	1.0	.5	1.8	3.8	5.8	6.0	3.3	.6	2.3	1.1	— .5
28	.....	.9	.7	1.6	3.5	5.9	5.2	2.9	1.0	2.0	.8	— .2
29	.....	.9	1.3	1.3	3.3	5.6	4.6	2.8	3.1	1.7	.6	— .2
30	.....	1.1	1.6	1.7	.....	5.3	4.2	2.6	4.0	1.4	.4	.0
31	.....	.....	1.8	1.7	.....	4.9	.....	2.5	.....	1.2	.3	.....
1873.												
1	0.0	— .4	.5	6.1	7.0	18.6	12.5	3.6	3.7	3.7	1.0	1.0
2	— .2	— .3	.6	5.6	6.3	16.8	12.4	8.0	3.6	3.6	1.3	.9
3	— .1	— .3	.8	5.4	5.8	15.5	11.9	7.6	3.6	4.3	1.3	.7
4	.1	— .3	.8	6.2	5.4	13.9	10.2	7.0	3.7	6.1	1.2	.6
5	.2	— .4	.6	6.6	5.0	12.1	10.7	7.5	3.6	6.4	1.2	.7
6	.1	— .4	.6	7.9	5.1	10.4	9.8	7.2	3.4	5.7	1.3	.8
7	.0	— .4	.5	8.8	7.5	9.1	8.8	6.6	3.2	4.8	1.2	.6
8	— .2	— .4	.5	9.2	9.4	8.2	7.8	6.4	2.9	4.0	1.0	.5
9	— .1	— .3	.4	9.1	11.9	7.5	7.1	6.4	3.2	3.6	.8	.5
10	— .2	— .3	.3	8.4	13.4	7.0	6.6	6.9	3.6	3.8	.7	.6
11	— .4	— .2	.3	7.6	14.2	6.6	6.2	8.0	3.7	3.7	.6	.5
12	— .5	.3	.3	6.8	17.0	6.4	5.8	9.4	3.8	3.3	.6	.4
13	— .5	.8	.3	6.1	19.2	6.4	5.6	10.4	4.4	2.7	.5	.3
14	— .5	1.2	.2	5.4	19.3	6.3	5.4	10.5	4.4	2.3	.6	.2
15	— .4	1.5	.1	5.0	18.6	6.4	5.2	9.6	4.6	1.9	.5	.2
16	— .4	1.4	.2	4.7	19.8	6.5	5.0	8.0	5.8	1.6	.5	.1
17	— .4	1.0	.0	4.5	20.6	6.5	4.7	6.7	5.7	1.6	.5	.0
18	— .5	.6	.5	4.6	20.6	6.3	4.5	5.8	6.4	1.6	.6	— .1
19	— .6	.4	1.2	4.6	21.0	6.0	4.3	5.2	6.2	1.4	.7	.2
20	— .6	.3	4.0	4.7	22.2	6.8	4.2	4.7	5.4	1.2	1.0	— .1
21	— .7	.3	11.9	5.4	22.6	7.8	4.1	4.3	4.8	1.2	1.0	— .1
22	— .7	.2	15.2	6.2	22.9	8.5	4.0	3.9	4.4	1.1	1.0	— .2
23	— .7	.1	15.8	6.8	22.7	8.9	4.0	3.6	3.8	1.2	.7	.0
24	— .8	.0	16.2	7.4	22.2	9.0	3.8	3.4	3.4	1.5	.8	— .2
25	— .7	.0	16.4	9.1	21.7	8.7	3.6	3.5	3.6	1.6	1.0	— .2
26	— .8	.3	15.9	10.2	21.0	9.6	3.4	4.0	4.0	1.5	1.2	— .2
27	— .8	.1	13.8	10.4	20.8	9.8	3.2	4.7	3.6	1.4	1.3	— .2
28	— .8	.5	10.6	10.2	20.0	9.2	3.2	5.1	3.5	1.0	1.3	— .2
29	— .8	.4	8.2	9.5	.....	10.0	3.0	5.0	3.8	.8	1.2	— .2
30	— .7	.4	7.3	8.7	.....	11.4	2.9	4.5	3.8	.8	1.1	— .1
31	— .6	.....	6.6	7.8	.....	12.1	.....	4.1	.....	.8	1.0	.....

Daily gage height, in feet, of Tennessee River at Florence, Ala., for the years ending Sept. 30, 1872–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1874.												
1	−0.0	1.7	5.2	3.4	9.0	9.5	9.4	20.0	2.9	0.9	3.6	7.5
2	− .0	2.2	4.6	3.2	9.0	11.8	9.2	20.0	2.7	1.0	5.0	10.4
3	− .1	1.9	3.8	3.0	8.4	12.2	8.5	20.0	2.6	1.4	5.4	10.4
4	.1	1.6	3.6	2.9	7.7	12.2	7.7	20.2	2.5	1.5	5.1	8.3
5	.4	1.4	4.2	3.0	7.0	12.2	7.0	19.8	2.4	1.5	4.2	6.0
6	.5	1.2	3.7	3.8	6.5	12.2	6.4	19.2	2.6	1.4	3.2	4.5
7	.3	.9	4.7	5.6	6.2	13.5	6.4	17.9	2.8	1.2	2.5	3.6
8	.1	.7	6.9	7.6	6.1	12.6	8.6	16.7	2.7	1.2	2.0	2.9
9	− .1	.6	6.8	9.0	5.9	11.5	14.7	15.6	2.7	1.0	1.5	2.3
10	− .2	.5	6.2	10.8	5.7	10.6	16.0	14.5	2.6	.8	1.2	1.8
11	− .3	.4	6.2	11.2	5.4	10.1	17.6	13.0	2.7	.7	1.2	1.4
12	− .4	.3	6.2	10.5	5.0	9.4	17.2	11.0	2.9	.6	1.7	1.2
13	− .4	.3	6.1	9.5	4.8	8.5	16.7	9.2	2.5	.9	2.1	1.0
14	− .4	.3	6.0	8.6	5.6	7.6	17.6	8.0	2.4	1.2	1.7	.8
15	− .3	.2	5.6	8.2	6.8	6.8	22.1	7.1	2.5	1.0	1.2	.6
16	− .3	.3	5.0	7.6	7.0	6.8	25.7	6.5	3.0	.8	.9	.5
17	− .3	.2	4.8	7.0	7.6	7.3	26.0	6.0	3.4	1.0	.8	.6
18	− .4	.9	4.6	6.6	9.1	7.4	25.2	5.6	3.7	1.2	.6	.6
19	− .2	.8	4.5	6.0	10.2	8.0	23.9	5.3	3.4	1.3	.4	.4
20	− .4	.9	4.2	5.5	10.2	9.8	23.3	5.0	2.9	1.5	.2	.3
21	− .4	2.4	3.9	4.9	9.8	12.8	22.9	4.7	2.6	1.4	.1	.4
22	− .4	4.9	3.6	4.5	9.2	15.5	22.4	4.4	2.3	1.2	.1	.6
23	− .4	4.9	3.7	4.3	9.6	17.9	23.6	4.2	2.0	1.1	.1	.9
24	− .2	5.9	4.6	5.2	8.8	18.4	24.2	3.9	1.7	.9	.0	1.1
25	− .2	6.8	4.6	5.8	7.6	17.9	23.5	3.7	1.5	.8	.0	1.2
26	.0	5.4	4.6	6.4	7.1	17.6	22.8	3.5	1.3	.8	.2	1.2
27	1.4	4.4	4.8	7.2	7.0	17.2	21.9	3.4	1.2	.7	.2	1.4
28	2.6	5.2	4.8	7.7	7.7	16.0	20.9	3.2	1.1	.8	.5	1.8
29	1.6	5.8	4.5	8.0	.....	13.8	20.2	3.2	1.0	1.2	1.2	2.2
30	1.0	5.5	4.1	8.0	.....	11.6	20.0	3.1	.9	1.7	2.6	2.0
31	.9	.....	3.8	8.4	.....	9.7	.....	3.0	.....	2.4	4.0	.....
1875.												
1	1.6	.2	4.9	3.9	17.0	24.4	16.7	10.0	2.6	2.8	4.8	2.3
2	1.4	.2	4.9	4.3	17.1	26.4	15.4	11.8	2.4	2.9	3.9	2.0
3	1.6	.1	5.9	5.6	17.8	27.6	15.4	12.8	2.2	2.8	3.4	1.7
4	2.1	.1	6.0	6.8	18.9	28.1	15.2	12.8	2.0	3.1	3.0	1.4
5	2.6	.1	5.6	8.8	18.2	28.7	15.1	11.5	2.0	3.1	3.0	1.3
6	2.9	.1	5.0	9.9	16.4	29.0	15.1	10.0	2.1	3.0	3.6	1.2
7	2.7	.1	4.3	10.1	13.4	29.3	14.8	8.3	2.3	2.8	3.7	1.1
8	2.0	.0	3.8	9.8	10.2	29.4	14.1	7.4	2.7	2.8	4.2	1.0
9	1.5	.0	3.3	8.8	8.2	28.8	12.9	6.6	3.1	3.0	4.0	.9
10	1.1	.0	3.0	7.7	7.0	28.0	11.4	6.2	3.0	3.0	3.4	.8
11	.8	.1	2.7	6.6	6.4	26.8	11.2	6.0	3.0	3.4	3.0	.8
12	.6	.2	2.6	6.1	6.4	25.5	11.6	5.6	3.0	3.5	2.8	.8
13	.6	.7	2.5	5.5	6.3	24.0	11.0	5.3	3.0	3.7	2.4	.8
14	.6	.8	2.4	5.2	6.2	22.2	10.9	5.0	2.8	4.2	2.2	.6
15	.5	1.5	2.3	4.9	7.7	20.2	10.8	4.8	2.5	6.2	2.2	.7
16	.4	2.2	2.3	4.7	8.5	18.9	10.1	4.5	2.2	6.5	3.2	.7
17	.4	2.3	2.2	4.4	8.7	16.8	9.2	4.2	1.9	7.8	4.7	1.2
18	.3	2.1	2.1	4.2	8.5	16.0	8.3	4.0	1.6	10.1	5.4	1.8
19	.2	1.8	2.0	4.0	7.8	15.8	7.5	3.7	1.5	11.0	6.8	6.4
20	.2	1.5	2.3	3.8	7.0	16.9	6.9	3.5	1.5	10.2	7.6	7.9
21	.1	1.2	3.4	3.5	6.7	20.9	6.6	3.4	1.7	8.2	7.6	7.5
22	.3	1.2	4.3	3.3	6.6	22.2	6.9	3.3	2.1	6.4	7.0	8.5
23	.8	1.3	5.9	3.1	6.7	22.1	6.8	3.2	2.3	5.6	6.1	8.0
24	1.3	2.6	6.5	3.4	11.6	21.8	6.3	3.1	2.2	5.0	5.1	6.4
25	1.4	3.0	6.4	5.0	20.0	21.1	6.2	3.0	2.3	4.8	4.2	4.9
26	1.2	4.9	6.0	6.2	22.9	21.0	6.4	3.0	2.7	5.8	3.5	3.9
27	1.0	6.8	5.4	7.6	24.0	21.6	7.5	2.9	3.0	7.3	3.0	3.3
28	.8	7.0	4.9	8.0	24.3	22.3	8.0	3.0	3.0	7.9	2.8	2.8
29	.6	6.6	4.4	11.9	.....	22.6	7.6	2.9	2.9	7.4	2.7	2.5
30	.5	5.8	4.0	14.6	.....	21.1	7.6	2.7	3.7	6.8	2.7	2.2
31	.3	.....	3.8	17.0	.....	18.6	.....	2.7	.....	5.8	2.5	.....

Daily gage height, in feet, of Tennessee River at Florence, Ala., for the years ending Sept. 30, 1872–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1876.												
1	2.0	0.4	5.3	18.9	9.9	5.7	11.8	4.6	7.4	5.0	1.8	0.8
2	1.8	.4	5.1	19.2	11.1	5.3	14.8	7.5	6.9	4.8	1.6	.8
3	1.7	.4	4.8	19.7	11.9	5.1	15.1	12.2	6.2	4.4	1.7	.7
4	1.6	.8	4.6	19.8	11.9	4.8	14.6	13.1	5.8	4.0	2.2	.6
5	1.5	1.0	4.6	19.0	11.9	4.6	13.5	13.0	5.5	4.0	3.6	.6
6	1.4	1.4	5.4	16.8	11.3	4.3	12.0	12.8	5.2	4.6	3.2	.7
7	1.3	1.8	7.0	13.4	10.6	4.3	10.4	11.6	5.4	5.2	3.1	.8
8	1.3	2.0	8.4	10.2	9.5	4.1	8.9	11.3	5.5	5.2	3.1	.7
9	1.4	2.7	8.9	8.2	8.7	4.2	7.8	11.7	5.5	5.0	3.4	.5
10	2.2	3.3	8.5	7.0	8.2	4.1	7.1	12.5	5.2	4.8	3.7	.4
11	3.0	4.1	8.0	6.4	8.1	4.3	6.5	13.0	4.7	4.6	3.3	.2
12	2.8	4.6	7.5	5.9	8.0	5.4	6.0	13.6	4.1	4.1	3.0	.2
13	2.4	4.7	7.0	5.4	8.0	6.0	5.6	13.7	3.6	4.0	2.7	.2
14	1.9	4.9	6.6	5.2	8.9	5.8	5.7	13.2	3.7	3.6	2.9	.2
15	1.7	5.7	6.0	4.9	10.4	5.5	6.1	12.1	3.7	3.2	2.8	.3
16	1.4	6.0	5.5	4.5	10.7	5.8	6.6	10.2	3.5	2.9	2.5	.4
17	1.2	5.8	5.0	4.4	11.5	11.7	7.6	8.6	3.5	3.0	2.1	.4
18	1.1	5.4	4.5	4.4	12.4	14.1	9.0	7.6	3.2	2.7	1.8	.4
19	1.0	5.2	4.0	7.2	13.1	14.8	8.9	6.3	4.5	2.6	1.8	.3
20	.9	5.1	3.7	7.4	13.1	15.2	8.2	6.1	9.5	2.7	1.8	.3
21	.9	4.7	3.4	7.5	12.2	14.7	7.5	5.6	11.4	2.6	1.7	.3
22	.8	4.2	3.2	9.2	10.4	13.7	6.9	5.3	12.4	2.6	1.6	.2
23	.8	4.1	3.0	10.0	8.8	12.0	6.4	5.4	12.4	2.9	1.5	.2
24	.7	4.3	2.9	10.2	7.8	10.8	5.9	5.2	10.4	2.8	1.4	.2
25	.7	5.3	4.5	9.8	7.4	11.3	5.4	5.0	7.8	2.8	1.2	.4
26	.7	5.3	7.0	9.0	7.0	11.9	5.0	4.9	6.4	2.8	1.1	.5
27	.6	5.4	7.2	9.0	6.8	12.1	4.7	5.0	5.6	2.6	1.0	.4
28	.5	5.7	9.8	9.9	6.4	12.8	4.6	5.1	5.0	2.3	.9	.4
29	.5	5.6	14.2	10.3	6.0	13.0	4.3	5.3	5.3	2.8	.9	.6
30	.6	5.4	17.8	10.6	.....	12.6	4.2	5.6	5.2	2.8	.9	.9
31	.4	.....	19.0	9.9	.....	12.0	.....	6.6	.....	2.0	.8	.....
1877.												
1	1.0	.4	1.0	.9	5.6	1.5	10.2	13.2	1.6	1.5	1.8	.4
2	.8	.3	.8	1.0	5.0	1.6	10.3	12.0	1.6	1.5	1.5	.2
3	.6	.0	.6	.7	4.5	1.8	10.6	10.4	1.5	1.8	1.2	.1
4	.4	.0	.5	.7	4.3	2.1	9.2	8.8	1.4	1.9	1.0	.0
5	.3	— .1	.5	.4	5.0	2.4	8.9	7.8	1.3	1.7	.7	.2
6	.2	— .2	.6	.6	6.1	3.0	8.8	7.1	1.2	1.4	.6	.6
7	.0	— .2	.6	.4	5.6	3.6	8.3	6.4	1.1	1.2	.6	1.3
8	.0	— .3	.4	.4	5.2	3.6	13.9	6.0	1.2	1.0	.7	1.0
9	.0	— .2	.2	.2	4.7	3.5	17.8	5.9	2.0	.9	.5	.7
10	— .1	— .2	.2	.7	4.2	4.4	19.4	5.8	3.2	.7	.6	.7
11	— .1	— .2	.1	2.4	3.8	5.7	19.2	5.7	2.8	.6	.4	1.0
12	— .2	— .2	.1	3.2	3.5	7.8	17.9	5.7	2.4	.7	.2	1.0
13	— .2	— .2	.1	3.6	3.2	9.6	17.7	5.9	2.0	.8	.1	.8
14	— .2	— .3	.0	3.9	3.0	10.1	17.9	6.0	1.9	.6	.1	.7
15	— .4	— .3	— .1	4.2	2.8	9.8	17.8	5.8	2.3	.5	.1	1.0
16	— .5	— .3	— .2	6.1	2.7	8.9	17.1	5.2	3.8	.6	.1	1.2
17	— .5	— .2	— .2	8.8	2.5	8.5	15.9	4.8	5.0	1.1	.0	1.0
18	— .5	— .3	.0	10.7	2.3	8.3	14.5	4.3	3.9	1.1	.0	.7
19	— .5	— .3	.0	12.4	2.2	8.0	13.6	4.0	3.6	3.9	.1	.4
20	— .5	— .4	.2	13.4	2.0	7.4	12.1	3.7	3.0	3.2	.3	3.2
21	— .6	— .2	.4	15.0	1.9	6.9	10.4	3.5	2.6	2.1	.3	4.2
22	— .3	— .3	.3	15.4	1.8	6.6	9.7	3.3	2.5	1.5	.4	3.4
23	— .2	— .2	.2	15.6	1.8	6.4	9.8	3.1	2.4	1.5	.6	2.2
24	— .2	— .1	.3	15.7	1.6	6.0	10.2	2.9	2.4	2.2	.4	1.8
25	— .2	.0	.3	15.8	1.6	5.8	10.4	2.7	2.6	3.0	.5	1.7
26	— .2	.2	.2	15.8	1.5	5.8	10.0	2.6	3.0	3.1	.3	1.5
27	— .1	.4	.3	15.2	1.5	6.0	11.0	2.4	2.9	3.2	.1	1.3
28	.6	.8	.5	13.4	1.5	6.2	14.7	2.3	2.4	3.3	.0	1.1
29	.9	1.3	.8	10.4	.....	7.1	15.5	2.1	2.0	3.0	.1	1.3
30	.7	1.2	.6	7.9	.....	8.7	14.5	1.9	1.7	2.7	.4	2.0
31	.4	.....	.9	6.4	.....	10.0	.....	1.8	.....	2.3	.5	.....

Daily gage height, in feet, of Tennessee River at Florence, Ala., for the years ending Sept. 30, 1872–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1878												
1	2.0	1.4	8.2	9.3	7.0	10.2	4.6	7.0	2.2	0.8	−0.2	0.5
2	1.5	2.4	6.8	8.8	8.9	8.5	4.2	6.3	2.3	.7	− .3	.9
3	1.1	5.4	5.6	8.2	9.8	7.2	3.9	5.6	2.3	1.2	.0	1.4
4	.6	5.3	4.9	8.1	9.7	6.6	3.7	5.1	2.2	1.5	.6	1.5
5	.4	6.6	4.3	8.0	8.8	6.2	3.5	4.8	2.1	1.1	1.1	1.4
6	.2	6.7	3.9	7.3	7.6	5.8	3.4	4.6	1.7	1.2	1.1	1.3
7	.1	6.4	3.9	6.4	6.8	5.8	3.3	4.5	1.5	1.2	1.0	1.1
8	.2	5.4	4.4	5.8	6.1	5.9	3.3	4.4	1.3	1.0	.8	1.0
9	.4	4.8	4.9	5.1	5.8	5.8	3.5	4.5	1.4	.9	.6	.6
10	1.3	4.4	5.2	4.6	6.4	5.5	3.8	4.8	1.4	1.0	.3	.3
11	2.1	4.0	4.9	4.5	7.0	5.4	3.8	5.0	1.4	.8	.1	.0
12	2.0	3.5	4.5	4.7	8.2	5.7	3.8	4.8	1.2	.5	.0	− .2
13	1.7	3.3	4.0	5.3	9.1	7.3	4.4	4.4	1.3	.6	.0	− .3
14	1.5	3.4	3.6	6.7	9.1	7.8	5.2	4.1	1.4	.6	− .1	− .4
15	1.2	3.8	3.3	8.3	8.5	7.4	5.6	3.7	1.4	.6	− .2	− .5
16	1.1	4.0	3.0	9.1	7.6	7.4	5.6	3.4	1.6	.5	− .2	− .6
17	.9	4.0	2.8	8.8	7.0	7.7	5.2	3.2	1.8	.4	− .2	− .7
18	.7	3.3	2.6	8.0	6.5	7.8	4.7	3.0	2.2	.3	.0	− .8
19	.6	2.9	2.4	7.1	6.1	7.3	4.3	3.0	2.4	.3	.4	5.0
20	.5	2.7	2.2	6.6	5.8	6.5	6.4	2.8	1.9	.4	1.1	4.1
21	.8	3.0	2.0	6.3	6.2	5.7	7.8	2.8	1.7	.3	1.3	2.9
22	1.3	4.0	2.0	5.9	9.0	5.1	7.3	3.1	1.4	.2	1.0	1.9
23	1.4	4.3	1.8	5.4	9.7	4.6	6.7	3.8	1.2	.1	.8	1.4
24	1.3	5.0	2.3	5.0	9.9	4.3	10.2	4.5	1.0	.0	.5	1.0
25	1.3	5.7	5.6	4.8	10.3	4.0	12.2	4.1	1.0	.0	.2	1.2
26	1.5	6.2	5.2	4.9	11.6	3.7	13.6	3.9	.9	− .1	.2	.8
27	1.6	6.9	5.1	5.0	12.2	3.4	12.8	3.1	1.0	− .2	1.2	.4
28	1.7	8.8	5.9	5.0	11.8	3.7	11.1	2.8	1.0	− .2	1.2	.2
29	1.5	9.6	6.7	5.4	.....	5.0	9.2	2.4	1.0	− .1	1.0	.2
30	1.4	9.2	8.0	5.4	.....	5.5	7.8	2.2	.8	− .2	.6	.1
31	1.4	.....	9.4	5.4	.....	5.0	.....	2.2	.....	− .2	.5	.....
1879.												
1	.0	2.0	11.4	4.1	9.4	9.9	5.5	3.4	1.5	.2	.3	2.3
2	− .1	1.5	11.4	4.0	9.6	9.2	5.3	3.2	1.5	.2	.5	2.2
3	− .1	1.2	11.3	4.6	9.7	8.6	5.5	3.0	1.5	.2	.5	3.6
4	− .2	1.0	10.7	4.9	9.8	8.3	6.0	2.9	1.8	.1	1.2	2.2
5	− .4	1.1	10.0	5.3	10.0	7.6	6.3	2.9	1.6	.2	1.9	2.0
6	− .5	1.1	8.9	5.2	11.2	6.9	6.4	2.7	1.5	.2	2.1	1.9
7	− .4	1.1	8.0	5.1	10.5	6.2	6.1	2.6	1.4	.2	2.4	1.5
8	− .4	1.0	7.2	4.2	10.2	5.6	5.5	2.5	1.3	.2	2.6	1.2
9	− .5	.8	7.0	5.8	10.0	5.2	5.1	2.4	1.2	.1	2.5	1.0
10	− .4	.7	8.9	8.8	9.6	4.8	5.3	3.4	1.1	.1	2.0	1.0
11	− .3	.5	9.1	10.8	9.4	4.6	7.4	3.7	1.0	.1	1.6	1.0
12	− .3	.3	8.8	14.4	9.4	4.3	8.0	3.4	.9	.0	1.3	.8
13	− .3	.2	8.6	19.3	8.7	4.2	8.1	2.9	.8	.0	1.2	.8
14	− .2	.2	8.7	20.0	7.8	4.0	7.9	3.0	.8	.0	1.2	.6
15	− .1	.0	8.2	19.5	7.2	3.8	7.5	3.1	.8	.0	1.1	.4
16	− .1	.0	8.2	19.4	6.8	3.8	7.2	3.0	1.0	.0	1.0	.2
17	.1	− .1	8.3	19.8	6.7	4.0	7.4	4.0	1.1	.0	.8	.2
18	− .1	− .1	8.4	20.4	10.1	4.6	7.5	3.6	1.1	.0	.7	.1
19	.0	.0	8.4	21.4	12.1	4.8	7.4	3.4	1.1	.3	.4	.0
20	.0	.0	8.0	21.4	13.1	4.5	7.2	3.4	1.0	.2	.4	.0
21	.0	.1	7.5	20.4	13.7	5.2	6.8	3.6	1.0	.2	.6	.0
22	.0	.0	6.8	17.8	13.6	6.9	6.4	3.8	.8	.2	1.6	− .1
23	− .1	.2	6.4	15.0	12.8	9.2	6.0	3.8	.8	.1	2.2	− .1
24	− .2	.3	6.0	12.4	12.2	9.6	5.7	3.6	.6	.0	2.0	− .2
25	− .1	.4	6.0	10.2	11.2	9.0	5.4	3.4	.6	.1	1.7	− .3
26	− .1	.7	6.2	8.5	10.4	8.2	5.0	3.0	.6	.3	1.3	− .3
27	.0	.9	6.3	7.4	10.4	8.0	4.6	2.7	.4	.4	1.0	− .3
28	.1	2.8	6.0	6.6	10.3	7.4	4.2	2.5	.4	.4	.8	− .4
29	2.6	7.2	5.4	6.8	.....	6.8	4.0	2.2	.3	.2	1.1	− .4
30	3.3	10.4	4.7	8.4	.....	6.2	3.8	1.9	.2	.4	1.6	− .4
31	2.7	.....	4.2	9.1	.....	5.9	.....	1.7	.....	.3	1.8	.....

Daily gage height, in feet, of Tennessee River at Florence, Ala., for the years ending Sept. 30, 1872–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1880.												
1	−0.5	1.3	2.3	10.6	3.4	7.4	6.4	11.7	4.3	1.1	0.8	1.0
2	− .5	1.1	2.5	8.3	3.4	7.7	6.2	11.2	4.2	.9	.6	1.1
3	− .5	1.0	3.5	6.8	4.7	7.5	11.0	10.9	4.8	.9	.5	1.7
4	− .5	.8	3.6	6.0	6.7	8.8	14.5	10.4	4.8	1.2	.4	1.4
5	− .5	.7	3.6	5.3	6.6	11.0	15.3	9.8	4.5	1.9	.3	1.2
6	− .5	.6	6.2	5.0	6.3	12.0	14.5	9.0	4.3	1.9	.2	1.0
7	− .4	.5	8.6	9.2	6.1	12.6	14.0	8.0	3.8	3.6	.2	1.1
8	.0	.4	7.8	11.0	5.8	15.0	13.2	7.0	3.5	4.4	.4	1.2
9	.3	.4	6.6	14.2	5.2	15.7	11.8	6.3	3.3	3.9	1.0	1.4
10	− .1	.3	5.9	14.3	4.8	15.2	10.2	5.6	2.9	3.5	1.6	1.3
11	− .3	.3	7.6	13.2	4.4	15.1	9.0	5.0	2.6	3.1	2.0	1.2
12	− .3	.2	11.2	12.2	4.1	15.8	7.9	4.6	2.4	2.6	2.0	1.1
13	− .4	.2	13.0	10.8	4.8	18.0	7.1	4.4	2.2	2.2	1.7	1.0
14	− .2	.2	13.6	9.6	6.3	19.2	6.4	4.1	2.0	1.9	1.5	1.0
15	.0	.5	14.4	8.5	5.7	20.6	5.8	3.9	1.9	1.7	1.6	1.2
16	.4	.6	14.0	7.6	7.3	23.6	5.5	3.7	1.7	1.7	1.8	1.5
17	.8	.9	13.1	6.8	11.4	24.4	6.0	3.5	1.6	1.5	2.1	1.6
18	1.2	2.1	12.9	6.4	13.2	24.5	6.6	3.3	1.5	1.2	2.0	1.5
19	1.0	3.7	12.8	6.0	14.2	23.8	8.3	3.1	1.3	1.2	1.6	1.3
20	.8	3.2	12.2	5.5	14.3	23.1	9.9	2.8	1.2	1.6	1.3	1.1
21	.7	3.4	10.8	5.2	12.8	22.8	10.2	2.6	1.1	1.7	1.1	.9
22	6.3	3.5	9.0	5.2	9.6	22.6	10.0	2.6	1.1	1.5	1.0	.7
23	7.8	3.3	9.1	5.4	7.5	22.4	9.8	2.8	1.0	1.2	1.4	.6
24	6.8	2.8	12.5	5.6	6.4	21.9	9.5	2.5	1.0	1.0	1.4	.4
25	5.5	2.3	13.5	5.3	5.7	20.7	8.8	2.6	.9	.8	1.3	.4
26	4.3	2.0	14.6	4.8	5.5	18.2	9.1	3.2	.9	.8	1.4	.3
27	3.3	1.6	15.0	4.5	7.2	14.7	11.4	3.6	.8	.9	1.4	.9
28	2.6	1.6	15.0	4.2	6.3	11.0	11.2	4.2	.8	1.1	1.3	.8
29	2.2	1.9	14.8	3.9	6.2	8.8	11.4	4.8	1.1	1.4	1.2	.7
30	1.9	2.2	14.2	3.7	.....	7.7	12.0	4.8	1.3	1.2	1.2	.6
31	1.6	.....	12.8	3.5	.....	6.9	.....	4.4	.....	1.1	1.2	.....
1881.												
1	.5	.8	10.7	4.4	5.4	7.4	6.9	8.2	2.2	1.4	.7	.4
2	.8	.5	15.4	4.0	5.3	7.4	6.5	7.6	2.2	1.4	.7	.3
3	1.3	.4	16.4	3.5	5.4	7.3	6.3	7.3	2.1	1.4	.6	.3
4	1.6	.5	16.2	3.0	5.5	7.1	6.2	6.6	2.0	1.3	.5	.3
5	1.3	.7	16.9	2.8	6.9	6.6	6.2	6.4	2.1	1.4	.5	.4
6	1.1	.9	18.1	3.1	7.8	6.1	6.0	6.8	2.1	1.7	.5	.3
7	.9	1.4	17.5	3.9	7.8	5.7	5.7	7.8	2.4	1.9	.4	.4
8	.7	1.6	15.9	5.1	7.4	5.4	5.8	6.6	2.5	1.9	.4	.4
9	.6	1.2	14.6	6.4	7.7	5.1	6.1	6.0	3.0	1.7	.3	.4
10	.5	1.7	13.7	7.7	8.2	5.0	6.0	5.8	3.8	1.5	.4	.3
11	.4	3.1	12.2	8.9	9.8	4.8	5.7	5.3	3.4	1.3	.4	.2
12	.3	3.3	10.2	9.5	11.6	4.8	6.0	5.0	3.2	1.1	.4	.1
13	.3	2.9	8.0	9.4	12.5	4.6	8.6	4.8	3.2	1.0	.5	.1
14	.3	2.8	6.6	9.3	13.1	4.6	12.5	4.4	3.2	.9	.7	.0
15	.3	2.8	5.6	9.2	13.6	4.5	13.6	4.0	2.8	.8	1.3	.3
16	.2	2.7	5.2	8.9	13.8	4.8	13.6	3.7	2.4	.7	1.2	.3
17	.2	2.5	6.0	8.3	13.4	10.2	13.6	3.5	2.2	.7	1.0	.6
18	.2	2.3	6.8	7.6	12.1	14.1	13.4	3.3	2.1	.8	.8	.5
19	.2	2.1	7.1	7.3	11.4	15.3	12.6	3.0	2.2	.8	.6	.5
20	.1	1.8	6.9	7.8	12.0	17.2	11.1	2.8	2.2	.9	.5	.5
21	.1	1.6	7.0	11.0	10.6	17.4	9.4	2.6	2.2	.9	.5	.4
22	.0	1.3	6.9	12.1	10.4	16.7	8.3	2.5	2.0	.9	.5	3.6
23	.0	1.2	6.5	12.4	10.7	16.2	7.4	3.1	1.9	.8	.5	6.4
24	.1	1.1	6.0	13.0	10.6	15.1	6.8	3.1	1.8	.9	.5	5.8
25	.1	.9	5.6	13.4	10.2	13.2	6.5	3.0	1.6	1.1	.4	4.4
26	.1	.8	5.4	13.0	9.1	11.0	6.4	3.3	1.6	.9	.4	3.3
27	.0	.8	5.5	11.8	8.0	9.2	7.1	3.2	1.7	.8	.3	2.5
28	.1	.9	5.4	9.9	7.4	8.0	8.2	3.1	1.6	.6	.3	2.0
29	.1	3.6	5.2	8.1	.....	7.4	8.8	2.8	2.0	.6	.4	1.6
30	.5	7.5	5.1	6.8	.....	7.1	8.7	2.6	1.5	.6	.4	1.6
31	1.3	.....	4.7	6.0	.....	7.2	.....	2.5	.....	.8	.4	.....

Daily gage height, in feet, of Tennessee River at Florence, Ala., for the years ending Sept. 30, 1872–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1882.												
1	1.5	1.4	5.4	11.4	20.6	11.5	9.9	6.6	6.4	2.9	2.2	2.6
2	1.4	1.8	4.6	11.4	19.6	12.4	9.5	5.9	6.7	2.9	2.2	2.8
3	1.4	2.3	4.0	11.0	19.2	12.7	8.7	5.3	6.4	2.9	2.4	3.2
4	1.4	5.0	3.7	10.2	20.2	13.4	7.8	4.9	6.3	3.4	3.2	3.9
5	1.4	5.8	3.8	9.2	21.8	14.0	7.0	4.5	6.7	3.6	3.3	4.0
6	1.2	5.5	4.4	8.8	21.4	14.5	6.4	4.2	6.6	4.2	3.7	4.0
7	1.0	5.0	4.4	11.4	20.0	15.2	6.0	4.0	6.0	4.5	4.0	3.4
8	.9	4.1	4.2	13.5	19.0	13.9	6.0	3.8	5.6	4.2	4.0	3.0
9	.8	4.0	4.0	15.3	19.1	14.7	7.4	3.6	5.0	4.0	3.8	2.8
10	.7	4.3	3.6	16.6	19.3	18.0	7.0	3.6	4.4	3.6	3.6	2.8
11	.6	4.0	3.2	18.4	18.8	17.0	6.8	8.0	3.9	3.2	3.1	2.4
12	.6	4.2	3.0	19.8	17.8	16.0	6.8	6.2	3.5	2.9	2.9	2.6
13	.5	4.9	2.7	20.6	17.7	15.8	7.0	5.3	3.2	3.0	2.7	2.8
14	.4	5.2	2.6	23.2	19.9	15.6	7.0	5.0	2.9	3.0	2.5	5.0
15	.4	5.2	3.1	22.9	19.3	14.6	6.6	5.2	2.8	2.4	2.4	10.0
16	.4	5.0	5.0	23.8	18.3	13.2	6.2	5.0	2.7	2.4	2.2	11.7
17	.4	4.7	8.0	26.0	17.5	11.8	5.7	4.7	2.7	2.5	2.4	11.5
18	.4	4.3	10.5	26.7	16.9	10.4	5.2	4.7	3.0	3.1	2.6	9.4
19	.4	3.8	11.0	27.9	16.4	9.3	5.0	5.3	3.0	3.8	2.1	6.6
20	.4	3.3	10.8	27.3	15.7	8.6	4.7	5.6	3.1	3.4	2.0	4.7
21	.4	3.0	9.9	28.4	15.2	8.3	4.5	5.2	4.1	3.1	2.2	3.7
22	.4	2.8	9.6	29.6	14.8	8.1	4.4	5.1	5.0	2.6	2.8	3.0
23	.4	2.8	12.0	28.7	13.6	7.9	5.6	5.3	4.9	2.5	2.8	2.7
24	.5	4.6	14.4	28.0	12.4	7.6	8.0	4.7	4.3	2.5	2.6	2.6
25	.5	4.4	15.2	26.9	11.2	7.4	8.6	4.2	3.8	2.5	2.2	2.4
26	.5	4.4	15.4	25.6	10.2	7.2	9.0	4.0	3.6	2.4	2.2	2.3
27	.5	5.8	14.6	25.0	9.3	7.2	8.7	4.2	3.6	2.2	2.2	2.2
28	.6	6.7	13.5	24.7	9.1	7.8	8.1	4.3	3.4	2.2	2.0	2.0
29	.8	6.8	12.2	25.6	.....	8.3	7.7	5.4	3.1	2.1	2.0	2.0
30	1.2	6.3	11.5	23.9	.....	8.8	7.3	5.6	3.0	2.3	2.1	1.8
31	1.1	.....	11.3	21.8	.....	9.6	.....	6.2	.....	2.1	2.4	.....
1883.												
1	1.7	1.4	2.4	3.6	12.2	7.8	7.1	16.4	2.8	2.2	1.1	.8
2	1.6	1.3	2.6	3.2	9.7	7.2	9.0	13.8	2.6	2.4	1.2	.8
3	1.6	1.2	2.8	2.8	7.3	6.5	11.2	10.8	2.5	2.4	1.3	.8
4	1.6	1.2	2.9	2.8	6.8	6.0	13.1	8.8	2.4	2.2	1.0	.8
5	1.6	1.4	2.7	2.8	6.2	5.5	14.2	7.5	2.4	2.1	1.0	.8
6	1.6	1.6	2.4	3.0	6.2	5.2	14.7	6.6	2.2	2.0	.9	.8
7	1.6	1.6	2.2	3.7	6.3	6.0	14.9	6.0	2.2	1.8	.9	.7
8	1.5	1.5	2.0	5.6	7.3	7.5	14.6	5.5	2.1	1.7	1.0	.7
9	1.5	1.4	1.9	7.0	7.3	7.5	13.2	5.0	2.3	1.6	1.0	.6
10	1.4	1.3	1.9	8.6	8.1	7.6	13.1	4.8	2.5	1.5	1.0	.6
11	1.4	1.3	1.8	9.2	10.0	7.9	13.0	4.4	3.3	1.7	1.0	.5
12	1.4	1.3	1.8	9.1	11.2	7.9	13.3	4.2	3.6	1.7	1.0	.5
13	1.4	1.2	1.8	8.3	12.0	7.3	14.5	4.0	4.2	1.7	1.0	.4
14	1.4	1.2	1.8	7.4	11.5	6.7	14.0	3.8	5.0	1.8	1.0	.4
15	1.3	1.2	1.8	8.0	10.7	6.4	13.6	3.8	4.5	1.8	.9	.4
16	1.2	1.2	2.0	9.0	10.3	6.0	13.5	3.6	4.8	2.2	1.1	.4
17	1.2	1.2	2.1	10.4	10.0	5.6	13.1	3.5	4.8	2.2	1.2	.4
18	1.2	1.4	2.1	11.8	9.6	5.1	12.2	3.3	4.7	2.0	1.1	.4
19	1.2	1.6	2.1	12.5	9.0	4.8	12.0	3.2	4.2	1.9	1.0	.4
20	1.2	1.7	2.2	13.2	8.4	4.5	12.0	3.1	3.7	1.7	1.1	.4
21	1.2	1.7	2.0	16.2	7.9	4.3	11.5	3.1	3.2	1.6	1.3	.4
22	1.2	1.7	2.0	18.2	7.8	4.0	11.1	3.1	2.8	1.6	1.4	.4
23	1.2	1.7	2.2	18.4	7.8	3.9	12.2	3.0	2.5	1.5	1.4	.4
24	1.6	1.7	2.8	18.4	7.8	3.7	14.0	2.9	2.2	1.4	1.3	.4
25	2.1	1.7	3.6	18.8	9.3	3.7	15.2	2.8	2.2	1.2	1.1	.4
26	2.1	1.8	5.3	19.6	9.3	3.6	15.8	3.0	2.2	1.2	1.0	.4
27	1.9	1.7	6.4	20.0	8.8	3.9	16.5	3.0	2.2	1.0	.9	.6
28	1.8	1.7	6.3	20.3	8.3	4.4	16.9	3.1	2.5	1.0	.8	1.0
29	1.6	1.8	5.7	19.4	.....	4.7	17.5	2.9	2.4	.9	.8	1.0
30	1.5	2.1	4.9	17.0	.....	4.8	17.5	2.8	2.2	.9	.8	1.0
31	1.4	.....	4.2	14.6	.....	5.1	.....	2.8	.....	1.0	.8	.....

Daily gage height, in feet, of Tennessee River at Florence, Ala., for the years ending Sept. 30, 1872–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1884.												
1	1.2	1.3	4.8	7.8	11.0	9.1	13.0	11.3	3.1	7.4	3.0	1.0
2	1.3	1.2	4.1	6.8	12.0	8.4	11.2	10.4	3.0	7.7	4.0	1.0
3	1.3	1.2	3.5	6.1	13.0	8.1	10.3	9.6	2.7	6.8	4.7	1.0
4	1.1	1.5	3.1	5.6	14.2	7.8	8.8	9.0	2.7	5.9	5.3	1.4
5	1.0	1.8	2.8	5.1	15.0	7.7	8.0	8.6	2.6	5.3	6.4	1.4
6	1.0	1.8	2.4	4.8	15.4	12.5	7.5	8.8	2.6	5.0	6.3	1.2
7	1.0	1.5	2.3	4.5	16.5	14.7	7.0	9.3	2.6	4.9	4.4	1.1
8	.9	1.3	2.4	4.1	17.6	19.1	6.7	9.3	2.6	4.7	3.9	1.1
9	.9	1.2	4.2	3.6	20.7	21.0	6.2	9.2	3.0	4.3	3.3	1.0
10	1.0	1.0	4.5	3.4	21.4	21.3	6.0	8.8	3.5	4.3	2.7	.9
11	1.2	1.3	4.4	3.2	22.5	21.2	5.5	7.9	3.9	4.9	2.3	.8
12	2.8	1.8	4.1	5.2	22.5	23.2	5.3	7.1	3.7	4.4	2.0	.8
13	2.6	2.8	3.7	6.2	23.0	24.6	5.2	6.3	4.0	4.1	1.9	.8
14	2.0	2.4	3.5	6.7	24.0	25.2	5.5	5.7	5.0	3.8	1.9	.8
15	1.5	2.1	3.2	9.0	24.2	25.2	14.2	5.3	6.0	4.1	2.0	.8
16	1.3	1.9	3.0	11.2	24.0	24.9	14.1	4.9	6.2	3.8	2.0	.8
17	1.1	2.0	2.7	10.8	23.7	24.5	13.5	4.6	6.2	3.8	1.9	.8
18	1.0	2.0	2.7	10.8	23.2	24.0	13.2	4.4	5.8	3.4	1.7	.8
19	.9	1.9	2.7	11.6	22.6	23.3	13.6	4.2	5.2	3.0	1.6	.7
20	.9	1.6	3.3	12.6	22.0	22.4	13.5	4.0	4.6	2.6	1.5	.6
21	.9	1.5	3.8	12.4	21.2	21.0	12.0	3.7	4.1	2.3	1.3	.6
22	.8	1.6	3.9	12.1	20.4	19.0	10.8	3.5	3.7	2.2	1.3	.6
23	.8	2.8	4.0	11.9	19.7	17.5	10.2	3.5	3.3	2.2	1.1	.6
24	.8	4.2	4.9	12.9	19.0	17.5	10.1	3.2	2.9	2.2	1.1	.6
25	.8	6.1	9.0	13.4	18.0	17.3	10.6	3.2	2.6	2.0	1.0	.6
26	.6	8.4	8.8	12.9	16.0	17.4	10.5	3.2	2.6	1.8	1.0	.6
27	.6	9.5	8.6	11.3	13.5	17.3	10.6	3.1	2.7	1.6	1.0	.6
28	.6	8.7	9.2	10.8	11.4	17.0	11.3	3.0	3.0	1.8	1.1	.5
29	1.1	7.2	9.7	9.7	10.2	16.1	12.7	3.0	3.3	2.0	1.1	.5
30	1.8	5.8	9.7	9.0	.....	15.3	12.1	3.0	5.4	2.5	1.1	.5
31	1.8	.....	8.8	8.3	.....	14.2	.....	3.2	.....	2.6	1.0	.....
1885.												
1	.4	.6	.8	3.4	8.9	7.8	4.5	3.4	9.5	2.7	1.6	.8
2	.4	.5	.8	3.0	8.0	7.5	4.6	3.2	10.2	2.8	1.9	.8
3	.4	.5	.8	2.8	7.0	7.2	4.8	3.0	11.3	3.1	1.9	.7
4	.4	.4	.8	2.6	6.3	6.8	5.3	3.0	11.3	3.2	1.6	.7
5	.4	.4	.8	2.5	5.8	6.4	5.4	2.9	10.2	3.2	1.5	.7
6	.4	.4	.8	2.8	5.5	6.2	5.1	2.8	8.0	3.0	1.5	.8
7	.4	.4	.8	3.8	5.3	6.0	5.0	2.8	6.3	4.0	1.4	.8
8	.4	.4	.8	4.4	5.2	5.8	5.0	2.8	5.2	3.7	1.4	.8
9	.4	.4	.8	5.0	5.4	5.4	4.9	2.8	4.5	3.5	1.6	.7
10	.4	.4	.8	5.3	5.9	4.9	4.6	2.8	4.2	3.8	1.6	.7
11	.4	.4	.8	5.7	6.7	4.5	4.4	2.8	4.0	3.8	1.4	.7
12	.4	.4	.8	6.2	6.4	4.2	4.1	3.5	3.6	3.6	1.4	.7
13	.4	.4	1.0	8.3	6.7	4.1	3.9	3.6	4.0	3.5	1.5	.7
14	.4	.4	1.3	9.3	7.2	4.3	3.8	3.6	4.4	4.0	1.5	.7
15	.3	.4	1.5	11.6	7.2	4.2	3.5	3.2	4.0	3.5	1.3	.7
16	.3	.4	1.9	14.0	7.2	4.4	3.2	3.0	3.7	3.1	1.2	.6
17	.3	.4	2.0	16.2	7.0	4.6	3.1	2.7	3.3	2.8	1.4	.6
18	.3	.4	2.5	17.6	6.5	5.2	3.7	2.4	3.5	2.5	1.8	.6
19	.3	.4	2.6	17.7	6.5	6.0	4.5	2.4	3.5	2.5	2.4	.6
20	.3	.4	2.8	17.8	5.9	6.4	4.6	2.2	3.0	2.8	2.4	.6
21	.3	.4	3.2	17.7	5.5	6.4	4.5	2.2	3.0	2.8	2.0	.6
22	.3	.4	5.6	17.4	5.2	6.0	7.4	2.2	4.5	2.5	1.7	.6
23	.3	.4	6.2	16.1	4.8	5.6	9.3	2.1	4.5	2.0	1.4	.6
24	.2	.4	8.1	14.4	5.0	5.2	8.4	2.1	4.0	1.8	1.3	.6
25	.2	.4	9.8	11.2	5.2	4.8	6.8	2.8	3.2	1.7	1.1	.8
26	.2	.4	9.6	10.9	6.8	4.5	5.5	3.1	3.0	1.7	1.0	1.0
27	.2	.5	8.5	11.4	7.6	4.3	4.7	4.0	3.2	1.7	.9	1.0
28	.2	.6	7.2	12.1	7.9	4.1	4.2	5.4	3.5	1.8	.9	1.0
29	.3	.6	5.8	11.8	.....	4.1	3.8	6.6	3.1	1.6	.8	1.0
30	.5	.8	4.8	11.2	.....	4.6	3.6	7.3	3.0	1.6	.8	1.3
31	.5	.....	4.0	10.1	.....	4.6	.....	9.0	.....	1.6	.7	.....

Daily gage height, in feet, of Tennessee River at Florence, Ala., for the years ending Sept. 30, 1872–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1886.												
1	1.1	4.8	3.5	3.7	9.0	7.3	22.5	4.5	5.6	5.9	2.0	1.8
2	1.2	9.0	3.5	3.7	8.3	7.9	23.8	4.3	5.3	5.4	2.0	1.8
3	1.4	10.0	3.4	4.8	8.0	8.0	24.2	4.3	5.3	5.1	2.3	2.1
4	2.1	9.7	3.4	8.4	7.8	7.5	24.3	4.3	5.3	6.0	2.5	2.3
5	5.1	8.2	3.3	12.4	7.3	7.0	24.8	4.8	5.1	7.0	4.1	2.3
6	4.6	6.9	3.6	14.1	6.7	6.4	26.4	5.8	5.1	7.7	5.2	2.0
7	3.7	6.8	3.7	15.0	6.2	5.8	27.5	7.3	5.1	7.7	5.0	1.7
8	3.0	10.0	3.8	15.3	5.8	5.5	28.1	8.7	5.3	7.7	4.5	1.6
9	2.6	13.6	5.2	15.3	5.4	5.0	28.0	8.3	5.6	8.2	4.3	1.3
10	2.1	14.9	5.8	14.5	5.2	4.6	27.6	8.2	6.2	8.8	4.3	1.2
11	1.7	15.8	6.4	13.0	5.0	4.4	26.8	9.5	7.0	9.0	4.2	.9
12	1.4	16.3	7.4	10.4	6.2	4.2	26.0	10.6	7.2	8.6	3.8	.9
13	1.2	16.5	8.3	8.1	6.8	4.0	25.3	9.8	8.4	7.5	3.4	.9
14	1.1	16.1	8.8	6.4	7.8	4.0	23.9	9.5	8.8	6.5	2.9	1.8
15	1.0	14.4	9.5	5.1	9.5	3.9	21.9	8.0	8.3	6.2	2.5	2.3
16	1.0	10.9	11.0	4.8	10.0	3.9	18.7	6.4	8.0	5.9	2.3	2.3
17	1.1	8.0	12.4	5.8	9.4	3.9	14.4	5.5	8.0	5.2	2.3	1.8
18	2.6	6.7	13.1	7.2	8.4	3.9	10.8	5.0	8.0	4.6	2.2	1.5
19	3.1	5.7	13.1	8.8	7.8	3.9	8.8	4.5	8.5	4.4	2.1	1.5
20	2.9	5.3	12.1	10.2	7.0	3.9	7.6	4.7	8.5	4.4	2.1	1.4
21	2.3	4.9	10.0	10.4	6.4	5.5	6.9	5.4	10.0	4.2	2.2	1.4
22	2.0	4.6	7.9	10.4	5.8	6.5	6.3	5.8	9.0	3.7	2.2	1.3
23	1.8	4.3	6.5	10.4	5.4	6.9	5.9	6.2	8.4	3.3	2.4	1.2
24	1.7	4.3	5.8	10.3	5.1	8.6	5.5	6.7	9.5	3.0	2.3	1.2
25	1.7	4.1	5.3	10.8	5.1	9.7	5.2	7.0	11.0	2.9	2.5	1.2
26	1.7	4.1	5.1	11.6	5.7	9.9	5.0	6.9	10.8	2.9	2.5	1.1
27	1.7	4.1	4.7	11.9	6.3	9.5	4.8	6.6	9.7	2.7	2.5	1.0
28	1.5	4.1	4.5	11.9	6.5	10.8	4.6	6.3	8.6	2.6	2.3	.9
29	1.5	3.8	4.4	11.5	.....	11.7	4.6	6.3	8.0	2.5	2.1	.9
30	1.5	3.6	3.9	10.4	.....	15.8	4.6	6.2	7.0	2.4	2.0	.9
31	2.0	.....	3.8	9.6	.....	20.9	.....	5.8	.....	2.1	2.0	.....
1887.												
1	.8	.5	7.7	7.0	13.0	17.5	4.7	7.1	2.4	1.4	1.5	2.9
2	.7	.6	6.3	6.5	12.4	17.4	4.9	6.4	2.6	1.3	1.6	2.8
3	.7	.7	5.1	6.0	11.8	17.3	4.9	7.0	3.6	1.2	1.6	2.3
4	.7	.7	4.2	6.0	12.1	16.6	4.8	7.8	5.5	1.2	1.5	1.8
5	.7	.7	3.5	6.9	11.9	15.1	4.7	7.4	6.4	1.2	1.8	1.6
6	.7	.7	3.2	6.9	11.9	12.5	4.6	6.4	6.2	1.4	4.4	1.3
7	.7	.7	3.0	6.3	12.8	11.4	4.4	5.4	5.6	1.8	5.2	1.1
8	.7	.6	2.8	5.7	13.3	10.9	4.4	5.0	5.0	1.9	5.0	1.0
9	.7	.6	2.8	5.0	12.6	10.2	4.4	4.7	4.7	2.2	4.9	.9
10	.6	.5	2.7	4.5	12.3	10.8	4.3	4.3	4.6	2.7	4.6	.9
11	.6	.5	2.5	4.4	11.1	12.6	4.2	4.5	4.3	2.6	3.8	.8
12	.6	.5	2.7	4.2	10.0	13.8	4.0	4.7	3.8	2.4	3.3	.8
13	.6	.5	3.2	3.9	9.0	14.3	3.7	4.6	3.5	2.0	3.0	.8
14	.6	.5	3.8	3.9	7.6	14.0	3.6	4.3	3.2	2.0	2.8	.8
15	.5	.6	4.5	4.3	7.8	12.8	3.4	4.2	3.0	1.6	2.6	.8
16	.5	.6	6.0	5.0	8.8	10.8	3.2	4.3	2.6	1.4	2.2	.7
17	.5	1.0	7.3	5.6	9.8	9.0	3.0	4.3	2.4	1.4	1.9	.6
18	.5	1.6	8.5	5.8	10.8	7.6	3.0	4.2	2.0	1.2	1.6	.6
19	.5	2.2	10.4	5.5	11.0	6.7	2.9	4.0	1.8	1.1	1.4	.6
20	.5	1.5	9.7	5.2	11.2	6.1	3.0	3.6	1.6	1.0	1.4	.6
21	.5	1.7	9.2	4.8	12.8	5.6	3.0	3.2	1.6	1.0	1.5	.5
22	.5	5.0	9.9	4.4	13.9	5.3	3.4	3.0	1.7	.9	1.4	.5
23	.5	6.3	9.5	4.6	14.5	5.1	5.5	2.8	1.7	1.0	1.8	.5
24	.5	5.7	8.5	7.5	17.4	4.8	8.2	2.8	1.5	.9	2.0	.5
25	.5	5.8	7.4	10.3	17.3	4.6	10.8	2.8	1.4	1.0	2.0	.5
26	.5	7.3	7.0	12.7	16.8	4.3	12.0	2.9	1.4	1.2	2.0	.5
27	.5	8.0	6.0	13.8	17.3	4.2	12.3	2.8	1.8	1.4	1.6	.7
28	.5	8.4	5.7	14.3	17.5	4.1	11.9	2.6	1.8	1.6	1.5	.5
29	.5	8.7	7.1	15.1	.....	4.3	10.3	2.4	1.8	1.5	1.5	.5
30	.5	8.5	8.1	16.3	.....	4.3	8.6	2.4	1.6	1.5	1.4	.6
31	.5	.....	8.0	14.9	.....	4.4	.....	2.4	.....	1.5	2.4	.....

Daily gage height, in feet, of Tennessee River at Florence, Ala., for the years ending Sept. 30, 1872–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1888.												
1	0.7	2.2	0.6	7.1	5.0	8.3	18.2	3.1	4.4	4.8	0.7	2.0
2	.8	1.9	.6	10.0	4.6	7.4	17.7	3.1	4.6	5.1	.7	2.4
3	.8	1.6	.6	11.1	4.5	6.4	17.4	3.1	5.2	4.8	.7	2.6
4	1.0	1.3	.6	12.0	4.4	5.8	16.4	3.1	5.9	4.3	.7	4.2
5	1.4	1.1	.6	11.8	4.9	5.6	14.6	3.0	6.0	3.9	.8	5.4
6	1.5	1.0	.7	10.3	5.5	5.9	12.0	2.9	5.5	3.1	1.2	5.5
7	1.4	.9	.7	8.4	5.8	5.6	9.6	2.7	4.8	2.7	1.2	5.2
8	1.2	.8	.8	7.0	6.0	5.2	8.0	2.6	4.1	2.6	1.1	5.2
9	.9	.8	1.0	6.5	6.9	4.8	7.1	2.8	3.6	2.4	1.2	5.5
10	.8	.8	1.0	6.9	7.0	4.6	7.6	2.7	3.2	2.3	1.4	5.6
11	.8	.8	1.2	7.2	7.5	4.8	9.7	2.5	3.0	2.2	1.3	6.2
12	.6	.8	1.6	7.4	8.8	6.1	11.2	2.5	2.7	2.1	1.2	6.2
13	.5	.7	2.4	9.5	9.4	6.0	13.0	2.7	2.6	1.9	1.1	5.9
14	.5	.7	2.6	10.8	9.7	5.8	13.8	3.0	2.5	1.8	1.0	6.2
15	.5	.7	2.2	11.2	9.2	5.6	13.6	3.1	2.5	1.8	1.1	7.0
16	.5	.7	2.2	12.2	8.6	5.4	12.2	3.0	2.4	2.0	1.2	6.8
17	.5	.8	2.3	12.8	7.8	5.0	9.8	3.0	2.4	2.0	1.2	5.8
18	.5	.8	2.3	14.6	7.2	4.8	8.1	2.8	2.3	1.8	1.1	5.1
19	.5	.8	2.6	15.6	6.6	4.5	6.8	2.6	2.2	1.6	1.1	5.7
20	.5	.7	2.9	16.2	6.2	4.3	6.1	2.4	2.0	1.5	1.1	6.9
21	.5	.7	3.0	16.4	6.2	4.3	5.6	2.7	2.0	1.5	1.0	7.2
22	.5	.7	3.0	16.5	6.0	4.5	5.2	3.0	2.0	1.5	.9	6.6
23	.5	.7	2.8	16.1	5.9	5.0	4.8	3.3	1.9	1.4	.9	6.0
24	.7	.7	2.6	14.6	5.9	5.0	4.4	3.4	1.8	1.4	.8	5.2
25	.7	.6	2.4	12.0	6.6	5.4	4.2	3.6	1.8	1.3	1.4	4.4
26	.8	.6	2.3	9.6	7.9	14.9	4.0	4.9	1.8	1.2	3.0	4.6
27	.8	.6	2.2	8.2	9.2	18.2	3.7	6.5	2.0	1.2	3.0	4.4
28	1.0	.6	2.1	7.0	9.8	20.3	3.5	6.8	3.6	1.0	2.7	4.0
29	1.4	.6	2.3	6.4	9.2	20.5	3.4	6.4	4.4	.9	2.2	4.1
30	2.0	.6	2.8	5.8	.....	20.2	3.3	5.6	4.5	.8	2.1	3.0
31	2.3	.....	3.2	5.4	.....	19.1	.....	4.8	.....	.7	1.8	.....
1889.												
1	2.5	9.9	4.0	3.5	10.0	7.0	4.4	2.5	1.6	2.4	5.8	2.6
2	2.2	8.2	3.8	4.6	9.1	6.6	4.2	2.7	2.0	2.6	5.8	2.9
3	2.0	6.6	3.6	4.9	8.3	7.1	4.0	2.9	4.0	3.0	5.7	3.8
4	1.8	5.6	3.4	5.0	7.2	7.4	3.8	2.8	5.6	3.5	5.9	5.2
5	1.6	5.0	3.2	5.3	6.7	7.3	3.7	2.7	7.3	4.0	6.6	5.0
6	1.5	4.6	3.0	7.4	5.8	7.0	3.6	2.6	7.0	4.0	6.9	8.0
7	1.4	4.4	2.9	8.4	5.4	6.7	3.5	2.6	5.4	4.4	6.6	7.9
8	1.5	4.3	2.8	8.6	5.0	6.4	3.4	2.7	4.2	4.9	6.4	8.4
9	1.4	5.3	2.6	9.4	4.6	6.0	3.2	2.8	3.8	5.0	6.2	7.8
10	1.5	6.5	2.6	10.4	4.5	5.6	3.0	2.7	3.1	4.5	5.6	6.3
11	1.4	9.6	2.4	10.4	4.2	5.3	2.8	2.4	2.8	3.9	4.9	5.0
12	1.4	12.3	2.4	10.1	4.0	4.8	2.7	2.3	2.8	3.3	4.4	3.9
13	1.4	13.4	2.3	9.6	3.8	4.6	2.7	2.2	2.8	4.3	4.0	3.4
14	1.4	13.2	2.3	8.8	3.7	4.4	2.7	2.0	2.9	8.7	3.6	3.0
15	1.4	12.1	2.3	8.1	3.8	4.2	4.2	1.8	3.0	4.8	3.5	2.8
16	1.8	10.0	2.3	7.4	7.5	4.0	5.8	1.7	3.5	4.5	3.8	2.6
17	2.7	8.6	2.3	9.1	14.8	3.8	7.4	1.6	5.2	4.7	3.8	2.4
18	3.0	9.0	2.9	9.6	18.7	3.7	7.6	1.6	7.0	4.7	4.2	2.2
19	3.0	9.8	3.1	9.2	19.6	3.8	6.8	1.6	7.5	4.4	4.7	2.5
20	2.6	9.9	3.2	8.9	19.7	5.1	5.6	1.6	7.6	4.3	4.6	4.8
21	2.5	9.5	3.5	8.5	19.6	8.0	5.0	1.8	7.5	4.3	4.2	5.7
22	2.3	8.4	4.2	8.1	18.9	9.0	4.4	1.8	7.4	4.1	3.8	5.2
23	2.2	7.4	4.7	7.6	18.8	8.3	4.0	1.7	6.7	3.6	3.3	4.3
24	2.1	6.6	4.8	7.4	18.5	7.3	3.6	1.6	5.8	3.0	3.0	3.8
25	2.4	6.0	4.4	7.3	17.1	6.6	3.4	1.4	5.1	2.6	2.6	3.8
26	2.9	5.5	4.0	7.3	14.4	6.3	3.2	1.2	4.4	2.6	2.5	4.6
27	4.8	5.1	3.6	8.1	10.8	5.7	2.8	1.2	3.8	3.0	2.4	5.5
28	8.2	4.9	3.4	9.3	7.8	5.3	2.7	1.2	3.1	2.9	2.6	5.5
29	10.6	4.4	3.2	9.6	.....	5.0	2.6	1.2	2.6	2.6	2.6	5.2
30	11.4	4.2	3.0	10.0	.....	4.8	2.5	1.3	2.4	2.8	2.6	5.0
31	11.3	.....	3.0	10.3	.....	4.6	.....	1.2	.....	4.6	2.7	.....

Daily gage height, in feet, of Tennessee River at Florence, Ala., for the years ending Sept. 30, 1872–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1890.												
1	4.4	1.8	6.5	2.8	8.8	22.6	11.6	6.8	5.3	2.4	4.4	3.4
2	4.1	1.8	6.3	3.1	8.7	23.2	11.1	6.4	4.8	2.2	4.2	4.0
3	3.6	2.0	6.0	3.3	8.1	23.3	10.4	6.0	4.4	2.1	4.1	4.2
4	3.2	2.2	5.8	3.5	7.3	22.6	11.2	5.8	4.0	2.0	3.7	3.9
5	3.0	2.8	5.6	3.5	6.8	22.9	11.4	5.6	3.7	2.0	3.6	3.4
6	2.8	3.4	5.2	3.5	6.6	23.2	11.1	5.5	3.7	1.9	3.2	3.0
7	2.4	3.8	4.8	3.5	8.1	23.0	11.2	5.5	3.8	1.9	3.8	2.7
8	2.3	4.0	4.4	3.4	14.4	21.9	11.1	5.8	3.8	2.0	3.7	2.4
9	2.2	4.0	4.2	3.5	16.0	19.6	10.7	6.4	3.8	2.1	3.7	2.4
10	2.0	4.4	4.0	3.5	17.2	16.2	10.1	6.4	3.7	2.2	3.8	2.6
11	2.0	5.4	3.8	3.4	17.0	21.8	9.2	6.4	3.8	2.1	4.2	2.5
12	1.9	6.8	3.6	3.4	16.0	10.3	8.3	6.2	3.7	1.9	4.6	2.5
13	1.8	7.5	3.5	3.4	15.0	9.8	8.5	5.9	3.4	1.9	4.7	2.4
14	1.8	7.5	3.4	3.5	13.6	11.7	6.8	5.7	3.2	1.9	4.4	2.6
15	1.6	7.0	3.3	4.2	11.4	11.4	6.4	5.4	3.0	2.1	4.0	2.8
16	1.6	6.8	3.2	8.6	9.8	10.4	6.1	5.1	2.8	2.0	3.6	2.9
17	1.6	7.4	3.0	8.2	8.8	10.3	5.8	4.9	2.8	1.9	3.3	2.8
18	1.6	9.6	3.0	7.7	8.1	10.9	6.0	5.3	2.7	1.8	2.9	2.8
19	1.6	10.6	2.9	7.8	7.6	11.6	6.4	6.0	2.7	1.7	2.6	2.6
20	1.6	11.1	2.8	7.8	7.4	11.8	8.2	6.1	2.6	1.7	2.4	2.6
21	1.6	10.7	2.7	7.2	7.0	11.4	10.6	6.4	2.6	2.1	2.2	2.8
22	1.6	10.0	2.7	7.4	6.4	11.7	11.8	7.0	2.4	2.8	2.2	2.9
23	1.6	9.3	2.7	6.8	6.0	13.6	11.6	7.8	2.4	2.8	2.0	2.8
24	1.6	8.8	2.6	8.0	5.6	14.3	10.3	8.1	2.4	3.2	2.0	3.2
25	1.6	8.4	2.6	9.5	5.8	14.7	9.0	8.3	2.4	3.3	1.9	3.2
26	1.6	8.2	2.6	9.4	6.9	15.2	8.4	8.6	2.4	3.8	1.9	3.9
27	1.6	7.8	2.7	8.8	13.9	15.7	8.2	7.7	2.5	4.0	1.9	3.9
28	1.7	7.7	2.8	7.8	23.2	16.1	8.2	7.0	2.6	4.4	2.8	3.8
29	1.8	7.4	2.7	6.8	.....	15.8	7.6	6.4	2.6	5.0	3.3	3.6
30	1.8	6.9	2.6	7.5	.....	14.3	7.2	6.0	2.5	5.1	3.2	3.4
31	1.8	.....	2.6	8.4	.....	12.2	.....	5.8	.....	4.9	3.1	.....
1891.												
1	3.2	4.8	1.9	8.4	10.8	16.5	14.0	5.0	2.9	3.2	3.9	4.0
2	3.4	4.7	1.9	8.0	12.4	15.3	13.1	4.8	3.3	2.9	6.5	3.8
3	5.6	4.5	1.9	7.4	14.0	14.4	12.8	4.4	3.6	2.7	8.8	3.4
4	6.0	4.2	1.8	7.2	15.8	13.4	12.6	4.3	3.7	2.6	9.2	3.0
5	5.7	4.0	1.8	8.3	15.8	12.5	12.3	4.1	3.6	2.4	10.6	2.6
6	5.2	3.6	1.8	9.6	15.2	12.2	11.9	4.0	3.3	2.3	10.3	2.5
7	4.7	3.4	2.0	10.0	15.8	15.2	11.0	3.8	3.0	2.4	8.6	2.6
8	4.2	3.2	2.2	9.4	16.5	21.8	9.9	3.7	2.9	2.5	6.6	2.8
9	4.0	3.0	2.4	7.8	17.4	21.8	9.1	3.5	2.9	2.5	5.3	2.9
10	3.8	2.8	2.7	6.4	18.8	22.0	8.6	3.4	3.4	2.4	4.3	3.0
11	3.7	2.8	4.1	6.2	19.0	22.1	9.6	3.3	3.6	2.3	3.6	3.1
12	3.6	2.7	5.2	7.4	19.4	21.7	10.0	3.2	3.7	2.6	3.3	3.0
13	3.4	2.6	5.4	7.8	20.6	21.6	10.0	3.1	4.0	3.0	3.0	2.7
14	3.2	2.5	5.0	8.4	21.0	22.0	9.6	3.0	4.5	3.0	2.8	2.4
15	3.0	2.4	4.5	8.7	20.9	22.2	9.2	3.0	4.8	2.7	2.6	2.1
16	2.9	2.4	3.9	8.3	21.2	22.0	9.4	2.9	4.8	2.5	2.5	2.0
17	2.8	2.4	3.4	8.0	21.6	21.2	9.4	2.9	4.4	2.4	2.4	2.0
18	2.6	2.4	3.2	7.6	21.8	19.8	8.6	2.9	4.2	2.3	2.3	2.0
19	2.5	2.3	2.8	7.2	21.5	17.8	7.8	3.0	4.3	2.2	2.2	2.0
20	2.5	2.3	2.7	6.7	20.6	14.9	7.2	3.2	4.4	2.0	2.0	1.9
21	2.6	2.2	2.7	6.4	19.8	12.6	7.2	3.2	4.7	2.0	2.0	1.8
22	2.8	2.2	2.7	7.0	18.6	10.4	6.9	3.2	5.3	2.5	1.9	1.6
23	3.1	2.2	2.7	8.4	17.2	9.4	6.8	3.1	5.4	2.8	1.8	1.5
24	3.6	2.2	2.6	9.8	16.3	8.7	6.7	2.9	5.4	2.6	2.0	1.5
25	4.3	2.2	2.6	12.1	16.1	8.4	6.6	2.8	4.9	2.5	2.4	1.4
26	5.2	2.1	3.0	12.8	16.4	8.6	6.3	2.8	4.8	2.4	2.9	1.4
27	6.1	2.0	3.7	12.2	16.8	9.2	6.0	2.8	4.9	2.2	3.3	1.4
28	6.4	2.0	5.0	11.2	16.9	9.6	5.8	2.7	4.7	2.1	3.6	1.3
29	6.4	2.0	7.1	10.1	.....	10.2	5.6	2.7	4.2	2.3	5.0	1.3
30	5.9	1.9	8.5	9.2	.....	10.7	5.4	2.7	3.6	2.8	5.0	1.2
31	5.3	.....	8.8	8.9	.....	13.4	.....	2.7	.....	3.4	4.4	.....

Daily gage height, in feet, of Tennessee River at Florence, Ala., for the years ending Sept. 30, 1872–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1892.												
1	1.2	1.0	3.1	7.1	5.6	5.2	7.7	8.6	4.4	5.0	3.0	2.6
2	1.2	1.0	2.6	6.6	5.2	5.0	7.4	7.7	4.4	4.8	3.2	2.4
3	1.2	1.0	2.4	6.6	4.8	4.6	9.3	7.2	5.2	4.5	2.9	2.1
4	1.2	1.0	3.0	6.9	4.6	4.5	8.2	6.6	5.4	4.4	2.8	1.9
5	1.2	1.0	4.0	7.0	4.4	4.3	9.5	6.1	5.2	4.2	2.7	2.0
6	1.1	1.0	4.0	7.0	4.2	4.2	16.2	5.8	5.5	4.7	2.6	1.8
7	1.1	1.0	4.9	7.0	4.8	4.2	22.2	5.6	6.4	5.6	2.8	1.7
8	1.1	1.0	5.8	6.8	7.4	4.5	23.9	5.6	6.7	7.8	3.0	1.6
9	1.1	1.0	6.2	6.9	8.2	5.4	23.6	5.0	6.6	11.2	2.8	1.5
10	1.1	1.3	7.0	7.2	8.1	5.7	23.1	4.8	6.2	12.5	2.4	1.4
11	1.1	1.5	7.5	7.6	8.6	6.0	22.4	4.6	6.0	11.0	2.2	1.4
12	1.1	1.3	7.5	8.2	9.2	6.2	21.6	4.4	5.7	9.8	2.2	1.3
13	1.1	1.2	6.8	10.0	8.8	6.2	21.4	4.2	5.4	9.2	2.2	1.4
14	1.1	1.1	6.0	12.8	8.1	6.2	21.5	4.2	5.3	8.8	2.2	1.5
15	1.1	1.3	5.0	14.8	7.4	5.9	20.8	4.0	5.1	9.2	2.0	1.5
16	1.1	1.6	4.2	15.8	7.0	5.6	18.4	3.8	4.6	8.4	2.1	1.5
17	1.1	2.0	3.8	16.6	6.6	5.6	14.6	3.7	4.0	8.2	2.1	1.4
18	1.1	2.2	3.5	17.4	6.4	6.4	11.0	4.0	3.5	7.3	2.5	1.4
19	1.0	2.2	3.5	18.4	6.5	7.3	9.6	5.3	3.2	6.6	2.4	2.0
20	1.0	1.7	3.5	19.6	6.9	7.6	9.6	4.8	3.0	6.2	2.0	2.8
21	1.0	1.6	3.4	20.0	7.8	7.9	12.3	4.6	3.1	5.8	1.8	3.5
22	1.0	1.8	3.0	19.8	8.9	8.1	15.6	4.6	3.3	5.5	1.8	3.8
23	1.0	2.8	2.9	18.6	9.0	8.2	15.7	4.7	4.6	5.1	2.0	3.2
24	1.0	2.6	2.9	17.0	8.8	8.8	14.4	4.8	5.4	4.6	2.0	3.0
25	1.0	2.4	3.3	15.0	8.2	8.4	12.9	4.8	5.2	4.2	2.6	2.6
26	1.0	2.7	4.1	13.2	7.4	8.6	11.6	5.0	5.4	3.8	2.4	2.1
27	1.0	3.6	6.2	10.0	6.8	8.7	10.6	5.3	5.0	3.6	2.2	1.8
28	1.0	4.1	7.4	8.8	6.1	8.6	10.2	5.6	5.0	3.4	2.4	1.8
29	1.0	4.0	8.5	7.5	5.6	8.5	10.0	5.0	5.2	3.1	2.6	2.0
30	1.0	3.6	8.9	6.7	.....	8.4	9.6	4.6	5.0	2.9	2.8	2.0
31	1.0	.....	8.0	6.1	.....	8.1	.....	4.4	.....	2.8	2.8	.....
1893.												
1	1.8	.8	2.8	3.4	4.0	8.3	4.4	8.4	13.0	3.0	1.8	1.1
2	1.6	.8	2.8	3.7	5.0	7.6	4.3	9.0	12.8	2.8	1.6	1.5
3	1.5	1.0	3.2	3.7	7.0	7.2	4.2	10.2	11.8	2.6	1.6	4.4
4	1.4	1.1	3.4	3.7	8.0	7.7	4.0	13.0	10.0	2.5	1.5	4.1
5	1.3	1.3	3.5	3.8	7.4	8.4	4.1	13.8	9.6	2.6	1.6	3.6
6	1.3	1.2	3.4	4.3	6.4	8.2	4.3	14.8	14.0	2.8	1.8	3.5
7	1.2	1.2	3.2	4.4	6.0	7.8	4.5	16.0	14.0	2.8	2.0	3.4
8	1.2	1.2	3.1	4.1	5.6	7.7	4.6	16.6	13.8	2.6	1.9	3.2
9	1.1	1.7	3.2	4.0	5.3	7.6	4.4	17.0	13.4	2.4	2.0	2.8
10	1.1	1.9	3.3	3.6	5.1	7.8	4.2	17.1	13.7	2.2	2.4	2.4
11	1.1	2.4	3.2	3.3	5.6	8.2	4.0	16.3	13.2	2.3	2.4	2.6
12	1.0	3.0	2.8	3.0	8.5	9.0	4.1	14.0	11.9	2.2	2.2	2.2
13	1.1	3.9	2.7	2.6	10.4	9.8	11.0	11.4	9.4	2.1	2.0	1.9
14	1.1	4.2	3.2	2.5	12.7	9.8	15.2	8.9	7.2	2.0	2.0	1.8
15	1.0	3.8	3.8	2.4	14.4	9.7	18.2	7.8	6.0	1.9	2.1	2.8
16	1.0	3.2	3.8	2.4	16.6	9.0	17.2	7.4	5.2	1.8	2.0	6.4
17	1.0	3.0	6.8	2.4	20.7	7.4	15.0	7.0	4.7	1.8	1.8	7.3
18	1.0	3.2	7.6	2.0	20.7	7.3	11.5	6.7	4.4	1.7	1.6	6.6
19	1.0	3.8	7.9	2.0	20.7	6.6	9.2	7.0	4.1	1.7	1.7	5.6
20	1.0	4.2	9.2	2.0	20.7	6.0	7.6	7.2	4.0	1.7	2.4	4.6
21	1.0	4.4	10.2	2.1	20.2	5.6	7.2	6.5	3.8	1.7	2.6	3.8
22	1.0	4.2	10.1	2.0	20.2	5.2	7.1	5.9	3.7	1.7	2.2	3.0
23	1.0	3.8	9.6	2.0	20.2	5.0	6.8	5.4	3.7	1.8	2.0	2.6
24	.9	3.4	8.9	2.1	20.2	4.6	6.4	4.9	3.7	1.9	1.6	2.2
25	.9	3.0	7.8	2.4	19.4	5.2	6.0	4.4	3.8	2.2	1.5	2.1
26	.9	2.9	6.8	2.7	16.8	5.6	6.0	4.0	4.0	2.6	1.4	1.9
27	.9	2.6	6.0	3.0	13.2	5.9	7.0	4.2	4.0	2.6	1.3	1.8
28	.8	2.5	5.2	3.1	9.5	5.8	7.6	4.1	3.8	2.4	1.3	1.7
29	.8	2.7	4.5	3.1	.....	5.4	7.6	5.7	3.5	2.0	1.2	1.6
30	.8	2.9	4.0	3.3	.....	5.0	7.8	6.6	3.2	1.8	1.2	1.5
31	.8	.....	3.6	3.6	.....	4.8	.....	6.2	.....	2.0	1.1	.....

Daily gage height, in feet, of Tennessee River at Florence, Ala., for the years ending Sept. 30, 1872–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1894.												
1	1.4	2.0	1.5	1.7	3.8	7.0	4.7	2.7	2.7	1.5	1.9	1.6
2	1.4	1.9	1.5	1.8	3.6	7.6	4.8	2.6	2.5	1.8	2.0	1.6
3	1.5	1.8	1.9	1.8	5.6	7.8	5.4	2.6	2.3	2.2	2.0	1.8
4	1.4	1.7	2.4	2.0	11.4	8.0	5.6	2.5	2.1	2.3	1.7	2.0
5	1.4	1.6	2.6	2.3	10.8	8.0	6.8	2.5	2.0	2.4	1.6	2.0
6	1.4	1.5	2.5	2.8	14.0	7.8	7.0	2.4	1.9	2.8	1.6	1.6
7	1.4	1.5	2.5	3.4	14.6	7.7	6.8	2.3	1.8	2.8	1.5	1.4
8	1.4	1.5	2.6	3.1	15.8	7.5	6.4	2.8	1.7	2.6	1.5	1.3
9	1.4	1.4	2.8	3.8	17.6	7.1	6.0	2.7	1.6	2.2	1.6	1.2
10	1.5	1.4	2.7	5.9	17.0	6.6	5.9	2.5	1.5	1.8	1.5	1.1
11	1.6	1.4	2.6	7.6	15.5	6.2	6.2	2.6	1.5	1.7	1.5	1.1
12	1.6	1.4	2.4	8.2	14.8	5.9	6.2	2.6	1.4	1.7	1.5	1.0
13	1.5	1.5	2.2	7.4	14.6	5.8	6.2	2.9	1.4	1.8	1.4	1.0
14	1.5	2.1	2.1	7.2	13.8	5.8	6.4	3.4	1.4	1.9	1.3	1.0
15	1.5	2.1	2.0	7.0	12.8	5.8	6.4	3.5	1.4	1.8	1.2	1.0
16	1.4	2.0	2.0	7.8	11.4	5.7	6.2	3.4	1.4	1.6	1.1	.9
17	1.3	1.9	2.4	7.1	9.8	5.8	5.7	3.2	1.4	1.5	1.1	.9
18	1.4	1.7	2.2	6.7	8.6	6.1	5.1	2.9	1.3	1.5	1.1	1.2
19	4.0	1.6	2.1	6.1	8.3	6.2	4.6	2.7	1.2	1.9	1.9	1.3
20	4.4	1.5	2.1	5.7	7.8	6.8	4.4	3.0	1.2	1.8	2.2	1.3
21	3.8	1.6	2.1	5.3	7.4	7.2	4.0	3.2	1.2	1.5	1.9	1.3
22	3.0	1.6	2.2	4.9	7.2	8.2	3.8	3.2	1.5	1.7	1.9	1.2
23	2.4	1.6	2.3	4.5	7.2	9.4	3.7	3.4	1.5	1.8	2.0	1.1
24	2.1	1.5	2.2	4.2	7.0	10.3	3.5	3.8	1.5	2.0	2.2	1.0
25	1.8	1.5	2.2	4.5	6.8	9.2	3.4	4.1	1.4	2.1	2.7	1.0
26	1.8	1.4	1.9	4.8	6.6	8.2	3.3	4.4	1.5	2.1	2.8	1.0
27	1.7	1.5	1.8	4.6	6.4	7.2	3.3	4.2	1.5	2.0	2.4	1.0
28	1.8	1.5	1.7	4.4	6.4	6.5	3.1	4.0	1.5	2.2	2.2	1.0
29	2.3	1.5	1.6	4.2	.....	5.9	3.0	3.6	1.5	2.1	1.9	.9
30	2.4	1.5	1.6	4.2	.....	5.4	2.8	3.2	1.5	2.1	1.8	.8
31	2.2	.....	1.7	4.0	.....	5.0	.....	3.0	.....	2.0	1.7	.....
1895.												
1	.8	— .1	.1	5.0	7.6	4.9	7.1	5.0	4.9	1.1	4.9	1.7
2	.8	— .1	.1	4.0	7.0	5.4	6.6	4.9	4.3	1.8	3.6	1.9
3	.7	.0	.1	3.2	6.6	7.8	6.1	4.7	3.8	2.3	2.7	1.9
4	.7	.1	.1	3.0	6.5	8.8	5.8	4.4	3.5	2.7	2.1	1.7
5	.6	.2	.1	2.2	6.4	10.8	5.4	4.2	3.2	2.9	1.9	1.7
6	.6	.3	.1	2.0	6.3	12.1	5.0	4.0	2.8	2.8	1.7	1.5
7	.8	.3	.0	2.2	6.4	12.6	5.1	4.2	2.7	3.4	1.6	1.4
8	.9	.2	.1	4.8	6.9	12.4	6.2	4.8	2.5	4.1	1.5	1.4
9	.9	.2	.1	6.0	6.6	11.0	7.8	5.1	2.5	4.9	1.3	1.4
10	.9	.2	.2	7.9	6.0	8.8	9.0	5.6	2.8	5.1	1.4	1.5
11	.9	.1	.4	11.7	5.5	7.8	9.0	6.2	2.9	5.1	1.5	1.8
12	.8	.1	.6	14.0	4.8	7.1	9.0	6.4	2.7	4.5	1.5	1.3
13	.7	.1	1.0	15.1	4.2	7.1	9.2	6.6	2.4	3.9	1.3	1.1
14	.7	.0	2.4	15.9	3.8	8.6	8.8	6.4	2.1	3.4	1.3	.9
15	.7	.0	5.4	16.4	3.5	9.6	7.7	6.3	1.9	3.1	1.3	.9
16	.7	.0	7.0	17.0	3.4	9.8	6.8	6.2	1.8	3.1	1.3	.9
17	.9	.1	7.0	17.4	3.3	9.8	6.3	6.2	1.7	2.5	1.3	1.2
18	1.1	.0	6.2	15.4	3.4	9.4	6.0	5.8	1.8	2.4	1.2	1.4
19	1.1	.0	5.1	12.2	3.5	8.8	5.8	5.4	1.9	2.3	1.2	1.1
20	1.0	.0	4.0	10.4	3.5	11.4	7.0	4.8	1.9	2.2	1.5	.9
21	.9	.0	3.0	10.2	3.8	13.8	8.0	4.6	1.9	2.0	2.7	.9
22	.8	.0	2.6	11.0	4.1	14.0	7.9	4.6	1.7	1.9	4.0	.8
23	.4	.0	2.0	10.7	4.4	14.1	7.2	4.6	1.5	1.7	4.3	.6
24	.0	.0	1.8	10.0	4.6	14.8	6.3	4.4	1.4	1.4	3.9	.6
25	.0	.0	1.5	9.5	4.9	14.9	5.7	3.8	1.4	1.3	3.5	.6
26	.0	.1	1.3	9.6	5.0	14.8	5.4	4.2	1.4	1.2	3.1	.5
27	— .1	.1	1.3	9.9	5.2	13.7	5.5	5.0	1.3	1.1	2.8	.4
28	.0	.1	1.9	9.5	5.0	11.8	5.5	6.2	1.3	1.1	2.8	.3
29	.0	.1	2.8	8.9	.....	9.8	5.6	6.4	1.2	1.4	2.5	.2
30	— .1	.1	4.0	8.4	.....	8.5	5.4	6.0	1.1	5.2	2.1	.1
31	— .1	.....	5.2	8.0	.....	7.6	.....	5.5	.....	6.1	1.8	.....

Daily gage height, in feet, of Tennessee River at Florence, Ala., for the years ending Sept. 30, 1872–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1896.												
1	0.1	0.0	0.2	4.1	7.1	3.5	8.0	4.2	1.4	1.0	4.8	1.6
2	.1	.0	.4	3.8	12.2	3.3	12.2	3.9	1.3	1.0	3.9	1.2
3	.1	.0	.4	3.7	13.2	3.3	15.2	3.4	1.2	1.2	3.4	.9
4	.1	.0	.5	3.6	13.7	3.1	16.8	3.2	1.2	1.3	3.0	.6
5	.0	.1	.5	3.5	13.0	2.9	17.2	3.2	1.8	1.4	2.7	.6
6	.0	.1	.4	3.5	12.3	3.0	17.6	3.0	2.8	1.6	2.6	.5
7	.0	.2	.4	3.3	11.9	3.3	18.4	3.0	3.0	1.7	2.3	.4
8	.0	.2	.4	3.2	11.1	3.7	19.2	3.1	2.8	1.8	2.4	.2
9	.0	.2	.4	3.3	12.1	3.3	19.8	3.0	2.7	2.0	2.5	.2
10	.0	.3	.4	2.9	12.6	3.1	18.7	2.8	2.4	2.7	2.3	.2
11	.0	.3	.4	2.8	12.1	3.0	14.5	2.6	2.4	4.9	1.8	.8
12	.0	.3	.4	2.6	11.3	3.0	9.4	2.4	2.7	9.2	1.6	.6
13	— .1	.2	.3	2.3	11.1	2.9	7.0	2.0	3.9	11.4	1.4	.7
14	— .1	.2	.3	2.1	11.7	2.9	5.8	1.8	3.9	11.6	1.2	.6
15	.0	.3	.5	2.0	11.8	3.1	5.0	1.6	3.2	10.3	1.2	.4
16	.0	.5	.5	1.9	11.5	4.9	4.6	1.4	2.7	8.6	1.2	.4
17	.0	.6	.5	1.7	11.3	7.5	4.2	1.3	2.1	8.0	1.2	.4
18	.0	.6	.6	1.6	10.9	7.2	4.0	1.2	1.8	7.9	1.2	.4
19	.0	.6	.5	1.6	9.9	8.7	3.6	1.1	1.5	8.1	1.1	.2
20	.0	.4	.7	1.5	8.7	11.7	3.4	1.1	1.4	8.7	1.0	.2
21	.0	.4	.5	1.4	7.3	12.7	3.2	1.1	1.3	8.0	.9	.1
22	.0	.4	.6	1.5	6.3	12.7	3.1	1.0	1.2	6.6	.8	.2
23	.0	.4	.6	1.8	5.5	11.7	3.1	1.0	1.4	5.2	.7	.1
24	.0	.2	.6	2.4	4.8	10.1	3.0	1.0	1.7	4.5	.7	.1
25	.0	.2	1.1	2.9	4.4	8.9	2.8	1.1	1.6	4.5	.6	.0
26	.0	.2	4.0	4.0	3.9	7.9	2.8	1.4	1.6	5.6	.6	.0
27	— .1	.2	7.2	5.1	3.7	7.3	3.4	1.8	1.4	5.4	.6	.0
28	— .1	.3	6.4	5.7	3.5	6.6	4.2	2.1	1.7	5.2	.7	.2
29	— .1	.3	4.7	5.7	3.4	6.1	4.0	2.2	1.4	6.8	.7	.4
30	— .1	.3	4.3	5.1	.....	5.8	4.0	2.0	1.1	7.1	.8	.6
31	.1	.....	4.2	4.5	.....	6.5	.....	1.6	.....	6.0	1.0	.....
1897.												
1	.4	.1	5.5	1.2	2.8	16.8	8.8	4.2	2.4	3.3	3.5	.7
2	.4	.1	6.7	1.1	3.8	17.1	10.4	4.1	2.3	3.0	2.9	.7
3	.4	.1	8.2	1.0	4.2	15.4	10.2	4.0	2.3	2.6	2.4	.5
4	.6	.2	8.9	1.2	6.1	11.2	13.8	4.1	2.4	2.3	2.0	.4
5	.7	.2	8.8	1.6	7.9	9.0	16.3	4.9	2.3	2.1	1.9	.4
6	.8	.3	7.3	1.7	8.4	9.6	17.2	6.0	2.3	1.9	1.8	.4
7	.9	.3	5.8	1.7	8.8	13.0	17.5	6.1	2.3	1.6	1.9	.3
8	.9	.2	4.7	1.7	8.7	14.1	17.2	5.7	2.2	1.7	1.7	.2
9	.7	.2	3.8	1.7	9.1	14.6	17.8	5.1	2.2	1.8	1.8	.1
10	.6	.6	3.4	1.7	9.6	15.8	18.1	4.8	2.3	1.7	2.0	.1
11	.7	1.5	3.0	1.6	10.5	17.1	17.7	4.7	2.3	1.9	2.1	.1
12	.5	2.4	2.8	1.5	10.8	19.8	16.3	4.9	2.1	2.3	2.8	.1
13	.2	3.8	2.7	1.5	10.2	21.0	13.8	6.9	2.4	2.1	2.9	.1
14	.0	2.6	2.7	1.5	8.8	22.3	11.5	8.3	3.1	2.1	2.6	.0
15	.0	3.6	3.4	2.0	8.1	22.8	9.9	11.1	3.0	2.3	2.1	.0
16	.0	4.3	3.9	2.5	7.8	24.2	9.0	13.1	2.5	2.3	1.9	— .1
17	.0	4.1	3.6	3.3	7.8	25.1	8.3	13.5	2.3	2.1	1.5	— .1
18	.0	3.5	3.2	5.4	7.6	26.3	7.9	13.4	1.9	1.9	1.3	— .2
19	.2	2.9	2.8	6.2	7.1	31.6	7.7	12.1	1.7	2.5	1.0	— .2
20	.2	2.6	2.5	6.3	6.5	30.6	7.4	9.8	1.6	3.8	1.1	— .2
21	.1	2.1	2.4	6.0	6.0	28.6	6.9	7.3	1.5	4.3	1.3	— .2
22	.2	1.8	2.7	6.4	6.0	27.2	6.5	6.0	1.4	3.9	1.3	— .3
23	.2	1.4	2.8	6.4	6.3	25.3	5.9	5.0	1.5	3.9	1.4	— .3
24	.2	1.2	2.6	6.1	8.7	24.2	5.5	4.5	2.2	3.8	1.3	— .3
25	.2	1.0	2.4	5.8	11.8	23.6	5.1	4.0	2.4	3.6	1.1	— .3
26	.2	.9	2.2	5.4	13.9	21.8	4.7	3.7	2.6	3.7	1.3	— .3
27	.2	.8	2.0	5.0	15.0	20.6	4.5	3.5	2.7	4.7	1.4	— .3
28	.1	1.6	1.6	4.4	16.2	19.0	4.3	3.3	3.2	6.7	1.3	— .3
29	.1	5.4	1.6	3.9	.....	14.2	4.1	2.9	3.2	7.3	1.1	— .3
30	.1	5.4	1.4	3.4	.....	11.0	4.2	2.6	3.1	6.0	.9	— .3
31	.1	.....	1.3	3.0	.....	9.2	.....	2.5	.....	4.5	.9	.....

Daily gage height, in feet, of Tennessee River at Florence, Ala., for the years ending Sept. 30, 1872–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1898.												
1	−0.3	0.1	−0.2	3.0	9.8	2.3	6.3	5.2	2.5	0.9	3.6	1.9
2	− .3	.0	.0	2.6	7.9	2.3	9.3	5.3	2.1	.9	4.9	1.8
3	− .3	.0	.2	2.5	6.5	2.1	11.1	5.1	1.7	.9	5.4	1.6
4	− .3	.0	.4	2.2	5.7	2.0	11.5	4.6	1.5	.7	5.2	1.6
5	− .3	− .1	1.5	1.9	4.9	1.9	11.1	4.1	1.5	.7	4.6	4.7
6	− .3	− .1	1.7	1.9	4.5	1.7	11.0	3.8	1.3	.7	3.6	10.0
7	− .4	.0	1.8	1.8	4.1	1.7	10.3	3.4	1.1	.6	3.3	12.0
8	− .4	.0	2.3	1.6	3.7	1.7	9.8	3.3	1.0	.6	6.4	12.6
9	− .4	.0	2.2	1.5	3.4	1.9	9.4	3.1	.9	.6	8.4	11.4
10	− .4	.1	2.0	1.4	3.1	1.9	8.5	2.7	.7	.6	8.8	8.7
11	− .5	.2	1.8	1.6	3.1	1.8	7.8	2.6	.6	.6	8.4	6.8
12	− .4	.1	1.4	2.1	2.9	1.7	7.5	2.6	.5	.8	7.5	5.7
13	− .4	.1	1.4	3.3	2.7	1.9	7.5	2.5	.5	1.0	6.8	4.8
14	− .4	.0	1.0	4.5	2.7	1.9	7.7	2.7	.4	1.3	7.8	4.0
15	− .4	.0	1.0	11.1	2.5	2.2	7.5	2.7	.5	1.4	9.0	3.5
16	− .4	.0	.9	13.4	2.4	4.3	7.3	2.5	.6	1.3	9.8	3.0
17	− .3	.1	.9	12.4	2.3	4.5	7.1	2.3	.6	1.2	9.4	2.6
18	− .2	.1	1.1	10.2	2.1	4.1	7.0	2.1	.5	1.2	7.8	2.2
19	.0	.0	1.5	10.6	2.1	5.1	7.7	2.0	.5	1.5	6.3	2.1
20	.0	.0	2.3	13.4	2.1	4.8	9.5	2.0	.6	2.1	5.0	2.0
21	.1	− .1	5.0	11.9	2.0	4.6	9.5	1.9	.6	2.7	4.2	1.8
22	.1	− .2	6.4	11.6	1.9	4.7	8.7	1.9	1.5	2.3	3.6	1.8
23	.1	− .2	7.2	12.7	1.9	4.5	8.1	1.8	2.3	1.9	3.6	1.7
24	.2	− .2	7.8	12.6	1.8	3.9	7.3	1.7	2.8	1.7	3.2	1.6
25	.3	− .2	8.7	12.1	1.8	3.9	6.7	1.7	3.7	1.5	3.0	2.1
26	.2	− .2	7.8	13.0	1.9	3.6	6.7	1.5	3.1	1.5	2.8	2.6
27	.2	− .2	6.5	13.8	2.1	3.2	6.3	1.5	2.6	1.7	2.4	2.8
28	.2	− .2	5.6	13.8	2.3	3.2	6.1	1.5	2.1	2.4	2.1	3.8
29	.2	− .2	4.6	13.8	.....	4.7	5.8	2.0	1.6	2.5	1.9	3.8
30	.2	− .2	4.0	13.4	.....	5.7	5.8	2.7	1.1	3.3	1.7	3.2
31	.1	.....	3.4	12.2	.....	5.9	.....	2.9	.....	3.7	1.8	.....
1899.												
1	2.4	3.1	3.3	3.3	4.8	14.9	14.3	6.6	2.3	1.6	2.4	.1
2	2.0	2.8	3.1	3.2	5.0	14.4	14.4	6.0	2.3	1.6	2.4	.2
3	1.7	2.4	3.0	3.0	5.2	14.3	14.5	5.6	2.3	1.4	2.6	.2
4	1.5	2.3	3.0	2.9	7.1	13.6	14.2	5.2	2.2	1.4	2.2	.4
5	1.4	2.2	3.2	3.3	12.8	12.4	12.9	4.8	2.2	1.4	1.8	.6
6	1.4	2.0	3.3	6.8	15.9	12.1	11.2	4.6	2.3	1.2	1.4	.8
7	3.9	2.0	3.3	11.0	17.8	12.8	10.7	4.3	2.5	1.1	1.2	1.0
8	8.9	1.9	3.6	13.6	18.3	13.8	12.0	4.6	2.4	1.0	1.0	.9
9	9.6	1.9	3.9	14.1	18.6	14.6	13.0	5.5	2.2	.8	1.0	.8
10	8.2	2.0	3.9	13.6	19.0	15.2	13.4	6.2	2.2	.8	.9	.6
11	6.6	2.2	3.7	13.8	19.6	15.3	13.4	6.6	1.9	1.0	.8	.5
12	5.4	2.3	3.4	13.0	20.0	13.9	12.6	7.1	1.7	1.0	.8	.4
13	4.8	2.4	3.2	11.0	20.0	11.8	11.4	7.4	1.8	.9	.8	.3
14	4.2	2.5	3.0	9.2	20.4	11.7	10.2	7.1	1.9	.8	.8	.3
15	3.6	2.9	2.8	8.0	18.9	17.4	9.2	6.6	2.5	.8	.6	.3
16	3.4	2.8	2.4	7.2	14.4	21.0	8.3	6.3	3.0	.7	.6	.3
17	3.2	2.6	2.2	6.6	10.2	21.8	7.6	6.3	3.6	.7	.6	.3
18	2.9	2.4	2.2	6.4	8.8	22.6	7.2	6.1	3.6	.6	.8	.4
19	2.8	2.4	2.0	6.2	8.4	24.6	6.8	5.9	3.6	.5	.9	.4
20	2.9	2.4	2.4	6.0	8.7	25.1	6.4	5.2	3.8	.5	.8	.2
21	3.6	2.6	3.4	5.6	9.4	24.8	6.0	4.6	3.3	.5	.8	.2
22	4.7	3.0	4.3	5.4	9.6	24.5	5.8	4.4	2.8	.7	.7	.2
23	5.9	4.0	4.8	4.2	9.4	24.1	6.1	3.9	2.4	1.1	.6	.1
24	5.9	4.5	4.4	4.6	8.8	23.7	6.6	3.6	2.2	1.3	.5	.1
25	5.2	4.9	4.0	6.2	8.4	23.5	8.6	3.4	1.8	1.5	.4	.0
26	4.8	4.8	3.8	6.7	10.0	23.2	9.6	3.1	1.6	1.6	.4	.0
27	4.7	4.6	3.6	6.5	13.8	22.8	9.2	3.0	1.4	2.1	.3	.0
28	4.7	4.2	3.6	6.5	16.6	22.2	8.9	2.8	1.3	2.1	.2	.2
29	4.4	3.8	3.6	5.8	.....	20.2	8.2	2.7	1.3	1.8	.2	.2
30	3.8	3.3	3.5	5.2	.....	17.1	7.3	2.4	1.2	1.8	.2	.1
31	3.4	.....	3.4	4.8	.....	14.5	.....	2.4	.....	2.1	.1	.....

Daily gage height, in feet, of Tennessee River at Florence, Ala., for the years ending Sept. 30, 1872–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1900.												
1	0.1	—0.1	0.7	3.5	2.8	8.0	7.2	6.4	2.2	9.2	5.4	1.1
2	.0	— .1	.6	3.0	2.6	8.3	6.6	6.1	2.4	8.8	4.9	1.0
3	.0	— .1	.5	2.5	2.4	7.4	6.0	5.4	2.8	8.3	4.2	1.0
4	.0	— .1	.5	2.0	2.1	7.8	5.8	4.9	3.2	8.1	3.6	.8
5	.0	— .1	.3	1.5	2.4	8.4	5.8	4.2	3.6	7.0	3.0	.6
6	.0	.0	.4	1.1	2.8	9.0	5.8	4.0	4.8	5.8	2.5	.6
7	.0	.0	.4	1.0	3.0	10.0	6.2	3.8	5.4	5.0	2.1	.6
8	.0	.0	.4	1.0	3.0	10.8	6.4	3.6	5.8	4.3	1.8	.6
9	.0	.1	.3	1.0	4.2	11.0	6.4	3.6	5.9	4.0	1.4	.5
10	— .1	.1	.4	1.2	5.6	11.4	6.0	3.4	6.2	3.6	1.2	.4
11	.0	.1	2.3	2.1	6.0	11.9	9.2	3.2	5.7	2.8	1.0	.3
12	.0	.2	3.9	4.9	7.0	12.0	11.0	3.0	4.9	3.0	1.0	.2
13	.1	.2	4.8	5.9	8.8	11.7	11.0	3.0	4.6	3.0	.8	.1
14	.2	.2	6.0	7.2	11.4	10.8	10.4	2.7	4.2	2.8	.7	.1
15	.3	.2	6.6	7.7	12.8	9.4	8.8	2.6	5.1	2.6	.6	.1
16	.4	.1	6.4	7.5	14.0	8.2	7.8	2.4	4.9	2.2	.6	.2
17	.4	.1	5.8	6.9	14.6	7.4	11.2	2.3	5.2	2.1	.6	.4
18	.4	.1	5.0	6.4	14.4	6.7	18.0	2.2	5.4	2.0	.6	.6
19	.2	.0	4.8	6.3	13.6	6.4	19.0	2.1	5.4	2.1	.9	1.3
20	.1	.0	5.5	7.3	10.6	7.6	19.2	2.0	5.7	2.1	.8	1.8
21	.1	.0	4.8	8.5	8.5	8.9	17.8	2.0	6.4	2.0	.7	2.2
22	.1	.1	4.5	9.2	7.0	9.2	15.0	1.9	6.7	1.8	.7	2.3
23	.1	.1	4.6	8.6	7.0	9.6	13.7	2.1	7.4	1.6	.8	2.2
24	.0	.0	6.0	7.8	7.2	11.0	12.9	2.6	9.0	1.6	.8	1.7
25	.0	.2	6.3	6.8	7.4	11.8	11.6	2.4	9.2	1.5	.6	1.4
26	.0	.2	6.7	6.0	7.4	11.8	10.4	2.1	9.4	1.5	.6	1.0
27	.0	.4	6.4	5.2	6.4	10.8	9.6	1.8	11.6	2.6	.5	.7
28	.0	.6	5.6	4.5	7.2	9.6	8.4	1.8	12.8	3.0	.6	.7
29	.0	.8	5.1	4.0	.....	8.8	7.4	1.7	12.0	2.9	.8	.7
30	— .1	.8	4.6	3.6	.....	8.2	6.8	2.0	10.4	3.1	1.2	.8
31	— .1	.....	4.2	3.1	.....	7.9	.....	2.1	.....	4.8	1.4	.....
1901.												
1	.7	2.3	10.2	3.6	5.5	2.4	13.2	10.1	9.9	4.8	.9	7.2
2	.6	1.8	9.0	3.8	5.6	2.4	13.0	9.0	9.3	4.2	.9	7.0
3	.6	1.4	6.9	4.0	6.7	2.6	13.0	7.9	8.7	3.7	.9	6.9
4	.6	1.2	5.0	4.2	10.0	2.6	13.4	6.9	7.9	3.6	.9	6.7
5	.4	1.0	4.2	4.1	10.7	2.6	14.4	6.1	6.9	3.7	.9	6.6
6	.3	1.0	4.0	4.0	10.4	2.6	15.1	5.6	6.1	3.7	1.1	6.7
7	.3	1.3	4.0	3.6	10.1	3.0	15.4	5.1	5.4	3.5	1.3	6.3
8	.8	1.5	4.5	3.4	9.5	3.2	15.2	4.5	4.9	3.3	.9	5.3
9	.8	1.8	5.6	3.0	8.8	3.6	14.2	5.0	5.0	3.1	.9	4.6
10	.5	2.0	6.0	3.0	8.6	7.8	12.2	4.2	5.2	2.9	4.5	4.1
11	.8	2.0	5.8	4.8	7.8	11.6	9.8	4.0	5.1	2.9	6.9	3.7
12	2.4	1.6	5.0	10.9	7.1	12.0	8.1	4.0	5.1	3.3	6.2	3.3
13	3.8	1.4	4.4	14.0	6.6	11.6	7.1	3.8	5.7	3.7	5.2	3.3
14	3.1	1.2	3.7	15.2	6.0	10.6	6.6	3.7	5.1	3.3	4.1	3.0
15	2.8	1.0	3.2	15.9	5.8	9.0	6.4	3.6	4.5	2.8	4.0	3.9
16	2.2	.9	3.0	16.2	5.8	7.5	7.0	3.5	4.2	2.4	7.1	5.7
17	1.5	.8	2.6	16.2	5.4	6.4	7.3	3.3	4.1	2.1	13.3	6.5
18	1.2	.7	2.4	15.4	5.0	5.5	7.9	3.2	4.7	2.0	15.2	8.0
19	.8	.6	2.2	13.0	4.6	5.0	10.0	3.1	5.7	1.9	16.9	7.7
20	.7	.7	2.0	9.3	4.0	4.6	13.3	3.1	6.2	1.9	18.0	7.9
21	.6	1.2	2.2	7.2	4.0	4.6	15.2	4.1	6.1	1.9	18.5	7.7
22	.7	1.4	2.8	6.0	3.7	4.6	15.9	6.5	5.7	1.8	18.9	6.9
23	.8	1.2	2.8	5.5	3.4	4.4	16.3	9.7	5.3	1.9	18.2	6.0
24	1.0	1.1	3.2	5.4	3.2	4.0	16.1	12.3	5.2	1.9	17.3	5.3
25	1.0	1.4	3.6	6.5	3.2	4.1	16.0	13.7	6.1	1.8	16.1	4.5
26	.8	3.3	3.9	6.4	2.9	4.6	15.6	14.7	5.9	1.8	14.7	3.9
27	1.4	5.0	4.0	6.4	2.8	6.2	14.8	15.7	5.2	1.5	13.0	3.5
28	3.5	6.7	4.0	6.0	2.6	8.6	13.4	16.1	5.8	1.3	10.9	3.3
29	4.4	9.6	3.6	5.6	.....	11.4	12.0	16.1	6.1	1.1	9.1	3.5
30	3.9	10.4	3.4	5.4	.....	12.6	11.0	14.5	5.5	1.0	8.3	3.7
31	3.2	.....	3.2	5.4	.....	13.5	.....	12.1	.....	.9	7.7	.....

Daily gage height, in feet, of Tennessee River at Florence, Ala., for the years ending Sept. 30, 1872–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1902.												
1	3.3	1.0	0.8	17.1	15.6	13.2	17.6	3.7	2.3	1.7	1.1	0.2
2	3.1	1.0	.8	17.8	16.1	14.9	17.2	3.7	2.4	2.5	.9	.3
3	2.9	.9	.9	18.6	16.5	15.6	16.8	4.2	2.3	4.7	.9	.3
4	2.9	.9	.9	18.8	16.4	16.6	17.6	6.4	2.0	6.1	.7	.5
5	2.9	.9	.9	20.6	16.2	18.1	17.2	6.8	1.7	5.5	.6	.4
6	2.9	.9	.9	20.8	15.7	19.4	14.5	6.2	1.6	4.7	.6	.1
7	2.7	.9	.9	20.3	14.8	20.4	11.6	5.1	1.6	4.1	.6	.1
8	2.7	.9	.9	17.4	13.7	20.9	10.3	4.3	1.6	3.3	.7	.1
9	2.6	.9	1.0	12.4	11.4	20.9	9.8	3.9	1.5	2.7	.7	.1
10	2.5	.9	1.1	8.9	8.8	20.2	9.2	3.7	1.3	2.1	.7	.1
11	2.2	.9	1.3	8.2	7.4	18.8	8.6	3.7	1.3	1.9	.5	.1
12	2.1	.9	1.4	6.2	6.5	15.9	8.0	3.3	1.3	1.7	.5	.1
13	1.9	.9	1.8	5.5	6.0	13.6	7.6	3.1	1.3	1.5	.5	.1
14	1.9	.9	2.6	5.1	5.6	11.2	7.0	2.9	1.3	1.4	.7	.1
15	1.9	.9	7.8	4.8	5.4	9.8	6.6	2.7	1.3	1.3	.7	.1
16	2.1	.8	12.4	4.4	5.4	9.1	6.4	2.6	1.3	1.5	.7	.2
17	2.2	.8	15.0	4.1	5.3	9.6	6.0	2.7	1.2	2.1	.6	.3
18	2.2	.8	15.8	3.9	5.0	9.9	5.8	2.7	1.1	2.1	.5	.3
19	2.2	.8	16.0	3.9	4.8	10.6	5.6	2.6	1.1	1.8	.3	.3
20	2.1	.8	16.0	4.4	4.6	10.8	5.3	2.6	1.1	1.5	.2	.3
21	1.9	.8	15.1	4.7	4.5	10.5	5.2	2.5	1.5	1.3	.2	.2
22	1.8	.7	12.0	5.7	4.6	9.6	5.0	2.5	1.9	1.0	.2	.1
23	1.7	.7	8.3	6.0	4.8	9.4	4.9	2.3	2.1	.9	.2	.1
24	1.5	.7	6.8	6.2	5.1	8.2	4.8	2.3	2.1	.8	.2	.0
25	1.4	.8	5.6	6.0	5.8	7.2	4.6	2.4	1.9	.8	.2	.2
26	1.4	.8	5.7	6.1	7.0	7.0	4.4	2.4	1.7	.8	.2	.6
27	1.3	.8	6.3	7.6	7.7	6.9	4.2	2.4	1.7	.7	.2	.8
28	1.2	.8	8.2	9.4	9.8	8.4	4.2	2.3	1.5	.7	.1	.9
29	1.2	.8	11.6	9.5	.....	19.8	3.9	2.2	1.7	.6	.2	1.4
30	1.2	.8	14.8	11.8	.....	19.2	3.8	1.9	1.7	.7	.3	1.8
31	1.1	.....	16.2	14.2	.....	18.7	.....	2.1	.....	.7	.2	.....
1903.												
1	1.6	—.3	4.9	3.8	4.0	14.4	12.8	6.6	5.4	2.8	.7	.2
2	1.7	—.3	5.0	4.1	3.9	16.1	12.6	6.5	6.6	2.8	.7	.1
3	1.6	—.3	5.4	5.5	4.6	16.9	12.6	6.2	7.0	2.5	.9	.0
4	1.6	—.4	5.7	5.6	8.6	17.6	12.1	5.8	8.1	2.4	1.2	.0
5	1.6	—.3	6.4	5.5	10.8	18.2	11.2	5.4	10.2	2.2	1.1	.0
6	1.6	—.2	7.3	5.6	12.5	18.8	10.1	5.0	9.8	2.0	1.4	.0
7	1.2	—.2	6.8	5.8	14.2	18.4	9.5	4.6	9.2	2.0	2.4	.0
8	1.0	—.2	6.2	5.6	15.9	18.0	9.7	4.5	8.6	2.1	2.4	.0
9	.8	—.2	5.7	6.0	16.6	17.0	11.1	4.5	8.2	2.2	2.6	—.1
10	.6	—.2	5.1	5.7	15.9	16.6	13.2	4.2	8.4	2.1	2.4	—.1
11	.8	—.2	4.6	5.7	16.3	16.7	14.8	4.0	7.9	2.1	1.8	—.1
12	.8	.0	4.0	5.9	16.6	16.8	15.6	3.9	7.4	2.2	2.0	—.1
13	1.2	.1	3.4	5.8	15.8	16.8	16.6	3.8	6.9	2.7	1.8	—.2
14	.8	.1	3.0	5.7	15.0	16.6	18.2	4.3	6.3	2.7	1.4	—.2
15	1.5	.1	3.0	5.6	14.9	15.7	17.9	6.2	5.8	2.8	1.2	—.2
16	1.2	.1	6.1	5.9	14.8	14.2	17.2	5.9	5.1	3.3	1.2	—.2
17	1.1	.1	6.2	5.6	16.8	12.7	16.2	4.7	4.6	3.5	1.8	—.2
18	1.2	.1	5.6	5.0	17.5	11.2	15.4	4.4	4.3	3.5	2.2	—.2
19	1.4	.0	5.6	4.6	17.5	9.8	14.8	4.0	3.6	3.4	2.4	—.2
20	1.3	—.2	6.2	4.4	17.4	8.7	14.2	3.5	3.2	3.2	2.1	—.2
21	1.2	—.2	6.8	4.0	17.3	8.0	12.8	3.2	2.8	2.8	1.8	—.2
22	1.0	—.2	7.4	3.6	17.7	7.8	11.6	3.0	2.6	2.4	1.7	—.2
23	.8	—.2	7.4	3.4	17.6	7.7	10.5	2.9	2.5	2.0	1.7	—.2
24	.4	—.1	7.6	3.2	16.0	7.8	9.8	2.6	2.6	1.9	1.5	—.2
25	.4	1.0	7.6	3.0	12.9	9.0	9.4	2.5	2.5	1.9	1.2	—.2
26	.2	2.4	6.6	2.8	9.6	11.5	8.6	2.3	2.8	1.6	1.0	—.2
27	.2	2.8	5.8	3.0	8.0	13.4	7.9	2.2	2.6	1.3	.9	—.2
28	.0	3.3	5.0	4.0	9.7	14.6	7.4	2.2	2.5	1.2	.6	—.2
29	—.1	4.2	4.6	4.4	.....	15.2	6.9	1.9	2.5	1.0	.5	—.2
30	—.1	4.5	4.3	4.2	.....	15.0	6.6	2.0	2.5	.9	.4	—.3
31	—.2	.....	4.0	4.2	.....	13.5	.....	3.0	.....	.8	.4	.....

Daily gage height, in feet, of Tennessee River at Florence, Ala., for the years ending Sept. 30, 1872–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1904.												
1	−0.4	−0.4	0.1	1.9	3.2	5.2	11.2	2.6	2.6	0.9	0.5	0.6
2	− .4	− .4	.1	2.0	2.6	5.8	10.1	2.9	3.4	1.0	.6	.6
3	− .4	− .2	.1	1.8	2.2	5.8	8.5	3.6	4.0	1.2	.8	.5
4	− .4	.0	.0	1.5	2.0	5.5	7.4	4.6	3.6	1.5	.7	.5
5	− .5	.4	.0	1.0	1.8	5.2	6.4	4.4	3.2	1.7	.7	.5
6	− .5	.3	− .1	.8	1.6	5.0	5.7	4.0	2.8	2.1	.8	.3
7	− .5	.2	− .2	.7	1.4	4.8	5.4	3.8	2.4	2.1	1.0	.3
8	− .2	.1	− .2	.6	1.3	5.8	5.2	3.5	3.3	2.4	1.0	.3
9	.0	.2	− .3	.5	1.5	6.2	5.7	3.4	3.0	2.2	1.3	.3
10	− .1	.2	− .3	.5	2.0	6.9	5.8	3.5	2.5	1.6	1.8	.3
11	− .2	.0	− .3	.4	3.2	8.0	5.8	3.7	2.2	1.4	2.2	.4
12	− .3	− .1	− .3	.3	3.8	8.4	5.4	4.0	1.9	1.2	2.6	.5
13	− .2	− .1	− .2	.4	3.8	8.2	5.0	4.3	1.6	1.2	2.5	.4
14	− .1	− .1	− .2	.4	3.6	8.0	4.6	4.6	1.6	1.3	2.2	.4
15	− .1	− .1	− .2	.5	3.2	8.2	4.2	4.2	1.2	1.3	2.1	.5
16	.0	− .1	− .2	.5	3.0	8.1	4.0	3.9	1.1	1.4	2.2	.4
17	.2	.0	− .2	.6	2.7	8.0	3.7	3.4	1.0	1.5	2.0	.4
18	.0	1.2	− .2	.7	2.5	7.2	3.4	3.0	.9	1.5	1.7	.4
19	− .1	.7	− .1	1.2	2.0	6.2	3.2	3.0	.9	1.4	1.8	.4
20	− .2	.7	.6	1.4	1.9	5.8	3.0	2.8	.8	1.0	2.0	.3
21	− .3	2.1	2.6	1.7	1.9	5.4	3.0	2.4	.7	1.0	1.7	.4
22	− .3	3.5	1.5	2.6	1.8	7.9	3.0	2.2	.7	.9	1.5	.4
23	− .3	2.9	1.7	4.4	2.0	9.5	3.0	2.0	.6	.9	1.1	.4
24	− .4	2.5	2.6	5.0	3.0	11.8	2.8	1.8	.5	.8	1.0	.3
25	− .4	1.7	2.9	6.8	4.1	14.0	2.7	1.5	.5	.6	1.0	.3
26	− .4	1.1	2.6	8.0	5.2	15.0	2.6	1.4	.8	.6	.8	.2
27	− .4	.8	2.4	6.8	5.4	17.2	2.5	1.4	.7	.5	.7	.2
28	− .4	.5	2.0	5.8	5.4	17.0	2.5	1.2	.7	.6	.8	.2
29	− .4	.5	1.8	5.0	5.0	15.8	2.4	1.2	1.0	.5	1.0	.2
30	− .4	.2	1.7	4.4	.....	14.5	2.3	1.3	1.0	.5	1.0	.2
31	− .4	.....	1.8	3.6	.....	12.9	.....	1.3	.....	.5	.8	.....
1905.												
1	.2	− .5	.0	7.2	2.3	9.2	3.7	5.8	4.4	6.4	2.2	2.6
2	.2	− .5	.1	6.0	2.2	7.9	3.6	6.6	4.3	7.7	2.0	2.6
3	.1	− .5	.1	4.8	2.2	6.9	3.5	6.6	4.2	7.4	1.8	3.8
4	.0	− .4	.1	4.0	2.3	6.4	3.5	6.2	3.7	6.0	1.8	3.6
5	.0	− .3	.2	3.4	2.7	5.8	3.5	5.4	3.2	4.8	1.8	3.0
6	.0	− .2	.8	2.8	3.5	5.2	3.4	4.8	2.8	3.8	1.8	2.4
7	.0	− .2	1.8	2.6	5.1	4.9	3.2	4.7	2.6	3.4	1.8	2.0
8	.0	− .2	2.2	3.0	6.4	4.8	3.0	4.8	2.2	3.2	1.5	1.8
9	.0	− .2	2.8	2.7	11.0	6.0	3.0	4.6	2.1	3.2	1.4	1.6
10	.0	− .2	3.2	2.8	14.0	9.6	3.2	4.6	2.0	3.0	1.4	1.5
11	− .1	− .2	3.4	3.2	15.0	10.8	3.4	5.2	1.8	3.6	1.6	1.6
12	− .1	− .2	3.2	5.2	16.7	11.8	4.2	5.8	1.7	4.2	1.8	1.6
13	− .2	− .2	2.7	7.8	16.7	12.8	4.2	5.7	1.7	4.5	2.6	1.4
14	− .2	− .2	2.2	8.3	16.2	12.6	4.4	5.2	1.4	4.4	3.8	1.2
15	− .2	− .1	1.5	10.6	14.1	11.6	4.6	4.8	1.3	5.0	4.8	1.0
16	− .2	− .1	1.2	11.6	12.4	10.2	4.9	4.2	1.4	7.2	5.7	1.0
17	− .3	− .1	1.0	11.4	11.0	8.4	5.2	4.6	1.8	8.1	6.2	.9
18	− .3	− .1	.9	10.4	9.8	7.0	5.0	5.4	1.8	7.3	5.8	.8
19	− .3	− .2	.8	8.4	9.0	6.2	4.6	7.4	1.8	6.2	5.2	.8
20	− .3	− .2	.7	6.6	9.2	5.6	4.1	8.8	1.7	5.3	4.8	.8
21	− .4	− .2	.6	5.6	13.0	5.8	3.8	8.8	1.6	4.2	4.2	.8
22	− .4	− .1	.5	4.8	15.0	6.5	3.4	7.8	2.4	3.4	3.9	.6
23	− .4	.0	.4	4.4	15.5	6.8	3.2	7.2	3.8	3.0	3.4	.5
24	− .4	.0	.4	3.9	15.7	6.8	3.2	9.2	4.4	3.0	3.2	.4
25	− .4	.0	.6	3.4	15.5	6.5	3.1	10.0	4.8	3.0	2.8	.3
26	− .4	.0	1.0	3.1	14.6	5.9	3.1	9.6	4.4	3.1	2.6	.3
27	− .4	− .1	1.5	2.8	13.1	5.4	3.2	9.0	4.2	3.0	3.4	.2
28	− .5	− .1	4.2	2.6	10.8	5.0	3.7	7.8	4.8	2.9	4.0	.2
29	− .5	− .1	5.6	2.4	.....	4.8	4.4	6.6	5.2	2.9	3.7	.1
30	− .5	− .1	7.2	2.3	.....	4.4	5.3	5.6	6.0	2.8	3.2	.0
31	− .5	.....	8.5	2.4	.....	4.0	.....	4.8	.....	2.5	2.9	.....

Daily gage height, in feet, of Tennessee River at Florence, Ala., for the years ending Sept. 30, 1872–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906.												
1	0.1	1.8	0.3	5.6	7.9	4.0	11.5	3.6	2.4	3.4	5.0	4.6
2	.0	1.5	.3	5.1	7.6	3.9	11.8	3.5	2.8	3.0	5.0	6.5
3	.1	1.4	.4	5.0	7.2	4.8	11.6	3.4	3.0	2.6	5.5	7.6
4	.1	1.2	.9	5.8	6.6	6.8	10.2	3.3	2.9	2.5	6.1	7.5
5	.3	1.0	1.2	7.2	6.2	7.2	8.8	3.3	2.8	2.4	6.2	6.6
6	.3	.8	3.3	8.7	6.0	8.0	7.6	3.4	3.0	2.2	5.9	5.8
7	.3	.6	6.2	9.4	5.6	8.0	6.8	3.4	3.0	1.9	5.2	5.3
8	.2	.6	6.6	10.0	5.2	7.2	6.1	3.5	3.0	1.8	5.2	5.4
9	.1	.6	6.2	9.4	4.8	6.6	6.0	3.8	2.4	1.8	4.8	5.8
10	.4	.5	5.9	8.8	4.4	6.0	5.8	4.2	2.3	1.9	4.6	6.6
11	1.0	.4	6.2	7.8	4.0	5.4	5.9	5.0	2.2	1.9	4.2	6.8
12	1.8	.4	7.0	7.4	3.8	4.8	6.0	5.6	2.0	2.4	4.0	6.6
13	1.6	.4	7.0	7.5	3.6	4.6	6.4	5.4	1.8	3.3	3.6	6.8
14	1.3	.4	6.8	7.0	3.4	4.7	6.8	4.6	1.8	3.5	3.6	6.4
15	1.4	.3	6.6	6.5	3.2	7.8	6.6	3.9	1.8	3.4	3.8	5.5
16	1.9	.3	7.6	6.0	3.0	10.2	6.3	3.6	2.1	5.2	3.4	4.7
17	2.0	.2	7.0	6.0	3.0	9.3	6.2	3.1	3.2	6.2	3.7	4.2
18	1.8	.2	7.0	6.3	2.9	8.8	6.2	2.8	4.4	7.8	4.0	3.7
19	1.5	.1	6.4	6.8	2.9	9.2	6.6	2.4	5.6	8.6	4.6	3.4
20	1.5	.0	5.8	7.2	2.8	10.6	7.0	2.2	5.4	9.4	4.8	3.8
21	1.4	.0	5.6	7.1	2.8	10.8	6.8	2.0	4.8	10.5	5.0	3.9
22	1.2	.0	6.6	8.0	2.9	10.2	6.2	2.0	4.1	10.0	5.0	5.0
23	.8	.1	7.8	12.2	3.2	9.4	5.4	1.8	3.6	8.8	5.0	6.9
24	.6	.1	9.2	13.6	3.6	8.3	4.9	1.6	3.1	8.2	4.8	8.0
25	.6	.1	9.2	13.1	4.0	7.4	4.4	1.6	2.7	9.1	4.4	7.6
26	.8	.1	9.2	12.4	4.5	6.6	4.2	1.8	2.7	9.5	4.2	6.8
27	1.7	.2	9.3	13.2	4.5	6.2	4.0	2.1	3.4	8.3	4.0	5.9
28	1.6	.2	8.8	13.7	4.4	6.6	3.8	2.6	4.0	7.0	4.2	6.0
29	1.8	.3	7.4	12.8	.....	7.2	3.6	3.0	4.0	6.3	4.6	8.4
30	1.8	.3	6.9	10.9	.....	9.5	3.6	2.7	3.8	6.0	4.4	9.0
31	1.9	.....	6.1	8.9	.....	11.1	.....	2.5	.....	5.4	4.0	.....
1907.												
1	8.6	3.0	5.4	11.9	5.5	8.6	3.6	7.8	4.1	3.7	1.5	1.4
2	9.8	3.0	4.8	13.4	9.8	13.0	3.5	6.6	4.8	3.8	1.6	1.3
3	14.4	2.7	4.4	14.1	11.9	14.2	3.5	6.0	4.5	4.0	2.1	1.2
4	15.8	2.6	4.2	14.0	12.0	14.4	4.1	5.8	4.4	3.8	2.8	1.0
5	15.9	2.5	4.0	12.8	11.6	14.5	4.5	5.4	4.5	3.4	2.4	1.0
6	15.8	2.4	3.8	10.7	10.1	14.3	4.6	5.4	4.4	3.0	1.9	1.0
7	15.4	2.2	3.7	9.1	8.8	13.3	4.6	6.8	5.0	2.8	1.6	.9
8	13.9	2.0	3.6	7.8	8.1	11.5	4.9	8.4	6.0	2.4	1.4	.7
9	13.2	2.0	3.5	7.2	7.9	9.6	6.6	9.5	5.8	2.3	1.2	.8
10	12.2	1.9	3.7	6.6	7.6	8.4	7.6	10.0	5.6	2.0	1.6	1.0
11	10.6	1.9	3.8	6.0	7.0	8.3	7.3	11.2	6.3	1.7	1.7	.9
12	9.0	1.8	3.8	5.6	6.4	8.4	7.0	12.5	7.0	1.7	1.6	1.8
13	7.7	1.7	3.8	5.2	5.8	8.5	7.0	11.8	8.2	1.8	1.4	1.9
14	6.6	1.7	3.8	5.0	5.2	8.9	6.4	9.8	8.4	2.8	1.6	2.1
15	5.7	1.8	3.9	4.8	5.0	11.2	6.1	10.7	7.6	3.0	2.0	2.5
16	5.1	1.9	3.9	4.5	4.6	11.0	5.6	9.5	7.2	3.6	2.2	2.4
17	4.8	2.2	4.8	4.2	4.2	10.9	5.1	9.6	7.1	4.4	2.0	2.1
18	4.6	2.6	6.5	4.0	4.0	10.4	4.8	8.6	7.6	4.6	1.7	1.8
19	4.5	4.6	6.4	3.9	3.9	9.7	4.5	7.6	9.1	4.0	1.6	1.4
20	4.9	5.5	5.9	4.0	3.6	8.8	4.5	6.4	8.6	3.6	1.7	1.0
21	5.4	10.0	6.9	4.5	3.4	8.0	4.5	5.4	6.5	3.1	1.7	.9
22	5.4	13.5	7.2	4.6	3.2	7.3	4.6	4.9	4.9	2.8	1.7	1.5
23	5.0	15.2	7.2	4.7	3.2	6.4	5.4	4.4	4.0	2.7	1.6	1.7
24	5.2	16.0	6.8	5.0	3.4	6.0	5.5	4.0	3.7	2.5	1.5	2.7
25	5.8	16.7	6.2	5.7	3.8	5.4	5.6	4.0	3.9	2.3	1.8	3.0
26	5.6	16.3	5.8	5.5	4.2	4.9	6.0	3.7	3.8	2.0	1.9	4.8
27	5.2	14.4	5.4	4.9	4.5	4.6	6.0	3.6	4.0	1.8	1.8	6.9
28	4.5	10.7	5.0	4.4	5.4	4.2	6.0	3.0	4.0	1.5	1.8	6.6
29	4.0	7.7	4.6	4.0	.....	4.0	6.0	3.0	4.0	1.5	1.8	5.9
30	3.6	6.2	5.0	4.0	.....	3.9	6.8	3.0	3.9	1.4	1.7	4.8
31	3.4	.....	7.4	3.8	.....	3.7	.....	3.5	.....	1.5	1.6	.....

Daily gage height, in feet, of Tennessee River at Florence, Ala., for the years ending Sept. 30, 1872–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908.												
1	3.9	0.4	6.4	9.5	5.2	6.5	7.8	8.6	4.0	2.2	0.8	3.6
2	3.4	.6	5.3	11.5	6.6	6.5	7.0	7.7	3.8	1.8	.7	2.9
3	3.3	.7	4.4	12.0	6.9	6.4	6.4	6.4	3.8	1.6	.8	2.3
4	2.9	.8	3.9	12.0	6.9	6.6	5.9	5.8	4.2	1.6	1.0	1.8
5	2.5	.7	3.4	12.0	7.0	7.0	5.6	6.8	4.7	1.6	1.1	1.5
6	2.0	.7	3.0	11.6	6.9	7.4	6.8	9.6	4.2	1.4	1.6	1.6
7	1.8	.8	2.8	10.7	6.8	7.7	9.4	8.6	3.9	2.1	1.5	1.5
8	1.8	1.4	2.4	11.2	6.5	7.6	9.6	7.5	4.0	3.4	1.5	1.5
9	1.6	1.5	2.4	11.0	6.2	7.1	8.3	6.6	4.2	4.0	1.8	1.5
10	1.7	2.0	2.3	10.0	7.4	7.0	6.8	6.2	4.1	4.2	2.1	1.6
11	1.7	2.0	2.6	8.8	9.9	7.2	6.0	6.1	4.0	4.2	2.4	2.0
12	1.6	2.0	2.7	8.0	11.0	7.8	5.4	6.1	3.6	4.4	2.6	2.2
13	1.4	2.8	2.7	7.8	10.8	8.0	5.0	6.0	3.2	4.3	2.8	2.0
14	1.2	3.8	3.0	7.8	11.2	8.0	4.6	5.6	3.1	4.0	2.4	1.8
15	1.0	5.4	3.8	10.0	12.5	8.6	4.4	5.2	2.9	3.6	2.2	1.5
16	1.0	6.5	4.8	11.6	14.6	8.9	4.2	5.0	2 7	3.0	1.8	1.1
17	.9	5.2	5.0	12.8	15.3	8.7	4.2	4.8	2.5	2.6	1.4	.9
18	.8	4.2	5.0	12.7	15.8	8.2	4.4	4.7	2.3	2.2	1.1	.7
19	.8	3.5	5.0	11.0	17.0	7.2	7.2	5.2	2.4	2.2	1.0	.6
20	.7	3.2	5.0	9.6	17.0	7.2	7.8	4.8	2.4	2.2	.8	.5
21	.6	3.2	4.6	8.4	16.0	8.0	7.6	4.3	2.7	2.0	.8	.5
22	.5	3.6	4.5	7.6	14.2	8.1	7.0	4.2	2.6	1.7	.8	.6
23	.5	4.0	4.4	6.8	11.4	9.0	6.2	4.0	2.4	1.6	1.0	.7
24	.5	4.8	4.8	6.2	9.2	12.2	6.0	4.2	2.0	1.6	1.6	.6
25	.5	6.2	4.8	5.6	7.9	13.6	6.8	4.2	1.9	1.5	2.4	.5
26	.4	7.6	5.2	5.4	7.5	13.4	7.0	4.4	1.8	1.4	3.6	.4
27	.4	8.6	5.4	4.8	7.3	13.4	7.5	4.6	1.7	1.2	4.1	.3
28	.3	9.2	5.6	4.8	7.1	12.9	8.1	4.6	1.6	1.1	3.6	.2
29	.3	8.9	5.8	4.5	6.8	11.8	8.6	4.4	2.0	1.0	3.2	.1
30	.3	7.9	6.6	4.4	.....	9.6	9.0	4.2	2.3	1.0	3.6	.1
31	.3	.....	8.2	4.4	.....	8.8	.....	4.5	.....	1.0	4.0	.....
1909.												
1	.0	1.3	.6	5.8	3.9	15.7	11.5	9.9	8.2	7.6	2.9	1.4
2	— .1	1.0	.5	5.8	3.7	14.3	11.6	12.6	7.1	6.8	2.9	1.3
3	— .1	2.0	.5	5.8	3.6	12.4	10.8	13.8	6.9	6.3	3.2	1.3
4	— .1	3.1	.6	5.8	3.4	10.4	9.4	14.6	9.2	6.2	4.9	1.4
5	— .1	3.0	.7	5.7	3.3	8.8	8.0	14.8	13.0	6.0	5.4	1.5
6	— .1	2.4	1.4	5.8	3.3	8.0	7.0	14.8	14.8	5.9	5.8	1.4
7	— .1	1.9	3.4	6.4	4.0	8.0	7.1	13.8	15.6	5.6	6.2	1.3
8	.0	1.4	6.2	6.8	4.4	8.0	8.0	11.5	15.6	5.2	6.0	1.2
9	.0	1.0	7.5	7.0	5.2	8.8	8.1	9.2	15.4	5.4	5.2	1.0
10	.0	1.0	8.8	7.2	7.9	10.5	7.6	7.4	14.2	7.0	4.4	1.0
11	.0	.8	9.7	6.8	10.6	12.6	7.4	7.0	12.8	9.9	3.8	1.4
12	.0	.6	9.1	5.9	11.6	14.2	7.0	6.8	11.5	11.8	3.2	1.3
13	.0	.6	8.0	5.4	12.4	16.1	7.0	6.8	10.6	11.2	3.0	1.3
14	.2	.5	6.6	5.1	13.6	18.8	7.7	6.9	9.7	9.6	2.9	1.3
15	.4	.5	5.7	5.8	14.8	19.6	7.4	7.1	9.0	8.0	2.8	1.3
16	.8	.6	5.6	6.8	15.4	19.4	6.9	6.8	8.2	8.0	2.6	1.3
17	1.2	.8	5.2	8.8	14.7	19.0	6.3	6.2	8.2	8.8	2.8	1.3
18	.8	1.0	4.9	10.4	14.2	18.2	6.0	5.6	8.4	8.7	3.0	1.1
19	.6	1.0	4.5	11.0	14.6	16.6	6.0	5.0	8.0	8.0	3.0	1.0
20	.2	1.0	4.0	11.6	14.7	14.2	5.6	4.6	7.4	6.8	5.8	.9
21	.2	1.0	3.6	11.8	14.0	11.7	5.1	4.8	7.1	5.8	7.4	.9
22	.2	1.0	3.6	10.5	13.2	10.0	4.7	6.0	8.6	4.9	6.0	.9
23	.1	.9	5.3	9.4	14.8	9.1	4.8	7.1	9.2	4.4	4.6	1.2
24	.1	.8	6.3	7.8	18.8	8.9	5.9	9.6	9.0	4.0	3.6	1.2
25	.0	.8	7.4	6.6	18.7	8.6	6.8	12.4	8.4	3.4	3.0	1.5
26	.0	.8	8.6	5.8	19.0	8.8	7.6	12.9	7.6	3.3	2.4	1.6
27	— .1	.8	8.8	5.1	18.3	8.4	8.0	11.6	7.4	3.5	2.0	2.1
28	— .1	.7	8.2	4.8	17.1	9.3	7.6	9.6	8.2	3.4	1.8	2.4
29	1.0	.7	7.2	4.4	.....	10.5	7.5	7.6	8.3	3.2	1.6	2.6
30	2.4	.7	6.4	4.0	.....	11.0	7.4	6.5	8.0	3.0	1.5	2.2
31	2.0	.....	5.6	4.0	.....	11.0	.....	7.5	.....	3.1	1.4	.....

Daily gage height, in feet, of Tennessee River at Florence, Ala., for the years ending Sept. 30, 1872–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910.												
1	1.8	0.6	0.5	1.8	4.0	6.9	1.9	3.8	6.7	6.0	3.4	1.3
2	1.4	.6	.4	1.6	3.8	7.4	1.8	4.1	5.7	6.0	3.6	1.4
3	1.2	.5	.3	1.3	3.5	8.6	1.6	4.0	5.2	6.4	4.0	1.9
4	.9	.5	.3	1.2	3.4	9.8	1.6	3.8	4.6	7.0	4.2	3.0
5	.8	.4	.3	1.2	3.2	10.6	1.6	3.4	4.3	7.2	4.0	5.0
6	.7	.4	.3	2.5	3.0	10.0	1.5	3.0	4.4	7.8	3.9	5.6
7	.6	.4	.6	5.8	2.9	9.0	1.5	2.7	4.8	8.1	3.6	4.8
8	.5	.4	.8	6.4	2.8	7.8	1.4	2.6	5.2	8.7	3.9	4.2
9	.5	.4	1.6	7.6	3.0	6.8	1.3	2.5	6.1	9.2	4.0	4.2
10	.5	.4	1.9	9.2	3.0	5.9	1.2	3.0	7.2	9.4	4.2	3.8
11	.5	.4	2.6	9.2	3.0	5.5	1.2	4.2	8.0	9.6	4.0	3.6
12	.4	.3	2.8	7.8	3.0	5.2	1.2	5.3	7.3	9.3	4.0	3.0
13	.5	.3	2.6	6.7	2.8	4.7	1.2	5.7	6.6	8.4	3.6	2.8
14	1.2	.3	2.5	5.7	2.7	4.5	1.2	5.7	7.2	7.9	3.4	2.6
15	1.6	.3	2.6	5.0	2.7	4.3	1.2	5.4	7.4	7.4	3.0	2.5
16	2.4	.3	3.1	4.1	3.0	4.2	1.3	4.8	6.8	6.7	2.2	2.4
17	2.8	.3	3.6	3.7	4.8	4.0	3.8	4.4	6.2	6.5	1.9	2.2
18	3.6	.3	3.7	3.6	8.3	3.8	4.9	3.8	6.0	7.8	1.8	2.0
19	3.6	.3	3.7	3.7	9.4	3.7	5.0	3.8	5.9	8.7	1.6	1.6
20	3.0	.3	3.5	4.3	9.8	3.3	5.8	4.2	5.8	7.6	1.4	1.4
21	2.4	.3	3.1	4.6	11.0	3.2	6.1	5.9	5.4	6.6	1.3	1.2
22	2.0	.3	2.7	5.4	11.7	3.0	5.6	7.8	5.4	5.4	1.3	1.0
23	1.6	.3	2.2	6.4	11.3	2.8	5.0	8.8	5.0	4.4	1.6	.9
24	1.4	.6	1.8	7.0	10.6	2.8	4.4	9.1	4.8	4.0	1.8	.8
25	1.2	.6	1.8	7.2	9.4	2.6	4.0	9.8	4.4	4.0	2.0	.8
26	1.0	.5	2.0	7.0	8.4	2.6	3.6	10.5	4.2	3.8	1.8	.7
27	.9	.4	2.4	7.0	7.4	2.4	3.3	10.8	3.9	4.0	1.6	.7
28	.8	.3	2.5	6.2	6.8	2.3	3.2	10.6	3.8	4.2	1.5	.7
29	.8	.4	2.3	5.6	.....	2.2	3.2	9.7	4.0	4.4	1.5	.7
30	.7	.5	2.2	4.9	.....	2.1	3.4	8.7	5.2	3.6	1.4	.7
31	.6	.....	2.0	4.4	.....	2.0	.....	7.7	.....	3.4	1.3	.....
1911.												
1	.7	.2	.4	4.8	4.5	5.4	6.0	5.6	2.0	1.2	2.1	.0
2	.8	.2	.4	8.2	4.6	5.0	5.6	5.5	1.6	1.2	2.7	— .1
3	.8	.2	.4	13.4	5.1	5.0	5.4	5.6	1.5	1.6	2.6	— .2
4	.8	.2	.4	16.8	5.6	4.4	6.9	7.0	1.4	1.6	2.3	— .3
5	.9	.2	.8	17.0	6.6	4.0	12.8	7.8	1.4	1.3	1.9	— .2
6	1.1	.2	2.0	17.0	6.9	4.0	17.0	7.6	1.3	1.2	1.9	.6
7	1.2	.2	4.4	16.6	8.0	4.0	18.5	6.6	1.3	1.1	2.2	1.2
8	1.4	.2	6.2	16.2	9.2	3.8	19.8	5.8	1.4	.8	2.4	1.0
9	1.2	.2	7.6	15.2	13.0	3.6	21.5	5.2	1.3	.7	2.4	.8
10	1.0	.2	7.8	12.4	14.5	4.1	22.0	4.6	1.3	.9	2.2	.8
11	.9	.1	6.6	9.3	15.6	8.0	21.8	4.2	1.2	1.0	2.0	1.0
12	.8	.1	5.7	7.0	15.8	11.0	21.5	4.0	1.1	.8	1.6	1.6
13	.8	.1	4.6	6.0	16.0	11.8	20.8	3.6	1.0	1.0	1.4	.8
14	1.4	.1	3.7	5.4	15.8	10.8	19.4	3.4	1.0	1.2	1.2	.6
15	1.9	.0	2.9	4.7	15.4	8.6	18.2	3.0	1.0	1.6	1.2	.5
16	2.0	.0	2.4	4.2	13.6	6.8	16.3	3.0	.8	1.9	1.1	.4
17	1.7	.0	2.0	4.0	10.6	5.8	14.2	3.0	.7	1.9	1.0	.2
18	1.2	— .1	1.8	3.6	8.6	5.2	13.6	2.7	.4	1.9	1.0	.2
19	.9	— .1	1.6	3.5	7.0	4.7	14.0	2.6	.4	1.9	.9	.1
20	.6	— .1	1.4	3.4	6.4	4.2	16.2	2.5	.4	1.8	1.4	.1
21	.5	— .1	1.0	3.2	6.2	4.0	16.8	2.5	.7	2.4	1.4	.1
22	.4	— .1	1.0	3.0	6.0	3.8	15.8	3.0	.7	3.4	1.2	.2
23	.3	— .1	1.1	3.0	5.4	3.7	14.6	3.5	.7	3.0	1.0	.1
24	.3	— .1	1.1	3.0	5.4	3.7	12.5	4.0	.8	3.0	.8	.1
25	.2	— .1	1.4	2.8	5.0	3.7	10.8	3.6	1.0	2.9	.6	.2
26	.2	— .1	1.4	2.8	5.0	4.0	9.2	3.4	1.2	2.8	.4	.2
27	.2	— .1	1.4	3.0	4.8	4.6	7.7	3.0	1.4	3.4	.3	.2
28	.2	.0	1.4	3.4	5.2	5.2	6.7	2.6	1.5	3.3	.3	.2
29	.2	.1	1.8	4.0	.....	5.8	6.6	2.4	1.9	3.2	.2	.3
30	.2	.5	2.2	4.2	.....	6.0	6.0	2.2	1.4	2.4	.1	.3
31	.2	.....	3.0	4.2	.....	6.2	.....	2.0	.....	2.0	.0	.....

Daily gage height, in feet, of Tennessee River at Florence, Ala., for the years ending Sept. 30, 1872–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1912.												
1	0.4	0.8	3.0	17.0	10.3	13.6	18.4	17.4	7.2	5.2	3.0	1.8
2	.5	.4	2.8	15.4	11.1	12.7	18.9	16.5	7.3	5.4	2.9	1.7
3	.4	.3	2.5	13.6	11.0	11.6	19.6	16.2	6.4	4.8	2.6	1.4
4	.2	.3	2.2	12.5	10.4	10.0	19.4	16.5	5.7	4.4	2.6	1.3
5	.2	.2	2.0	11.0	9.3	8.6	19.0	15.9	5.4	4.0	3.1	1.3
6	— .1	.2	1.9	9.2	7.8	8.4	18.6	14.6	4.9	4.2	3.3	1.2
7	— .1	.2	1.8	7.9	6.4	8.2	17.5	13.4	4.4	5.8	3.2	1.2
8	— .2	.4	1.5	7.1	5.6	9.0	17.5	12.2	4.0	6.8	3.0	1.2
9	— .2	.5	1.4	7.6	4.9	10.2	17.4	10.6	4.0	7.7	3.6	1.0
10	.1	.8	1.3	8.1	4.4	10.8	16.2	10.0	3.8	7.4	4.1	1.0
11	.3	1.0	1.6	7.6	4.0	10.6	13.1	9.4	3.4	6.4	4.0	.8
12	.5	1.6	3.4	7.0	3.8	10.8	10.2	9.0	3.2	6.2	3.4	.7
13	.5	2.2	5.5	6.6	3.6	10.8	8.6	8.6	3.0	6.2	3.0	.5
14	.4	2.9	7.4	6.1	3.5	11.2	8.0	7.6	2.8	6.1	2.8	.4
15	.5	3.0	8.7	5.6	3.8	13.7	7.6	7.0	2.6	6.0	2.6	.4
16	1.0	3.5	9.2	5.1	4.0	15.6	8.0	6.4	2.4	5.9	2.4	.4
17	1.6	3.4	8.6	4.8	4.4	16.3	9.6	5.9	2.2	5.2	2.2	.4
18	2.4	3.2	8.0	4.4	5.0	16.2	11.0	5.6	2.0	4.4	2.2	.4
19	2.8	3.0	7.6	4.8	5.1	16.2	10.8	5.1	2.6	4.6	2.2	.5
20	3.1	2.9	6.8	5.6	5.3	16.0	10.0	5.0	2.8	4.4	2.2	.4
21	3.5	3.0	5.8	4.9	6.7	15.4	9.5	5.0	2.9	4.2	2.2	.5
22	3.8	3.1	6.2	4.4	9.3	14.0	9.5	5.2	2.8	3.8	2.4	.8
23	4.1	3.0	8.1	4.3	9.8	11.8	9.6	5.1	2.5	3.7	2.4	2.8
24	4.2	2.9	8.6	4.4	10.8	12.4	10.3	4.8	2.4	3.7	2.6	4.0
25	3.6	2.8	8.8	4.5	12.0	13.2	11.0	4.2	2.2	3.7	2.7	4.0
26	2.6	2.7	9.9	4.4	14.1	12.6	11.5	4.0	2.4	3.6	2.8	3.3
27	2.1	2.5	13.6	4.2	15.5	12.6	12.4	3.8	2.6	3.3	3.0	4.7
28	1.6	2.5	15.0	4.6	15.0	13.2	13.9	3.5	3.2	3.0	3.2	3.0
29	1.2	2.6	15.4	6.0	13.8	15.2	15.8	4.2	4.0	3.0	2.9	3.0
30	1.0	3.0	15.4	8.0	.....	17.6	17.4	7.2	4.6	3.0	2.4	3.
31	.9	.....	18.3	9.0	.....	18.0	.....	7.4	.....	3.2	1.9	.....
1913.												
1	2.8	.3	.1	4.6	16.8	14.8	17.2	3.6	7.3	1.5	.6	.3
2	2.6	.3	.2	5.2	15.8	15.2	17.6	3.7	7.9	1.3	.9	.2
3	2.2	.3	.2	6.1	14.2	15.0	17.9	3.6	7.4	1.2	1.0	.2
4	1.9	.3	.6	8.0	12.0	15.2	17.4	3.6	6.6	1.2	1.0	.2
5	1.5	.2	1.8	8.0	10.3	13.8	14.6	3.4	6.0	1.2	1.0	.2
6	1.2	.2	3.6	8.0	9.2	11.5	10.6	3.2	5.6	1.1	.8	.0
7	1.0	.2	4.5	10.0	8.6	9.1	8.8	3.2	5.8	1.1	.8	.0
8	.8	.3	6.2	11.2	8.2	7.7	7.6	2.9	6.0	1.1	.7	.0
9	.7	.3	7.2	12.6	7.8	6.6	6.8	2.8	5.6	1.1	.7	.0
10	.6	.4	7.0	15.0	7.2	5.9	6.2	2.8	5.2	1.1	.7	.0
11	.5	.4	6.3	14.4	7.2	5.8	6.0	2.6	4.8	1.4	.7	.0
12	.4	.4	5.0	14.0	8.3	5.7	5.9	2.6	4.8	1.5	.7	— .1
13	.3	.8	4.2	13.6	10.9	6.4	5.4	2.8	5.5	1.4	.7	— .2
14	.3	1.3	3.5	12.8	11.0	13.0	5.2	2.8	5.4	1.4	.6	— .3
15	.3	1.5	3.0	11.5	11.4	15.5	5.2	2.6	4.7	1.4	.8	— .3
16	.3	1.2	2.6	10.6	11.4	16.5	5.5	2.6	4.1	1.2	1.6	— .3
17	.3	1.0	2.1	9.6	10.2	16.2	5.8	3.0	3.6	1.2	1.3	— .3
18	.3	.9	2.0	9.3	8.9	16.8	5.8	2.8	3.0	1.2	1.2	— .3
19	.6	.7	2.0	9.1	7.8	17.2	6.2	2.7	2.6	1.2	1.0	— .3
20	.8	.6	2.0	8.6	6.8	17.5	6.2	2.8	2.4	.8	.8	— .1
21	1.0	.5	2.0	8.8	6.2	18.5	6.2	2.9	2.2	.7	.7	— .1
22	1.0	.5	1.9	9.5	5.8	17.4	5.8	3.2	2.0	.6	.6	— .1
23	.9	.5	1.8	9.6	5.8	15.5	5.4	4.2	2.2	.6	.6	— .1
24	1.0	.4	2.3	10.3	5.6	13.4	5.0	5.4	2.2	.6	.7	— .1
25	1.0	.3	2.8	13.0	5.2	11.6	4.6	6.4	1.8	.6	.7	.0
26	.9	.3	3.0	13.8	5.0	10.6	4.2	7.5	2.0	.4	.6	.3
27	.8	.3	2.8	14.8	9.1	14.0	4.0	9.2	1.9	.4	.6	.4
28	.6	.2	2.8	16.8	13.8	14.2	4.0	10.2	1.8	.4	.6	.5
29	.6	.2	2.8	17.0	.....	15.8	3.8	10.2	1.6	.4	.5	.8
30	.5	.2	3.0	16.8	.....	16.0	3.8	9.0	1.5	.6	.4	2.0
31	.4	.....	4.0	16.9	.....	16.6	.....	7.8	.....	.6	.4	.....

Daily discharge, in second-feet, of Tennessee River at Florence, Ala., for the years ending Sept. 30, 1895–1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1895.												
1	11,000	10,500	11,500	48,500	75,400	47,600	69,900	48,500	47,600	17,300	47,600	21,300
2	11,000	10,500	11,500	39,400	68,800	52,300	64,500	47,600	42,100	22,000	36,000	22,700
3	10,500	11,000	11,500	32,600	64,500	77,700	59,300	45,700	37,700	25,600	28,600	22,700
4	10,500	11,500	11,500	31,000	63,500	89,400	56,300	43,000	35,100	28,600	24,100	21,300
5	9,990	12,000	11,500	24,800	62,400	115,000	52,300	41,200	32,600	30,200	22,700	21,300
6	9,990	12,600	11,500	23,400	61,400	132,000	48,500	39,400	29,400	29,400	21,300	20,000
7	11,000	12,600	11,000	24,800	62,400	139,000	49,400	41,200	28,600	34,300	20,600	19,300
8	11,500	12,000	11,500	46,600	67,700	136,000	60,400	46,600	27,100	40,300	20,000	19,300
9	11,500	12,000	11,500	58,300	64,500	117,000	77,700	49,400	27,100	47,600	18,600	19,300
10	11,500	12,000	12,000	78,800	58,300	89,400	91,800	54,300	29,400	49,400	19,300	20,000
11	11,500	11,500	13,100	127,000	53,300	77,700	91,800	60,400	30,200	49,400	20,000	22,000
12	11,000	11,500	14,300	160,000	46,600	69,900	91,800	62,400	28,600	43,900	20,000	18,600
13	10,500	11,500	16,700	176,000	41,200	69,900	94,200	64,500	26,300	38,500	18,600	17,300
14	10,500	11,000	26,300	189,000	37,700	87,000	89,400	62,400	24,100	34,300	18,600	16,100
15	10,500	11,000	52,300	197,000	35,100	99,200	76,600	61,400	22,700	31,800	18,600	16,100
16	10,500	11,000	68,800	206,000	34,300	102,000	66,600	60,400	22,000	31,800	18,600	16,100
17	11,500	11,500	68,800	213,000	33,400	102,000	61,400	60,400	21,300	27,100	18,600	18,000
18	13,100	11,000	60,400	181,000	34,300	96,700	58,300	56,300	22,000	26,300	18,000	19,300
19	13,100	11,000	49,400	134,000	35,100	89,400	56,300	52,300	22,700	25,600	18,000	17,300
20	12,600	11,000	39,400	109,000	35,100	123,000	68,800	46,600	22,700	24,800	20,000	16,100
21	11,500	11,000	31,000	107,000	37,700	157,000	80,000	44,800	22,700	23,400	28,600	16,100
22	11,000	11,000	27,900	117,000	40,300	160,000	78,800	44,800	21,300	22,700	39,400	15,500
23	11,000	11,000	23,400	113,000	43,000	161,000	71,000	44,800	20,000	21,300	42,100	14,300
24	11,000	11,000	22,000	104,000	44,800	172,000	61,400	43,000	19,300	19,300	38,500	14,300
25	11,000	11,000	20,000	97,900	47,600	173,000	55,300	37,700	19,300	18,600	35,100	14,300
26	11,000	11,500	18,600	99,200	48,500	172,000	52,300	41,200	19,300	18,000	31,800	13,700
27	10,500	11,500	18,600	103,000	50,400	155,000	53,300	48,500	18,600	17,300	29,400	13,100
28	11,000	11,500	22,700	97,900	48,500	128,000	53,300	60,400	18,600	17,300	29,400	12,600
29	11,000	11,500	29,400	90,600	.....	102,000	54,300	62,400	18,000	19,300	27,100	12,000
30	10,500	11,500	39,400	84,600	.....	85,800	52,300	58,300	17,300	50,400	24,100	11,500
31	10,500	.....	50,400	80,000	.....	75,400	.....	53,300	.....	59,300	22,000	.....
1896.												
1	11,500	11,000	12,000	40,300	69,900	35,100	80,000	41,200	19,300	16,700	46,600	20,600
2	11,500	11,000	13,100	37,700	134,000	33,400	134,000	38,500	18,600	16,700	38,500	18,000
3	11,500	11,000	13,100	36,800	148,000	33,400	178,000	34,300	18,000	18,000	34,300	16,100
4	11,500	11,000	13,700	36,000	155,000	31,800	203,000	32,600	18,000	18,600	31,000	14,300
5	11,000	11,500	13,700	35,100	145,000	30,200	210,000	32,600	22,000	19,300	28,600	14,300
6	11,000	11,500	13,100	35,100	135,000	31,000	216,000	31,000	29,400	20,600	27,900	13,700
7	11,000	12,000	13,100	33,400	129,000	33,400	230,000	31,000	31,000	21,300	25,600	13,100
8	11,000	12,000	13,100	32,600	119,000	36,800	243,000	31,800	29,400	22,000	26,300	12,000
9	11,000	12,000	13,100	33,400	132,000	33,400	254,000	31,000	28,600	23,400	27,100	12,000
10	11,000	12,600	13,100	30,200	139,000	31,800	235,000	29,400	26,300	28,600	25,600	12,000
11	11,000	12,600	13,100	29,400	132,000	31,000	167,000	27,900	26,300	47,600	22,000	15,500
12	11,000	12,600	13,100	27,900	121,000	31,000	96,700	26,300	28,600	94,200	20,600	14,300
13	10,500	12,000	12,600	25,600	119,000	30,200	68,800	23,400	38,500	123,000	19,300	14,900
14	10,500	12,000	12,600	24,100	127,000	30,200	56,300	22,000	38,500	125,000	18,000	14,300
15	11,000	12,600	13,700	23,400	128,000	31,800	48,500	20,600	32,600	108,000	18,000	13,100
16	11,000	13,700	13,700	22,700	124,000	47,600	44,800	19,300	28,600	87,000	18,000	13,100
17	11,000	14,300	13,700	21,300	121,000	74,300	41,200	18,600	24,100	80,000	18,000	13,100
18	11,000	14,300	14,300	20,600	116,000	71,000	39,400	18,000	22,000	78,800	18,000	13,100
19	11,000	14,300	13,700	20,600	103,000	88,200	36,000	17,300	20,000	81,200	17,300	12,000
20	11,000	13,100	14,900	20,000	88,200	127,000	34,300	17,300	19,300	88,200	16,700	12,000
21	11,000	13,100	13,700	19,300	72,100	141,000	32,600	17,300	18,600	80,000	16,100	11,500
22	11,000	13,100	14,300	20,000	61,400	141,000	31,800	16,700	18,000	64,500	15,500	12,000
23	11,000	13,100	14,300	22,000	53,300	127,000	31,800	16,700	19,300	50,400	14,900	11,500
24	11,000	12,000	14,300	26,300	46,600	105,000	31,000	16,700	21,300	43,900	14,900	11,500
25	11,000	12,000	17,300	30,200	43,000	90,600	29,400	17,300	20,600	43,900	14,300	11,000
26	11,000	12,000	39,400	39,400	38,500	78,800	29,400	19,300	20,600	54,300	14,300	11,000
27	10,500	12,000	71,000	49,400	36,800	72,100	34,300	22,000	19,300	52,300	14,300	11,000
28	10,500	12,600	62,400	55,300	35,100	64,500	41,200	24,100	21,300	50,400	14,900	12,000
29	10,500	12,600	45,700	55,300	34,300	59,300	39,400	24,800	19,300	66,600	14,900	13,100
30	10,500	12,600	42,100	49,400	.....	56,300	39,400	23,400	17,300	69,900	15,500	14,300
31	11,500	.....	41,200	43,900	.....	63,500	.....	20,600	.....	58,300	16,700	.....

Daily discharge, in second-feet, of Tennessee River at Florence, Ala., for the years ending Sept. 30, 1895–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1897.												
1	13,100	11,500	53,300	18,000	29,400	203,000	89,400	41,200	26,300	33,400	35,100	14,900
2	13,100	11,500	65,600	17,300	37,700	208,000	109,000	40,300	25,600	31,000	30,200	14,900
3	13,100	11,500	82,300	16,700	41,200	181,000	107,000	39,400	25,600	27,900	26,300	13,700
4	14,300	12,000	90,600	18,000	59,300	120,000	157,000	40,300	26,300	25,600	23,400	13,100
5	14,900	12,000	89,400	20,600	78,800	91,800	195,000	47,600	25,600	24,100	22,700	13,100
6	15,500	12,600	72,100	21,300	84,600	93,200	210,000	58,300	25,600	22,700	22,000	13,100
7	16,100	12,600	56,300	21,300	89,400	145,000	215,000	59,300	25,600	20,600	22,700	12,600
8	16,100	12,000	45,700	21,300	88,200	161,000	210,000	55,300	24,800	21,300	21,300	12,000
9	14,900	12,000	37,700	21,300	93,000	168,000	220,000	49,400	24,800	22,000	22,000	11,500
10	14,300	14,300	34,300	21,300	99,200	187,000	225,000	46,600	25,600	21,300	23,400	11,500
11	14,900	20,000	31,000	20,600	111,000	208,000	218,000	45,700	25,600	22,700	24,100	11,500
12	13,700	26,300	29,400	20,000	115,000	254,000	195,000	47,600	24,100	25,600	29,400	11,500
13	12,000	37,700	28,600	20,000	107,000	275,000	157,000	67,700	26,300	24,100	30,200	11,500
14	11,000	27,900	28,600	20,000	89,400	299,000	124,000	83,500	31,800	24,100	27,900	11,000
15	11,000	36,000	34,300	23,400	81,200	308,000	103,000	119,000	31,000	25,600	24,100	11,000
16	11,000	42,100	38,500	27,100	77,700	334,000	91,800	146,000	27,100	25,600	22,700	10,500
17	11,000	40,300	36,000	33,400	77,700	352,000	83,500	152,000	25,600	24,100	20,000	10,500
18	11,000	35,100	32,600	52,300	75,400	375,000	78,800	151,000	22,700	22,700	18,600	9,990
19	12,000	30,200	29,400	60,400	69,900	481,000	76,600	132,000	21,300	27,100	16,700	9,990
20	12,000	27,900	27,100	61,400	63,500	460,000	73,200	102,000	20,600	37,700	17,300	9,990
21	11,500	24,100	26,300	58,300	58,300	420,000	67,700	72,100	20,000	42,100	18,600	9,990
22	12,000	22,000	28,600	62,400	58,300	392,000	63,500	58,300	19,300	38,500	18,600	9,500
23	12,000	19,300	29,400	62,400	61,400	355,000	57,300	48,500	20,000	38,500	19,300	9,500
24	12,000	18,000	27,900	59,300	88,200	334,000	53,300	43,900	24,800	37,700	18,600	9,500
25	12,000	16,700	26,300	56,300	128,000	312,000	49,400	39,400	26,300	36,000	17,300	9,500
26	12,000	16,100	24,800	52,300	158,000	290,000	45,700	36,800	27,900	36,800	18,600	9,500
27	12,000	15,500	23,400	48,500	175,000	268,000	43,900	35,100	28,600	45,700	19,300	9,500
28	11,500	20,600	20,600	43,000	193,000	240,000	42,100	33,400	32,600	65,600	18,600	9,500
29	11,500	52,300	20,600	38,500	.....	162,000	40,300	30,200	32,600	72,100	17,300	9,500
30	11,500	52,300	19,300	34,300	.....	117,000	41,200	27,900	31,800	58,300	16,100	9,500
31	11,500	.....	18,600	31,000	.....	94,200	.....	27,100	.....	43,900	16,100	.....
1898.												
1	9,500	11,500	9,990	31,000	102,000	25,600	61,400	50,400	27,100	16,100	36,000	22,700
2	9,500	11,000	11,000	27,900	78,800	25,600	95,400	51,400	24,100	16,100	47,600	22,000
3	9,500	11,000	12,000	27,100	63,500	24,100	119,000	49,400	21,300	16,100	52,300	20,600
4	9,500	11,000	13,100	24,800	55,300	23,400	124,000	44,800	20,000	14,900	50,400	20,600
5	9,500	10,500	20,000	22,700	47,600	22,700	119,000	40,300	20,000	14,900	44,800	45,700
6	9,500	10,500	21,300	22,700	43,900	21,300	117,000	37,700	18,600	14,900	36,000	104,000
7	9,020	11,000	22,000	22,000	40,300	21,300	108,000	34,300	17,300	14,300	33,400	131,000
8	9,020	11,000	25,600	20,600	36,800	21,300	102,000	33,400	16,700	14,300	62,400	139,000
9	9,020	11,000	24,800	20,000	34,300	22,700	96,700	31,800	16,100	14,300	84,600	123,000
10	9,020	11,500	23,400	19,300	31,800	22,700	85,800	28,600	14,900	14,300	89,400	88,200
11	8,550	12,000	22,000	20,600	31,800	22,000	77,700	27,900	14,300	14,300	84,600	66,600
12	9,020	11,500	19,300	24,100	30,200	21,300	74,300	27,900	13,700	15,500	74,300	55,300
13	9,020	11,500	19,300	33,400	28,600	22,700	74,300	27,100	13,700	16,700	66,600	46,600
14	9,020	11,000	16,700	43,900	28,600	22,700	76,600	28,600	13,100	18,600	77,700	39,400
15	9,020	11,000	16,700	119,000	27,100	24,800	74,300	28,600	13,700	19,300	91,800	35,100
16	9,020	11,000	16,100	151,000	26,300	42,100	72,100	27,100	14,300	18,600	102,000	31,000
17	9,500	11,500	16,100	136,000	25,600	43,900	69,900	25,600	14,300	18,000	96,700	27,900
18	9,990	11,500	17,300	107,000	24,100	40,300	68,800	24,100	13,700	18,000	77,700	24,800
19	11,000	11,000	20,000	112,000	24,100	49,400	76,600	23,400	13,700	20,000	61,400	24,100
20	11,000	11,000	25,600	151,000	24,100	46,600	97,900	23,400	14,300	24,100	48,500	23,400
21	11,500	10,500	48,500	129,000	23,400	44,800	97,900	22,700	14,300	28,600	41,200	22,000
22	11,500	9,990	62,400	125,000	22,700	45,700	88,200	22,700	20,000	25,600	36,000	22,000
23	11,500	9,990	71,000	141,000	22,700	43,900	81,200	22,000	25,600	22,700	36,000	21,300
24	12,000	9,990	77,700	139,000	22,000	38,500	72,100	21,300	29,400	21,300	32,600	20,600
25	12,600	9,990	88,200	132,000	22,000	38,500	65,600	21,300	36,800	20,000	31,000	24,100
26	12,000	9,990	77,700	145,000	22,700	36,000	65,600	20,000	31,800	20,000	29,400	27,900
27	12,000	9,990	63,500	157,000	24,100	32,600	61,400	20,000	27,900	21,300	26,300	29,400
28	12,000	9,990	54,300	157,000	25,600	32,600	59,300	20,000	24,100	26,300	24,100	37,700
29	12,000	9,990	44,800	157,000	.....	45,700	56,300	23,400	20,600	27,100	22,700	37,700
30	12,000	9,990	39,400	151,000	.....	55,300	56,300	28,600	17,300	33,400	21,300	32,600
31	11,500	.....	34,300	134,000	.....	57,300	.....	30,200	.....	36,800	22,000	.....

Daily discharge, in second-feet, of Tennessee River at Florence, Ala., for the years ending Sept. 30, 1895–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1899												
1	26,300	31,800	33,400	33,400	46,600	173,000	164,000	64,500	25,600	20,600	26,300	11,500
2	23,400	29,400	31,800	32,600	48,500	165,000	165,000	58,300	25,600	20,600	26,300	12,000
3	21,300	26,300	31,000	31,000	50,400	164,000	167,000	54,300	25,600	19,300	27,900	12,000
4	20,000	25,600	31,000	30,200	69,900	154,000	162,000	50,400	24,800	19,300	24,800	13,100
5	19,300	24,800	32,600	33,400	142,000	136,000	143,000	46,600	24,800	19,300	22,000	14,300
6	19,300	23,400	33,400	66,600	189,000	132,000	120,000	44,800	25,600	18,000	19,300	15,500
7	38,500	23,400	33,400	117,000	220,000	142,000	113,000	42,100	27,100	17,300	18,000	16,700
8	90,600	22,700	36,000	154,000	228,000	157,000	131,000	44,800	26,300	16,700	16,700	16,100
9	99,200	22,700	38,500	161,000	233,000	168,000	145,000	53,300	24,800	15,500	16,700	15,500
10	82,300	23,400	38,500	154,000	240,000	178,000	151,000	60,400	24,800	15,500	16,100	14,300
11	64,500	24,800	36,800	157,000	250,000	179,000	151,000	64,500	22,700	16,700	15,500	13,700
12	52,300	25,600	34,300	145,000	257,000	158,000	139,000	69,900	21,300	16,700	15,500	13,100
13	46,600	26,300	32,600	117,000	257,000	128,000	123,000	73,200	22,000	16,100	15,500	12,600
14	41,200	27,100	31,000	94,200	264,000	127,000	107,000	69,900	22,700	15,500	15,500	12,600
15	36,000	30,200	29,400	80,000	238,000	213,000	94,200	64,500	27,100	15,500	14,300	12,600
16	34,300	29,400	26,300	71,000	165,000	275,000	83,500	61,400	31,000	14,900	14,300	12,600
17	32,600	27,900	24,800	64,500	107,000	290,000	75,400	61,400	36,000	14,900	14,300	12,600
18	30,200	26,300	24,800	62,400	89,400	304,000	71,000	59,300	36,000	14,300	15,500	13,100
19	29,400	26,300	23,400	60,400	84,600	342,000	66,600	57,300	36,000	13,700	16,100	13,100
20	30,200	26,300	26,300	58,300	88,200	352,000	62,400	50,400	37,700	13,700	15,500	12,000
21	36,000	27,900	34,300	54,300	96,700	346,000	58,300	44,800	33,400	13,700	15,500	12,000
22	45,700	31,000	42,100	52,300	99,200	340,000	56,300	43,000	29,400	14,900	14,900	12,000
23	57,300	39,400	46,600	41,200	96,700	332,000	59,300	38,500	26,300	17,300	14,300	11,500
24	57,300	43,900	43,000	44,800	89,400	325,000	64,500	36,000	24,800	18,600	13,700	11,500
25	50,400	47,600	39,400	60,400	84,600	321,000	87,000	34,300	22,000	20,000	13,100	11,000
26	46,600	46,600	37,700	65,600	104,000	316,000	99,200	31,800	20,600	20,600	13,100	11,000
27	45,700	44,800	36,000	63,500	157,000	308,000	94,200	31,000	19,300	24,100	12,600	11,000
28	45,700	41,200	36,000	63,500	200,000	297,000	90,600	29,400	18,600	24,100	12,000	12,000
29	43,000	37,700	36,000	56,300	.....	261,000	82,300	28,600	18,600	22,000	12,000	12,000
30	37,700	32,400	35,100	50,400	.....	208,000	72,100	26,300	18,000	22,000	12,000	11,500
31	34,300	.....	34,300	46,600	.....	167,000	.....	26,300	.....	24,100	11,500	.....
1900.												
1	11,500	10,500	14,900	35,100	29,400	80,000	71,000	62,400	24,800	94,200	52,300	17,300
2	11,000	10,500	14,300	31,000	27,900	83,500	64,500	59,300	26,300	89,400	47,600	16,700
3	11,000	10,500	13,700	27,100	26,300	73,200	58,300	52,300	29,400	83,500	41,200	16,700
4	11,000	10,500	13,700	23,400	24,100	77,700	56,300	47,600	32,600	81,200	36,000	15,500
5	11,000	10,500	12,600	20,000	26,300	84,600	56,300	41,200	36,000	68,800	31,000	14,300
6	11,000	11,000	13,100	17,300	29,400	91,800	56,300	39,400	46,600	56,300	27,100	14,300
7	11,000	11,000	13,100	16,700	31,000	104,000	60,400	37,700	52,300	48,500	24,100	14,300
8	11,000	11,000	13,100	16,700	31,000	115,000	62,400	36,000	56,300	42,100	22,000	14,300
9	11,000	11,500	12,600	16,700	41,200	117,000	62,400	36,000	57,300	39,400	19,300	13,700
10	10,500	11,500	13,100	18,000	54,300	123,000	58,300	34,300	60,400	36,000	18,000	13,100
11	11,000	11,500	25,600	24,100	58,300	129,000	94,200	32,600	55,300	29,400	16,700	12,600
12	11,000	12,000	38,500	47,600	68,800	131,000	117,000	31,000	47,600	31,000	16,700	12,000
13	11,500	12,000	46,600	57,300	89,400	127,000	117,000	31,000	44,800	31,000	15,500	11,500
14	12,000	12,000	58,300	71,000	123,000	115,000	109,000	28,600	41,200	29,400	14,900	11,500
15	12,600	12,000	64,500	76,600	142,000	96,700	89,400	27,900	49,400	27,900	14,300	11,500
16	13,100	11,500	62,400	74,300	160,000	82,300	77,700	26,300	47,600	24,800	14,300	12,000
17	13,100	11,500	56,300	67,700	168,000	73,200	120,000	25,600	50,400	24,100	14,300	13,100
18	13,100	11,500	48,500	62,400	165,000	65,600	223,000	24,800	52,300	23,400	14,300	14,300
19	12,000	11,000	46,600	61,400	154,000	62,400	240,000	24,100	52,300	24,100	16,100	18,600
20	11,500	11,000	53,300	72,100	112,000	75,400	243,000	23,400	55,300	24,100	15,500	22,000
21	11,500	11,000	46,600	85,800	85,800	90,600	220,000	23,400	62,400	23,400	14,900	24,800
22	11,500	11,500	43,900	94,200	68,800	94,200	175,000	22,700	65,600	22,000	14,900	25,600
23	11,500	11,500	44,800	87,000	68,800	99,200	155,000	24,100	73,200	20,600	15,500	24,800
24	11,000	11,000	58,300	77,700	71,000	117,000	143,000	27,900	91,800	20,600	15,500	21,300
25	11,000	12,000	61,400	66,600	73,200	128,000	125,000	26,300	94,200	20,000	14,300	19,300
26	11,000	12,000	65,600	58,300	73,200	128,000	109,000	24,100	96,700	20,000	14,300	16,700
27	11,000	13,100	62,400	50,400	62,400	115,000	99,200	22,000	125,000	27,900	13,700	14,900
28	11,000	14,300	54,300	43,900	71,000	99,200	84,600	22,000	142,000	31,000	14,300	14,900
29	11,000	15,500	49,400	39,400	.....	89,400	73,200	21,300	131,000	30,200	15,500	14,900
30	10,500	15,500	44,800	36,000	.....	82,300	66,600	23,400	109,000	31,800	18,000	15,500
31	10,500	.....	41,200	31,800	.....	78,800	.....	24,100	.....	46,600	19,300	.....

Daily discharge, in second-feet, of Tennessee River at Florence, Ala., for the years ending Sept. 30, 1895–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1901.												
1	14,900	25,600	107,000	36,000	53,300	26,300	148,000	105,000	103,000	46,600	16,100	71,000
2	14,300	22,000	91,800	37,700	54,300	26,300	145,000	91,800	95,400	41,200	16,100	68,800
3	14,300	19,300	67,700	39,400	65,600	27,900	145,000	78,800	88,200	36,800	16,100	67,700
4	14,300	18,000	48,500	41,200	104,000	27,900	151,000	67,700	78,800	36,000	16,100	65,600
5	13,100	16,700	41,200	40,300	113,000	27,900	165,000	59,300	67,700	36,800	16,100	64,500
6	12,600	16,700	39,400	39,400	109,000	27,900	176,000	54,300	59,300	36,800	17,300	65,600
7	12,600	18,600	39,400	36,000	105,000	31,000	181,000	49,400	52,300	35,100	18,600	61,400
8	15,500	20,000	43,900	34,300	97,900	32,600	178,000	43,900	47,600	33,400	16,100	51,400
9	15,500	22,000	54,300	31,000	89,400	36,000	162,000	48,500	48,500	31,800	16,100	44,800
10	13,700	23,400	58,300	31,000	87,000	77,700	134,000	41,200	50,400	30,200	43,900	40,300
11	15,500	23,400	56,300	46,600	77,700	125,000	102,000	39,400	49,400	30,200	67,700	36,800
12	26,300	20,600	48,500	116,000	69,900	131,000	81,200	39,400	49,400	33,400	60,400	33,400
13	37,700	19,300	43,000	160,000	64,500	125,000	69,900	37,700	55,300	36,800	50,400	33,400
14	31,800	18,000	36,800	178,000	58,300	112,000	64,500	36,800	49,400	33,400	40,300	31,000
15	29,400	16,700	32,600	189,000	56,300	91,800	62,400	36,000	43,900	29,400	39,400	38,500
16	24,800	16,100	31,000	193,000	56,300	74,300	68,800	35,100	41,200	26,300	69,900	55,300
17	20,000	15,500	27,900	193,000	52,300	62,400	72,100	33,400	40,300	24,100	149,000	63,500
18	18,000	14,900	26,300	181,000	48,500	53,300	78,800	32,600	45,700	23,400	178,000	80,000
19	15,500	14,300	24,800	145,000	44,800	48,500	104,000	31,800	55,300	22,700	205,000	76,600
20	14,900	14,900	23,400	95,400	39,400	44,800	149,000	31,800	60,400	22,700	223,000	78,800
21	14,300	18,000	24,800	71,000	39,400	44,800	178,000	40,300	59,300	22,700	231,000	76,600
22	14,900	19,300	29,400	58,300	36,800	44,800	189,000	63,500	55,300	22,000	238,000	67,700
23	15,500	18,000	29,400	53,300	34,300	43,000	195,000	100,000	51,400	22,700	226,000	58,300
24	16,700	17,300	32,600	52,300	32,600	39,400	192,000	135,000	50,400	22,700	211,000	51,400
25	16,700	19,300	36,000	63,500	32,600	40,300	190,000	155,000	59,300	22,000	192,000	43,900
26	15,500	33,400	38,500	62,400	30,200	44,800	184,000	170,000	57,300	22,000	170,000	38,500
27	13,100	48,500	39,400	62,400	29,400	60,400	172,000	185,000	50,400	20,000	145,000	35,100
28	35,100	65,600	39,400	58,300	27,900	87,000	151,000	192,000	56,300	18,600	116,000	33,400
29	43,000	99,200	36,000	54,300	.....	123,000	131,000	192,000	59,300	17,300	93,000	35,100
30	38,500	109,000	34,300	52,300	.....	139,000	117,000	167,000	53,300	16,700	83,500	36,800
31	32,600	.....	32,600	52,300	.....	152,000	.....	132,000	.....	16,100	76,600	.....
1902.												
1	33,400	16,700	15,500	208,000	184,000	148,000	216,000	36,800	25,600	21,300	17,300	12,000
2	31,800	16,700	15,500	220,000	192,000	173,000	210,000	36,800	26,300	27,100	16,100	12,600
3	30,200	16,100	16,100	233,000	198,000	184,000	203,000	41,200	25,600	45,700	16,100	12,600
4	30,200	16,100	16,100	236,000	197,000	200,000	216,000	62,400	23,400	59,300	14,900	13,700
5	30,200	16,100	16,100	268,000	193,000	225,000	210,000	66,600	21,300	53,300	14,300	13,100
6	30,200	16,100	16,100	272,000	185,000	247,000	167,000	60,400	20,600	45,700	14,300	11,500
7	28,600	16,100	16,100	263,000	172,000	264,000	125,000	49,400	20,600	40,300	14,300	11,500
8	28,600	16,100	16,100	213,000	155,000	273,000	108,000	42,100	20,600	33,400	14,900	11,500
9	27,900	16,100	16,700	136,900	123,000	273,000	102,000	38,500	20,000	28,600	14,900	11,500
10	27,100	16,100	17,300	90,600	89,400	261,900	94,200	36,800	18,600	24,100	14,900	11,500
11	24,800	16,100	18,600	82,300	73,200	236,000	87,000	36,800	18,600	22,700	13,700	11,500
12	24,100	16,100	19,300	60,400	63,500	189,000	80,000	33,400	18,600	21,300	13,700	11,500
13	22,700	16,100	22,000	53,300	58,300	154,000	75,400	31,800	18,600	20,000	13,700	11,500
14	22,700	16,100	27,900	49,400	54,300	120,000	68,800	30,200	18,600	19,300	14,900	11,500
15	22,700	16,100	77,700	46,600	52,300	102,000	64,500	28,600	18,600	18,600	14,900	11,500
16	24,100	15,500	136,000	43,000	52,300	93,000	62,400	27,900	18,600	20,000	14,900	12,000
17	24,800	15,500	175,000	40,300	51,400	99,200	58,300	28,600	18,000	24,100	14,300	12,600
18	24,800	15,500	187,000	38,500	48,500	103,000	56,300	28,600	17,300	24,100	13,700	12,600
19	24,800	15,500	190,000	38,500	46,600	112,000	54,300	27,900	17,300	22,000	12,600	12,600
20	24,100	15,500	190,000	43,000	44,800	115,000	51,400	27,900	17,300	20,000	12,000	12,600
21	22,700	15,500	176,000	45,700	43,900	111,000	50,400	27,100	20,000	18,600	12,000	12,000
22	22,000	14,900	131,000	55,300	44,800	99,200	48,500	27,100	22,700	16,700	12,000	11,500
23	21,300	14,900	83,500	58,300	46,600	96,700	47,600	25,600	24,100	16,100	12,000	11,500
24	20,000	14,900	66,600	60,400	49,400	82,300	46,600	25,600	24,100	15,500	12,000	11,000
25	19,300	15,500	54,300	58,300	56,300	71,000	44,800	26,300	22,700	15,500	12,000	12,000
26	19,300	15,500	55,300	59,300	68,800	68,800	43,000	26,300	21,300	15,500	12,000	14,300
27	18,600	15,500	61,400	75,400	76,600	67,700	41,200	26,300	21,300	14,900	12,000	15,500
28	18,000	15,500	82,300	96,700	102,000	84,600	41,200	25,600	20,000	14,900	11,500	16,100
29	18,000	15,500	125,000	97,900	.....	254,000	38,500	24,800	21,300	14,300	12,000	19,300
30	18,000	15,500	172,000	128,000	.....	243,000	37,700	22,700	21,300	14,900	12,600	22,000
31	17,300	.....	193,000	162,000	.....	235,000	.....	24,100	.....	14,900	12,000	.....

Daily discharge, in second-feet, of Tennessee River at Florence, Ala., for the years ending Sept. 30, 1895–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903.												
1	20,600	9,500	47,600	37,700	39,400	165,000	142,000	64,500	52,300	29,400	14,900	12,000
2	21,300	9,500	48,500	40,300	38,500	192,000	139,000	63,500	64,500	29,400	14,900	11,500
3	20,600	9,500	52,300	53,300	44,800	205,000	139,000	60,400	68,800	27,100	16,100	11,000
4	20,600	9,020	55,300	54,300	87,000	216,000	132,000	56,300	81,200	26,300	18,000	11,000
5	20,600	9,500	62,400	53,300	115,000	226,000	126,000	52,300	107,000	24,800	17,300	11,000
6	20,600	9,990	72,100	54,300	138,000	236,000	105,000	48,500	102,000	23,400	19,300	11,000
7	18,000	9,990	66,600	56,300	162,000	230,000	97,900	44,800	94,200	23,400	26,300	11,000
8	16,700	9,990	60,400	54,300	189,000	223,000	100,000	43,900	87,000	24,100	26,300	11,000
9	15,500	9,990	55,300	58,300	200,000	206,000	119,000	43,900	82,300	24,800	27,900	10,500
10	14,300	9,990	49,400	55,300	189,000	200,000	148,000	41,200	84,600	24,100	26,300	10,500
11	15,500	9,990	44,800	55,300	195,000	201,000	172,000	39,400	78,800	24,100	22,000	10,500
12	15,500	11,000	39,400	57,300	200,000	203,000	184,000	38,500	73,200	24,800	23,400	10,500
13	18,000	11,500	34,300	56,300	187,000	203,000	200,000	37,700	67,700	28,600	22,000	9,990
14	15,500	11,500	31,000	55,300	175,000	200,000	226,000	42,100	61,400	28,600	19,300	9,990
15	20,000	11,500	31,000	54,300	173,000	185,000	221,000	60,400	56,300	29,400	18,000	9,990
16	18,000	11,500	59,300	57,300	172,000	162,000	210,000	57,300	49,400	33,400	18,000	9,990
17	17,300	11,500	60,400	54,300	203,000	141,000	193,000	45,700	44,800	35,100	22,000	9,990
18	18,000	11,500	54,300	48,500	215,000	120,000	181,000	43,000	42,100	35,100	24,800	9,990
19	19,300	11,000	54,300	44,800	215,000	102,000	172,000	39,400	36,000	34,300	26,300	9,990
20	18,600	9,990	60,400	43,000	213,000	88,200	162,000	35,100	32,600	32,600	24,100	9,990
21	18,000	9,990	66,600	39,400	211,000	80,000	142,000	32,600	29,400	29,400	22,000	9,990
22	16,700	9,990	73,200	36,000	218,000	77,700	125,000	31,000	27,900	26,300	21,300	9,990
23	15,500	9,990	73,200	34,300	216,000	76,600	111,000	30,200	27,100	23,400	21,300	9,990
24	13,100	10,500	75,400	32,600	190,000	77,700	102,000	27,900	27,900	22,700	20,000	9,990
25	13,100	16,700	75,400	31,000	143,000	91,800	96,700	27,100	27,100	22,700	18,000	9,990
26	12,000	26,300	64,500	29,400	99,200	124,000	87,000	25,600	29,400	20,600	16,700	9,990
27	12,000	29,400	56,300	31,000	80,000	151,000	78,800	24,800	27,900	18,600	16,100	9,990
28	11,000	33,400	48,500	39,400	100,000	168,000	73,200	24,800	27,100	18,000	14,300	9,990
29	10,500	41,200	44,800	43,000	.....	178,000	67,700	22,700	27,100	16,700	13,700	9,990
30	10,500	43,900	42,100	41,200	.....	175,000	64,500	23,400	27,100	16,100	13,100	9,500
31	9,990	.....	39,400	41,200	.....	152,000	.....	31,000	.....	15,500	13,100	.....
1904.												
1	9,020	9,020	11,500	22,700	32,600	50,400	120,000	27,900	27,900	16,100	13,700	.....
2	9,020	9,020	11,500	23,400	27,900	56,300	105,000	30,200	34,300	16,700	14,300	.....
3	9,020	9,990	11,500	22,000	24,800	56,300	85,800	36,000	39,400	18,000	15,500	.....
4	9,020	11,000	11,000	20,000	23,400	53,300	73,200	44,800	36,000	20,000	14,900	.....
5	8,550	13,100	11,000	16,700	22,000	50,400	62,400	43,000	32,600	21,300	14,900	.....
6	8,550	12,600	10,500	15,500	20,600	48,500	55,300	39,400	29,400	24,100	15,500	.....
7	8,550	12,000	9,990	14,900	19,300	46,600	52,300	37,700	26,300	24,100	16,700	.....
8	9,990	11,500	9,990	14,300	18,600	56,300	50,400	35,100	33,400	26,300	16,700	.....
9	11,000	12,000	9,500	13,700	20,000	60,400	55,300	34,300	31,000	24,800	18,600	.....
10	10,500	12,000	9,500	13,700	23,400	67,700	56,300	35,100	27,100	20,600	22,000	.....
11	9,990	11,000	9,500	13,100	32,600	80,000	56,300	36,800	24,800	19,300	24,800	.....
12	9,500	10,500	9,500	12,600	37,700	84,600	52,300	39,400	22,700	18,000	27,900	.....
13	9,990	10,500	9,990	13,100	37,700	82,300	48,500	42,100	20,600	18,000	27,100	.....
14	10,500	10,500	9,990	13,100	36,000	80,000	44,800	44,800	20,600	18,600	24,800	.....
15	10,500	10,500	9,990	13,700	32,600	82,300	41,200	41,200	18,000	18,600	24,100	.....
16	11,000	10,500	9,990	13,700	31,000	81,200	39,400	38,500	17,300	19,300	24,800	.....
17	12,000	11,000	9,990	14,300	28,600	80,000	36,800	34,300	16,700	20,000	23,400	.....
18	11,000	18,000	9,990	14,900	27,100	71,000	34,300	31,000	16,100	20,000	21,300	.....
19	10,500	14,900	10,500	18,000	23,400	60,400	32,600	31,000	16,100	19,300	22,000	.....
20	9,990	14,900	14,300	19,300	22,700	56,300	31,000	29,400	15,500	16,700	23,400	.....
21	9,500	24,100	27,900	21,300	22,700	52,300	31,000	26,300	14,900	16,700	21,300	.....
22	9,500	35,100	20,000	27,900	22,000	78,800	31,000	24,800	14,900	16,100	20,000	.....
23	9,500	30,200	21,300	43,000	23,400	97,900	31,000	23,400	14,300	16,100	17,300	.....
24	9,020	27,100	27,900	48,500	31,000	128,000	29,400	22,000	13,700	15,500	16,700	.....
25	9,020	21,300	30,200	66,600	40,300	160,000	28,600	20,000	13,700	14,300	16,700	.....
26	9,020	17,300	27,900	80,000	50,400	175,000	27,900	19,300	15,500	14,300	15,500	.....
27	9,020	15,500	26,300	66,600	52,300	210,000	27,100	19,300	14,900	13,700	14,900	.....
28	9,020	13,700	23,400	56,300	52,300	206,000	27,100	18,000	14,900	14,300	15,500	.....
29	9,020	13,700	22,000	48,500	48,500	187,000	26,300	18,000	16,700	13,700	16,700	.....
30	9,020	12,000	21,300	43,000	.....	167,000	25,600	18,600	16,700	13,700	16,700	.....
31	9,020	.....	22,000	36,000	.....	143,000	.....	18,600	.....	13,700	15,500	.....

Daily discharge, in second-feet, of Tennessee River at Florence, Ala., for the years ending Sept. 30, 1895–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905.												
1	.....	.....	11,000	71,000	25,600	94,200	36,800	56,300	43,000	62,400	24,800	27,900
2	.....	.....	11,500	58,300	24,800	78,800	36,000	64,500	42,100	76,600	23,400	27,900
3	.....	.....	11,500	46,600	24,800	67,700	35,100	64,500	41,200	73,200	22,000	37,700
4	.....	.....	11,500	39,400	25,600	62,400	35,100	60,400	36,800	58,300	22,000	36,000
5	.....	.....	12,000	34,300	28,600	56,300	35,100	52,300	32,600	46,600	22,000	31,000
6	.....	.....	15,500	29,400	35,100	50,400	34,300	46,600	29,400	37,700	22,000	26,300
7	.....	.....	22,000	27,900	49,400	47,600	32,600	45,700	27,900	34,300	22,000	23,400
8	.....	.....	24,800	31,000	62,400	46,600	31,000	46,600	24,800	32,600	20,080	22,000
9	.....	.....	29,400	28,600	117,000	58,300	31,000	44,800	24,100	32,600	19,300	20,600
10	.....	.....	32,600	29,400	160,000	99,200	32,600	44,800	23,400	31,000	19,300	20,000
11	.....	.....	34,300	32,600	175,000	115,000	34,300	50,400	22,000	36,000	20,600	20,600
12	.....	.....	32,600	50,400	201,000	128,000	41,200	56,300	21,300	41,200	22,000	20,600
13	.....	.....	28,600	77,700	201,000	142,000	41,200	55,300	21,300	43,900	27,900	19,300
14	.....	.....	24,800	83,500	193,000	139,000	43,000	50,400	19,300	43,000	37,700	18,000
15	.....	.....	20,000	112,000	161,000	125,000	44,800	46,600	18,600	48,500	46,600	16,700
16	.....	.....	18,000	125,000	136,000	107,000	47,600	41,200	19,300	71,000	55,300	16,700
17	.....	.....	16,700	123,000	117,000	84,600	50,400	44,800	22,000	81,200	60,400	16,100
18	.....	.....	16,100	109,000	102,000	68,800	48,500	52,300	22,000	72,100	56,300	15,500
19	.....	.....	15,500	84,600	91,800	60,400	44,800	73,200	22,000	60,400	50,400	15,500
20	.....	.....	14,900	64,500	94,200	54,300	40,300	89,400	21,300	51,400	46,600	15,500
21	.....	.....	14,300	54,300	145,000	56,300	37,700	89,400	20,600	41,200	41,200	15,500
22	.....	.....	13,700	46,600	175,000	63,500	34,300	77,700	26,300	34,300	38,500	14,300
23	.....	.....	13,100	43,000	182,000	66,600	32,600	71,000	37,700	31,000	34,300	13,700
24	.....	.....	13,100	38,500	185,000	66,600	32,600	94,200	43,000	31,000	32,600	13,100
25	.....	.....	14,300	34,300	182,000	63,500	31,800	104,000	46,600	31,000	29,400	12,600
26	.....	.....	16,700	31,800	168,000	57,300	31,800	99,200	43,000	31,800	27,900	12,600
27	.....	.....	20,000	29,400	146,000	52,300	32,600	91,800	41,200	31,000	34,300	12,000
28	.....	.....	41,200	27,900	115,000	48,500	36,800	77,700	46,600	30,200	39,400	12,000
29	.....	.....	54,300	26,300	.....	46,600	43,000	64,500	50,400	30,200	36,800	11,500
30	.....	.....	71,000	25,600	.....	43,000	51,400	54,300	58,300	29,400	32,600	11,000
31	.....	.....	85,800	26,300	.....	39,400	.....	46,600	.....	27,100	30,200	.....
1906.												
1	11,500	22,000	12,600	54,300	78,800	39,400	124,000	36,000	26,300	34,300	48,500	44,800
2	11,000	20,000	12,600	49,400	75,400	38,500	128,000	35,100	39,400	31,000	48,500	63,500
3	11,500	19,300	13,100	48,500	71,000	46,600	125,000	34,300	31,000	27,900	53,300	75,400
4	11,500	18,000	16,100	56,300	64,500	66,600	107,000	33,400	30,200	27,100	59,300	74,300
5	12,600	16,700	18,000	71,000	60,400	71,000	89,400	33,400	29,400	26,300	60,400	64,500
6	12,600	15,500	33,400	88,200	58,300	80,000	75,400	34,300	31,000	24,800	57,300	56,300
7	12,600	14,300	60,400	96,700	54,300	80,000	66,600	34,300	31,000	22,700	50,400	51,400
8	12,000	14,300	64,500	104,000	50,400	71,000	59,300	35,100	31,000	22,000	50,400	52,300
9	11,500	14,300	60,400	96,700	46,600	64,500	58,300	37,700	26,300	22,000	46,600	56,300
10	13,100	13,700	57,300	89,400	43,000	58,300	56,300	41,200	25,600	22,700	44,800	64,500
11	16,700	13,100	60,400	77,700	39,400	52,300	57,300	48,500	24,800	22,700	41,200	66,600
12	22,000	13,100	68,800	73,200	37,700	46,600	58,300	54,300	23,400	26,300	39,400	64,500
13	20,600	13,100	68,800	74,300	36,000	44,800	62,400	52,300	22,000	33,400	36,000	66,600
14	18,600	13,100	66,600	68,800	34,300	45,700	66,600	44,800	22,000	35,100	36,000	62,400
15	19,300	12,600	64,500	63,500	32,600	77,700	64,500	38,500	22,000	34,300	37,700	53,300
16	22,700	12,600	75,400	58,300	31,000	107,000	61,400	36,000	24,100	50,400	34,300	45,700
17	23,400	12,000	68,800	58,300	31,000	95,400	60,400	31,800	32,600	60,400	36,800	41,200
18	22,000	12,000	68,800	61,400	30,200	89,400	60,400	29,400	43,000	77,700	39,400	36,800
19	20,000	11,500	62,400	66,600	30,200	94,200	64,500	26,300	54,300	87,000	44,800	34,300
20	20,000	11,000	56,300	71,000	29,400	112,000	68,800	24,800	52,300	96,700	46,600	37,700
21	19,300	11,000	54,300	69,900	29,400	115,000	66,600	23,400	46,600	111,000	48,500	38,500
22	18,000	11,000	64,500	80,000	30,200	107,000	60,400	23,400	40,300	104,000	48,500	48,500
23	15,500	11,500	77,700	134,000	32,600	96,700	52,300	22,000	36,000	89,400	48,500	67,700
24	14,300	11,500	94,200	154,000	36,000	83,500	47,600	20,600	31,800	82,300	46,600	80,000
25	14,300	11,500	94,200	146,000	39,400	73,200	43,000	20,600	28,600	93,000	43,000	75,400
26	15,500	11,500	94,200	136,000	43,900	64,500	41,200	22,000	28,600	97,900	41,200	66,600
27	21,300	12,000	95,400	148,000	43,900	60,400	39,400	24,100	34,300	83,500	39,400	57,300
28	20,600	12,000	89,400	155,000	43,000	64,500	37,700	27,900	39,400	68,800	41,200	58,300
29	22,000	12,600	73,200	142,000	.....	71,000	36,000	31,000	39,400	61,400	44,800	84,600
30	22,000	12,600	67,700	116,000	.....	97,900	36,000	28,600	37,700	58,300	43,000	91,800
31	22,700	.....	59,300	90,600	.....	119,000	.....	27,100	.....	52,300	39,400	.....

Daily discharge, in second-feet, of Tennessee River at Florence, Ala., for the years ending Sept. 30, 1895–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907.												
1	87,000	31,000	52,300	129,000	53,300	87,000	36,000	77,700	40,300	36,800	20,000	19,300
2	102,000	31,000	46,600	151,000	102,000	145,000	35,100	64,500	46,600	37,700	20,600	18,600
3	165,000	28,600	43,000	161,000	129,000	162,000	35,100	58,300	43,900	39,400	24,100	18,000
4	187,000	27,900	41,200	160,000	131,000	165,000	40,300	56,300	43,000	37,700	29,400	16,700
5	189,000	27,100	39,400	142,000	125,000	167,000	43,900	52,300	43,900	34,300	26,300	16,700
6	187,000	26,300	37,700	113,000	105,000	164,000	44,800	52,300	43,000	31,000	22,700	16,700
7	181,000	24,800	36,800	93,000	89,400	149,000	44,800	66,600	48,500	29,400	20,600	16,100
8	158,000	23,400	36,000	77,700	81,200	124,000	47,600	84,600	58,300	26,300	19,300	14,900
9	148,000	23,400	35,100	71,000	78,800	99,200	64,500	97,900	56,300	25,600	18,000	15,500
10	134,000	22,700	36,800	64,500	75,400	84,600	75,400	104,000	54,300	23,400	20,600	16,700
11	112,000	22,700	37,700	58,300	68,800	83,500	72,100	120,000	61,400	21,300	21,300	16,100
12	91,800	22,000	37,700	54,300	62,400	84,600	68,800	138,000	68,800	21,300	20,600	22,000
13	76,600	21,300	37,700	50,400	56,300	85,800	68,800	128,000	82,300	22,000	19,300	22,700
14	64,500	21,300	37,700	48,500	50,400	90,600	62,400	102,000	84,600	29,400	20,600	24,100
15	55,300	22,000	38,500	46,600	48,500	120,000	59,300	113,000	75,400	31,000	23,400	27,100
16	49,400	22,700	38,500	43,900	44,800	117,000	54,300	97,900	71,000	36,000	24,800	26,300
17	46,600	24,800	46,600	41,200	41,200	116,000	49,400	99,200	69,900	43,000	23,400	24,100
18	44,800	27,900	63,500	39,400	39,400	109,000	46,600	87,000	75,400	44,800	21,300	22,000
19	43,900	44,800	62,400	38,500	38,500	100,000	43,900	75,400	93,000	39,400	20,600	19,300
20	47,600	53,300	57,300	39,400	36,000	89,400	43,900	62,400	87,000	36,000	21,300	16,700
21	52,300	104,000	67,700	43,900	34,300	80,000	43,900	52,300	63,500	31,800	21,300	16,100
22	52,300	152,000	71,000	44,800	32,600	72,100	44,800	47,600	47,600	29,400	21,300	20,000
23	48,500	178,000	71,000	45,700	32,600	62,400	52,300	43,000	39,400	28,600	20,600	21,300
24	50,400	190,000	66,600	48,500	34,300	58,300	53,300	39,400	36,800	27,100	20,000	28,600
25	56,300	201,000	60,400	55,300	37,700	52,300	54,300	39,400	38,500	25,600	22,000	31,000
26	54,300	195,000	56,300	53,300	41,200	47,600	58,300	36,800	37,700	23,400	22,700	46,600
27	50,400	165,000	52,300	47,600	43,900	44,800	58,300	36,000	39,400	22,000	22,000	67,700
28	43,900	113,000	48,500	43,000	52,300	41,200	58,300	31,000	39,400	20,000	22,000	64,500
29	39,400	76,600	44,800	39,400	.....	39,400	58,300	31,000	39,400	20,000	22,000	57,300
30	36,000	60,400	48,500	39,400	.....	38,500	66,600	31,000	38,500	19,300	21,300	46,600
31	34,300	.....	73,200	37,700	.....	36,800	.....	35,100	.....	20,000	20,600	.....
1908.												
1	38,500	13,100	62,400	97,900	50,400	63,500	77,700	87,000	39,400	24,800	15,500	36,000
2	34,300	14,300	51,400	124,000	64,500	63,500	68,800	76,600	37,700	22,000	14,900	30,200
3	33,400	14,900	43,000	131,000	67,700	62,400	62,400	62,400	37,700	20,600	15,500	25,600
4	30,200	15,500	38,500	131,000	67,700	64,500	57,300	56,300	41,200	20,600	16,700	22,000
5	27,100	14,900	34,300	131,000	68,800	68,800	54,300	66,600	45,700	20,600	17,300	20,000
6	23,400	14,900	31,000	125,000	67,700	73,200	66,600	99,200	41,200	19,300	20,600	20,600
7	22,000	15,500	29,400	113,000	66,600	76,600	96,700	87,000	38,500	24,100	20,000	20,000
8	22,000	19,300	26,300	120,000	63,500	75,400	99,200	74,300	39,400	34,300	20,000	20,000
9	20,600	20,000	26,300	117,000	60,400	69,900	83,500	64,500	41,200	39,400	22,000	20,000
10	21,300	23,400	25,600	104,000	73,200	68,800	66,600	60,400	40,300	41,200	24,100	20,600
11	21,300	23,400	27,900	89,400	103,000	71,000	58,300	59,300	39,400	41,200	26,300	23,400
12	20,600	23,400	28,600	80,000	117,000	77,700	52,300	59,300	36,000	43,000	27,900	24,800
13	19,300	29,400	28,600	77,700	115,000	80,000	48,500	58,300	32,600	42,100	29,400	23,400
14	18,000	37,700	31,000	77,700	120,000	80,000	44,800	54,300	31,800	39,400	26,300	22,000
15	16,700	52,300	37,700	104,000	138,000	87,000	43,000	50,400	30,200	36,000	24,800	20,000
16	16,700	63,500	46,600	125,000	168,000	90,600	41,200	48,500	28,600	31,000	22,000	17,300
17	16,100	50,400	48,500	142,000	179,000	88,200	41,200	46,600	27,100	27,900	19,300	16,100
18	15,500	41,200	48,500	141,000	187,000	82,300	43,000	45,700	25,600	24,800	17,300	14,900
19	15,500	35,100	48,500	117,000	206,000	71,000	71,000	50,400	26,300	24,800	16,700	14,300
20	14,900	32,600	48,500	99,200	206,000	71,000	77,700	46,600	26,300	24,800	15,500	13,700
21	14,300	32,600	44,800	84,600	190,000	80,000	75,400	42,100	28,600	23,400	15,500	13,700
22	13,700	36,000	43,900	75,400	162,000	81,200	68,800	41,200	27,900	21,300	15,500	14,300
23	13,700	39,400	43,000	66,600	123,000	91,800	60,400	39,400	26,300	20,600	16,700	14,900
24	13,700	46,600	46,600	60,400	94,200	134,000	58,300	41,200	23,400	20,600	20,600	14,300
25	13,700	60,400	46,600	54,300	78,800	154,000	66,600	41,200	22,700	20,000	26,300	13,700
26	13,100	75,400	50,400	52,300	74,300	151,000	68,800	43,000	22,000	19,300	36,000	13,100
27	13,100	87,000	52,300	46,600	72,100	151,000	74,300	44,800	21,300	18,000	40,300	12,600
28	12,600	94,200	54,300	46,600	69,900	143,000	81,200	44,800	20,600	17,300	36,000	12,000
29	12,600	90,600	56,300	43,900	66,600	128,000	87,000	43,000	23,400	16,700	32,600	11,500
30	12,600	78,800	64,500	43,000	.....	99,200	91,800	41,200	25,600	16,700	36,000	11,500
31	12,600	.....	82,300	43,000	.....	89,400	.....	43,900	.....	16,700	39,400	.....

Daily discharge, in second-feet, of Tennessee River at Florence, Ala., for the years ending Sept. 30, 1895–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909.												
1	11,000	18,600	14,300	56,300	38,500	185,000	124,000	103,000	82,300	75,400	30,200	19,300
2	10,500	16,700	13,700	56,300	36,800	164,000	125,000	139,000	69,900	66,600	30,200	18,600
3	10,500	23,400	13,700	56,300	36,000	136,000	115,000	157,000	67,700	61,400	32,600	18,600
4	10,500	31,800	14,300	56,300	34,300	109,000	96,700	168,000	94,200	60,400	47,600	19,300
5	10,500	31,000	14,900	55,300	33,400	89,400	80,000	172,000	145,000	58,300	52,300	20,000
6	10,500	26,300	19,300	56,300	33,400	80,000	68,800	172,000	172,000	57,300	56,300	19,300
7	10,500	22,700	34,300	62,400	39,400	80,000	69,900	157,000	184,000	54,300	60,400	18,600
8	11,000	19,300	60,400	66,600	43,000	80,000	80,000	124,000	184,000	50,400	58,300	18,000
9	11,000	16,700	74,300	68,800	50,400	89,400	81,200	94,200	181,000	52,300	50,400	16,700
10	11,000	16,700	89,400	71,000	78,800	111,000	75,400	73,200	162,000	68,800	43,000	16,700
11	11,000	15,500	100,000	66,600	112,000	139,000	73,200	68,800	142,000	103,000	37,700	19,300
12	11,000	14,300	93,000	57,300	125,000	162,000	68,800	66,600	124,000	128,000	32,600	18,600
13	11,000	14,300	80,000	52,300	136,000	192,000	68,800	66,600	112,000	120,000	31,000	18,600
14	12,000	13,700	64,500	49,400	154,000	236,000	76,600	67,700	100,000	99,200	30,200	18,600
15	13,100	13,700	55,300	56,300	172,000	250,000	73,200	69,900	91,800	80,000	29,400	18,600
16	15,500	14,300	54,300	66,600	181,000	247,000	67,700	66,600	82,300	80,000	27,900	18,600
17	18,000	15,500	50,400	89,400	170,000	240,000	61,400	60,400	82,300	89,400	29,400	18,600
18	15,500	16,700	47,600	109,000	162,000	226,000	58,300	54,300	84,600	88,200	31,000	17,300
19	14,300	16,700	43,900	117,000	168,000	200,000	58,300	48,500	80,000	80,000	31,000	16,700
20	12,000	16,700	39,400	125,000	170,000	162,000	54,300	44,800	73,200	66,600	56,300	16,100
21	12,000	16,700	36,000	128,000	160,000	127,000	49,400	46,600	69,900	56,300	73,200	16,100
22	12,000	16,700	36,000	111,000	148,000	104,000	45,700	58,300	87,000	47,600	58,300	16,100
23	11,500	16,100	51,400	96,700	172,000	93,000	46,600	69,900	94,200	43,000	44,800	18,000
24	11,500	15,500	61,400	77,700	236,000	90,600	57,300	99,200	91,800	39,400	36,000	18,000
25	11,000	15,500	73,200	64,500	235,000	87,000	66,600	136,000	84,600	34,300	31,000	20,000
26	11,000	15,500	87,000	56,300	240,000	89,400	75,400	143,000	75,400	33,400	26,300	20,600
27	10,500	15,500	89,400	49,400	228,000	84,600	80,000	125,000	73,200	35,100	23,400	24,100
28	10,500	14,900	82,300	46,600	208,000	95,400	75,400	99,200	82,300	34,300	22,000	26,300
29	16,700	14,900	71,000	43,000	.....	111,000	74,300	75,400	83,500	32,600	20,600	27,900
30	26,300	14,900	62,400	39,400	.....	117,000	73,200	63,500	80,000	31,000	20,000	24,800
31	23,400	.....	54,300	39,400	.....	117,000	.....	74,300	.....	31,800	19,300	.....
1910.												
1	22,000	14,300	13,700	22,000	39,400	67,700	22,700	37,700	65,600	58,300	34,300	18,600
2	19,300	14,300	13,100	20,600	37,700	73,200	22,000	40,300	55,300	58,300	36,000	19,300
3	18,000	13,700	12,600	18,600	35,100	87,000	20,600	39,400	50,400	62,400	39,400	22,700
4	16,100	13,700	12,600	18,000	34,300	102,000	20,600	37,700	44,800	68,800	41,200	31,000
5	15,500	13,100	12,600	18,000	32,600	112,000	20,600	34,300	42,100	71,000	39,400	48,500
6	14,900	13,100	12,600	27,100	31,000	104,000	20,000	31,000	43,000	77,700	38,500	54,300
7	14,300	13,100	14,300	56,300	30,200	91,800	20,000	28,600	46,600	81,200	36,000	46,600
8	13,700	13,100	15,500	62,400	29,400	77,700	19,300	27,900	50,400	88,200	38,500	41,200
9	13,700	13,100	20,600	75,400	31,000	66,600	18,600	27,100	59,300	94,200	39,400	41,200
10	13,700	13,100	22,700	94,200	31,000	57,300	18,000	31,000	71,000	96,700	41,200	37,700
11	13,700	13,100	27,900	94,200	31,000	53,300	18,000	41,200	80,000	99,200	39,400	36,000
12	13,100	12,600	29,400	77,700	31,000	50,400	18,000	51,400	72,100	95,400	39,400	31,000
13	13,700	12,600	27,900	65,600	29,400	45,700	18,000	55,300	64,500	84,600	36,000	29,400
14	18,000	12,600	27,100	55,300	28,600	43,900	18,000	55,300	71,000	78,800	34,300	27,900
15	20,600	12,600	27,900	48,500	28,600	42,100	18,000	52,300	73,200	73,200	31,000	27,100
16	26,300	12,600	31,800	40,300	31,000	41,200	18,600	46,600	66,600	65,600	24,800	26,300
17	29,400	12,600	36,000	36,800	46,600	39,400	37,700	43,000	60,400	63,500	22,700	24,800
18	36,000	12,600	36,800	36,000	83,500	37,700	47,600	37,700	58,300	77,700	22,000	23,400
19	36,000	12,600	36,800	36,800	96,700	36,800	48,500	37,700	57,300	88,200	20,600	20,600
20	31,000	12,600	35,100	42,100	102,000	33,400	56,300	41,200	56,300	75,400	19,300	19,300
21	26,300	12,600	31,800	44,800	117,000	32,600	59,300	57,300	52,300	64,500	18,600	18,000
22	23,400	12,600	28,600	52,300	127,000	31,000	54,300	77,700	52,300	52,300	18,600	16,700
23	20,600	12,600	24,800	62,400	121,000	29,400	48,500	89,400	48,500	43,000	20,600	16,100
24	19,300	14,300	22,000	68,800	112,000	29,400	43,000	93,000	46,600	39,400	22,000	15,500
25	18,000	14,300	22,000	71,000	96,700	27,900	39,400	102,000	43,000	39,400	23,400	15,500
26	16,700	13,700	23,400	68,800	84,600	27,900	36,000	111,000	41,200	37,700	22,000	14,900
27	16,100	13,100	26,300	68,800	73,200	26,300	33,400	115,000	38,500	39,400	20,600	14,900
28	15,500	12,600	27,100	60,400	66,600	25,600	32,600	112,000	37,700	41,200	20,000	14,900
29	15,500	13,100	25,600	54,300	.....	24,800	32,600	100,000	39,400	43,000	20,000	14,900
30	14,900	13,700	24,800	47,600	.....	24,100	34,300	88,200	50,400	36,000	19,300	14,900
31	14,300	.....	23,400	43,000	.....	23,400	.....	76,600	.....	34,300	18,600	.....

Daily discharge, in second-feet, of Tennessee River at Florence, Ala., for the years ending Sept. 30, 1895–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1911.												
1	14,900	12,000	13,100	46,600	43,900	52,300	58,300	54,300	23,400	18,000	24,100	11,000
2	15,500	12,000	13,100	82,300	44,800	48,500	54,300	53,300	20,600	18,000	28,600	10,500
3	15,500	12,000	13,100	151,000	49,400	48,500	52,300	54,300	20,000	20,600	27,900	9,990
4	15,500	12,000	13,100	203,000	54,300	43,000	67,700	68,800	19,300	20,600	25,600	9,500
5	16,100	12,000	15,500	206,000	64,500	39,400	142,000	77,700	19,300	18,600	22,700	9,990
6	17,300	12,000	23,400	206,000	67,700	39,400	206,000	75,400	18,600	18,000	22,700	14,300
7	18,000	12,000	43,000	200,000	80,000	39,400	231,000	64,500	18,600	17,300	24,800	18,000
8	19,300	12,000	60,400	193,000	94,200	37,700	254,000	56,300	19,300	15,500	26,300	16,700
9	18,000	12,000	75,400	178,000	145,000	36,000	284,000	50,400	18,600	14,900	26,300	15,500
10	16,700	12,000	77,700	136,000	167,000	40,300	293,000	44,800	18,600	16,100	24,800	15,500
11	16,100	11,500	64,500	95,400	184,000	80,000	290,000	41,200	18,000	16,700	23,400	16,700
12	15,500	11,500	55,300	68,800	187,000	117,000	284,000	39,400	17,300	15,500	20,600	20,600
13	15,500	11,500	44,800	58,300	190,000	128,000	272,000	36,000	16,700	16,700	19,300	15,500
14	19,300	11,500	36,800	52,300	187,000	115,000	247,000	34,300	16,700	18,000	18,000	14,300
15	22,700	11,000	30,200	45,700	181,000	87,000	226,000	31,000	16,700	20,600	18,000	13,700
16	23,400	11,000	26,300	41,200	154,000	66,600	195,000	31,000	15,500	22,700	17,300	13,100
17	21,300	11,000	23,400	39,400	112,000	56,300	162,000	31,000	14,900	22,700	16,700	12,000
18	18,000	10,500	22,000	36,000	87,000	50,400	154,000	28,600	13,100	22,700	16,700	12,000
19	16,100	10,500	20,600	35,100	68,800	45,700	160,000	27,900	13,100	22,700	16,100	11,500
20	14,300	10,500	19,300	34,300	62,400	41,200	193,000	27,100	13,100	22,000	19,300	11,500
21	13,700	10,500	16,700	32,600	60,400	39,400	203,000	27,100	14,900	26,300	19,300	11,500
22	13,100	10,500	16,700	31,000	58,300	37,700	187,000	31,000	14,900	34,300	18,000	12,000
23	12,600	10,500	17,300	31,000	52,300	36,800	168,000	35,100	14,900	31,000	16,700	11,500
24	12,600	10,500	17,300	31,000	52,300	36,800	138,000	39,400	15,500	31,000	15,500	11,500
25	12,000	10,500	19,300	29,400	48,500	36,800	115,000	36,000	16,700	30,200	14,300	12,000
26	12,000	10,500	19,300	29,400	48,500	39,400	94,200	34,300	18,000	29,400	13,100	12,000
27	12,000	10,500	19,300	31,000	46,600	44,800	76,600	31,000	19,300	34,300	12,600	12,000
28	12,000	11,000	19,300	34,300	50,400	50,400	65,600	27,900	20,000	33,400	12,600	12,000
29	12,000	11,500	22,000	39,400	.....	56,300	64,500	26,300	22,700	32,600	12,000	12,600
30	12,000	13,700	24,800	41,200	.....	58,300	58,300	24,800	19,300	26,300	11,500	12,600
31	12,000	.....	31,000	41,200	.....	60,400	.....	23,400	.....	23,400	11,000	.....
1912.												
1	13,100	15,500	31,000	206,000	108,000	154,000	230,000	213,000	71,000	50,400	31,000	22,000
2	13,700	13,100	29,400	181,000	119,000	141,000	238,000	198,000	72,100	52,300	30,200	21,300
3	13,100	12,600	27,100	154,000	117,000	125,000	250,000	193,000	62,400	46,600	27,900	19,300
4	12,000	12,600	24,800	138,000	109,000	104,000	247,000	198,000	55,300	43,000	27,900	18,600
5	12,000	12,000	23,400	117,000	95,400	87,000	240,000	189,000	52,300	39,400	31,800	18,600
6	10,500	12,000	22,700	94,200	77,700	84,600	233,000	168,000	47,600	41,200	33,400	18,000
7	10,500	12,000	22,000	78,800	62,400	82,300	215,000	151,000	43,000	56,300	32,600	18,000
8	9,990	13,100	20,000	69,900	54,300	91,800	215,000	134,000	39,400	66,600	31,000	18,000
9	9,990	13,700	19,300	75,400	47,600	107,000	213,000	112,000	39,400	76,600	36,000	16,700
10	11,500	15,500	18,600	81,200	43,000	115,000	193,000	104,000	37,700	73,200	40,300	16,700
11	12,600	16,700	20,600	75,400	39,400	112,000	146,000	96,700	34,300	62,400	39,400	15,500
12	13,700	20,600	34,300	68,800	37,700	115,000	107,000	91,800	32,600	60,400	34,300	14,900
13	13,700	24,800	53,300	64,500	36,000	115,000	87,000	87,000	31,000	60,400	31,000	13,700
14	13,100	30,200	73,200	59,300	35,100	120,000	80,000	75,400	29,400	59,300	29,400	13,100
15	13,700	31,000	88,200	54,300	37,700	155,000	75,400	68,800	27,900	58,300	27,900	13,100
16	16,700	35,100	94,200	49,400	39,400	184,000	80,000	62,400	26,300	57,300	26,300	13,100
17	20,600	34,300	87,000	46,600	43,000	195,000	99,200	57,300	24,800	50,400	24,800	13,100
18	26,300	32,600	80,000	43,000	48,500	193,000	117,000	54,300	23,400	43,000	24,800	13,100
19	29,400	31,000	75,400	46,600	49,400	193,000	115,000	49,400	27,900	44,800	24,800	13,700
20	31,800	30,200	66,600	54,300	51,400	190,000	104,000	48,500	29,400	43,000	24,800	13,100
21	35,100	31,000	56,300	47,600	65,600	181,000	97,900	48,500	30,200	41,200	24,800	13,700
22	37,700	31,800	60,400	43,000	95,400	160,000	97,900	50,400	29,400	37,700	26,300	15,500
23	40,300	31,000	81,200	42,100	102,000	128,000	99,200	49,400	27,100	36,800	26,300	29,400
24	41,200	30,200	87,000	43,000	115,000	136,000	108,000	46,600	26,300	36,800	27,900	39,400
25	36,000	29,400	89,400	43,900	131,000	148,000	117,000	41,200	24,800	36,800	28,600	39,400
26	27,900	28,600	103,000	43,000	161,000	139,000	124,000	39,400	26,300	36,000	29,400	38,500
27	24,100	27,100	154,000	41,200	182,000	139,000	136,000	37,700	27,900	33,400	31,000	42,100
28	20,600	27,100	175,000	44,800	175,000	148,000	158,000	35,100	32,600	31,000	32,600	36,800
29	18,000	27,900	181,000	58,300	157,000	178,000	187,000	41,200	39,400	31,000	30,200	31,000
30	16,700	31,000	181,000	80,000	.....	216,000	213,000	71,000	44,800	31,000	26,300	31,000
31	16,100	.....	228,000	91,800	.....	223,000	.....	73,200	.....	32,600	22,700	.....

Daily discharge, in second-feet, of Tennessee River at Florence, Ala., for the years ending Sept. 30, 1895–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1913.												
1	29,400	12,600	11,500	44,800	203,000	172,000	210,000	36,000	72,100	20,000	14,300	12,600
2	27,900	12,600	12,000	50,400	187,000	178,000	216,000	36,800	78,800	18,600	16,100	12,000
3	24,800	12,600	12,000	59,300	162,000	175,000	221,000	36,000	73,200	18,000	16,700	12,000
4	22,700	12,600	14,300	80,000	131,000	178,000	213,000	36,000	64,500	18,000	16,700	12,000
5	20,000	12,000	22,000	80,000	108,000	157,000	168,000	34,300	58,300	18,000	16,700	12,000
6	18,000	12,000	36,000	80,000	94,200	124,000	112,000	32,600	54,300	17,300	15,500	11,000
7	16,700	12,000	43,900	104,000	87,000	93,000	89,400	32,600	56,300	17,300	15,500	11,000
8	15,500	12,600	60,400	120,000	82,300	76,600	75,400	30,200	58,300	17,300	14,900	11,000
9	14,900	12,600	71,000	139,000	77,700	64,500	66,600	29,400	54,300	17,300	14,900	11,000
10	14,300	13,100	68,800	175,000	71,000	57,300	60,400	29,400	50,400	17,300	14,900	11,000
11	13,700	13,100	61,400	165,000	71,000	56,300	58,300	27,900	46,600	19,300	14,900	11,000
12	13,100	13,100	48,500	160,000	83,500	55,300	57,300	27,900	46,600	20,000	14,900	10,500
13	12,600	15,500	41,200	154,000	116,000	62,400	52,300	29,400	53,300	19,300	14,900	9,990
14	12,600	18,600	35,100	142,000	117,000	145,000	50,400	29,400	52,300	19,300	14,300	9,500
15	12,600	20,000	31,000	124,000	123,000	182,000	50,400	27,900	45,700	19,300	15,500	9,500
16	12,600	18,000	27,900	112,000	123,000	198,000	53,300	27,900	40,300	18,000	20,600	9,500
17	12,600	16,700	24,100	99,200	107,000	193,000	56,300	31,000	36,000	18,000	18,600	9,500
18	12,600	16,100	23,400	95,400	90,600	203,000	56,300	29,400	31,000	18,000	18,000	9,500
19	14,300	14,900	23,400	93,000	77,700	210,000	60,400	28,600	27,900	18,000	16,700	9,500
20	15,500	14,300	23,400	87,000	66,600	215,000	60,400	29,400	26,300	15,500	15,500	10,500
21	16,700	13,700	23,400	89,400	60,400	231,000	60,400	30,200	24,800	14,900	14,900	10,500
22	16,700	13,700	22,700	97,900	56,300	213,000	56,300	32,600	23,400	14,300	14,300	10,500
23	16,100	13,700	22,000	99,200	56,300	182,000	52,300	41,200	24,800	14,300	14,300	10,500
24	16,700	13,100	25,600	108,000	54,300	151,000	48,500	52,300	24,800	14,300	14,900	10,500
25	16,700	12,600	29,400	145,000	50,400	125,000	44,800	62,400	22,000	14,300	14,900	11,000
26	16,100	12,600	31,000	157,000	48,500	112,000	41,200	74,300	23,400	13,100	14,300	12,600
27	15,500	12,600	29,400	172,000	93,000	160,000	39,400	94,200	22,700	13,100	14,300	13,100
28	14,300	12,000	29,400	203,000	157,000	162,000	39,400	107,000	22,000	13,100	14,300	13,700
29	14,300	12,000	29,400	206,000	.....	187,000	37,700	107,000	20,600	13,100	13,700	15,500
30	13,700	12,000	31,000	203,000	.....	190,000	37,700	91,800	20,000	14,300	13,100	23,400
31	13,100	.....	39,400	205,000	.....	200,000	.....	77,700	.....	14,300	13,100	.....

Monthly discharge of Tennessee River at Florence, Ala., for the years ending Sept. 30, 1895–1913.

[Drainage area, 30,800 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
1895.						
October	13,100	9,990	11,100	0.360	0.42	C.
November	12,600	10,500	11,400	.370	.41	B.
December	68,800	11,000	26,700	.867	1.00	C.
January	213,000	23,400	103,000	3.34	3.85	B.
February	75,400	33,400	49,800	1.62	1.69	B.
March	173,000	47,600	111,000	3.60	4.15	B.
April	94,200	48,500	66,600	2.16	2.41	B.
May	64,500	37,700	51,100	1.66	1.91	B.
June	47,600	17,300	25,800	.838	.94	B.
July	59,300	17,300	30,500	.990	1.14	B.
August	47,600	18,000	25,700	.834	.96	B.
September	22,700	11,500	17,400	.565	.63	B.
The year	213,000	9,990	44,300	1.44	19.51	
1896.						
October	11,500	10,500	11,000	.357	.41	B.
November	14,300	11,000	12,400	.403	.45	B.
December	71,000	12,000	20,700	.672	.77	B.
January	55,300	19,300	32,200	1.05	1.21	B.
February	155,000	34,300	100,000	3.25	3.50	B.
March	141,000	30,200	61,000	1.98	2.28	B.
April	254,000	29,400	98,500	3.20	3.57	B.
May	41,200	16,700	24,600	.799	.92	B.
June	38,500	17,300	23,800	.773	.86	B.
July	125,000	16,700	56,500	1.83	2.11	B.
August	46,600	14,300	21,400	.695	.80	B.
September	20,600	11,000	13,300	.432	.48	B.
The year	254,000	10,500	39,300	1.28	17.36	

Monthly discharge of Tennessee River at Florence, Ala., for the years ending Sept. 30, 1895–1913—Continued.

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
1897.						
October	16,100	11,000	12,700	0.412	0.48	B.
November	52,300	11,500	23,400	.760	.85	B.
December	90,600	18,600	39,000	1.27	1.46	B.
January	62,400	16,700	34,900	1.13	1.30	B.
February	193,000	29,400	88,900	2.89	3.01	B.
March	481,000	91,800	255,000	8.28	9.55	C.
April	225,000	40,300	115,000	3.73	4.16	B.
May	152,000	27,100	63,800	2.07	2.39	B.
June	32,600	19,300	25,900	.841	.94	C.
July	72,100	20,600	33,000	1.07	1.23	C.
August	35,100	16,100	21,900	.711	.82	B.
September	14,900	9,500	11,100	.360	.40	B.
The year	481,000	9,500	60,300	1.96	26.59	
1898.						
October	12,600	8,550	10,300	.334	.39	C.
November	12,000	9,990	10,800	.351	.39	C.
December	88,200	9,990	33,400	1.08	1.24	B.
January	157,000	19,300	87,200	2.83	3.26	A.
February	102,000	22,000	35,400	1.15	1.20	B.
March	57,300	21,300	33,500	1.09	1.26	B.
April	124,000	56,300	83,200	2.70	3.01	A.
May	51,400	20,000	29,600	.961	1.11	B.
June	36,800	13,100	19,400	.630	.70	B.
July	36,800	14,300	19,900	.646	.74	C.
August	102,000	21,300	52,900	1.72	1.98	B.
September	139,000	20,600	45,500	1.48	1.65	C.
The year	157,000	8,550	38,400	1.25	16.93	
1899.						
October	99,200	19,300	43,100	1.40	1.61	C.
November	47,600	22,700	30,600	.994	1.11	B.
December	46,600	23,400	33,900	1.10	1.27	B.
January	161,000	30,200	74,900	2.43	2.80	B.
February	264,000	46,600	150,000	4.87	5.07	A.
March	352,000	127,000	231,000	7.50	8.65	A.
April	167,000	56,300	107,000	3.47	3.87	B.
May	73,200	26,300	49,100	1.59	1.83	B.
June	37,700	18,000	26,000	.844	.94	C.
July	24,100	13,700	17,900	.581	.67	C.
August	27,900	11,500	16,500	.536	.62	B.
September	16,700	11,000	12,800	.416	.46	B.
The year	352,000	11,000	65,600	2.13	28.90	
1900.						
October	13,100	10,500	11,400	.370	.43	B.
November	15,500	10,500	11,700	.380	.42	B.
December	65,600	12,600	39,000	1.27	1.46	B.
January	94,200	16,700	48,600	1.58	1.82	B.
February	168,000	24,100	76,300	2.48	2.58	B.
March	131,000	62,400	97,700	3.17	3.66	B.
April	243,000	56,300	110,000	3.57	3.98	B.
May	62,400	21,300	31,700	1.03	1.19	B.
June	142,000	24,800	63,600	2.06	2.30	C.
July	94,200	20,000	38,800	1.26	1.45	B.
August	52,300	13,700	20,700	.672	.77	B.
September	25,600	11,500	16,100	.523	.58	B.
The year	243,000	10,500	46,800	1.52	20.64	
1901.						
October	43,000	12,600	20,300	.659	.76	B.
November	109,000	14,300	27,500	.893	1.00	B.
December	107,000	23,400	42,400	1.38	1.59	A.
January	193,000	31,000	80,800	2.62	3.02	A
February	113,000	27,900	61,100	1.98	2.06	A.
March	152,000	26,300	65,400	2.12	2.44	A.
April	195,000	62,400	138,000	4.48	5.00	A.
May	192,000	31,800	81,500	2.65	3.06	B.
June	103,000	40,300	57,800	1.88	2.10	A.
July	46,600	16,100	28,100	.912	1.05	B.
August	238,000	16,100	98,600	3.20	3.69	A.
September	80,000	31,000	53,500	1.74	1.94	A.
The year	238,000	12,600	62,800	2.04	27.71	

Monthly discharge of Tennessee River at Florence, Ala., for the years ending Sept. 30, 1895–1913—Continued.

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
1902.						
October	33,400	17,300	24,300	0.789	9.91	B.
November	16,700	14,900	15,800	.513	.57	C.
December	193,000	15,500	77,600	2.52	2.90	B.
January	272,000	38,500	114,000	3.70	4.27	B.
February	198,000	43,900	97,200	3.16	3.29	B.
March	273,000	67,700	161,000	5.23	6.03	A.
April	216,000	37,700	91,600	2.97	3.31	B.
May	66,600	22,700	34,000	1.10	1.27	B.
June	26,300	17,300	20,800	.675	.75	C.
July	59,300	14,300	24,600	.799	.92	C.
August	17,300	11,500	13,600	.442	.51	C.
September	22,000	11,000	12,900	.419	.47	B.
The year	273,000	11,000	57,200	1.86	25.20	
1903.						
October	21,300	9,990	16,400	.532	.61	B.
November	43,900	9,020	14,600	.474	.53	C.
December	75,400	31,000	54,800	1.78	2.05	B.
January	58,300	29,400	46,500	1.51	1.74	A.
February	218,000	38,500	157,000	5.10	5.31	B.
March	236,000	76,600	163,000	5.29	6.10	A.
April	226,000	64,500	137,000	4.45	4.96	A.
May	64,500	22,700	40,600	1.32	1.52	A.
June	107,000	27,100	53,800	1.75	1.95	A.
July	35,100	15,500	25,600	.831	.96	B.
August	27,900	13,100	19,900	.646	.74	B.
September	12,000	9,500	10,400	.338	.38	B.
The year	236,000	9,020	61,100	1.98	26.85	
1904.						
October	12,000	8,550	9,640	.313	.36	B.
November	35,100	9,020	14,800	.481	.54	B.
December	30,200	9,500	15,500	.503	.58	B.
January	80,000	12,600	27,800	.903	1.04	B.
February	52,300	18,600	30,500	.990	1.07	B.
March	210,000	46,600	93,800	3.05	3.52	B.
April	120,000	25,600	47,300	1.54	1.72	B.
May	44,800	18,000	31,000	1.01	1.16	B.
June	39,400	13,700	21,900	.711	.79	B.
July	26,300	13,700	18,100	.588	.68	B.
August	27,900	13,700	19,100	.620	.71	C.
September	.....	.....	11,500	.373	.42	D.
The year	210,000	.....	28,400	.922	12.59	
1905.						
October	.....	.....	7,700	.250	.29	D.
November	.....	.....	8,500	.276	.31	D.
December	85,800	11,000	24,500	.795	.92	C.
January	125,000	25,600	53,000	1.72	1.98	B.
February	201,000	24,800	119,000	3.86	4.02	B.
March	142,000	39,400	73,800	2.40	2.77	A.
April	51,400	31,000	38,000	1.23	1.37	A.
May	104,000	41,200	63,100	2.05	2.36	A.
June	58,300	18,600	31,600	1.03	1.15	A.
July	81,200	27,100	44,600	1.45	1.67	A.
August	60,400	19,300	32,800	1.06	1.22	B.
September	37,700	11,000	19,200	.623	.70	A.
The year	201,000	.....	42,500	1.38	18.76	
1906.						
October	23,400	11,000	17,100	.555	.64	A.
November	22,000	11,000	13,600	.442	.49	A.
December	95,400	12,600	60,400	1.96	2.26	A.
January	155,000	48,500	90,300	2.93	3.38	A.
February	78,800	29,400	44,000	1.43	1.49	A.
March	119,000	38,500	75,300	2.44	2.81	B.
April	128,000	36,000	65,800	2.14	2.39	A.
May	54,300	20,600	32,700	1.06	1.22	B.
June	54,300	22,000	32,500	1.06	1.18	B.
July	111,000	22,000	54,400	1.77	2.04	A.
August	60,400	34,300	45,000	1.46	1.68	B.
September	91,800	34,300	59,400	1.93	2.15	A.
The year	155,000	11,000	49,300	1.60	21.73	

Monthly discharge of Tennessee River at Florence, Ala., for the years ending Sept. 30, 1895–1913—Continued.

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
1907.						
October	189,000	34,300	86,700	2.81	3.24	A.
November	201,000	21,300	66,100	2.15	2.40	A.
December	73,200	35,100	49,100	1.59	1.83	A.
January	161,000	37,700	68,400	2.22	2.56	A.
February	131,000	32,600	63,000	2.05	2.14	A.
March	167,000	36,800	94,100	3.06	3.53	A.
April	75,400	35,100	52,800	1.71	1.91	A.
May	138,000	31,000	69,700	2.26	2.61	B.
June	93,000	36,800	55,600	1.81	2.02	B.
July	44,800	19,300	29,500	.958	1.10	A.
August	29,400	18,000	21,700	.705	.81	B.
September	67,700	14,900	26,300	.854	.95	B.
The year	201,000	14,900	57,000	1.85	25.10	
1908.						
October	38,500	12,600	19,100	.620	.71	A.
November	94,200	13,100	39,900	1.30	1.45	B.
December	82,300	25,600	43,500	1.41	1.63	A.
January	142,000	43,000	92,400	3.00	3.46	A.
February	206,000	50,400	108,000	3.51	3.79	B.
March	154,000	62,400	89,900	2.92	3.37	A.
April	99,200	41,200	66,200	2.15	2.40	A.
May	99,200	39,400	55,500	1.80	2.08	A.
June	45,700	20,600	31,600	1.03	1.15	B.
July	43,000	16,700	26,200	.851	.98	B.
August	40,300	14,900	23,500	.763	.88	B.
September	36,000	11,500	18,600	.604	.67	A.
The year	206,000	11,500	51,000	1.66	22.57	
1909.						
October	26,300	10,500	12,800	.416	.48	A.
November	31,800	13,700	17,700	.575	.64	B.
December	100,000	13,700	54,200	1.76	2.03	A.
January	128,000	39,400	69,200	2.25	2.59	A.
February	240,000	33,400	129,000	4.19	4.36	B.
March	250,000	80,000	139,000	4.51	5.20	B.
April	125,000	45,700	74,000	2.40	2.68	A.
May	172,000	44,800	95,600	3.10	3.57	A.
June	184,000	67,700	105,000	3.41	3.80	A.
July	128,000	31,000	63,200	2.05	2.36	A.
August	73,200	19,300	37,800	1.23	1.42	B.
September	27,900	16,100	19,300	.627	.70	B.
The year	250,000	10,500	67,600	2.19	29.83	
1910.						
October	36,000	13,100	19,300	.627	.72	A.
November	14,300	12,600	13,100	.425	.47	B.
December	36,800	12,600	24,100	.782	.90	A.
January	94,200	18,000	51,200	1.66	1.91	A.
February	127,000	28,600	58,500	1.90	1.98	A.
March	112,000	23,400	50,500	1.64	1.89	A.
April	59,300	18,000	30,500	.990	1.10	B.
May	115,000	27,100	58,700	1.91	2.20	A.
June	80,000	37,700	54,600	1.77	1.98	A.
July	99,200	34,300	65,400	2.12	2.44	B.
August	41,200	18,600	28,900	.938	1.08	B.
September	54,300	14,900	26,100	.847	.94	B.
The year	127,000	12,600	40,000	1.30	17.61	
1911.						
October	23,400	12,000	15,600	.506	.58	A.
November	13,700	10,500	11,300	.367	.41	A.
December	77,700	13,100	29,500	.958	1.10	A.
January	206,000	29,400	80,000	2.60	3.00	B.
February	190,000	43,900	94,300	3.06	3.19	B.
March	128,000	36,000	55,100	1.79	2.06	A.
April	293,000	52,300	167,000	5.42	6.05	B.
May	77,700	23,400	40,800	1.32	1.52	A.
June	23,400	13,100	17,600	.571	.64	A.
July	34,300	14,900	22,900	.744	.86	A.
August	28,600	11,000	19,200	.623	.72	A.
September	20,600	9,500	13,100	.425	.47	B.
The year	293,000	9,500	46,700	1.52	20.60	

Monthly discharge of Tennessee River at Florence, Ala., for the years ending Sept. 30, 1895–1913—Continued.

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
1912.						
October	41,200	9,990	20,100	0.653	0.75	C.
November	35,100	12,000	23,800	.773	.86	B.
December	228,000	18,600	74,400	2.42	2.79	C.
January	206,000	41,200	75,400	2.45	2.82	C.
February	182,000	35,100	84,000	2.73	2.94	B.
March	223,000	82,300	144,000	4.68	5.40	B.
April	250,000	75,400	154,000	5.00	5.58	B.
May	213,000	35,100	93,100	3.02	3.48	B.
June	72,100	23,400	37,200	1.21	1.35	A.
July	76,600	31,000	47,400	1.54	1.78	A.
August	40,300	22,700	29,500	.958	1.10	A.
September	42,100	13,100	21,300	.692	.77	A.
The year	250,000	9,990	67,000	2.18	29.62	
1913.						
October	29,400	12,600	16,300	.529	.61	A.
November	20,000	12,000	13,800	.448	.50	B.
December	71,000	11,500	32,400	1.05	1.21	B.
January	206,000	44,800	124,000	4.03	4.65	B.
February	203,000	48,500	98,400	3.19	3.32	C.
March	231,000	55,300	152,000	4.94	5.70	B.
April	221,000	37,700	81,500	2.65	2.96	B.
May	107,000	27,900	44,900	1.46	1.68	B.
June	78,800	20,000	41,800	1.36	1.52	A.
July	20,000	13,100	16,700	.542	.62	A.
August	20,600	13,100	15,400	.500	.58	A.
September	23,400	9,500	11,500	.373	.42	B.
The year	231,000	9,500	53,900	1.75	23.77	

Discharge and horsepower table for Tennessee River at Florence, Ala., for the years ending Sept. 30, 1895–1913.

Gage height.	Discharge in second-feet.	Theoretical horsepower per foot of fall.	Days of deficient discharge.									
			1895	1896	1897	1898	1899	1900	1901	1902	1903	1904
−0.62	8,000	909	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
− .51	8,500	966	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
− .40	9,000	1,020	.....	.....	.....	1	.....	.....	.....	.....	.....	3
− .30	9,500	1,080	.....	.....	.....	10	.....	.....	.....	.....	1	17
− .20	10,000	1,140	2	.....	13	28	.....	.....	.....	.....	34	38
.00	11,000	1,250	13	6	15	31	.....	8	.....	.....	41	49
.19	12,000	1,360	62	43	35	55	8	48	.....	14	57	91
.55	14,000	1,590	77	97	60	71	35	76	5	42	65	115
.89	16,000	1,820	82	121	70	86	59	106	22	80	75	144
1.51	20,000	2,270	121	162	97	108	84	124	52	133	100	186
2.22	25,000	2,840	161	194	147	188	119	158	77	178	133	237
2.87	30,000	3,410	182	217	188	222	152	179	94	202	163	263
3.49	35,000	3,980	196	253	207	242	183	194	125	212	179	285
4.07	40,000	4,550	213	273	226	258	205	206	165	221	195	302
5.16	50,000	5,680	251	292	251	282	231	231	205	247	223	318
Over 5.16	Over 50,000	Over 5,680	365	366	365	365	365	365	365	365	365	366

Discharge and horsepower table for Tennessee River at Florence, Ala., for the years ending Sept. 30, 1895–1913—Continued.

Gage height.	Discharge in second-feet.	Theoretical horsepower per foot of fall.	Days of deficient discharge.								
			1905	1906	1907	1908	1909	1910	1911	1912	1913
−0.62	8,000	909	31	.....	.....	.....	.....	.....	.....	.....	.....
− .51	8,500	966	31	.....	.....	.....	.....	.....	.....	.....	.....
− .40	9,000	1,020	61	.....	.....	.....	.....	.....	.....	.....	.....
− .30	9,500	1,080	61	.....	.....	.....	.....	.....	.....	.....	.....
− .20	10,000	1,140	61	.....	.....	.....	.....	.....	3	2	7
.00	11,000	1,250	61	.....	.....	.....	8	.....	14	4	13
.19	12,000	1,360	67	13	.....	2	19	.....	31	5	21
.55	14,000	1,590	77	34	.....	19	28	38	75	32	70
.89	16,000	1,820	87	42	2	40	46	58	99	37	111
1.51	20,000	2,270	101	52	18	61	84	89	157	52	147
2.22	25,000	2,840	135	86	71	112	96	128	190	74	173
2.87	30,000	3,410	160	104	89	137	104	158	207	106	194
3.49	35,000	3,980	199	134	104	152	125	186	230	143	205
4.07	40,000	4,550	220	167	154	175	138	229	251	172	217
5.16	50,000	5,680	265	207	212	223	156	266	273	210	230
Over 5.16	Over 50,000	Over 5,680	365	365	365	366	365	365	365	366	365

NOTE.—The above table gives the theoretical horsepower per foot fall that may be developed at different rates of discharge, and shows the number of days on which the discharge and corresponding horsepower were respectively less than the amounts given in the columns for discharge and horsepower. In using this table, allowance should be made for the various losses, the principal ones being the wheel loss, which may be as large as 20 per cent, and the head loss, which may be as large as 5 per cent.

TENNESSEE RIVER AT JOHNSONVILLE, TENN.

Location.—At the Nashville, Chattanooga & St. Louis Railway freight elevator, about 1,000 feet below the railway bridge at Johnsonville, Tenn., 160 miles below Florence, Ala., and 96 miles from the mouth of the Tennessee.

Records available.—October 1, 1875, to September 30, 1913.

Drainage area.—38,500 square miles.

Gage.—Staff, at freight elevator on right bank about 1,000 feet below the Nashville, Chattanooga & St. Louis Railway bridge. Gage is in three vertical sections: −0.3 to 12.3 feet, on pile foundation; 12 to 36 feet on upstream elevator guide; 36 to 48 feet on downstream elevator guide. There is also a low-water section extending from −0.3 to −1.5 feet.

Descriptions of this gage appear in the publications of the Signal Service and of the Weather Bureau, and beginning 1903 in "Stages of the Mississippi River and of its principal tributaries," published by the Mississippi River Commission. "Stages of the Ohio River and of its principal tributaries, Part I, 1858 to 1889, inclusive," published by the Signal Service, states:

The river gage, made of 5 by 2-inch cypress lumber, is on the corner of the elevator building. It is graduated from zero to 50 feet. * * * For a zero stage of water the depth of water on Duck River Bar, 15 miles above, is 3.5 feet.

Original gage records contain this note:

Gage owned by railroad company. First used for Signal Service readings during summer, 1885.

"Daily river stages, principal rivers of the United States, Part IV, 1890–1892," published by the Weather Bureau, states:

The river gage, made of 5 by 2-inch cypress lumber, was on the corner of the elevator building. The part above 8 feet was carried away by a steamboat.

The lowest water is 0.1 foot below zero of gage. * * *

A new gage was graduated June 1, 1892, on the south lead of elevator, inside the elevator building, from 11.8 feet, the level of the lowest floor, to 48 feet, some distance above the top floor. It was marked to feet and tenths in lead pencil, to be finally marked with copper tacks. The gage was set by leveling from the bench mark. The level of lower floor by the old gage is 12.2 instead of 11.8 inches.

Part V, 1893–1895, "Daily river stages," states:

The river gage is located on the Nashville, Chattanooga & St. Louis Railroad elevator. The lower section (12.1 feet) is made of hickory timber. The remainder is on the inside post of the elevator and is graduated with copper tacks and wire. * * * Graduation is from 0.1 foot below to 48 feet above zero.

Same description appears in Part VI, 1896–1899. Part VII, 1900–1904, states:

The river gage * * * is located on the elevator on the right bank of the river and is in two sections. The first section (−0.3 to 12 feet) is made of hickory timber and is painted white, with graduations cut into the wood. There is also a low-water extension (−1.5 feet to −0.3 foot), made of 1 by 4-inch poplar timber. The second section (12 to 48 feet) is on the inside post of the elevator and is graduated by means of copper tacks and wires.

Inspection report of December 14, 1904, states:

The lower section is −0.3 to 12 feet, with an extension of poplar, 4 inches wide and 1 inch thick, −0.3 to −1.5 feet. The extension and repainting was completed October 25, 1904.

Part VIII, 1905–6, states:

A new river gage was installed by the Nashville, Chattanooga & St. Louis Railway Co. in March, 1906. It is attached to the railway elevator on the right bank of the river and is in two vertical sections. The first section (−0.3 to 12 feet) is made of hickory timber and is painted white, with graduations cut into the wood. The second section (12 to 48 feet) is attached to the elevator timbers and is painted white, with graduations cut into the wood and painted black. There is also a low-water section extending from 0.3 to 1.5 feet below zero. Graduation extends from 1.5 feet below to 48 feet above zero.

Inspection report of April 18, 1906, states:

The second section of the gage was recently renewed by the railroad company, and first used in January, 1906, but not finally completed until March, 1906.

Same description appears in Parts IX, X, and XI, 1907–1912.

The datum to which the gage is referred has remained the same throughout, but Mr. Balch, the superintendent of the elevator, states that the foundation piles of the elevator are settling, as indicated by the unevenness of the floor of the elevator, which means that there has been some change in the elevation of the gage as referred to the datum. On July 22, 1910, the section −0.3 to 12.3 feet was 0.1 foot too high, assuming the section 12 to 36 feet as being correct. The section −0.3 to 12.3 feet had been torn off by a boat and in being replaced was set 0.1 foot too high, but it is stated that the correction of 0.1 foot was made in the readings before they were recorded by the observer. The bench marks to which the gage was referred could not be found, as noted below; therefore the elevation of the gage could not be checked otherwise than as noted above.

Bench marks.—The following descriptions of bench marks are taken from "Stages of the Mississippi River and of its principal tributaries for 1913:"

Bench mark is top of coping of west abutment of N., C. & St. L. R. R. bridge. It is 44 feet above zero of the gage and 359.89 feet above mean Gulf level.

Top of rail on bridge is 46 feet above zero of gage and 361.89 feet above mean Gulf level.

P. B. M. 25 is top of iron bolt leaded vertically into top face of stone coping of the cylinder or draw pier of the N., C. & St. L. R. R. bridge at Johnsonville, Tenn. It is in northwest corner of northwest quadrant, 10 inches from face of stone coping and 20 inches from iron frame (probably pedestal). Elevation above mean Gulf level, 356.94 feet.

The bench marks described above could not be found by engineers of the Survey on July 22, 1910, but further search may bring them to light. It is believed that these bench marks may have been destroyed when the bridge was raised. The following bench marks were established July 22, 1910, assuming the gage section 12 to 36 feet to be correct. (See "Gage.")

Bench mark No. 1.—Railroad spike driven in the northwest corner of right abutment of railway bridge. Elevation above zero of gage, 13.64 feet.

Bench mark No. 2.—Horizontal chisel draft inclosed in a chiseled square about 0.2 foot square on north face of right abutment. Stone is in fourth course above ground about 3½ feet from west face of abutment. Elevation above zero of gage, 18.60 feet.

Daily gage height.—Taken from published reports and original records of the Signal Service and the Weather Bureau, and the published reports of the Mississippi River Commission. Values represent one reading per day, taken about 3 p. m., from October, 1875, to December, 1879; about noon, January, 1880; about 1 p. m., February, 1880–April, 1883; about noon, February, 1884–February, 1885; about 1 p. m., March, 1885, to June, 1888; and about 7 a. m., July, 1888, to September, 1913—central time.

Observer, W. H. Johnson, October, 1875–March, 1894; Sallie B. Mathews, April, 1894–September, 1913.

The following notes are taken from the observer's reports:

March, 1882.—During last rise the gage was broken off. A temporary one has been put up and rise and fall of river noted as accurately as possible.

October, 1882.—About middle of October the gage was covered with mud by workmen repairing the elevator. Rise and fall of river taken from an improvised gage.

April, 1884.—Observations taken as accurately as the stage of the water and condition of gage permitted. Since water carried part of Government gage away I have been using the gage that steamboat men use. Another gage has been improvised, which is quite as accurate as the regular gage.

September, 1884.—Tennessee River has been lower for past six weeks than it has ever been in the eight years in which I have taken observations. The fluctuations have been less than common at this point, and for several days at a time river has remained stationary.

The recorded daily gage height September 3–October 31, 1884, does not agree with the daily difference reported by the observer, and it appears that some of the published gage heights during this period may be in error. No observations taken during December, 1884.

No records available August 19, 1877–February 28, 1879; November 1, 1880–December 31, 1881; May 1, 1883–February 4, 1884, and other shorter periods for which no values appear in the tables.

A note, stamped May 24, 1895, appears in the original records of the Weather Bureau under the heading "River Reports, Johnsonville, 1882 to 1891," and states: "River records at Johnsonville, Tenn., are of doubtful accuracy."

Control.—No information relative to control. The discharge measuring section at the bridge, of bowlders and coarse gravel, is apparently permanent.

Discharge measurements.—Made from downstream side of through type railway bridge of six spans and draw span. Total length of draw span is 400 feet; other spans are 150 feet in length. The initial point for soundings is the west side of stone bridge seat on downstream side of left abutment. At extremely high stages the water extends for miles on the left bank and flow occurs through numerous openings in the railway embankment. Discharge measurements by the United States Geological Survey at this station were made first in July, 1910.

Results of observations of the discharge of Tennessee River near Birmingham, Ky., September 5–19, 1903, reduced to three significant figures, are given in the table on page 201. The data are given in detail in the supplement, volume 9, to the annual report for 1904 of the Chief of Engineers of the United States Army, and the following description of the work is taken from the report of Mr. Kivas Tully, assistant engineer, Mississippi River Commission, contained therein.

The Tennessee River reached the prescribed stage for low-water discharge observations early in September, and a small party was organized. Observations

were made at the section laid out in 1902, 1½ miles below Birmingham, Ky., about 26 miles above the mouth. The party was in charge of Junior Engineer M. A. Bell, assisted by Mr. E. E. Whitehead, and a very complete set of measurements was made from September 5 to 19, comprising observations with Price and Haskell meters and double floats. The gage readings at Florence, Ala., ranged from zero to −0.2 foot. The work was done from a skiff located by means of transit and stadia. The results are given in Table No. 4. The different methods, in the main, agree very closely. At the conclusion of work at this station the Cumberland River was approaching the prescribed low stage, and the party and outfit were transported by wagon across country to that river and began work September 21 at the section used at high water of 1902, which is 1 mile below Rock Castle, Ky., about 53 miles above the mouth. Sixteen sets of observations were made by October 2. The meters were then rated in the river and the party returned to the St. Louis office. The velocity of the river was very low, and as a check on the meter work floats were used, both double floats and rod floats; the double floats give somewhat larger discharges than the meters, but the discrepancies are not large. The gage at Nashville, Tenn., during the observations ranged from 1.2 feet to 0.9 foot. The results are given in Table No. 4. It is thought that these measurements sufficiently determine the low-water discharge, and it was decided by resolution of the Commission that no more observations on these rivers at low water will be required.

From the measurements near Birmingham the following values of discharge at Johnsonville were computed:

No.	Dates used in determining gage heights at Johnsonville (1903).	Gage height and corresponding discharge at Johnsonville.		Dates of discharge measurements near Birmingham (1903).
		Gage height.	Discharge.	
		Feet.	*Second-feet.*	
A	Sept. 3, 4, 5....	1.03	13,200	Sept. 6, 7, 8.
B	Sept. 7, 8, 9....	.90	12,400	Sept. 10, 11, 12.
C	Sept. 11, 12, 13.	.57	11,500	Sept. 14, 15, 16.
D	Sept. 15, 16....	.40	10,300	Sept. 18, 19.

The discharge measuring section below Birmingham is about 67 miles below Johnsonville. In computing the above values of discharge the mean velocity between the two points was assumed to be about 1 mile per hour, and the time required for a given quantity of water to flow from Johnsonville to the measuring section below Birmingham was accordingly taken as three days. The mean gage height for several days of comparatively little change at Johnsonville was taken as the gage height corresponding to the mean discharge for the same number of days near Birmingham, the dates being shown in the table above. A reduction of 200 second-feet in the measured discharge below Birmingham was made in transferring the discharge to Johnsonville to allow for inflow between the two points. The drainage area between Johnsonville and the measuring section below Birmingham is about 1,560 square miles, and in estimating the inflow the discharge from this area was estimated about 0.1 second-foot per square mile on the basis of the discharge of Duck River at Columbia, Tenn., during the low-water periods of 1904 and 1908.

Daily discharge.—Values in the daily discharge tables were computed from the rating table on pages 202–203.

Discharge for certain periods was estimated as noted under "Backwater." The daily gage height published for October 19, 1893, is apparently in error and the daily discharge was estimated.

No discharge values are published prior to the year ending September 30, 1890. The gage height record for the early period is questionable, as noted under "Daily gage height." In addition, comparisons with preliminary computations of discharge at Florence and with the records of discharge at Chattanooga prior to 1890 cast sufficient doubt upon the reliability of discharge values for Johnsonville,

computed from the published gage heights and the rating table on pages 202–203, to make it necessary to withhold from publication the discharge record at Johnsonville prior to the year ending September 30, 1890. Some of the published data prior to 1900 are questionable as noted under the table of ratios on page 93.

Duration of flow.—The table on pages 239–240 gives the number of days in each year that the daily discharge as given in the tables on pages 222–234 was less than the limiting values of discharge given in the first column of the duration table. In constructing the table, the daily discharge for periods of estimated discharge was assumed to be constant and the same as the estimated mean discharge. For further explanation of the duration table see description of Chattanooga station, page 95.

Backwater.—The extent of the effect on the discharge relation at Johnsonville of backwater from Ohio River has not been determined, but that backwater does, at times, affect the flow at Johnsonville is shown by the following: The sea-level elevation of the zero of the gage on Ohio River at Paducah, Ky., at the mouth of the Tennessee, is 286 feet and of the gage at Johnsonville is 316 feet, as published in Part XI, "Daily river stages," by the United States Weather Bureau. A stationary stage of 30 feet at Paducah would, therefore, put water on the zero of the Johnsonville gage, which is 97 miles from Paducah. In 1904 the stage at Johnsonville fell to −0.9 foot. The flood of March–April, 1913, reached a stage of 54.3 feet at Paducah or a sea-level elevation of 340 feet. This, with no flow in the Tennessee, would put about 24 feet of water on the Johnsonville gage.

Neglecting the backwater curve, it may be observed from the foregoing that whenever the stage at Paducah is over 30 feet for any considerable length of time, the discharge relation at Johnsonville is subject to backwater effect, the amount of which will depend largely on the source of the greater portion of the water passing Paducah—that is, whether it comes from the Tennessee or the Ohio above the Tennessee. It should be noted that when the two high-water discharge measurements at Johnsonville were made, April 13 and 18, 1911, the stage at Paducah was 37 feet and 42 feet respectively. On April 7, 1911, the stage at Paducah was 23 feet and on July 22, 1910, it was 24 feet and on these dates also discharge measurements were made at Johnsonville. The discharge rating table for Johnsonville, on pages 202–203, therefore applies for periods when the effects of backwater are similar to the effects which existed when the discharge measurements were made upon which the rating table is based.

When the stage of Ohio River at Paducah indicated probable backwater effect at Johnsonville, Tenn., the discharge at Johnsonville was estimated, provided the discharge computed from the daily gage height indicated that the backwater effect at the time in question was materially different from the effect at the time the discharge measurements were made upon which the discharge rating table is based. No reduction in discharge as computed from the discharge rating table has been made in cases where the discharge relation appears to be about the same as when the discharge measurements were made.

Those months during a portion of which backwater is believed to have existed are marked "*a*" in the table of monthly discharge. The periods of probable backwater were selected by an inspection of the gage heights at Paducah and Johnsonville and are neither absolute nor well defined. The estimates of discharge for the periods of probable backwater effect are based principally upon a comparison of the discharge at Johnsonville and Florence.

The periods of probable backwater and the estimates of discharge are as follows:

January 16 to April 19, 1890.—Mean discharge, January 16–31, estimated 120,000 second-feet; February 1–28, 140,000 second-feet; March 1–31, 230,000 second-feet; and April 1–19, 130,000 second-feet.

February 14 to April 23, 1891.—No reduction made February 14–28; mean discharge, March 1–31, estimated 230,000 second-feet; and April 1–23, 130,000 second-feet.

April 6 to May 7 and May 22 to June 18, 1892.—Mean discharge, April 6–30, estimated 240,000 second-feet; May 1–7, 100,000 second-feet. No reduction made May 22 to June 18.

February 18 to March 5, April 18 to May 23, 1893.—No reduction made.

February 11–21, 1894.—No reduction made.

April 5–15, 1896.—No reduction made.

February 27 to April 23, 1897.—February 27 to March 31. No reduction. Mean discharge, April 1–23, estimated 200,000 second-feet.

January 18 to February 7 and March 25 to April 15, 1898.—Mean discharge, January 18–31, estimated 180,000 second-feet; February 1–7, 110,000 second-feet; March 25–31, 60,000 second-feet; and April 1–15, 120,000 second-feet.

January 13–26 and March 1 to April 17, 1899.—No reduction January 13–26 or March 1–31. Mean discharge, April 1–17, estimated 200,000 second-feet.

April 24 to May 8, 1902.—No reduction made.

February 4–10, March 7–24, and April 3–11, 1902.—No reduction made.

December 18–30, 1902, February 8 to March 31, and April 15 to 30, 1903.—Mean discharge, December 18–30, estimated 90,000 second-feet. No reduction February 8–28. Mean discharge, March 1–31, 1903, estimated 190,000 second-feet. No reduction April 15–30.

March 27 to April 15, 1904.—No reduction March 27–31. Mean discharge, April 1–15, estimated 100,000 second-feet.

March 15–20, 1905.—No reduction made.

April 1–16, 1906.—Mean discharge, estimated 110,000 second-feet.

November 25–30, 1906, January 4 to February 9, and March 8 to April 2, 1907.—No reduction November 25–30, 1906; mean discharge, January 4–31, estimated 80,000 second-feet; February 1–9, 120,000 second-feet; and March 8–31, 110,000 second-feet. No reduction April 1 and 2.

February 15 to April 23 and May 10–23, 1908.—Mean discharge, February 15–29, estimated 170,000 second-feet; March 1–31, 110,000 second-feet; April 1–23, 80,000 second-feet; and May 10–23, 70,000 second-feet.

May 6–15, 1909.—No reduction made.

January 23 to February 1 and February 27 to March 19, 1910.—No reduction made.

February 9–17 and April 10–28, 1911.—No reduction made.

December 29, 1911, to January 9, 1912, and February 28 to May 16, 1912.—No reduction December 29 to January 9, and February 28–29. Mean discharge, March 1–31, estimated 170,000 second-feet; April 1–30, 190,000 second-feet; and May, 1–16, 180,000 second-feet.

January 10 to February 12 and March 22 to April 23, 1913.—Mean discharge, January 10–31, estimated 180,000 second-feet; February 1–12, 160,000 second-feet; March 22–31, 230,000 second-feet; and April 1–23, 140,000 second-feet.

Floods.—On March 24, 1897, the river reached a stage of 48.0 feet, which is the highest on record about which is no question.

"Daily river stages, Part IV, 1890–1892," states:

> The highest water, 48 feet, occurred in January or February, 1882. This does not agree with record of stages at that time, which must be wrong. The high water estimated from the Chattanooga stages as being March 7, 1875, marked by a stone under ground, was 45.3 feet. In 1867 there were 44.8 feet.

Winter flow.—Discharge relation not materially affected by ice.

Regulation.—The flow at Johnsonville recorded in the following tables is not believed to have been affected by other than natural causes.

Ratios.—The ratios of monthly and yearly mean discharge of Tennessee River at Chattanooga, Florence, and Johnsonville are given in the table on pages 88–93.

For those months in which the discharge was estimated or partly estimated, the ratios must not be taken as an index of the accuracy of the estimates, because in

many cases the estimates were so made as to yield what appeared to be a reasonable ratio of the Florence to the Johnsonville discharge. A discussion of the ratios is given with the table.

Accuracy.—No accuracy ratings have been assigned to the results at this station, but it is believed that the records published in the following tables are as accurate and reliable as the obtainable base data will yield and the records are believed to be free from gross errors.

Cooperation.—The gage height record, as noted above, was taken from the records of the United States Weather Bureau and of the Mississippi River Commission.

Discharge measurements of Tennessee River at Johnsonville, Tenn, during 1910–1913.

No.	Date.	Hydrographer.	Method.[a]	Coefficient.	Gage height.	Discharge.
	1910.				*Feet.*	*Sec.-ft.*
1	July 22	Horton and Dort	Subsurface	0.89	12.25	86,500
2	July 28	do	do	.89	6.92	47,700
3	Oct. 16	Horton and Bolster	0.2 and 0.8 depth.	1.00	3.06	21,400
4	Nov. 6	C. T. Bailey	do	1.00	1.30	13,300
	1911.					
5	Apr. 7	C. T. Bailey	Subsurface	.89	24.76	206,000
6	Apr. 13	Horton and Bailey	do	.89	32.06	[b] 262,000
7	Apr. 18	C. T. Bailey	do	.89	35.67	[b] 267,000
		Flood channels.				
	Apr. 14	Horton and Bailey	0.6 depth	1.00	33.6	5,510
	Apr. 17	C. T. Bailey	do	1.00	36.03	27,700

[a] All measurements made with small Price current meter.
[b] Does not include flow in flood channels. See values for flood channels.

NOTE.—See "Discharge measurements" in station description.

Discharge measurements of Tennessee River near Birmingham, Ky., 67 miles below Johnsonville, Tenn., in 1903 by the Mississippi River Commission.

[Drainage area, 40,000 square miles.]

No.	Date.	Gage height. Local.	Gage height. Johnsonville.[a]	Discharge.	Method.[b]	Mean discharge for day.	No.	Date.	Gage height. Local.	Gage height. Johnsonville.[a]	Discharge.	Method.[b]	Mean discharge for day.
		Feet.	*Feet.*	*Sec.-ft.*		*Sec.-ft.*			*Feet.*	*Feet.*	*Sec.-ft.*		*Sec.-ft.*
1	Sept. 5	[c] 0.92	1.0	14,100	H	13,800	22	Sept. 10	.....	.....	12,800	P	.....
2	do	.....	.....	13,000	P	.....	23	Sept. 11	.68	.6	11,900	H	12,000
3	do.[d]	.92	.....	14,200	H	.....	24	do	.....	.....	12,100	P	.....
4	Sept. 6	.90	1.0	13,300	H	13,400	25	do.[d]	.68	.....	11,800	H	.....
5	do.[d]	.90	.....	14,000	H	.....	26	do.[d]	.....	.....	12,300	P	.....
6	do.[d]	.....	.....	13,000	P	.....	27	Sept. 12	.62	.6	12,900	H	13,200
7	Sept. 7	.90	1.0	13,600	H	13,500	28	do	.....	.....	13,700	P	.....
8	do	.....	.....	13,700	P	.....	29	do.[d]	.62	.....	12,800	H	.....
9	do	.90	.....	13,400	H	.....	30	do.[d]	.....	.....	13,300	P	.....
10	do	.....	.....	13,200	P	.....	31	Sept. 14	.51	.5	11,900	H	12,000
11	do.[d]	.90	.....	13,400	H	.....	32	do	.....	.....	12,400	P	.....
12	do.[d]	.....	.....	13,800	P	.....	33	do.[d]	.51	.....	11,600	H	.....
13	Sept. 8	.86	.....	13,200	H	13,400	34	do.[d]	.....	.....	12,100	P	.....
14	do	.....	.9	13,300	P	.....	35	Sept. 15	.49	.4	11,600	H	12,000
15	do.[d]	.86	.....	13,400	H	.....	36	do	.....	.....	12,400	P	.....
16	do.[d]	.....	.....	13,900	P	.....	37	Sept. 16	.48	.4	10,600	H	11,000
17	Sept. 9	.80	.....	12,500	H	12,800	38	do	.....	.....	11,400	P	.....
18	do	.....	.8	12,900	P	.....	39	Sept. 18	.34	.3	10,400	H	10,400
19	do.[d]	.80	.....	12,700	H	.....	40	do.[d]	.34	.....	10,300	H	.....
20	do.[d]	.....	.....	13,200	P	.....	41	Sept. 19	.35	.3	10,800	H	10,800
21	Sept. 10	.71	.7	12,500	H	12,600							

[a] Regular observation at Johnsonville at 7 a. m. central time. Gage heights at Johnsonville Sept. 1–4, 1903, were 1.4, 1.3, 1.1, and 1.0 feet, respectively.
[b] H, Haskell meter; P, Price meter. Results are from simultaneous observations with two meters. The meters were submerged at 0.6 depth.
[c] Change in 24 hours was −0.10 foot.
[d] Observations made in the afternoon. All other observations were made in the morning.

NOTE.—See "Discharge measurements" in station description.

Discharge rating table for Tennessee River at Johnsonville, Tenn., from Oct. 1, 1889, to Sept. 30, 1913.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*
−1.00	6,950	6.80	45,530	14.60	109,720	22.40	179,200
− .90	7,150	6.90	46,240	14.70	110,590	22.50	180,100
− .80	7,360	7.00	46,960	14.80	111,460	22.60	181,000
− .70	7,580	7.10	47,680	14.90	112,330	22.70	181,900
− .60	7,810	7.20	48,400	15.00	113,200	22.80	182,800
− .50	8,050	7.30	49,130	15.10	114,080	22.90	183,700
− .40	8,300	7.40	49,860	15.20	114,960	23.00	184,600
− .30	8,560	7.50	50,590	15.30	115,840	23.10	185,500
− .20	8,820	7.60	51,320	15.40	116,720	23.20	186,400
− .10	9,090	7.70	52,060	15.50	117,600	23.30	187,300
.00	9,370	7.80	52,800	15.60	118,480	23.40	188,200
.10	9,650	7.90	53,540	15.70	119,360	23.50	189,100
.20	9,940	8.00	54,280	15.80	120,240	23.60	190,000
.30	10,240	8.10	55,030	15.90	121,120	23.70	190,900
.40	10,540	8.20	55,780	16.00	122,000	23.80	191,800
.50	10,850	8.30	56,540	16.10	122,880	23.90	192,700
.60	11,170	8.40	57,300	16.20	123,760	24.00	193,600
.70	11,500	8.50	58,070	16.30	124,640	24.10	194,500
.80	11,840	8.60	58,840	16.40	125,520	24.20	195,400
.90	12,190	8.70	59,620	16.50	126,400	24.30	196,300
1.00	12,550	8.80	60,410	16.60	127,280	24.40	197,200
1.10	12,920	8.90	61,200	16.70	128,160	24.50	198,100
1.20	13,300	9.00	62,000	16.80	129,040	24.60	199,000
1.30	13,690	9.10	62,810	16.90	129,920	24.70	199,900
1.40	14,080	9.20	63,620	17.00	130,800	24.80	200,800
1.50	14,480	9.30	64,430	17.10	131,690	24.90	201,700
1.60	14,880	9.40	65,250	17.20	132,580	25.00	202,600
1.70	15,290	9.50	66,070	16.30	133,470	25.10	203,500
1.80	15,700	9.60	66,890	17.40	134,360	25.20	204,400
1.90	16,120	9.70	67,710	17.50	135,250	25.30	205,300
2.00	16,540	9.80	68,540	17.60	136,140	25.40	206,200
2.10	16,960	9.90	69,370	17.70	137,030	25.50	207,100
2.20	17,390	10.00	70,200	17.80	137,920	25.60	208,000
2.30	17,830	10.10	71,030	17.90	138,810	25.70	208,900
2.40	18,280	10.20	71,860	18.00	139,700	25.80	209,800
2.50	18,740	10.30	72,690	18.10	140,590	25.90	210,700
2.60	19,210	10.40	73,530	18.20	141,480	26.00	211,600
2.70	19,690	10.50	74,370	18.30	142,370	26.10	212,500
2.80	20,180	10.60	75,210	18.40	143,260	26.20	213,400
2.90	20,680	10.70	76,050	18.50	144,150	26.30	214,300
3.00	21,190	10.80	76,900	18.60	145,040	26.40	215,200
3.10	21,710	10.90	77,750	18.70	145,930	26.50	216,100
3.20	22,240	11.00	78,600	18.80	146,820	26.60	217,000
3.30	22,780	11.10	79,460	18.90	147,710	26.70	217,900
3.40	23,330	11.20	80,320	19.00	148,600	26.80	218,800
3.50	23,890	11.30	81,180	19.10	149,500	26.90	219,700
3.60	24,460	11.40	82,040	19.20	150,400	27.00	220,600
3.70	25,030	11.50	82,900	19.30	151,300	27.10	221,500
3.80	25,610	11.60	83,760	19.40	152,200	27.20	222,400
3.90	26,200	11.70	84,620	19.50	153,100	27.30	223,300
4.00	26,800	11.80	85,480	19.60	154,000	27.40	224,200
4.10	27,410	11.90	86,340	19.70	154,900	27.50	225,100
4.20	28,030	12.00	87,200	19.80	155,800	27.60	226,000
4.30	28,650	12.10	88,060	19.90	156,700	27.70	226,900
4.40	29,280	12.20	88,920	20.00	157,600	27.80	227,800
4.50	29,910	12.30	89,780	20.10	158,500	27.90	228,700
4.60	30,550	12.40	90,640	20.20	159,400	28.00	229,600
4.70	31,190	12.50	91,500	20.30	160,300	28.10	230,500
4.80	31,830	12.60	92,360	20.40	161,200	28.20	231,400
4.90	32,480	12.70	93,220	20.50	162,100	28.30	232,300
5.00	33,130	12.80	94,080	20.60	163,000	28.40	233,200
5.10	33,790	12.90	94,940	20.70	163,900	28.50	234,100
5.20	34,450	13.00	95,800	20.80	164,800	28.60	235,000
5.30	35,120	13.10	96,670	20.90	165,700	28.70	235,900
5.40	35,790	13.20	97,540	21.00	166,600	28.80	236,800
5.50	36,470	13.30	98,410	21.10	167,500	28.90	237,700
5.60	37,150	13.40	99,280	21.20	168,400	29.00	238,600
5.70	37,830	13.50	100,150	21.30	169,300	29.10	239,500
5.80	38,520	13.60	101,020	21.40	170,200	29.20	240,400
5.90	39,210	13.70	101,890	21.50	171,100	29.30	241,300
6.00	39,900	13.80	102,760	21.60	172,000	29.40	242,200
6.10	40,600	13.90	103,630	21.70	172,900	29.50	243,100
6.20	41,300	14.00	104,500	21.80	173,800	29.60	244,000
6.30	42,000	14.10	105,370	21.90	174,700	29.70	244,900
6.40	42,700	14.20	106,240	22.00	175,600	29.80	245,800
6.50	43,400	13.30	107,110	22.10	176,500	29.90	246,700
6.60	44,110	14.40	107,980	22.20	177,400	30.00	247,600
6.70	44,820	14.50	108,850	22.30	178,300	30.10	248,500

Discharge rating table for Tennessee River at Johnsonville, Tenn., from Oct. 1, 1889, to Sept. 30, 1913—Continued.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*
30.20	249,400	35.20	294,400	40.20	339,400	45.20	384,400
30.30	250,300	35.30	295,300	40.30	340,300	45.30	385,300
30.40	251,200	35.40	296,200	40.40	341,200	45.40	386,200
30.50	252,100	35.50	297,100	40.50	342,100	45.50	387,100
30.60	253,000	35.60	298,000	40.60	343,000	45.60	388,000
30.70	253,900	35.70	298,900	40.70	343,900	45.70	388,900
30.80	254,800	35.80	299,800	40.80	344,800	45.80	389,800
30.90	255,700	35.90	300,700	40.90	345,700	45.90	390,700
31.00	256,600	36.00	301,600	41.00	346,600	46.00	391,600
31.10	257,500	36.10	302,500	41.10	347,500	46.10	392,500
31.20	258,400	36.20	303,400	41.20	348,400	46.20	393,400
31.30	259,300	36.30	304,300	41.30	349,300	46.30	394,300
31.40	260,200	36.40	305,200	41.40	350,200	46.40	395,200
31.50	261,100	36.50	306,100	41.50	351,100	46.50	396,100
31.60	262,000	36.60	307,000	41.60	352,000	46.60	397,000
31.70	262,900	36.70	307,900	41.70	352,900	46.70	397,900
31.80	263,800	36.80	308,800	41.80	353,800	46.80	398,800
31.90	264,700	36.90	309,700	41.90	354,700	46.90	399,700
32.00	265,600	37.00	310,600	42.00	355,600	47.00	400,600
32.10	266,500	37.10	311,500	42.10	356,500	47.10	401,500
32.20	267,400	37.20	312,400	42.20	357,400	47.20	402,400
32.30	268,300	37.30	313,300	42.30	358,300	47.30	403,300
32.40	269,200	37.40	314,200	42.40	359,200	47.40	404,200
32.50	270,100	37.50	315,100	42.50	360,100	47.50	405,100
32.60	271,000	37.60	316,000	42.60	361,000	47.60	406,000
32.70	271,900	37.70	316,900	42.70	361,900	47.70	406,900
32.80	272,800	37.80	317,800	42.80	362,800	47.80	407,800
32.90	273,700	37.90	318,700	42.90	363,700	47.90	408,700
33.00	274,600	38.00	319,600	43.00	364,600	48.00	409,600
33.10	275,500	38.10	320,500	43.10	365,500	48.10	410,500
33.20	276,400	38.20	321,400	43.20	366,400	48.20	411,400
33.30	277,300	38.30	322,300	43.30	367,300	48.30	412,300
33.40	278,200	38.40	323,200	43.40	368,200	48.40	413,200
33.50	279,100	38.50	324,100	43.50	369,100	48.50	414,100
33.60	280,000	38.60	325,000	43.60	370.000	48.60	415,000
33.70	280,900	38.70	325,900	43.70	370,900	48.70	415,900
33.80	281,800	38.80	326,800	43.80	371,800	48.80	416,800
33.90	282,700	38.90	327,700	43.90	372,700	48.90	417,700
34.00	283,600	39.00	328,600	44.00	373,600	49.00	418,600
34.10	284,500	39.10	329,500	44.10	374,500	50.00	427,600
34.20	285,400	39.20	330,400	44.20	375,400	51.00	436,600
34.30	286,300	39.30	331,300	44.30	376,300	52.00	445,600
34.40	287,200	39.40	332,200	44.40	377,200	53.00	454,600
34.50	288,100	39.50	333,100	44.50	378,100	54.00	463,600
34.60	289,000	39.60	334,000	44.60	379,000	55.00	472,600
34.70	289,900	39.70	334,900	44.70	379,900	56.00	481,600
34.80	290,800	39.80	335,800	44.80	380,800	57.00	490,600
34.90	291,700	39.90	336,700	44.90	381,700	58.00	499,600
35.00	292,600	40.00	337,600	45.00	382,600	59.00	508,600
35.10	293,500	40.10	338,500	45.10	383,500	60.00	517,600

NOTE.—The above table is not applicable for periods during which ice was present or channel was obstructed. It is based on seven discharge measurements made during 1910–11 by the United States Geological Survey, and four values of discharge computed from 41 discharge measurements made during September, 1903, by the United States Engineer Corps at Birmingham, Ky., as noted under "Discharge measurements" in the station description. The rating table is well defined between discharges 9,370 and 302,000 second-feet (gage heights 0.0 and 36.0 feet). Use this table to three significant figures only.

See "Discharge measurements" and "Backwater" in station description.

Daily gage height, in feet, of Tennessee River at Johnsonville, Tenn., for the years ending Sept. 30, 1876–1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1876.												
1	4.7	1.0	9.4	25.9	19.5	8.9	21.7	6.7	8.8	7.2	4.4	1.0
2	4.2	1.0	8.6	26.9	19.1	8.3	22.9	8.2	9.9	7.0	3.8	1.8
3	3.8	1.0	8.1	27.6	20.5	7.8	24.5	12.6	10.0	6.2	3.2	2.0
4	3.8	1.0	7.6	28.2	21.0	7.4	25.6	16.8	9.3	6.2	3.2	1.9
5	3.8	1.4	7.2	28.7	21.8	6.8	25.8	18.8	8.5	6.0	3.7	1.6
6	3.6	1.8	7.1	29.0	21.8	6.4	25.4	19.6	7.9	6.1	5.8	1.5
7	3.5	2.3	7.8	28.9	21.5	6.5	24.2	20.8	7.4	6.7	6.1	1.5
8	3.3	2.8	10.2	28.7	20.5	6.9	22.0	21.9	7.2	7.2	6.2	1.4
9	2.2	3.1	11.8	26.9	19.2	6.9	21.1	22.6	7.2	7.2	5.2	1.4
10	2.2	3.5	12.8	23.1	17.8	6.8	15.8	22.2	10.6	7.1	5.6	1.2
11	2.5	4.4	12.7	17.5	16.1	6.5	13.1	21.4	7.3	6.8	5.8	1.2
12	3.2	5.4	11.9	13.1	15.1	8.7	11.1	21.0	7.0	6.6	5.6	1.0
13	4.2	6.2	10.2	10.3	15.1	11.6	11.0	20.9	6.4	6.2	5.2	1.0
14	3.7	6.5	10.4	8.8	15.4	12.5	13.5	20.5	6.2	6.0	6.1	1.0
15	3.1	6.9	9.7	7.8	15.8	11.6	13.0	19.6	14.7	5.8	5.8	1.0
16	.....	7.8	8.8	5.5	17.5	12.5	13.0	17.6	24.6	5.0	5.2	1.0
17	2.4	8.4	8.0	10.3	18.0	14.5	12.4	14.9	22.9	4.8	4.5	1.0
18	2.2	8.3	7.3	14.1	19.4	18.1	12.6	12.4	18.5	4.6	4.0	1.0
19	2.1	7.8	6.3	17.0	19.1	20.7	13.3	10.6	13.3	4.2	3.6	.9
20	1.8	7.4	6.0	18.7	19.8	22.0	13.5	10.1	10.7	4.2	3.1	1.1
21	1.7	7.0	5.4	18.3	20.3	22.8	13.9	10.0	12.9	4.1	3.2	2.0
22	1.6	6.7	5.1	16.7	20.0	23.0	11.9	8.4	15.2	4.2	3.2	2.9
23	1.6	6.3	4.8	16.3	18.8	21.8	9.9	7.8	17.0	4.0	3.0	1.8
24	1.5	7.5	6.2	16.8	16.3	21.4	9.9	7.5	17.5	4.0	2.3	1.2
25	1.4	8.1	8.0	16.9	14.1	21.2	8.9	7.3	16.3	3.9	2.7	.8
26	1.3	8.8	9.7	17.6	12.6	22.4	8.2	7.0	13.4	3.8	2.2	.8
27	1.3	10.6	16.0	16.5	11.4	22.6	7.5	6.8	10.6	3.8	2.2	1.1
28	1.2	10.3	17.2	16.0	10.4	22.6	7.0	.....	8.8	3.7	2.0	1.1
29	1.2	10.2	18.8	16.8	9.7	22.5	6.7	6.8	7.7	3.7	1.9	1.0
30	1.1	9.9	21.4	18.4	.....	22.4	6.2	7.0	7.4	4.5	1.8	1.0
31	1.1	.....	24.0	19.5	.....	22.1	.....	7.3	.....	5.3	1.4	.....
1877.												
1	.9	1.3	1.8	1.5	14.5	2.7	.....	.....	.....	3.3	3.5	.....
2	1.0	1.1	1.8	1.5	9.3	2.0	.....	.....	.....	3.3	3.0	.....
3	1.4	.9	1.4	1.6	8.0	2.0	.....	.....	.....	3.1	2.8	.....
4	1.3	.8	1.2	1.5	7.5	2.0	.....	.....	.....	2.8	2.6	.....
5	1.2	.7	1.1	1.5	8.2	3.0	.....	.....	.....	2.5	2.4	.....
6	1.2	.6	1.1	1.7	9.9	3.7	.....	.....	.....	2.3	2.1	.....
7	1.0	.5	1.1	1.8	10.8	4.5	.....	.....	.....	2.7	1.9	.....
8	.8	.4	1.0	2.0	9.2	4.7	.....	.....	.....	2.7	1.8	.....
9	.8	.3	.8	1.2	8.9	6.8	.....	.....	.....	2.2	1.7	.....
10	.8	.3	.8	1.8	8.2	7.7	.....	.....	.....	2.1	1.6	.....
11	.4	.3	.8	2.5	7.5	.....	.....	.....	.....	2.0	1.6	.....
12	.4	.2	.7	3.7	6.5	.....	.....	.....	.....	2.0	1.5	.....
13	.3	.2	.6	5.2	6.0	.....	.....	.....	.....	1.5	1.4	.....
14	.2	.2	.6	.....	5.5	.....	.....	.....	.....	1.5	1.2	.....
15	.2	.2	.5	.....	5.0	.....	.....	.....	.....	.....	1.1	.....
16	.2	.2	.4	.....	4.7	.....	.....	.....	.....	.....	1.0	.....
17	.2	.1	.3	.....	4.3	.....	.....	.....	.....	.....	.9	.....
18	.1	.1	.2	.....	4.0	.....	.....	.....	.....	.....	.9	.....
19	.0	.2	.2	.....	3.8	.....	.....	.....	.....	.....	.....	.....
20	− .1	.3	.1	.....	3.8	.....	.....	.....	.....	.....	.....	.....
21	− .1	.2	.3	21.3	3.5	.....	.....	.....	.....	.....	.....	.....
22	+ .2	.0	.6	22.7	3.2	.....	.....	.....	.....	.....	.....	.....
23	.3	.1	.8	24.2	3.0	.....	.....	.....	.....	.....	.....	.....
24	.9	.1	.8	24.7	3.0	.....	.....	.....	.....	.....	.....	.....
25	1.2	.1	.8	24.6	3.0	.....	.....	.....	.....	.....	.....	.....
26	1.0	.2	.8	24.2	3.0	.....	.....	.....	.....	.....	.....	.....
27	.9	.4	.8	24.5	2.8	.....	.....	.....	.....	.....	.....	.....
28	.8	.6	.8	24.4	2.7	.....	.....	.....	.....	.....	.....	.....
29	.7	.9	1.0	23.1	.....	.....	.....	.....	.....	.....	.....	.....
30	1.2	1.4	1.2	22.5	.....	.....	.....	.....	.....	.....	.....	.....
31	1.5	.....	1.3	18.9	.....	.....	.....	.....	.....	.....	.....	.....

Daily gage height, in feet, of Tennessee River at Johnsonville, Tenn., for the years ending Sept. 30, 1876–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1879.[a]												
1						18.9	13.5	6.0	2.0	0.6	1.5	2.8
2						16.8	12.3	6.0	1.9	.7	1.1	4.2
3						14.8	11.8	6.1	2.3	.8	.9	5.2
4						12.8	11.2	6.2	2.8	.8	1.2	6.0
5						10.8	10.5	6.5	3.2	.8	2.3	6.2
6						9.1	10.2	7.0	3.5	.8	3.3	6.5
7						8.0	10.0	7.6	3.7	.8	3.9	6.5
8						7.0	9.7	8.2	3.5	.7	4.2	5.8
9						6.3	9.2	8.8	3.3	.8	4.2	4.7
10						6.0	8.7	8.8	3.1	.9	4.3	3.5
11						6.2	8.3	8.5	2.8	.8	4.0	3.0
12						6.0	8.2	7.5	2.7	.7	3.5	2.7
13						5.9	8.0	7.0	2.4	.6	2.9	2.4
14						5.8	8.0	6.8	2.2	.5	2.6	2.1
15						5.8	8.0	6.8	2.1	.7	2.3	2.0
16						5.7	7.9	6.7	2.0	1.0	2.1	2.0
17						5.7	7.8	6.6	1.9	1.2	2.0	1.9
18						5.8	7.8	6.5	1.8	1.0	1.9	1.9
19						6.9	7.6	6.2	1.8	.8	1.8	1.8
20						8.6	7.4	6.0	1.7	.8	1.8	1.8
21						9.5	7.2	5.7	1.6	.7	1.7	1.8
22						10.3	7.1	5.3	1.6	.6	1.7	1.6
23						10.2	6.8	5.1	1.4	.5	1.6	1.2
24						11.8	6.7	4.9	1.2	.5	1.7	.8
25						12.4	6.5	4.3	1.0	.5	2.0	.7
26						12.8	6.3	3.7	.8	.5	2.7	.3
27						13.2	6.2	3.1	.7	.8	2.8	.0
28						13.5	6.1	2.8	.5	1.3	2.6	.0
29						13.7	6.0	2.5	.5	1.8	2.3	.0
30						13.8	6.0	2.3	.5	2.1	2.0	.0
31						13.8		2.2		1.8	1.8	
1880.												
1	0.0	3.0	4.6	27.0	6.5	22.5	21.5	18.7	7.0	3.2	1.2	4.5
2	.1	2.5	4.5	23.3	9.2	23.0	18.2	18.9	7.2	3.2	.9	4.6
3	.2	2.1	4.5	18.3	12.2	22.0	14.0	19.0	7.5	3.1	.8	4.6
4	.3	1.9	4.4	14.5	14.5	20.5	13.5	19.0	7.7	3.4	.5	4.5
5	1.0	1.8	6.2	12.5	15.4	20.5	13.0	18.8	7.8	3.9	.2	4.3
6	1.7	1.7	9.2	10.7	14.8	21.3	16.2	18.0	7.8	4.4	.1	4.2
7	2.8	1.6	12.0	10.0	12.0	23.3	19.2	17.0	7.9	5.0	.0	4.0
8	3.2	1.5	15.0	10.3	10.0	25.0	22.5	16.0	7.8	5.3	.0	3.8
9	3.1	1.5	17.5	11.7	9.8	26.7	26.0	14.7	7.1	5.7	.3	3.6
10	3.8	1.4	19.4		13.2	28.2	25.4	13.2	6.5	6.0	.8	3.4
11	4.9	1.4	20.8	13.7	16.8	29.3	24.5	11.7	5.9	6.0	1.1	3.2
12	6.1	1.3	20.9	18.0	19.0	30.2	22.0	10.2	5.4	5.1	1.4	2.8
13	8.0	1.3	22.5	22.2	22.0	31.0	20.0	9.0	5.0	4.2	1.8	2.6
14	9.5	2.0	24.2	23.0	24.0	31.8	18.0	8.2	4.6	3.5	2.2	2.3
15	10.3	3.2	25.3	21.0	24.8	32.6	16.0	7.6	4.2	3.0	2.5	2.2
16	10.7	4.9	26.0	18.5	24.9	33.4	14.2	7.3	4.0	2.5	2.8	2.2
17	10.9	6.8	26.5	16.0	24.4	34.2	12.6	7.2	3.8	2.0	3.0	2.4
18	11.3	8.8	26.9	14.7	23.0	35.2	12.0	7.0	3.7	1.7	3.2	2.8
19	11.8	9.9	27.2	13.0	21.5	36.2	12.2	6.8	3.5	1.4	3.5	3.2
20	12.2	10.8	27.5	12.2	21.8	37.0	12.8	6.7	3.3	1.3	3.7	3.5
21	12.3	10.9	27.0	11.4	22.4	37.5	13.8	6.5	3.2	1.2	3.8	3.7
22	12.5	10.7	26.2	11.0	23.0	37.7	14.8	6.3	3.0	1.2	3.8	3.8
23	12.0	10.0	25.7	10.5	22.5	37.7	15.7	6.1	2.8	1.1	3.8	3.9
24	11.5	9.0	25.7	10.0	20.0	37.5	15.7	5.8	2.7	1.0	3.8	4.0
25	10.5	8.2	25.9	9.4	17.2	37.3		5.6	2.6	1.9	3.7	4.0
26	9.2	7.0	26.5	8.8	16.8	37.2		5.3	2.5	1.8	3.6	3.8
27	7.7	6.3	26.2	8.1	17.9	37.2		5.3	2.4	1.8	3.7	3.4
28	6.0	5.8	26.9	7.4	19.0	35.0		5.7	2.3	1.7	3.8	3.1
29	4.3	5.2	27.5	6.9	20.5	32.0		6.0	2.3	1.6	3.9	2.9
30	3.8	4.8	27.7	6.4		29.0		6.3	2.2	1.5	4.2	2.7
31	3.3		27.7	6.0		25.5		6.7		1.4	4.4	

[a] No record during the year ending Sept. 30, 1878.

Daily gage height, in feet, of Tennessee River at Johnsonville, Tenn., for the years ending Sept. 30, 1876–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1881.												
1	2.5											
2	2.2											
3	2.1											
4	2.0											
5	2.2											
6	2.7											
7	2.8											
8	2.6											
9	2.4											
10	2.2											
11	2.0											
12	1.8											
13	1.8											
14	1.8											
15	2.0											
16	2.2											
17	2.4											
18	2.5											
19	2.6											
20	2.7											
21	2.8											
22	2.9											
23	3.0											
24	3.0											
25	2.8											
26	2.7											
27	2.4											
28	2.4											
29	2.6											
30	2.8											
31	3.2											
1882.												
1				19.3	43.5	25.7	19.8	11.4	8.8	6.2	3.7	
2				20.3	43.8	26.3	19.5	10.0	10.0	6.7	3.7	
3				21.3	42.6	27.1	19.0	9.0	10.8	7.2	3.6	3.1
4				22.2	40.1	27.6	18.3	8.0	10.4	7.2	3.5	3.3
5				23.0	39.0	27.8	17.2	7.8	9.0	7.4	3.3	3.3
6				23.8	40.6	28.4	16.1	10.6	9.9	7.6	3.3	3.2
7				24.4	40.7	28.8	15.0	13.0	10.8	7.7	3.4	3.2
8				25.1	39.2	29.1	14.2	16.8	9.8	7.8	3.6	3.1
9				25.7	38.5	29.4	10.4	19.0	8.8	7.7	3.7	2.8
10				26.0	37.8	29.2	12.8	22.0	8.3	7.3	3.8	2.8
11				26.0	37.1	28.4	12.2	20.0	7.8	7.0	3.8	2.8
12				26.2	36.4	27.7	11.8	18.0	7.5	6.7	3.8	2.8
13				26.8	35.8	26.8	11.2	17.5	7.1	6.4	3.7	3.0
14				28.0	34.3	25.0	10.8	17.3	6.7	6.3	3.7	3.2
15				29.4	33.2	24.3	10.4	16.3	6.3	6.2	3.7	3.3
16				30.8	32.1	23.7	10.2	15.0	5.8	6.0	3.7	11.9
17				32.6	31.1	23.0	10.0	12.8	5.7	5.8	3.8	15.3
18				34.0	30.0	22.3	9.8	10.5	5.8	5.7	3.8	17.0
19				35.2	30.8	21.8	8.7	10.0	5.9	5.4	3.8	18.0
20				36.5	29.0	21.2	7.6	9.4	6.0	5.1	3.9	18.8
21				37.7	28.3	20.6	7.6	8.4	5.9	5.1	4.0	19.2
22				38.7	27.8	20.0	8.0	8.0	5.9	5.0	4.1	19.5
23				39.7	27.2	19.5	9.8	9.8	5.8	4.9	4.2	19.8
24				40.5	26.7	19.0	11.8	9.8	5.9	4.8	4.2	19.9
25				41.3	26.2	19.4	13.0	8.8	5.9	4.4	4.2	19.9
26				42.1	25.7	20.8	13.2	7.7	5.8	4.1	4.1	19.7
27				42.8	25.2	20.4	12.9	6.4	5.8	3.7	3.0	19.3
28				43.0	25.0	20.8	12.7	7.0	5.7	3.3	3.1	18.8
29				43.2		20.9	12.3	7.5	5.8	3.2	3.2	18.6
30				43.5		21.3	11.9	8.0	5.8	3.0	3.3	18.3
31				43.8		21.3		8.0		2.8	3.5	

Daily gage height, in feet, of Tennessee River at Johnsonville, Tenn., for the years ending Sept. 30, 1876–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1883.												
1	18.0	9.4	0.2	3.5	28.8	23.2	19.2	.....	.....	.....	.....	.....
2	17.3	9.2	.2	3.7	29.0	23.3	19.4	.....	.....	.....	.....	.....
3	17.0	8.8	.3	4.0	29.0	23.4	19.7	.....	.....	.....	.....	.....
4	16.0	8.6	.4	4.3	28.8	23.4	19.8	.....	.....	.....	.....	.....
5	14.2	8.3	.6	4.8	28.5	23.3	20.2	.....	.....	.....	.....	.....
6	13.1	7.8	.8	5.3	28.3	23.2	20.0	.....	.....	.....	.....	.....
7	11.0	7.3	.9	5.7	28.0	22.9	20.8	.....	.....	.....	.....	.....
8	10.4	6.3	1.0	6.1	27.7	22.7	21.2	.....	.....	.....	.....	.....
9	10.0	6.3	1.3	6.8	27.3	22.5	21.6	.....	.....	.....	.....	.....
10	8.0	5.6	1.6	7.5	27.0	22.0	21.9	.....	.....	.....	.....	.....
11	8.0	4.3	2.0	8.0	26.6	21.6	22.3	.....	.....	.....	.....	.....
12	8.0	3.4	2.5	8.8	26.2	21.1	22.8	.....	.....	.....	.....	.....
13	6.0	2.8	3.0	10.2	25.7	20.5	23.2	.....	.....	.....	.....	.....
14	5.2	2.6	3.3	11.2	25.3	20.0	23.8	.....	.....	.....	.....	.....
15	5.0	2.2	3.9	12.0	24.9	19.5	24.3	.....	.....	.....	.....	.....
16	3.1	1.8	4.2	12.8	24.6	19.1	24.7	.....	.....	.....	.....	.....
17	3.2	1.3	4.8	13.2	24.2	18.8	25.2	.....	.....	.....	.....	.....
18	3.7	1.0	5.0	14.2	23.9	18.5	25.4	.....	.....	.....	.....	.....
19	4.5	.7	5.2	15.2	23.8	18.3	25.7	.....	.....	.....	.....	.....
20	5.1	.3	5.2	16.3	23.3	18.2	25.9	.....	.....	.....	.....	.....
21	6.1	.2	5.2	17.0	23.0	18.0	26.2	.....	.....	.....	.....	.....
22	6.1	.2	5.2	21.0	22.8	17.9	26.3	.....	.....	.....	.....	.....
23	6.1	.2	5.2	24.0	22.7	17.9	26.6	.....	.....	.....	.....	.....
24	6.1	.1	5.1	25.0	22.6	18.0	26.7	.....	.....	.....	.....	.....
25	5.7	.1	4.9	26.0	22.6	18.1	26.8	.....	.....	.....	.....	.....
26	5.4	.0	4.8	26.8	22.7	18.2	26.8	.....	.....	.....	.....	.....
27	5.1	.0	4.3	27.2	22.8	18.4	26.7	.....	.....	.....	.....	.....
28	5.8	.0	3.8	27.8	23.0	18.7	26.6	.....	.....	.....	.....	.....
29	6.2	.1	3.8	28.0	.....	18.8	26.5	.....	.....	.....	.....	.....
30	7.7	.1	3.7	28.5	.....	19.0	26.3	.....	.....	.....	.....	.....
31	9.6	.....	3.6	28.7	.....	19.2	.....	.....	.....	.....	.....	.....
1884.												
1	.....	.....	.....	.....	.....	44.2	42.3	25.2	2.8	5.1	1.6	−0.1
2	.....	.....	.....	.....	.....	44.0	42.7	24.3	2.7	5.1	1.2	.0
3	.....	.....	.....	.....	.....	43.8	43.0	23.5	2.6	5.2	1.0	.0
4	.....	.....	.....	.....	.....	43.5	43.2	22.7	2.5	5.2	.8	.0
5	.....	.....	.....	.....	36.4	43.2	43.4	21.8	2.4	5.3	.7	.1
6	.....	.....	.....	.....	36.6	42.8	43.6	20.0	2.2	5.4	.5	.1
7	.....	.....	.....	.....	36.8	42.2	43.7	19.2	2.2	5.5	.5	.2
8	.....	.....	.....	.....	37.0	41.7	43.7	18.3	2.0	5.5	.3	.0
9	.....	.....	.....	.....	37.2	41.1	43.7	17.5	2.1	5.5	.3	.0
10	.....	.....	.....	.....	37.5	40.7	43.5	16.7	2.0	5.5	.2	.0
11	.....	.....	.....	.....	37.8	40.0	43.2	15.7	2.0	5.5	.2	.0
12	.....	.....	.....	.....	38.2	39.3	42.8	14.7	2.1	5.5	.2	.0
13	.....	.....	.....	.....	38.6	38.8	42.2	13.6	2.2	5.0	.1	.2
14	.....	.....	.....	.....	38.9	38.3	41.6	12.8	2.3	5.3	.1	.0
15	.....	.....	.....	.....	39.2	38.0	41.0	11.0	2.5	5.2	.0	.0
16	.....	.....	.....	.....	39.8	37.8	40.1	10.2	2.7	5.0	.0	.0
17	.....	.....	.....	.....	40.2	37.5	39.0	9.3	2.9	4.8	.0	.2
18	.....	.....	.....	.....	40.8	37.4	38.0	8.6	3.3	4.5	.1	.1
19	.....	.....	.....	.....	41.4	37.4	37.2	7.8	3.6	4.3	.1	.0
20	.....	.....	.....	.....	41.9	37.5	36.2	7.2	4.0	4.2	.2	.0
21	.....	.....	.....	.....	42.3	37.5	35.2	6.7	4.2	4.0	.4	.0
22	.....	.....	.....	.....	42.8	37.7	34.4	6.0	4.3	3.8	.5	.0
23	.....	.....	.....	.....	43.2	37.9	33.3	5.7	4.5	3.7	.5	.0
24	.....	.....	.....	.....	43.6	38.2	32.2	5.3	4.6	3.5	.6	.0
25	.....	.....	.....	.....	43.8	38.8	31.4	5.0	4.7	3.2	.6	.0
26	.....	.....	.....	.....	44.1	39.8	30.4	4.6	4.8	3.1	.5	.0
27	.....	.....	.....	.....	44.2	40.2	29.6	4.2	4.8	2.8	.4	.2
28	.....	.....	.....	.....	44.4	40.6	28.8	3.9	4.8	2.6	.2	.2
29	.....	.....	.....	.....	44.3	41.0	27.0	3.6	4.9	2.3	.1	.2
30	.....	.....	.....	.....	.....	41.5	26.2	3.2	5.0	2.1	−.1	.0
31	.....	.....	.....	.....	.....	42.0	.....	3.0	.....	1.8	−.1	.....

Daily gage height, in feet, of Tennessee River at Johnsonville, Tenn., for the years ending Sept. 30, 1876–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1885.												
1	0.0	0.3	.....	1.8	19.4	9.0	6.4	10.0	13.4	1.8	2.4	2.3
2	.0	.3	.....	2.2	17.4	9.3	6.2	9.0	13.7	1.7	2.4	2.2
3	.2	.4	.....	2.5	14.0	9.9	6.0	8.0	13.8	1.7	2.4	2.1
4	.2	.5	.....	2.8	12.0	10.0	5.9	7.5	13.8	1.6	2.4	2.1
5	.0	.5	.....	3.0	10.0	10.1	5.7	7.0	13.8	1.6	2.4	2.0
6	.0	.6	.....	3.3	9.6	10.2	5.9	6.8	13.7	1.5	2.3	2.0
7	.0	.6	.....	3.8	8.3	10.2	6.2	6.4	13.5	1.5	2.3	1.9
8	.0	.7	.....	4.3	7.0	10.2	7.0	6.2	13.0	1.5	2.3	1.8
9	.0	.8	.....	5.5	6.8	10.1	8.0	6.0	12.5	1.4	2.0	2.1
10	.1	.8	.....	6.5	6.2	10.0	8.5	5.7	11.5	1.4	2.4	2.2
11	.1	.9	.....	8.5	5.8	9.9	8.3	5.3	11.0	1.8	2.2	2.2
12	.1	.9	.....	11.7	5.4	9.7	8.5	4.8	10.2	2.6	2.2	2.2
13	.0	.9	.....	13.5	5.0	9.6	8.0	4.4	9.5	3.2	2.2	2.2
14	.0	.8	.....	15.5	4.9	9.6	7.7	4.0	9.0	3.8	2.1	2.2
15	.0	.8	.....	17.4	4.8	9.7	6.6	3.9	8.2	4.0	2.2	2.3
16	.1	.7	.....	20.3	4.6	9.9	6.0	3.7	7.2	4.0	2.4	2.3
17	.2	.6	.....	24.3	4.5	10.1	5.0	3.5	6.4	3.8	2.7	2.3
18	.2	.5	.....	26.3	4.5	10.3	4.0	3.4	5.5	3.6	2.9	2.4
19	.2	.5	.....	28.0	4.5	10.3	4.3	3.4	4.6	3.4	2.9	2.2
20	.3	.4	.....	29.0	4.6	10.0	4.7	3.8	4.0	3.2	2.8	1.9
21	.3	.4	.....	29.5	4.7	9.8	5.0	4.5	3.7	3.0	2.6	1.6
22	.3	.2	.....	29.9	4.9	9.6	5.4	5.5	3.5	3.0	2.5	1.6
23	.0	.2	.....	30.0	5.0	9.3	5.6	6.4	3.4	2.9	2.5	1.5
24	.0	.2	.....	29.8	5.6	9.0	7.7	7.9	3.2	2.8	2.5	1.5
25	.0	.3	.....	28.0	6.1	9.0	12.0	8.5	3.0	2.8	2.4	1.5
26	.0	.3	.....	27.0	7.0	9.0	13.6	8.9	2.7	2.7	2.4	1.4
27	.3	.4	.....	26.0	7.7	8.1	15.4	9.9	2.5	2.6	2.5	1.4
28	.2	.4	.....	25.0	8.4	7.6	15.0	10.6	2.4	2.6	2.6	1.8
29	.0	.4	.....	24.2	.....	7.0	14.0	11.0	2.1	2.5	2.6	1.9
30	.0	.2	.....	23.3	.....	6.9	12.6	12.5	1.9	2.5	2.5	2.0
31	.0	.....	.....	21.3	.....	6.7	.....	13.0	.....	2.4	2.4	.....
1886.												
1	3.2	2.8	5.5	6.0	17.5	10.6	26.9	7.2	9.0	12.0	4.0	3.0
2	3.3	4.1	5.4	5.9	17.5	10.8	28.9	6.9	8.7	10.9	4.2	2.9
3	3.4	9.2	5.3	8.0	16.7	11.9	31.0	6.8	9.3	10.3	4.5	2.8
4	3.0	11.0	5.2	12.0	14.0	12.3	32.3	6.6	9.9	10.0	4.8	2.8
5	3.6	13.0	5.1	16.0	13.0	12.3	33.2	6.2	10.1	9.3	4.5	2.9
6	5.8	12.2	5.0	20.0	11.9	11.3	34.1	5.9	8.9	9.9	3.8	3.5
7	6.4	11.3	4.9	24.4	11.0	10.0	35.3	6.9	7.9	10.3	3.5	3.9
8	5.8	11.3	4.7	24.8	10.4	9.5	36.2	12.1	7.7	12.0	4.7	3.2
9	5.0	14.6	5.8	25.0	10.0	8.5	37.6	14.8	7.5	12.0	6.1	2.9
10	4.7	17.8	6.8	25.1	9.6	8.3	38.7	14.7	8.2	11.2	5.4	2.8
11	3.8	18.6	8.6	24.8	12.8	7.4	39.8	13.4	6.4	12.4	4.9	2.4
12	3.2	20.1	9.6	22.9	20.4	6.9	40.7	13.5	9.5	12.7	5.6	2.1
13	2.8	22.0	10.6	20.0	21.4	6.7	41.4	13.9	10.4	12.3	5.3	2.0
14	2.2	22.8	11.9	17.3	20.0	6.2	41.8	14.3	11.5	11.5	4.6	2.2
15	2.0	23.0	12.5	15.1	17.8	6.2	42.1	14.7	13.4	10.6	4.3	2.1
16	1.8	22.7	13.8	12.0	17.4	6.2	42.1	15.1	14.0	9.5	4.2	2.4
17	1.7	21.0	15.2	10.5	17.0	6.0	41.9	13.2	14.4	9.6	4.0	5.0
18	2.7	16.5	16.0	10.3	16.6	5.5	41.2	10.5	15.3	9.9	4.0	5.5
19	2.1	12.5	18.0	12.1	15.5	5.8	40.1	8.4	17.1	9.1	3.6	5.6
20	3.7	10.2	18.6	14.7	15.4	6.0	38.1	9.0	16.1	8.3	3.2	4.0
21	4.2	8.8	18.8	15.4	12.9	5.9	35.5	8.0	15.4	7.5	3.1	3.6
22	3.9	8.1	16.6	16.0	12.3	6.9	31.8	8.5	18.8	7.0	3.0	2.9
23	3.4	7.4	15.9	16.7	10.5	6.9	28.6	8.2	19.6	6.7	2.9	2.2
24	3.1	6.4	13.9	16.7	9.5	8.8	20.7	9.1	16.6	6.2	3.5	2.2
25	2.9	6.2	10.2	16.3	9.0	11.2	15.4	9.1	16.6	6.0	5.0	2.0
26	2.7	6.1	8.1	16.5	8.8	12.4	11.8	9.9	17.4	5.6	4.2	2.0
27	2.8	6.0	7.8	17.2	9.8	14.0	9.4	9.8	16.1	5.2	4.1	1.9
28	2.5	5.9	7.0	18.2	10.2	15.2	8.8	9.3	15.7	4.9	4.1	1.8
29	2.3	5.8	6.7	18.7	.....	16.0	8.0	9.0	15.1	4.8	3.8	1.7
30	2.5	5.6	6.6	19.8	.....	18.5	7.5	9.4	14.3	4.3	3.7	1.7
31	2.5	.....	6.2	18.6	.....	22.0	.....	9.1	.....	4.0	3.3	.....

Daily gage height, in feet, of Tennessee River at Johnsonville, Tenn., for the years ending Sept. 30, 1876–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1887.												
1	1.6	0.1	12.3	11.5	27.8	31.3	6.6	14.8	10.6	3.2	3.3	3.2
2	1.5	.1	11.8	12.4	27.4	31.0	6.9	14.9	10.8	3.9	3.3	3.3
3	1.3	.2	10.3	11.0	27.3	30.6	7.0	14.7	10.9	3.9	2.9	3.4
4	1.2	.7	8.8	9.9	27.2	29.5	7.4	14.1	11.0	3.0	2.4	3.8
5	1.1	1.0	8.2	9.3	26.5	29.6	8.0	13.8	11.4	2.8	2.7	3.9
6	1.4	1.1	7.8	9.8	26.0	29.4	8.3	13.2	11.7	2.4	3.0	4.0
7	1.5	1.3	7.0	10.0	25.3	30.5	8.0	12.1	12.0	2.3	3.0	3.2
8	1.4	1.1	6.7	9.5	24.9	30.4	7.7	11.6	12.4	2.0	3.8	3.0
9	1.3	.9	5.5	9.0	22.9	30.1	7.5	11.0	12.4	2.6	4.6	2.7
10	1.1	.9	5.5	8.4	22.9	30.0	7.4	10.5	11.9	3.1	5.1	2.6
11	1.0	1.2	4.7	8.3	22.8	29.0	7.2	10.2	10.8	3.5	4.9	2.5
12	1.0	1.3	4.3	8.0	22.1	28.2	7.0	9.5	10.0	3.8	4.6	2.1
13	.9	1.4	4.2	7.7	21.0	26.6	7.0	9.0	9.5	3.9	4.1	1.9
14	.9	1.5	4.9	6.5	20.1	25.1	7.0	9.0	8.7	3.7	3.7	1.8
15	.8	1.5	5.2	6.2	19.9	24.0	6.8	9.1	8.2	3.5	2.9	1.4
16	.8	1.5	6.0	5.9	19.9	23.9	6.7	9.4	8.1	3.1	2.8	1.0
17	.7	1.6	7.0	8.1	19.1	22.7	6.4	9.6	8.1	3.0	2.6	1.0
18	.7	1.7	8.8	7.0	20.6	21.0	6.2	9.6	8.1	2.7	2.3	.9
19	.7	1.8	9.1	7.5	21.1	20.8	6.0	9.6	8.1	2.3	2.1	.8
20	.6	3.0	9.9	8.0	21.3	19.0	5.9	9.4	7.0	2.0	2.0	.9
21	.5	3.8	13.3	7.7	21.5	18.5	5.8	9.0	5.0	2.1	2.0	.7
22	.5	3.9	13.2	7.4	22.1	16.1	5.5	8.6	4.0	2.0	2.0	.6
23	.4	6.5	12.6	8.8	23.0	15.3	5.1	8.3	3.4	1.9	1.9	.5
24	.4	11.0	14.5	11.8	23.9	13.9	6.1	8.2	3.1	1.1	1.9	.5
25	.4	10.8	14.1	13.0	27.1	11.4	6.9	8.0	2.8	1.1	1.8	.4
26	.3	10.4	12.0	14.2	29.7	9.0	7.9	7.9	2.8	1.1	2.1	.1
27	.3	10.7	10.7	19.1	30.8	8.8	8.2	7.5	2.4	1.0	2.3	.4
28	.2	11.8	10.0	20.7	31.4	8.0	10.0	6.8	2.4	.9	3.0	.3
29	.2	12.0	9.4	24.2	.....	7.6	12.9	6.5	2.4	1.6	3.2	.6
30	.1	12.0	9.7	25.4	.....	6.6	14.1	6.3	2.8	2.6	3.4	1.0
31	.1	.....	11.0	27.3	.....	5.5	.....	6.2	.....	2.9	2.4	.....
1888.												
1	1.0	2.0	1.5	4.6	10.3	14.7	33.3	5.0	8.0	5.0	1.0	4.7
2	.8	1.8	1.9	4.8	9.6	15.0	32.2	4.9	7.1	6.8	1.0	6.7
3	.7	1.7	1.9	14.5	9.8	13.4	31.9	4.9	6.6	7.4	.8	7.0
4	1.2	2.0	2.3	17.1	7.5	12.9	31.7	4.8	6.2	7.5	.6	6.7
5	1.6	2.4	2.4	17.7	7.2	11.8	31.6	4.7	8.2	7.5	.4	5.7
6	1.7	2.3	2.3	18.2	7.2	10.9	31.4	4.7	8.5	7.5	.3	7.0
7	1.7	2.0	2.4	17.5	8.7	10.5	30.6	4.6	9.5	7.3	.1	8.1
8	1.6	1.6	2.3	15.3	10.0	10.0	29.7	4.5	9.0	6.9	.1	9.1
9	1.8	1.6	2.5	14.0	10.8	9.3	24.9	4.4	7.9	6.3	.1	10.5
10	2.3	1.5	2.3	13.2	12.3	8.4	19.0	4.3	6.8	6.7	.7	10.3
11	2.8	1.7	3.3	13.3	13.0	8.0	20.1	4.3	6.2	6.1	.7	9.8
12	3.1	1.9	3.8	12.7	12.4	8.7	20.7	4.2	5.6	7.8	.3	9.3
13	3.1	2.0	3.9	12.9	13.6	10.9	21.1	4.2	4.7	5.0	1.0	9.5
14	2.9	1.9	3.6	13.0	14.5	11.8	22.0	4.2	4.0	4.6	1.2	9.3
15	2.5	1.8	3.7	17.9	15.5	10.0	22.1	4.0	4.4	4.0	1.0	9.0
16	2.5	1.7	4.0	18.4	15.5	10.4	22.6	4.1	4.3	3.3	1.0	9.3
17	2.2	1.6	4.0	19.5	14.5	8.3	22.1	4.7	4.3	2.9	1.0	10.6
18	2.0	1.6	3.8	19.8	13.0	8.0	21.1	5.9	4.2	2.3	.8	9.8
19	1.8	1.3	3.9	20.1	12.0	7.3	19.4	5.3	4.1	2.3	.8	8.7
20	1.7	1.2	3.8	22.1	11.2	7.1	16.6	5.0	4.0	2.3	.8	8.0
21	1.7	1.1	2.9	23.2	10.7	7.0	16.1	4.5	4.5	2.2	1.0	8.4
22	1.6	.9	3.1	23.8	11.1	6.8	12.3	4.3	4.6	2.2	1.6	9.6
23	1.3	.8	3.9	24.4	11.1	6.7	9.0	4.1	4.5	2.2	2.0	9.7
24	1.4	.6	4.0	24.8	11.1	6.6	7.9	4.5	4.4	2.2	3.1	9.7
25	1.1	.3	4.5	24.7	10.5	6.4	7.7	4.9	4.3	2.1	2.9	8.9
26	1.0	.3	4.7	23.7	10.3	10.9	7.1	4.3	4.3	1.6	3.6	7.9
27	.9	.8	4.3	21.3	11.3	18.7	6.9	5.6	4.3	1.6	2.5	7.0
28	1.5	1.1	4.0	20.5	13.3	24.8	6.5	7.0	4.3	1.2	4.2	7.8
29	1.9	1.4	3.9	16.0	14.3	28.6	6.1	9.0	4.3	1.1	4.9	6.5
30	2.1	1.5	3.8	12.9	.....	30.2	5.6	8.7	4.6	1.1	4.8	6.0
31	1.2	.....	4.0	11.2	.....	32.3	.....	8.2	.....	1.0	4.8	.....

Daily gage height, in feet, of Tennessee River at Johnsonville, Tenn., for the years ending Sept. 30, 1876–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1889.												
1	5.5	15.7	7.0	5.3	16.9	27.5	8.0	4.3	3.1	5.9	6.3	3.6
2	4.9	15.6	6.6	5.5	16.5	22.9	8.0	4.3	2.9	4.7	6.9	4.0
3	4.4	14.5	6.3	6.1	15.1	17.8	8.0	4.4	2.9	4.5	7.4	4.2
4	4.0	13.0	5.9	6.5	14.7	13.5	8.8	4.5	2.9	4.0	8.0	5.6
5	3.3	12.0	5.5	7.5	13.5	13.2	8.0	4.5	3.6	5.4	8.9	7.5
6	3.4	9.6	5.0	7.9	11.9	12.8	8.0	4.6	4.8	6.0	6.6	10.8
7	3.0	7.8	4.9	9.1	10.7	12.1	8.0	4.0	5.0	6.8	8.6	13.4
8	3.0	7.9	4.9	11.4	10.4	11.5	8.8	5.0	6.0	7.7	9.6	13.5
9	2.9	7.0	4.8	12.7	10.0	11.0	6.5	5.5	6.5	7.9	9.6	13.6
10	2.9	9.7	4.7	13.5	9.0	10.7	6.0	4.9	8.0	7.3	9.9	13.0
11	2.9	9.7	4.5	14.8	8.0	10.0	5.5	4.3	7.1	7.2	9.6	11.8
12	2.8	12.1	4.4	15.5	7.4	9.9	5.5	4.3	6.1	6.6	9.0	9.1
13	2.8	15.6	4.3	16.5	6.7	9.3	5.4	4.5	5.2	6.2	7.9	7.9
14	2.6	18.0	4.4	15.5	6.7	9.0	5.4	4.4	5.3	8.0	7.4	6.1
15	2.6	19.3	4.1	15.3	6.6	7.9	5.4	4.2	5.5	12.0	6.7	5.1
16	2.7	19.8	4.1	13.7	6.4	6.8	6.4	3.9	6.3	15.2	6.0	5.1
17	2.7	18.0	4.1	13.0	9.4	6.3	8.0	3.5	5.9	13.9	6.0	4.8
18	3.0	17.9	4.2	16.0	18.0	6.0	10.4	3.4	7.1	11.6	6.0	4.0
19	3.2	16.0	4.9	18.9	23.1	5.1	12.0	3.0	7.3	10.9	5.9	4.0
20	4.0	14.8	4.6	17.0	26.3	4.5	11.6	3.3	11.3	9.0	5.9	3.9
21	5.8	13.2	5.3	16.7	27.5	5.3	10.4	3.0	11.6	8.8	6.5	3.0
22	5.8	15.2	5.4	16.2	28.2	6.9	9.8	2.9	12.6	6.7	7.5	5.1
23	4.8	15.2	5.5	15.3	28.7	10.2	9.0	2.9	12.1	5.9	7.3	7.1
24	4.5	13.4	5.8	13.8	29.0	11.0	8.9	2.9	11.2	4.5	6.4	7.0
25	4.2	12.0	6.5	13.2	29.2	12.3	7.1	3.0	11.0	5.3	5.0	6.5
26	3.0	10.7	6.9	12.0	29.3	13.2	6.3	3.2	10.9	4.3	4.6	5.6
27	4.3	9.6	6.8	12.3	29.1	11.9	5.7	3.4	9.8	4.2	4.0	5.6
28	4.8	8.8	6.2	13.0	28.2	10.8	5.0	3.0	8.7	4.1	3.7	6.9
29	7.5	8.1	5.7	15.1	.....	9.7	4.9	2.3	7.8	4.0	3.3	5.3
30	11.4	7.7	5.4	16.6	.....	9.4	4.6	2.2	7.1	5.0	3.0	8.0
31	14.0	.....	5.5	16.9	.....	9.1	.....	2.6	.....	7.0	2.9	.....
1890.												
1	7.0	2.4	13.0	4.4	14.3	28.9	28.0	13.3	8.9	3.9	6.9	5.1
2	7.0	2.4	11.7	4.9	15.0	31.0	27.9	12.5	9.0	3.8	6.6	4.6
3	5.6	2.5	11.0	4.9	16.8	33.4	27.4	11.8	9.6	3.5	6.0	4.9
4	5.0	2.6	10.4	5.5	17.2	34.5	26.5	10.9	7.5	3.3	5.0	3.5
5	5.0	2.8	10.7	5.1	16.2	35.2	26.1	10.3	6.8	3.1	5.7	3.7
6	4.7	2.9	9.1	6.0	14.9	35.6	25.3	9.8	6.3	3.0	6.2	5.4
7	4.3	3.1	8.3	6.3	13.7	36.1	24.2	9.4	5.8	2.8	4.9	5.0
8	4.3	4.5	8.0	6.0	20.6	37.7	23.6	9.1	5.6	2.7	4.5	4.4
9	4.3	5.5	7.8	5.7	27.1	37.7	22.1	9.1	5.5	2.7	5.5	3.9
10	4.1	5.8	7.1	5.3	29.0	37.4	21.4	9.3	6.0	2.7	5.4	3.5
11	3.4	6.0	6.5	4.0	30.2	34.4	19.9	10.2	6.7	2.8	5.4	3.6
12	3.0	6.3	6.0	4.0	30.0	37.2	18.4	10.7	7.4	3.0	5.4	3.5
13	2.9	7.6	5.9	4.0	29.6	37.4	16.7	10.6	7.9	3.1	5.7	5.5
14	2.8	9.9	5.5	3.9	29.2	36.2	14.8	10.3	6.6	2.8	6.3	4.3
15	2.2	11.0	5.4	5.8	28.3	36.8	13.2	10.2	6.4	2.6	6.4	3.4
16	2.0	11.4	5.3	14.0	26.1	30.1	11.8	10.0	5.6	2.7	6.1	3.5
17	2.0	11.9	5.1	19.0	24.2	34.2	11.3	9.1	5.1	3.1	5.8	3.7
18	2.0	13.0	4.6	22.0	23.0	31.8	10.9	8.2	4.7	3.1	5.2	3.9
19	2.0	14.3	4.4	21.0	19.7	29.5	10.0	8.6	4.6	2.8	6.8	4.0
20	1.9	17.2	4.3	18.0	17.4	27.1	10.0	9.1	4.4	2.6	4.4	4.1
21	1.8	18.1	4.2	19.0	14.4	26.0	11.0	10.2	4.3	2.4	3.9	4.2
22	1.8	18.2	4.2	21.5	13.0	26.3	13.6	10.3	4.2	2.5	3.7	4.3
23	1.8	17.7	4.2	21.6	12.5	26.4	13.9	10.7	3.9	2.6	2.3	4.4
24	1.8	16.9	4.2	20.2	11.0	26.4	17.3	11.0	3.8	3.6	2.3	5.8
25	1.8	15.9	4.0	20.1	12.0	26.5	18.0	11.5	3.7	3.9	3.1	7.9
26	1.8	14.8	3.9	18.0	15.0	27.0	17.3	12.3	3.6	4.1	2.9	8.3
27	1.8	14.3	3.8	17.0	17.0	26.9	16.1	13.1	3.6	5.5	2.9	8.7
28	1.8	14.2	3.8	17.2	24.0	27.0	15.8	14.1	3.8	6.6	3.0	8.0
29	2.0	14.2	3.9	17.1	.....	27.2	15.6	12.5	3.9	5.5	3.3	7.5
30	2.2	13.8	4.0	16.0	.....	27.4	14.5	11.4	3.9	6.0	4.9	6.7
31	2.4	.....	4.2	15.1	.....	27.5	.....	11.3	.....	6.7	5.1	.....

Daily gage height, in feet, of Tennessee River at Johnsonville, Tenn., for the years ending Sept. 30, 1876–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1891.												
1	6.1	8.5	2.8	12.3	20.9	32.6	24.4	8.8	4.0	6.3	5.0	6.9
2	5.6	8.0	2.7	12.4	22.6	31.7	25.9	8.4	4.0	5.6	6.9	6.4
3	5.1	7.1	2.6	14.5	24.0	30.7	27.0	8.1	3.7	4.8	8.2	5.9
4	5.5	5.9	2.6	14.5	25.9	30.5	26.4	7.6	4.5	4.3	11.8	5.5
5	5.9	6.5	2.6	13.1	27.7	29.8	25.5	7.1	5.1	4.0	12.6	5.1
6	6.0	5.9	2.6	12.4	27.9	28.5	24.5	6.1	5.1	3.8	13.6	4.7
7	8.2	5.1	5.1	13.5	28.3	29.1	23.1	6.4	4.9	3.6	15.0	4.2
8	7.8	5.0	4.4	14.6	28.6	30.2	21.7	6.1	4.8	3.6	14.7	3.9
9	7.2	4.9	4.4	15.0	28.9	32.4	20.9	5.8	4.4	3.6	14.5	3.0
10	6.5	4.8	4.4	14.0	29.3	36.5	18.5	5.6	4.2	3.7	12.1	4.1
11	6.0	4.5	4.4	13.1	30.3	37.8	18.5	5.4	4.7	3.7	8.1	4.4
12	6.1	4.1	4.8	12.3	31.3	38.2	18.9	5.1	5.5	3.7	6.7	4.6
13	6.1	4.0	5.0	14.1	33.0	38.0	19.2	5.0	5.5	3.7	5.8	4.6
14	6.3	3.9	6.9	13.7	32.6	37.7	19.1	4.8	5.7	3.7	5.3	4.6
15	5.0	3.7	7.8	13.9	33.3	37.4	18.2	4.7	5.8	3.9	4.8	4.2
16	4.6	3.6	7.5	14.1	34.1	37.4	17.1	4.6	6.0	4.2	4.6	3.9
17	4.2	3.6	7.5	14.1	34.4	37.1	16.5	4.5	7.3	3.9	4.2	3.7
18	4.2	4.5	5.9	13.9	34.6	37.0	16.2	4.4	7.5	3.8	4.0	3.4
19	4.0	4.7	5.9	13.7	34.7	37.8	16.1	4.3	6.7	3.7	3.9	3.1
20	3.9	4.4	4.8	12.2	34.9	36.5	14.8	4.2	7.0	3.7	3.6	3.0
21	3.7	4.0	4.5	11.4	35.3	36.0	13.8	4.1	7.2	3.3	3.5	2.9
22	3.7	3.9	4.2	10.6	35.7	33.6	13.3	4.6	7.0	2.9	3.4	2.8
23	3.9	3.9	3.9	10.8	36.1	32.0	12.8	4.7	7.7	2.8	3.4	2.7
24	4.9	3.9	3.8	12.2	36.0	31.3	12.2	4.6	8.1	3.5	3.4	2.6
25	5.6	3.4	4.0	14.0	35.9	31.1	12.1	4.5	8.3	3.9	3.3	2.4
26	5.8	3.3	4.4	16.5	35.1	28.9	11.8	4.3	7.8	3.9	3.3	2.2
27	6.8	3.2	5.0	16.7	34.2	22.5	11.4	4.3	6.2	3.8	3.7	2.1
28	7.3	3.1	5.5	19.9	33.3	19.9	12.2	5.4	6.1	3.8	4.1	2.0
29	8.6	3.0	6.5	20.0	.....	18.7	10.1	5.6	6.0	3.7	4.9	1.9
30	9.0	3.0	7.5	19.2	.....	19.4	10.5	6.9	6.4	3.5	6.0	1.8
31	9.0	.....	11.0	18.7	.....	21.4	.....	6.9	.....	4.1	6.8	.....
1892.												
1	1.6	1.0	6.0	13.5	11.9	10.4	13.2	19.2	8.0	6.7	4.8	4.5
2	1.5	1.0	5.5	12.7	11.5	9.4	13.1	19.3	7.6	5.9	4.8	4.5
3	1.6	1.0	5.0	11.9	10.4	8.7	15.6	16.0	9.1	6.0	5.1	4.2
4	1.5	1.0	4.9	11.8	8.5	8.4	19.0	15.1	9.1	6.8	5.2	3.9
5	1.4	1.0	4.6	11.4	7.7	7.7	20.8	12.8	10.3	6.8	4.8	3.7
6	1.5	1.0	5.5	11.2	7.3	7.1	22.1	11.6	11.1	7.8	4.6	3.7
7	1.5	1.0	7.1	10.8	7.3	7.1	24.3	10.6	10.0	8.2	4.4	3.9
8	1.5	1.0	7.2	10.8	9.8	7.0	29.2	10.0	9.8	8.7	4.3	3.9
9	1.4	1.0	8.3	10.5	12.8	6.9	31.4	9.4	10.6	10.6	4.3	4.2
10	1.4	1.0	9.1	10.5	14.6	8.8	32.1	10.3	10.9	15.3	4.4	3.6
11	1.4	1.1	9.8	10.5	15.0	9.6	33.2	10.3	10.6	20.6	4.4	2.9
12	1.3	1.4	10.4	10.9	15.1	9.7	35.5	11.1	10.0	22.1	4.3	2.6
13	1.3	2.0	10.6	11.8	14.5	9.5	35.6	11.5	9.4	21.1	5.4	2.6
14	1.3	2.1	10.7	13.3	14.5	9.4	35.8	8.2	9.0	19.7	5.6	4.1
15	1.3	2.0	10.1	16.4	14.4	9.8	35.8	7.4	8.5	17.6	4.8	4.0
16	1.3	1.7	9.1	19.3	14.1	10.0	35.7	7.5	8.2	16.2	4.0	3.7
17	1.3	1.7	8.1	21.0	13.5	9.6	35.1	7.1	7.9	15.0	3.7	3.4
18	1.3	2.2	7.3	22.4	12.5	9.4	35.1	6.6	7.1	14.2	3.6	3.0
19	1.3	3.0	6.3	23.6	11.5	9.4	34.4	7.3	6.2	13.2	3.5	2.7
20	1.3	3.5	5.8	24.6	11.6	9.9	33.1	8.7	5.8	11.6	3.8	2.6
21	1.3	3.4	5.6	25.0	12.0	11.5	33.1	9.5	5.4	10.6	3.8	3.0
22	1.3	3.4	5.4	26.7	13.1	12.2	32.6	9.5	5.2	10.0	3.8	4.3
23	1.2	4.2	6.4	28.0	14.4	13.8	32.0	9.1	5.2	9.4	3.9	5.5
24	1.2	5.2	7.7	28.5	15.2	16.1	31.0	8.9	5.3	7.9	3.5	5.5
25	1.2	5.2	8.2	28.8	15.2	14.6	31.3	8.7	6.8	7.9	3.4	5.1
26	1.2	5.6	8.6	29.0	14.5	15.0	31.7	8.5	7.3	7.4	3.5	4.6
27	1.1	4.9	9.0	28.4	13.6	14.6	28.9	8.0	7.8	6.8	4.3	4.3
28	1.1	4.7	9.8	26.6	12.0	14.0	26.7	7.9	8.2	6.4	4.4	4.1
29	1.1	4.9	11.6	23.5	11.3	13.9	24.5	8.2	8.0	5.8	4.4	3.5
30	1.0	6.0	12.4	18.7	.....	13.9	22.5	9.2	7.1	5.5	4.2	3.1
31	1.0	.....	12.8	15.0	.....	13.3	.....	9.6	.....	5.0	4.2	.....

Daily gage height, in feet, of Tennessee River at Johnsonville, Tenn., for the years ending Sept. 30, 1876–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1893.												
1	3.1	1.1	4.9	12.2	5.1	32.3	8.3	13.8	18.0	5.6	2.8	1.3
2	3.2	1.1	5.2	12.6	6.2	30.1	7.8	15.0	21.8	4.6	2.6	1.2
3	3.4	1.1	5.7	13.1	6.2	28.8	6.9	16.0	25.0	4.6	2.6	3.4
4	3.2	1.3	5.9	10.3	10.4	24.2	6.6	17.0	26.0	4.3	2.4	3.4
5	2.7	1.5	6.0	9.6	10.5	19.2	6.5	18.2	24.6	4.2	2.5	3.4
6	2.4	1.6	6.1	8.5	10.5	15.0	6.5	20.2	22.3	3.9	2.4	3.7
7	2.2	1.4	5.9	8.0	10.4	14.4	6.4	22.5	23.3	3.8	2.4	4.8
8	2.0	1.5	6.0	7.5	10.0	13.2	6.3	23.6	23.8	4.8	2.5	4.8
9	1.9	1.7	5.8	6.3	8.2	12.8	12.0	24.9	24.9	4.1	2.7	4.8
10	1.9	1.6	5.7	6.8	8.2	12.0	16.6	25.7	24.8	3.9	2.8	4.5
11	1.8	1.7	5.5	5.5	7.9	11.8	16.6	26.2	23.6	3.8	2.9	4.3
12	1.7	2.8	5.4	5.3	8.0	12.8	19.9	26.8	23.0	3.8	3.0	4.0
13	1.6	3.0	5.3	5.2	10.8	13.8	16.6	27.0	22.6	3.6	3.0	4.2
14	1.6	4.1	8.9	5.0	13.8	15.1	14.3	26.0	20.0	3.4	3.1	4.5
15	1.6	5.2	9.2	4.7	16.6	15.6	20.4	23.8	18.2	3.4	3.1	4.6
16	1.6	5.5	9.4	4.2	19.6	15.6	24.6	20.6	16.9	3.2	3.1	4.6
17	1.5	5.6	13.8	4.1	23.6	15.2	29.4	17.9	13.0	3.0	3.0	4.5
18	1.5	5.1	15.5	5.8	27.7	14.5	29.9	16.0	10.1	2.8	3.0	8.1
19	1.5	4.9	17.5	3.6	30.1	13.0	29.0	14.5	7.6	2.8	2.7	9.2
20	1.5	5.0	17.1	3.5	32.0	11.4	27.0	11.8	6.6	2.8	2.6	8.8
21	1.4	5.4	16.5	3.1	33.4	10.4	23.8	11.2	6.5	2.7	2.5	7.7
22	1.3	5.9	17.0	3.1	33.6	9.2	21.2	10.6	6.4	2.6	2.8	6.5
23	1.3	6.1	17.2	3.1	33.5	9.1	17.0	10.1	6.1	2.5	3.7	5.5
24	1.3	6.0	16.6	3.1	33.5	9.5	13.2	9.1	5.9	2.5	3.8	4.5
25	1.3	5.5	15.8	3.2	33.6	8.7	11.8	8.5	5.7	2.6	3.4	4.1
26	1.3	5.0	15.0	3.3	33.6	8.7	10.9	8.2	5.6	2.6	2.2	3.9
27	1.3	5.1	13.8	3.7	33.5	8.7	11.3	7.4	5.6	3.1	2.2	3.5
28	1.2	5.5	11.6	4.4	33.2	9.0	12.4	7.6	5.8	3.6	2.0	3.2
29	1.1	5.7	10.0	4.0	.....	9.2	13.0	7.9	5.9	3.8	1.9	3.0
30	1.1	5.0	9.1	5.2	.....	8.8	13.4	10.6	6.0	3.8	1.6	2.8
31	1.1	.....	7.6	5.1	.....	8.5	.....	12.0	.....	3.2	1.4	.....
1894.												
1	2.6	3.1	2.2	2.7	7.1	10.7	9.6	4.8	4.8	2.1	3.2	2.8
2	2.5	3.1	2.3	2.6	6.6	10.8	8.5	4.6	4.5	2.0	3.0	2.6
3	2.4	2.9	2.5	2.6	6.4	10.7	10.7	4.4	4.1	2.0	3.0	2.4
4	2.3	2.8	2.7	2.7	13.3	10.4	11.3	4.3	3.8	2.3	3.1	2.3
5	2.0	2.7	2.8	2.9	20.6	10.2	13.9	4.4	3.5	2.9	3.1	2.5
6	1.9	2.6	3.4	3.8	24.0	10.8	14.6	4.4	3.2	3.3	2.8	2.7
7	1.8	2.5	4.8	4.0	24.8	11.9	14.6	4.2	3.0	3.6	2.5	2.7
8	1.6	2.4	4.5	6.2	26.4	12.7	13.5	4.3	2.9	4.0	2.3	2.5
9	1.9	2.1	4.3	7.0	29.0	12.8	12.2	4.5	2.8	4.3	2.2	2.3
10	1.7	2.0	4.2	6.9	30.1	12.4	12.7	4.8	2.6	4.0	2.1	1.8
11	1.8	1.9	4.4	8.1	31.0	11.6	14.3	4.8	2.5	3.5	2.1	1.6
12	1.9	1.8	4.2	11.1	31.0	10.9	14.0	4.6	2.2	3.0	2.1	1.6
13	2.0	1.7	4.0	13.4	31.1	10.4	13.0	4.5	2.1	3.7	2.0	1.6
14	2.2	1.6	3.8	13.4	31.1	10.0	11.9	4.6	2.0	2.6	1.9	1.5
15	2.0	1.8	3.7	12.1	30.7	9.6	11.4	4.7	1.9	2.6	1.9	1.3
16	2.0	1.9	3.8	11.6	29.9	9.2	10.9	5.1	1.9	2.8	1.8	1.3
17	2.0	2.6	4.4	12.2	26.7	9.1	10.5	5.3	1.9	2.8	1.6	1.3
18	1.9	3.8	5.1	13.3	26.7	10.1	9.9	5.1	1.8	2.6	1.4	1.3
19	1.0	2.6	5.3	11.9	26.7	11.4	9.1	4.7	1.9	2.4	1.4	1.4
20	4.5	2.4	4.8	10.9	18.3	13.9	8.9	4.4	1.9	2.6	1.4	1.7
21	4.1	2.3	4.5	9.3	16.2	15.4	8.2	4.1	1.9	3.1	2.1	1.8
22	5.7	2.3	4.4	10.7	14.5	15.4	7.5	4.4	1.9	3.2	2.9	1.8
23	5.0	2.4	3.7	11.0	13.6	15.6	6.9	4.6	1.9	2.9	2.8	1.8
24	4.4	2.5	3.7	10.9	12.8	16.1	6.5	4.7	1.9	2.6	3.0	1.7
25	3.7	2.5	3.6	10.7	12.1	17.4	6.1	4.9	2.6	2.6	3.2	1.5
26	3.2	2.3	3.6	10.5	11.6	17.6	5.8	5.4	2.2	2.9	3.6	1.2
27	2.7	2.3	3.4	9.5	11.2	16.4	5.4	5.9	2.2	3.1	4.2	1.0
28	2.5	2.2	3.2	9.5	11.0	15.2	5.3	6.1	2.2	3.2	4.4	1.0
29	2.5	2.2	3.0	8.2	.....	13.6	5.2	6.0	2.3	3.0	3.9	1.0
30	2.5	2.2	2.8	7.7	.....	10.9	4.9	5.7	2.2	3.2	3.5	1.0
31	2.4	.....	2.7	7.4	.....	9.6	.....	5.3	.....	3.3	3.1	.....

Daily gage height, in feet, of Tennessee River at Johnsonville, Tenn., for the years ending Sept. 30, 1876–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1895.												
1	0.9	0.2	0.5	6.1	11.8	7.6	14.3	8.4	8.2	2.6	6.6	3.5
2	.7	.2	.5	7.0	12.2	7.7	11.6	8.1	7.7	2.6	7.6	3.3
3	.6	.1	.5	6.7	11.5	8.2	11.4	7.7	7.0	2.6	6.7	3.0
4	.4	.1	.5	5.8	10.7	10.2	10.5	7.4	6.4	3.3	5.5	3.0
5	.4	.1	.6	4.9	10.2	12.2	9.7	7.0	5.9	5.0	4.5	3.0
6	.3	.2	.6	4.4	9.8	14.0	9.0	6.6	5.7	5.7	3.8	2.9
7	.3	.4	.6	3.9	9.6	16.0	8.4	6.9	5.1	5.9	3.7	2.8
8	.3	.6	.6	4.2	9.3	17.6	8.3	6.3	4.6	6.2	3.0	2.7
9	.3	.8	.8	6.5	9.5	18.8	8.8	6.0	4.3	6.5	2.8	2.6
10	.5	.8	1.0	10.0	9.8	18.8	10.1	7.1	4.1	6.9	2.7	2.5
11	.6	.7	1.3	11.8	9.4	17.3	11.9	7.7	4.0	6.9	2.4	2.4
12	.7	.7	1.2	14.2	9.1	15.0	12.8	8.3	4.2	7.5	2.6	2.9
13	.7	.6	1.5	17.3	8.1	13.8	13.1	8.9	4.3	7.4	2.7	3.0
14	.6	.5	1.8	19.3	7.1	12.4	13.3	9.3	4.2	6.9	2.8	2.7
15	.5	.5	2.2	20.7	6.3	13.2	13.2	9.2	3.9	6.3	2.8	2.3
16	.4	.4	3.9	21.2	5.8	15.3	12.6	9.0	3.6	5.7	2.4	2.0
17	.3	.4	7.4	23.6	5.5	15.3	11.5	8.9	3.5	5.4	2.4	1.8
18	.3	.4	9.0	24.8	5.3	16.4	10.7	8.8	3.3	5.1	2.4	1.9
19	.4	.5	9.2	25.5	5.2	16.0	10.4	8.5	3.2	4.6	2.9	2.3
20	.8	.5	8.4	25.0	5.3	17.1	9.8	8.1	3.1	4.5	2.4	2.5
21	1.0	.5	7.1	23.4	5.4	20.3	9.7	7.6	3.2	4.7	2.4	2.3
22	.9	.5	5.8	21.0	5.7	23.1	10.8	7.0	3.3	4.4	2.7	2.0
23	.8	.4	4.8	19.5	6.1	24.7	11.6	6.7	3.3	3.7	3.9	1.8
24	.6	.4	4.1	18.5	6.5	23.6	11.3	6.5	3.1	3.5	5.3	1.6
25	.5	.5	3.5	17.3	6.8	24.1	10.4	6.4	2.9	3.3	5.7	1.4
26	.4	.5	3.2	16.2	6.9	24.1	9.0	6.3	2.9	3.1	5.5	1.3
27	.3	.5	3.1	15.6	7.3	24.1	8.7	6.0	2.9	3.0	5.2	1.2
28	.3	.5	2.9	15.6	7.6	23.9	8.5	6.2	2.8	2.7	4.7	1.2
29	.2	.5	3.4	15.5	.....	23.0	8.7	7.2	2.7	2.5	4.3	.9
30	.2	.5	3.7	14.5	.....	20.6	8.7	8.3	2.6	2.4	4.1	.8
31	.2	.....	4.4	13.6	.....	17.5	.....	8.6	.....	2.9	3.9	.....
1896.												
1	.6	.0	.8	7.6	8.0	6.0	12.6	7.3	3.5	3.1	9.8	1.7
2	.5	.1	.9	7.0	12.3	6.0	16.0	7.5	3.5	2.5	8.5	1.7
3	.4	.2	.9	6.6	19.9	5.9	19.7	7.5	3.3	2.3	7.2	2.4
4	.4	.2	1.2	6.2	24.1	5.7	22.6	7.1	3.0	2.2	6.0	2.5
5	.3	.2	1.3	5.9	25.9	5.5	24.2	6.5	2.8	2.5	5.2	2.2
6	.3	.3	1.4	5.7	26.5	5.7	24.9	6.1	2.7	3.6	4.6	1.9
7	.2	.3	1.3	5.5	25.4	7.3	25.5	5.8	3.1	4.2	4.2	1.6
8	.2	.3	1.2	5.4	23.9	8.8	26.0	5.4	4.0	4.2	4.0	1.3
9	.2	.5	1.1	5.5	22.0	9.1	26.6	5.2	4.8	4.0	3.8	1.2
10	.1	.6	1.0	5.6	21.0	8.6	27.2	5.2	5.0	3.9	3.8	1.0
11	.1	.8	1.0	5.7	20.8	7.6	27.9	5.0	4.7	3.9	3.8	.8
12	.1	.9	1.0	5.3	20.7	6.8	28.3	4.8	4.3	4.6	3.7	.7
13	.1	.9	1.1	5.1	20.1	6.2	27.7	4.5	4.2	8.0	3.3	.7
14	.1	.9	1.1	4.7	20.1	5.9	24.8	4.3	4.5	12.3	3.0	1.0
15	.1	.8	1.0	4.4	20.3	6.0	19.4	3.9	5.5	15.2	2.7	1.3
16	.1	.8	1.0	4.1	20.5	6.5	13.8	3.6	5.7	16.0	2.5	1.4
17	.1	.7	1.0	3.9	20.0	9.6	10.4	3.3	5.5	14.9	2.4	1.3
18	.1	.9	1.0	3.7	19.3	13.3	8.5	2.9	4.6	13.3	2.4	1.1
19	.1	1.2	1.0	3.3	18.5	15.5	7.4	2.9	4.3	13.0	2.3	.9
20	.1	1.3	1.2	3.4	17.3	17.2	6.8	2.9	3.8	12.5	2.3	.7
21	.1	1.3	1.3	3.3	15.6	19.2	6.3	2.9	3.3	12.2	2.2	.6
22	.1	1.2	1.3	3.2	13.3	20.6	5.9	2.9	3.0	12.2	2.1	.6
23	.1	1.0	1.3	3.1	11.5	20.9	5.8	2.8	2.8	11.7	2.1	.5
24	.1	1.0	1.3	3.2	10.0	20.6	5.6	2.8	2.7	10.1	2.1	.4
25	.1	.9	1.3	3.5	8.8	19.5	5.5	2.7	2.9	8.4	2.0	.4
26	.1	.8	1.3	4.2	8.1	17.6	5.3	2.6	3.0	7.3	1.9	.4
27	.1	.8	2.7	5.0	7.1	15.5	5.6	2.6	3.3	7.5	1.8	.3
28	.0	.8	8.6	5.9	6.4	13.5	6.3	2.8	3.1	8.0	1.7	.4
29	.0	.8	11.9	5.7	6.1	11.9	7.2	3.3	3.5	7.9	1.6	.4
30	.0	.8	10.9	7.9	.....	11.0	7.6	3.5	3.6	8.1	1.6	.5
31	.0	.....	8.8	8.0	.....	10.6	.....	3.6	.....	9.4	1.6	.....

Daily gage height, in feet, of Tennessee River at Johnsonville, Tenn., for the years ending Sept. 30, 1876–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1897.												
1	0.8	0.3	11.0	2.9	6.1	21.8	40.1	8.3	4.5	4.8	8.2	2.0
2	1.1	.3	10.9	2.8	5.5	23.1	38.5	8.3	4.4	4.8	6.7	1.9
3	1.3	.3	10.3	2.7	5.9	24.2	36.2	7.8	4.2	4.9	5.5	1.9
4	1.2	.3	10.9	2.6	7.3	25.4	34.0	7.3	4.1	4.7	4.7	1.7
5	1.1	.3	11.8	3.0	8.2	26.0	32.6	7.0	4.0	4.3	4.1	1.6
6	1.3	.3	12.4	3.4	10.5	24.9	32.1	7.0	4.0	4.0	3.6	1.3
7	1.4	.3	12.0	3.8	12.0	22.9	32.0	7.8	4.0	3.7	3.3	1.1
8	1.5	.5	10.5	3.8	13.6	22.9	32.0	8.9	4.0	3.6	3.3	1.1
9	1.5	.7	8.7	3.7	14.6	24.0	32.0	8.9	4.0	3.3	3.4	1.0
10	1.6	.7	7.4	3.6	15.0	25.3	31.1	8.5	3.9	3.3	3.2	.8
11	1.6	.6	6.3	3.5	15.3	26.4	30.5	8.0	3.8	3.3	3.3	.8
12	1.4	.8	5.5	3.4	15.8	27.7	30.1	7.8	3.8	3.3	3.5	.7
13	1.2	2.2	5.0	3.3	16.2	29.3	29.8	8.0	3.9	3.5	3.6	.7
14	1.0	3.9	4.8	3.4	16.3	31.2	29.5	9.7	3.8	3.8	4.1	.6
15	.8	4.9	5.1	3.6	15.4	32.8	28.8	12.1	4.1	3.8	4.4	.5
16	.6	4.5	5.5	4.0	14.1	33.7	26.9	14.8	4.6	3.9	4.1	.4
17	.5	5.2	6.2	4.5	12.7	34.8	24.0	17.0	4.7	3.9	3.7	.4
18	.4	5.8	6.5	6.0	12.2	36.0	20.6	18.5	4.3	3.8	3.3	.3
19	.4	5.7	6.2	7.8	11.9	37.5	17.6	19.5	3.8	3.8	2.9	.2
20	.3	5.1	5.6	9.7	11.9	40.5	15.4	19.5	3.5	3.7	2.5	.1
21	.3	4.5	5.3	10.5	10.7	43.7	14.0	18.1	3.3	4.2	2.2	.1
22	.5	3.9	4.7	10.6	10.1	46.2	12.8	15.2	3.3	5.5	2.2	.1
23	.6	3.5	4.4	10.6	10.4	47.4	11.9	12.0	3.1	6.1	2.2	.1
24	.7	3.0	4.6	10.4	11.4	48.0	10.9	9.5	2.9	6.0	2.3	.0
25	.7	2.6	4.6	10.3	12.5	47.7	9.9	8.0	3.0	5.8	2.3	.0
26	.7	2.5	4.5	9.6	15.0	47.2	9.5	7.0	3.5	5.7	2.3	— .1
27	.7	2.5	4.5	9.9	18.0	46.6	8.6	6.4	3.9	5.4	2.3	— .1
28	.5	3.9	3.8	8.3	20.1	45.7	8.0	5.9	4.1	5.6	2.3	— .1
29	.5	6.5	3.1	6.6	.....	44.7	7.5	5.5	4.4	7.1	2.4	— .1
30	.4	8.8	3.3	6.5	.....	43.6	7.2	5.3	4.8	9.2	2.4	— .1
31	.3	.....	3.1	6.3	.....	42.1	.....	4.8	.....	9.5	2.1	.....
1898.												
1	— .1	.6	.0	6.3	23.8	4.3	15.0	9.0	3.9	3.0	5.5	3.1
2	— .1	.6	.0	5.5	22.0	4.4	15.5	8.8	4.3	2.5	5.9	3.0
3	— .2	.5	.1	4.9	19.3	4.4	16.6	8.5	4.0	2.3	5.9	3.0
4	— .2	.4	.4	4.5	16.2	4.2	18.7	8.0	3.6	2.0	7.0	3.0
5	— .2	.2	1.4	4.1	13.5	4.0	20.6	7.5	3.1	2.0	7.6	2.9
6	— .3	.1	2.8	3.9	11.0	3.7	21.5	7.0	2.9	1.9	7.5	2.8
7	— .3	.1	3.5	3.6	9.4	3.6	21.7	6.6	2.6	1.9	6.7	7.8
8	— .3	.1	3.6	3.4	7.8	3.4	21.2	6.2	2.5	1.9	5.6	13.0
9	— .3	.1	3.7	3.3	6.7	3.4	20.5	5.8	2.3	1.7	6.0	15.6
10	— .3	.3	3.8	3.1	6.0	3.3	19.7	5.4	1.8	2.2	9.9	16.5
11	— .3	.4	3.7	3.1	5.5	3.4	19.2	5.0	1.6	2.4	13.0	15.4
12	— .3	.5	3.5	6.7	5.3	3.4	18.2	4.7	1.7	2.0	13.6	12.7
13	— .3	.6	3.2	7.4	5.1	3.4	17.2	4.4	1.7	1.7	12.3	10.1
14	— .3	.6	2.9	8.1	5.0	3.5	15.8	4.3	1.5	1.8	10.7	8.0
15	— .3	.5	2.7	12.8	4.8	4.0	14.5	4.2	1.5	2.0	10.2	6.8
16	— .3	.4	2.5	17.9	4.6	4.8	13.6	4.2	1.4	1.4	11.3	5.9
17	— .3	.4	2.3	22.3	4.4	5.8	12.5	4.2	1.5	2.6	12.6	5.2
18	— .3	.5	2.2	23.9	4.3	7.8	11.8	4.0	1.7	2.6	13.3	4.6
19	— .3	.5	2.0	23.0	4.2	8.6	11.3	3.8	1.8	2.5	12.7	4.1
20	— .3	.5	2.5	22.8	4.1	8.9	11.4	3.6	1.8	2.4	11.1	3.7
21	.0	.5	5.0	24.4	4.0	8.7	13.8	3.5	1.8	2.8	9.0	3.4
22	.1	.4	8.0	25.8	3.8	8.2	15.4	4.9	1.9	3.7	7.6	3.3
23	.2	.2	11.2	28.8	3.7	7.8	15.1	4.8	2.0	3.9	6.1	3.2
24	.3	.1	12.8	29.1	3.6	7.6	13.9	3.4	2.4	3.6	5.5	3.1
25	.3	.1	13.3	28.9	3.5	7.9	12.4	4.0	3.4	3.5	5.1	3.1
26	.4	.1	13.3	27.8	3.5	7.8	11.3	3.7	4.6	3.2	4.9	3.0
27	.4	.1	12.9	26.4	3.4	7.9	10.7	3.4	4.9	3.0	4.5	3.2
28	.7	.0	11.9	25.6	4.0	8.0	10.4	3.1	4.7	3.4	4.5	3.8
29	.6	— .1	9.9	25.1	.....	10.3	9.9	3.0	4.1	4.0	3.9	4.4
30	.6	— .1	8.4	24.8	.....	11.6	9.4	3.0	3.6	4.6	3.7	5.1
31	.5	.....	7.2	24.3	.....	13.6	.....	3.3	.....	4.6	3.2	.....

Daily gage height, in feet, of Tennessee River at Johnsonville, Tenn., for the years ending Sept. 30, 1876–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1899.												
1	5.3	5.7	5.6	5.3	8.4	25.3	38.9	12.3	4.0	2.2	3.1	0.7
2	4.8	5.0	5.1	5.2	7.7	26.1	36.7	11.2	3.8	2.2	3.1	.6
3	4.0	4.7	4.9	5.2	7.9	25.9	35.8	9.9	3.7	2.5	3.5	.5
4	3.5	4.3	4.9	5.1	8.5	25.5	34.4	9.0	3.7	2.6	3.6	.4
5	3.1	3.9	4.8	5.5	11.6	26.6	32.8	8.7	3.6	2.5	3.7	.8
6	2.7	3.7	4.9	6.7	17.0	25.9	31.1	7.8	3.5	2.5	3.5	1.0
7	2.6	3.6	5.2	10.6	21.9	25.6	29.3	7.2	3.5	2.4	3.0	.9
8	2.6	3.4	5.3	16.4	24.9	23.8	29.4	6.9	3.6	2.4	2.6	1.3
9	6.9	3.2	5.5	20.2	26.7	22.8	25.5	6.6	3.8	2.2	2.3	1.6
10	11.1	3.4	5.6	22.4	27.2	22.9	24.5	7.0	3.8	1.9	2.1	1.4
11	12.2	3.5	5.8	23.4	27.4	23.4	23.8	8.0	3.6	1.7	1.9	1.4
12	10.9	3.7	5.7	23.1	27.8	23.9	23.4	8.9	3.5	1.6	1.9	1.3
13	9.1	3.8	5.5	23.1	28.1	24.5	22.7	10.4	3.3	1.6	1.8	1.1
14	7.9	3.8	5.2	23.9	28.5	24.1	21.4	11.1	3.1	1.8	1.7	1.0
15	6.7	3.9	5.0	22.6	28.9	23.4	19.6	11.1	3.0	1.7	1.7	.9
16	6.0	4.0	4.5	20.0	29.4	25.2	15.4	10.6	3.2	1.6	1.6	.7
17	5.3	4.3	4.3	17.5	29.6	27.6	15.3	9.7	3.6	1.6	1.5	.7
18	5.0	4.0	4.0	15.3	29.4	29.3	13.4	9.2	4.3	1.5	1.4	.7
19	4.7	4.0	3.9	13.7	27.4	31.3	12.3	8.9	4.8	1.5	1.5	.7
20	4.5	3.9	4.5	12.5	22.2	32.9	11.3	8.6	5.0	1.4	1.4	.8
21	4.2	3.7	4.5	11.5	20.6	34.4	10.4	8.2	5.1	1.3	1.4	.8
22	4.4	3.7	5.0	10.6	18.0	35.8	9.7	7.5	5.1	1.3	1.5	.7
23	5.2	4.1	5.9	9.0	16.8	36.6	9.1	6.8	4.7	1.3	1.8	.5
24	6.6	4.8	6.7	9.9	16.3	37.3	9.0	6.1	4.2	1.8	1.8	.5
25	7.9	5.8	7.0	10.6	15.4	37.9	10.0	5.8	3.8	2.6	1.5	.4
26	8.0	6.6	6.7	10.4	16.0	38.2	11.6	5.4	3.5	2.7	1.3	.3
27	7.5	6.9	6.2	11.3	19.3	38.5	13.8	5.0	3.1	2.9	1.2	.2
28	6.8	6.7	5.7	11.5	23.0	38.7	14.2	4.8	2.9	3.0	1.1	.1
29	6.7	6.5	5.5	11.1	.....	39.1	14.0	4.5	2.6	3.5	.9	.1
30	6.2	6.0	5.3	10.2	.....	39.5	13.3	4.3	2.5	3.6	.9	.2
31	6.0	.....	5.3	9.4	.....	39.7	.....	4.1	.....	3.4	.7	.....
1900.												
1	.3	.1	1.4	6.8	5.5	11.7	13.3	13.3	4.5	28.6	6.0	2.3
2	.3	.1	1.4	6.2	5.1	12.3	12.3	11.8	4.5	26.6	7.2	2.8
3	.3	.0	1.4	5.5	4.7	13.0	11.1	10.6	4.7	23.6	7.5	2.8
4	.2	.0	1.3	4.9	4.4	13.0	10.6	9.7	5.2	19.8	7.0	2.6
5	.2	.0	1.2	4.3	4.0	12.7	10.0	8.5	6.2	17.0	6.2	2.3
6	.2	.0	1.2	3.7	3.7	12.5	9.5	7.7	7.7	14.7	5.5	2.1
7	.2	.0	1.0	3.1	4.2	13.2	9.3	7.0	8.9	12.2	4.8	1.8
8	.2	.1	.9	2.7	5.1	14.3	9.3	6.4	10.6	10.0	4.2	1.7
9	.1	.1	.9	2.4	10.0	15.6	9.6	6.2	11.6	8.6	3.8	1.7
10	.1	.1	.9	2.2	10.7	16.7	9.7	6.0	11.6	7.5	3.6	1.6
11	.0	.1	1.1	2.0	10.8	17.3	10.3	5.9	11.2	6.7	2.9	1.5
12	.0	.3	1.7	3.2	11.5	17.7	14.3	5.6	10.4	6.2	2.7	1.3
13	.0	.4	5.5	5.6	11.5	18.1	17.9	5.2	9.5	5.6	2.4	1.1
14	.1	.5	7.3	8.7	12.5	18.3	19.3	4.9	8.7	5.3	2.0	.9
15	.1	.4	8.1	10.2	15.0	17.9	19.1	4.7	10.1	5.2	1.9	.8
16	.2	.4	9.0	11.0	17.2	16.6	17.6	4.4	11.1	5.0	1.8	.7
17	.5	.4	9.2	11.4	19.0	14.7	15.5	4.2	10.9	4.7	1.7	.6
18	.7	.3	8.6	10.9	20.3	12.8	15.2	4.1	10.5	4.3	1.6	.6
19	.7	.3	7.9	10.4	21.0	11.4	20.5	4.0	10.1	4.0	1.6	.8
20	.7	.2	7.9	9.9	21.3	10.9	24.1	4.0	9.9	3.9	1.5	1.0
21	.6	.2	8.7	10.7	20.6	11.3	26.7	4.0	9.2	3.8	1.7	1.8
22	.5	.2	9.0	11.9	18.7	13.0	28.1	3.9	9.2	4.5	1.9	2.8
23	.4	.2	8.3	13.0	15.7	13.9	29.1	3.9	11.6	4.1	1.8	3.5
24	.3	.3	8.1	13.3	13.5	14.5	28.9	3.4	13.6	3.8	1.7	3.9
25	.3	.4	9.0	12.7	12.5	15.5	28.0	5.0	16.6	3.7	1.6	3.9
26	.2	.4	10.1	11.6	12.0	17.2	26.6	5.1	19.4	3.9	2.0	3.5
27	.1	.5	10.3	10.5	11.9	18.6	24.0	4.7	23.9	3.9	1.8	3.1
28	.1	.7	10.2	8.9	11.8	18.7	21.2	4.2	26.7	3.8	1.6	2.3
29	.1	1.0	9.4	8.0	.....	17.5	18.3	3.8	29.1	5.6	1.5	1.8
30	.1	1.3	8.5	7.0	.....	15.8	15.5	3.9	29.5	7.0	1.5	1.6
31	.1	.....	7.6	6.2	.....	14.4	.....	4.2	.....	5.8	1.7	.....

Daily gage height, in feet, of Tennessee River at Johnsonville, Tenn., for the years ending Sept. 30, 1876–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1901.												
1	1.8	5.1	14.4	6.5	9.2	4.5	17.7	21.3	22.1	8.2	2.0	13.8
2	1.8	5.1	15.0	6.0	9.2	4.5	19.4	19.5	18.1	7.6	1.9	12.0
3	1.7	4.3	14.5	6.3	9.5	4.4	20.0	17.4	17.9	6.8	1.8	10.8
4	1.6	3.8	12.7	6.4	12.0	4.2	20.6	15.5	14.6	6.0	1.8	8.1
5	1.5	3.1	10.2	6.5	15.7	4.0	21.0	13.6	13.0	5.6	1.8	9.8
6	1.3	2.8	8.1	6.6	17.7	4.0	21.2	11.7	11.4	5.2	1.8	9.5
7	1.3	2.5	6.8	6.4	18.1	4.4	21.7	10.2	10.1	5.2	1.8	9.3
8	2.6	2.3	6.0	6.2	17.7	4.3	22.2	8.9	9.0	5.3	2.1	9.2
9	2.7	2.3	6.1	5.8	16.7	4.2	22.5	7.8	8.0	5.1	2.5	8.5
10	2.6	2.6	7.0	5.6	15.5	5.6	22.6	7.2	7.8	4.9	2.3	7.6
11	2.5	3.0	8.0	6.0	14.5	9.6	21.9	6.6	8.0	4.6	2.0	6.7
12	2.2	3.1	8.0	9.2	13.7	15.0	19.1	6.3	8.3	4.4	6.1	5.9
13	2.9	3.1	7.9	14.4	12.6	18.2	16.8	6.2	8.1	4.5	8.2	5.4
14	4.6	3.0	7.1	19.5	11.0	19.0	14.0	5.8	8.1	4.8	8.0	5.2
15	6.1	2.6	6.2	21.7	10.5	18.4	11.9	5.7	8.2	5.1	7.5	6.0
16	5.5	2.5	5.6	22.8	9.8	16.8	10.8	5.6	7.6	4.8	6.9	6.8
17	4.8	2.1	5.0	23.5	9.2	15.5	10.4	5.4	6.9	4.3	8.3	8.4
18	4.0	2.0	4.6	23.9	8.9	12.0	10.7	5.4	6.3	3.9	15.0	10.4
19	3.5	1.9	4.2	24.0	8.4	10.0	12.2	5.3	6.1	3.6	19.5	11.7
20	2.8	1.8	3.8	23.5	7.8	9.7	14.1	5.1	6.8	3.0	22.6	12.7
21	2.2	7.2	3.8	21.4	7.2	7.7	17.9	5.1	7.8	3.1	24.9	12.2
22	1.9	9.4	3.8	17.3	6.7	7.0	21.2	5.7	8.3	3.2	26.0	11.8
23	2.0	8.6	4.2	13.0	6.0	7.0	22.8	5.8	8.3	3.3	26.7	11.0
24	2.2	7.5	4.9	10.7	5.8	6.8	23.7	10.0	7.9	3.3	27.3	10.0
25	2.5	7.8	5.5	11.0	5.6	6.6	24.1	14.0	7.5	3.1	27.5	8.8
26	2.6	8.8	5.9	11.7	5.2	6.4	24.5	16.7	7.5	3.0	27.6	7.6
27	2.6	8.6	6.0	12.3	5.0	6.4	24.7	18.7	8.2	2.9	27.2	6.7
28	3.0	9.6	6.5	11.6	4.8	7.1	24.6	20.1	7.9	2.7	26.1	5.8
29	3.4	10.0	6.9	11.0	.....	9.0	24.2	21.4	7.5	2.6	24.0	5.3
30	4.2	13.5	6.8	10.4	.....	12.5	23.1	22.3	8.0	2.5	20.6	5.0
31	6.0	.....	6.4	9.9	.....	15.6	.....	22.7	.....	2.2	16.8	.....
1902.												
1	5.2	2.0	1.8	20.9	24.6	15.0	35.0	7.5	5.2	3.8	1.7	.5
2	5.3	2.0	1.8	22.6	26.4	18.3	35.6	7.0	4.8	3.8	1.8	.8
3	5.0	1.9	1.9	23.7	27.4	20.7	35.6	6.9	4.1	3.2	2.2	1.1
4	4.7	1.9	1.9	24.6	27.5	22.0	34.6	6.9	3.9	3.9	2.7	1.4
5	4.4	1.9	1.8	25.4	27.0	23.4	33.2	8.1	3.8	6.9	2.6	1.5
6	4.3	1.9	1.8	26.2	26.8	24.6	32.2	9.4	3.5	7.8	2.1	1.5
7	4.3	1.9	1.8	27.0	26.5	25.8	31.4	9.6	3.0	7.0	1.6	1.4
8	4.2	1.8	1.7	27.8	26.2	27.1	30.2	8.8	3.0	6.4	1.4	1.2
9	4.0	1.7	1.8	28.5	25.2	28.3	28.0	7.7	2.9	5.7	1.3	.9
10	4.0	1.7	2.2	28.5	23.0	29.2	24.7	6.9	2.9	4.9	1.4	.7
11	3.9	1.7	2.5	27.0	19.2	29.8	20.9	6.2	2.8	4.1	1.5	.6
12	3.8	1.7	2.7	22.6	15.2	30.4	17.5	5.8	2.6	3.6	1.5	.5
13	3.6	1.8	2.9	16.4	12.3	30.8	15.0	5.6	2.5	3.2	1.5	.5
14	3.6	1.8	4.8	11.8	10.2	30.8	13.2	5.5	2.5	2.9	1.2	.5
15	3.4	1.8	7.3	9.3	9.2	30.0	11.6	4.9	2.5	2.7	1.1	.4
16	3.4	1.8	10.0	8.0	8.8	28.2	10.6	4.9	2.4	2.5	1.2	.4
17	3.4	1.8	15.1	7.2	8.7	25.3	10.0	4.8	2.3	2.3	1.4	.4
18	3.4	1.7	18.6	6.1	8.4	22.0	9.3	4.6	2.3	2.6	1.4	.5
19	3.4	1.7	20.6	6.3	8.0	19.7	8.9	4.6	2.3	3.2	1.3	.7
20	3.5	1.7	21.7	6.6	7.8	18.5	8.7	4.3	2.2	3.6	1.1	.8
21	3.5	1.7	22.4	6.7	7.5	17.9	8.2	4.3	2.2	3.0	1.0	.9
22	3.5	1.7	22.8	7.5	7.0	17.6	7.9	4.2	2.2	3.0	.8	.8
23	3.2	1.7	22.4	8.5	7.9	17.1	7.5	4.1	2.3	2.5	.7	.7
24	3.1	1.7	19.6	9.6	8.2	16.2	7.3	3.9	2.8	2.3	.6	.6
25	2.8	1.7	15.0	9.8	8.9	14.7	7.0	3.8	3.3	2.0	.6	.6
26	2.7	1.7	11.2	10.0	9.9	13.0	6.8	3.8	3.3	1.9	.5	.8
27	2.5	1.6	9.5	12.3	11.3	12.0	6.4	3.8	3.1	1.6	.5	1.2
28	2.3	1.6	9.0	14.3	13.0	12.0	6.1	3.8	3.0	1.5	.6	1.4
29	2.2	1.6	10.8	16.7	.....	24.0	6.1	3.8	2.8	1.5	.6	1.7
30	2.2	1.6	14.0	18.7	.....	30.4	8.1	3.7	3.3	1.4	.6	2.0
31	2.0	.....	18.0	21.8	.....	33.9	.....	3.6	.....	1.5	.5	.....

Daily gage height, in feet, of Tennessee River at Johnsonville, Tenn., for the years ending Sept. 30, 1876–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903.												
1	3.1	0.6	6.4	8.4	7.8	23.2	22.2	10.6	5.4	4.2	2.4	1.4
2	3.5	.6	7.1	8.0	7.4	23.5	21.5	9.9	8.0	4.3	2.4	1.3
3	3.5	.5	8.1	9.0	7.0	25.0	20.8	9.6	10.4	4.3	2.0	1.1
4	3.3	.4	8.6	10.0	9.8	25.9	20.0	9.4	11.5	4.3	2.0	1.0
5	3.0	.4	9.6	11.5	14.5	26.3	19.4	9.0	13.8	4.0	1.9	1.0
6	2.9	.4	10.7	11.3	18.1	27.0	18.5	8.4	17.1	4.0	2.0	1.0
7	2.8	.4	11.8	10.5	20.5	28.3	17.0	7.8	18.7	3.8	2.4	1.0
8	2.7	.6	11.9	10.1	21.5	30.1	16.6	7.4	17.2	3.6	2.7	.9
9	2.5	.6	10.9	9.7	22.8	31.9	15.6	7.0	15.7	3.5	3.5	.8
10	2.2	.6	9.8	9.5	24.2	32.9	16.2	6.7	14.2	3.5	3.8	.7
11	2.0	.5	8.8	9.5	25.2	33.7	18.2	6.5	13.3	3.6	4.0	.6
12	1.8	.5	7.9	9.4	25.8	33.5	20.0	6.2	13.1	3.7	3.9	.6
13	1.7	.5	7.3	10.5	26.3	33.1	21.3	6.0	12.3	3.7	3.7	.5
14	1.8	.5	6.8	11.0	26.8	32.7	22.8	5.9	11.5	4.6	3.5	.5
15	2.2	.9	8.0	10.7	27.0	32.3	23.2	6.4	10.7	5.0	3.4	.4
16	2.5	1.0	17.0	10.8	28.1	31.8	25.6	8.8	9.5	4.7	3.1	.4
17	2.7	1.0	19.6	9.9	28.4	31.3	26.5	10.4	8.6	4.6	3.0	.4
18	2.5	.9	19.9	9.5	28.4	30.5	26.9	9.8	7.7	4.9	3.0	.3
19	2.3	.8	15.5	8.7	28.8	29.0	26.8	8.5	6.8	5.1	3.1	.3
20	2.2	.8	14.7	8.0	29.1	26.7	26.5	7.4	6.1	5.0	3.4	.3
21	2.4	.7	12.6	7.4	29.2	23.7	25.9	7.1	5.5	4.9	3.6	.3
22	2.4	.7	12.5	6.9	29.1	20.7	25.0	6.7	4.9	4.7	3.6	.3
23	2.2	.6	13.4	6.5	29.1	18.4	23.5	6.1	4.7	4.5	3.3	.3
24	2.0	.7	14.5	6.0	29.1	16.6	21.5	5.6	4.7	3.9	3.1	.3
25	1.8	1.0	13.4	5.8	29.0	15.3	19.4	5.1	4.5	3.7	2.9	.3
26	1.5	2.3	13.4	5.5	28.7	14.5	17.5	4.7	4.5	3.5	2.7	.3
27	1.4	4.4	12.4	5.3	27.2	15.6	15.9	4.3	4.5	3.2	2.5	.3
28	1.1	5.5	11.9	5.5	25.0	18.0	14.3	4.2	4.7	3.0	2.3	.3
29	1.0	5.5	9.7	6.6	.....	19.7	12.9	4.0	4.6	2.8	2.1	.3
30	.9	5.8	9.7	7.9	.....	21.0	11.6	4.1	4.4	2.6	1.8	.3
31	.7	.....	9.0	8.1	.....	22.0	.....	4.8	.....	2.4	1.7	.....
1904.												
1	.3	.0	1.6	3.3	6.5	7.3	26.9	4.6	3.8	2.5	1.6	1.8
2	.3	.0	1.3	3.4	5.7	7.0	25.8	4.5	3.9	2.3	1.6	1.8
3	.2	.2	1.1	3.5	5.0	7.3	24.4	4.2	4.5	2.2	1.6	1.7
4	.2	.4	.9	3.6	4.4	8.2	22.3	4.8	5.5	2.2	1.7	1.6
5	.1	.5	.8	3.4	4.1	8.3	19.4	5.5	6.0	2.8	2.0	1.5
6	.0	.8	.7	3.2	3.7	7.8	17.1	6.4	6.1	3.0	1.9	1.2
7	.0	1.0	.6	2.7	3.5	7.6	15.1	6.5	5.8	3.2	1.8	1.2
8	.0	1.3	.5	2.5	3.3	7.4	13.5	6.0	5.3	3.4	1.9	1.1
9	.2	1.3	.5	2.2	3.2	7.9	12.3	5.9	5.1	3.8	2.0	1.0
10	.0	1.4	.4	2.0	3.4	8.9	11.5	5.8	5.2	4.0	2.2	.8
11	.2	1.2	.4	1.9	3.5	9.5	11.1	5.7	4.9	3.9	2.5	.8
12	.4	1.1	.4	1.8	3.7	10.7	10.8	5.7	4.3	3.5	2.9	.7
13	.4	.9	.4	1.7	4.7	11.8	10.3	5.7	3.8	3.1	3.2	1.0
14	.4	.9	.4	1.6	5.3	12.8	9.9	6.0	3.3	2.7	3.6	1.1
15	.3	.8	.4	1.6	5.5	13.2	9.8	6.4	3.1	2.7	3.8	1.0
16	.3	.7	.4	1.5	5.3	13.5	8.1	6.5	2.9	2.7	3.7	.8
17	.3	.7	.4	1.7	5.0	13.4	7.4	6.1	2.7	2.7	3.4	.7
18	.5	.8	.4	1.9	4.5	13.2	6.7	5.8	2.5	2.7	3.4	.5
19	.6	1.3	.4	2.2	4.2	12.6	6.1	5.2	2.2	2.8	3.3	.4
20	.6	2.3	.9	2.4	4.0	11.5	5.6	4.9	2.1	2.8	3.0	.3
21	.5	2.7	2.3	2.5	3.7	10.2	5.3	4.6	2.1	2.5	2.9	.3
22	.4	2.3	4.3	3.4	3.6	9.5	5.2	4.3	2.2	2.4	3.0	.2
23	.3	3.3	5.5	6.3	3.9	11.2	5.2	3.9	2.1	2.2	2.9	.1
24	.2	4.3	4.4	8.0	3.9	15.0	5.1	3.7	1.9	2.2	2.6	.2
25	.2	4.3	4.0	8.9	4.0	17.7	5.0	3.5	1.7	2.0	2.4	.3
26	.1	3.7	4.4	9.3	4.8	20.6	6.0	3.4	1.7	1.8	2.1	.2
27	.0	3.2	4.8	10.7	6.0	24.1	6.0	3.2	1.7	1.6	1.8	.0
28	.0	2.7	4.7	10.9	7.0	26.5	5.6	3.3	1.8	1.4	1.7	.0
29	.1	2.2	4.3	9.9	7.4	27.8	5.3	3.0	2.2	1.4	1.7	.0
30	.1	2.9	3.8	8.7	.....	28.1	4.9	2.9	2.5	1.4	1.6	.0
31	.0	.....	3.5	7.5	.....	27.7	.....	3.7	.....	1.6	1.8	.....

Daily gage height, in feet, of Tennessee River at Johnsonville, Tenn., for the years ending Sept. 30, 1876–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905.												
1	−0.1	−0.9	−0.1	11.9	5.2	21.2	6.8	6.7	8.9	10.0	4.3	4.9
2	−.1	−.9	.0	11.7	5.3	18.8	6.4	7.7	7.7	10.5	4.1	4.7
3	−.2	−.9	.1	10.3	4.8	15.6	6.0	8.4	6.8	11.0	3.7	4.9
4	−.3	−.9	.2	8.8	4.5	12.8	5.8	9.0	6.0	11.7	3.4	4.7
5	−.3	−.8	.4	7.4	4.2	11.0	5.8	9.1	6.0	10.8	3.1	4.4
6	−.4	−.7	.5	6.2	4.6	9.7	5.7	8.8	5.6	9.1	3.0	5.4
7	−.4	−.6	1.0	5.6	6.1	8.8	5.6	8.9	5.1	7.5	3.0	4.7
8	−.4	−.5	1.6	5.2	8.5	8.1	5.4	8.9	4.7	6.2	3.1	4.1
9	−.4	−.5	2.8	4.9	11.8	9.0	5.3	8.7	4.3	5.5	3.0	3.5
10	−.3	−.5	3.5	4.9	16.8	14.2	5.0	8.2	4.0	5.2	2.9	3.0
11	−.3	−.5	4.1	4.9	20.7	18.2	5.0	7.8	3.7	5.4	2.7	3.3
12	−.3	−.5	4.5	5.8	22.7	20.8	5.4	7.3	3.5	5.3	2.5	3.2
13	−.4	−.5	4.8	11.2	23.6	21.2	5.9	7.8	3.4	5.8	3.1	3.2
14	−.5	−.5	4.6	14.5	24.0	20.7	6.2	8.6	3.1	6.4	3.5	3.2
15	−.5	−.5	4.0	15.5	24.0	20.6	6.4	8.8	3.0	6.5	4.2	3.0
16	−.5	−.5	3.6	15.4	23.8	20.0	6.6	8.4	2.9	6.5	5.5	2.7
17	−.6	−.4	2.9	16.2	22.8	18.8	6.8	7.7	2.9	7.5	6.9	2.5
18	−.6	−.3	2.5	16.8	20.8	16.7	7.1	7.0	3.0	9.6	8.0	2.2
19	−.7	−.3	2.2	16.7	18.2	14.1	7.3	6.8	3.3	10.4	8.4	2.0
20	−.7	−.3	1.9	15.0	16.2	12.2	7.1	8.6	3.4	10.0	8.1	2.0
21	−.7	−.3	1.8	12.8	15.2	10.7	6.7	11.4	3.5	8.8	7.6	2.0
22	−.8	−.4	1.6	10.5	16.6	9.8	6.3	12.8	3.4	7.2	7.0	1.9
23	−.8	−.3	1.5	8.9	20.7	10.0	5.7	14.5	4.2	6.2	6.3	1.9
24	−.8	−.2	1.6	7.7	22.6	10.5	5.5	17.1	5.1	5.1	5.6	1.8
25	−.8	−.1	1.8	6.7	23.5	10.7	5.2	17.9	8.1	4.9	5.4	1.7
26	−.9	.0	1.9	6.1	23.9	10.5	5.0	19.5	8.4	4.7	4.9	1.5
27	−.9	.0	4.0	5.2	23.9	10.0	5.0	20.1	8.0	4.5	4.5	1.4
28	−.9	.0	9.0	5.0	23.3	9.3	5.0	19.1	7.5	4.5	4.2	1.2
29	−.9	.0	11.2	4.8	.....	8.5	5.2	15.7	8.5	4.4	4.9	1.0
30	−.9	.0	12.1	4.5	.....	7.8	5.9	13.0	9.0	4.2	5.5	1.0
31	−.9	.0	11.7	5.0	.....	7.3	.....	10.6	.....	4.2	5.3	.....
1906.												
1	.8	3.3	2.0	10.8	17.7	7.0	20.2	6.8	3.7	5.9	9.3	6.6
2	.8	3.4	1.8	9.9	15.0	6.7	22.0	6.6	4.5	5.7	8.5	6.3
3	.8	3.4	2.0	9.0	13.0	6.5	21.4	6.3	4.4	5.3	8.0	7.0
4	.7	3.0	2.7	9.3	11.8	7.0	21.0	6.0	4.7	4.8	7.7	9.0
5	.7	2.8	2.7	9.8	10.7	9.1	20.0	5.8	4.8	4.4	8.0	10.3
6	.7	2.6	3.2	10.3	10.3	11.0	18.5	5.6	4.8	4.1	8.7	10.2
7	.9	2.4	3.4	12.4	9.7	11.5	16.7	5.8	4.7	4.0	8.8	9.5
8	.9	2.2	5.9	13.8	9.6	12.1	15.0	5.7	4.7	3.8	8.3	8.6
9	.9	2.0	8.6	14.0	8.4	12.0	14.0	5.8	4.8	3.5	7.9	8.0
10	.8	1.8	9.2	15.1	7.2	11.0	13.5	6.0	4.6	3.3	7.6	8.0
11	.8	1.6	9.3	14.5	7.1	9.9	12.8	6.0	4.4	3.3	7.4	8.6
12	1.1	1.5	9.1	13.5	6.9	9.5	12.5	6.6	4.1	3.5	7.2	9.4
13	2.0	1.5	9.6	12.3	6.5	8.5	11.8	7.5	3.9	3.4	6.7	9.6
14	2.9	1.4	10.1	12.3	6.1	8.0	11.5	7.9	3.7	5.4	6.4	9.9
15	2.8	1.4	9.7	12.2	5.9	8.7	11.6	7.7	3.5	8.0	6.1	9.9
16	2.7	1.3	11.3	11.5	5.7	10.4	11.4	7.0	3.4	6.9	6.1	9.1
17	2.7	1.4	12.3	10.9	5.4	13.6	10.9	6.3	3.2	6.9	6.0	8.1
18	3.2	1.5	12.9	10.4	5.2	14.9	10.0	5.6	3.5	9.0	5.8	7.1
19	3.5	1.4	11.8	10.0	5.0	15.0	9.9	5.0	4.7	12.0	5.8	6.2
20	4.1	1.3	11.5	10.2	4.9	14.8	9.9	4.8	6.0	13.3	6.4	5.6
21	4.1	1.2	10.5	10.7	4.8	15.3	10.1	4.4	7.5	13.6	6.8	5.2
22	3.9	1.2	10.0	11.2	4.7	16.4	10.3	4.2	7.5	14.5	7.2	5.6
23	3.6	1.1	10.8	12.0	4.8	16.5	10.1	4.0	6.9	15.2	7.2	6.1
24	3.3	1.1	13.0	16.4	4.9	15.9	9.4	3.7	6.2	14.8	7.4	7.4
25	3.7	1.1	15.0	20.1	5.6	15.8	8.4	3.5	5.4	13.8	7.2	10.1
26	2.5	1.1	15.9	22.2	5.7	15.3	7.6	3.3	5.0	13.3	7.0	11.1
27	2.4	1.1	15.5	22.0	6.2	12.5	6.9	3.3	4.5	13.5	6.6	11.1
28	2.5	1.1	14.8	21.0	6.8	12.3	6.6	3.7	4.5	13.2	6.5	10.5
29	3.2	1.1	14.4	20.9	.....	12.7	6.7	4.0	4.9	12.2	6.4	10.1
30	3.4	2.2	13.3	20.9	.....	14.7	6.9	4.5	5.5	11.0	6.5	11.9
31	3.3	.....	12.0	20.0	.....	17.0	.....	4.7	.....	10.0	6.9	.....

Daily gage height, in feet, of Tennessee River at Johnsonville, Tenn., for the years ending Sept. 30, 1876–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907.												
1	15.1	5.9	15.3	14.6	12.8	10.0	8.4	14.2	6.5	6.2	3.3	3.4
2	15.9	5.5	11.7	18.2	14.1	15.6	7.5	16.7	7.6	6.4	3.1	3.3
3	15.0	5.2	9.3	21.3	18.3	21.6	6.8	16.2	8.5	6.2	3.0	3.2
4	17.5	4.9	8.2	23.0	21.4	24.4	6.1	14.3	8.7	6.3	3.1	2.9
5	20.8	4.3	7.4	24.0	22.5	25.4	6.1	12.5	8.1	6.6	4.0	2.6
6	22.8	4.3	7.1	24.1	22.1	25.1	7.0	11.7	7.8	6.4	4.5	2.5
7	24.1	4.2	6.8	23.2	20.8	24.6	7.9	17.5	7.6	5.9	4.4	2.6
8	25.2	4.1	6.5	21.2	18.6	24.0	8.0	19.5	7.7	5.9	4.1	2.7
9	25.3	4.0	6.3	18.3	16.1	22.8	8.1	21.7	8.3	4.9	3.5	2.5
10	24.2	3.9	6.1	15.8	14.5	20.6	8.4	21.7	8.8	4.5	3.2	2.5
11	22.6	3.8	6.0	14.1	13.3	18.8	10.1	20.6	9.0	4.3	3.0	2.6
12	20.5	3.7	6.2	13.0	12.4	17.5	10.9	20.0	8.9	4.0	3.2	2.6
13	17.9	3.5	6.2	12.1	11.0	16.4	10.8	20.4	9.0	3.9	3.5	2.6
14	15.0	3.3	6.3	11.3	10.4	15.7	10.5	20.5	10.5	3.8	3.3	2.7
15	12.1	3.6	6.2	10.6	9.5	18.8	10.2	21.0	11.7	4.4	3.2	3.4
16	10.2	3.6	6.4	9.8	8.8	21.1	9.8	22.1	12.0	4.9	3.1	3.7
17	9.1	3.6	9.0	9.3	8.2	22.5	9.3	21.7	11.5	4.9	3.5	4.3
18	8.2	16.8	11.4	9.2	7.4	21.8	8.6	20.5	11.0	5.4	4.0	4.3
19	7.8	19.6	9.0	9.1	7.2	20.7	8.0	18.5	10.7	6.4	3.9	3.9
20	7.6	22.1	14.1	9.5	7.0	19.4	7.7	16.0	11.5	6.5	3.7	3.5
21	7.6	22.4	13.2	10.3	6.8	18.2	7.3	13.5	12.7	6.2	3.5	3.2
22	7.9	21.5	12.3	11.0	6.6	17.1	7.3	11.0	12.1	5.8	3.3	3.0
23	8.2	21.9	12.3	12.0	6.0	15.9	7.3	9.9	10.2	5.5	3.3	2.8
24	8.1	22.8	12.3	12.4	6.0	14.8	7.7	8.6	8.2	5.1	3.2	3.0
25	7.9	23.6	12.0	12.5	6.9	13.9	8.1	7.8	7.1	4.9	3.1	4.1
26	7.9	24.4	11.0	14.0	7.6	13.0	8.2	7.2	6.6	4.5	3.2	4.6
27	8.4	24.7	10.8	14.5	8.0	12.1	8.6	7.0	6.4	4.2	3.4	5.3
28	8.2	24.8	9.7	14.2	8.4	11.3	8.8	6.9	6.4	4.1	3.5	7.6
29	7.7	23.9	9.7	14.1	.....	10.8	9.6	6.5	6.3	3.9	3.6	9.1
30	6.9	20.1	8.9	13.6	.....	10.1	10.3	6.1	6.4	3.7	3.5	9.3
31	6.3	.....	12.5	13.1	.....	9.3	.....	5.9	.....	3.3	3.3	.....
1908.												
1	8.6	1.4	12.5	11.8	7.6	14.0	19.5	14.8	7.0	3.8	2.7	5.5
2	7.6	1.5	11.5	13.9	8.9	13.4	16.9	15.1	7.1	4.2	2.7	5.8
3	6.1	1.7	9.8	15.6	10.5	13.9	14.6	14.1	7.0	4.3	2.6	5.7
4	5.5	2.0	8.3	17.1	11.4	14.2	12.7	12.6	7.0	4.4	2.6	5.0
5	5.0	2.1	7.1	19.2	11.6	14.7	11.5	11.1	8.0	4.3	2.5	4.3
6	4.9	2.2	6.2	20.4	12.8	14.8	11.3	11.4	8.9	3.9	3.0	4.2
7	4.5	2.5	5.6	21.0	12.9	14.5	11.3	14.0	9.0	3.9	3.2	4.7
8	4.1	2.2	4.9	20.2	12.9	14.4	13.2	16.6	8.0	3.8	3.5	5.1
9	4.0	2.3	4.9	19.0	12.3	14.3	15.4	15.9	7.4	4.3	3.5	4.6
10	3.7	2.9	5.1	18.2	11.8	13.9	15.8	14.3	7.9	5.5	3.4	4.1
11	3.3	3.4	4.8	17.3	13.7	13.2	15.0	12.7	8.1	6.4	3.4	3.6
12	3.4	3.8	4.6	16.0	16.5	13.9	13.8	11.7	7.9	6.6	3.7	3.4
13	3.4	4.0	4.8	14.6	19.7	15.0	12.4	11.2	7.4	6.6	4.1	3.6
14	3.3	4.1	4.9	13.7	21.4	16.0	11.2	11.0	7.0	6.7	4.5	3.9
15	3.1	4.5	5.1	13.4	23.4	16.2	10.2	10.9	6.4	6.7	4.7	4.0
16	3.0	5.8	5.4	14.0	24.4	16.0	9.5	10.6	6.0	6.6	4.7	3.8
17	2.8	7.5	6.8	15.7	25.3	16.1	8.9	10.0	5.7	6.9	4.2	3.2
18	2.7	8.5	7.3	17.7	25.9	16.3	8.4	9.7	5.3	5.2	3.8	2.8
19	2.5	8.0	7.8	19.0	26.1	15.9	10.5	9.8	5.0	4.5	3.5	2.5
20	2.3	6.8	7.9	18.8	26.4	15.3	12.2	9.9	4.7	4.2	3.3	2.2
21	2.2	6.0	7.8	17.4	26.8	14.8	13.8	10.1	4.5	4.0	3.2	1.9
22	2.1	5.7	7.6	14.4	27.1	14.5	13.9	9.7	4.5	3.9	3.0	1.8
23	2.0	6.0	7.5	13.5	27.0	14.7	13.2	8.5	4.7	3.9	2.8	1.7
24	2.0	6.0	8.2	11.9	26.1	15.2	12.0	7.8	4.7	3.7	2.7	2.5
25	1.9	6.9	8.3	10.9	23.7	17.4	11.5	7.1	4.4	3.6	3.0	2.5
26	1.8	8.2	8.5	9.9	20.8	20.2	13.5	7.1	4.2	3.5	3.6	2.2
27	1.7	9.6	8.5	9.1	18.1	21.6	14.9	7.0	4.0	3.4	4.4	2.1
28	1.6	11.3	8.5	8.5	16.3	22.1	14.3	7.4	3.9	3.4	5.7	1.9
29	1.5	12.5	8.6	8.1	15.0	22.3	13.0	7.7	3.7	3.2	6.0	1.7
30	1.5	13.0	8.8	7.7	.....	22.4	14.0	7.6	3.7	3.0	5.7	1.6
31	1.5	.....	10.0	7.3	.....	21.4	.....	7.2	.....	2.8	5.3	.....

Daily gage height, in feet, of Tennessee River at Johnsonville, Tenn., for the years ending Sept. 30, 1876–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909.												
1	1.5	3.2	2.9	9.7	6.6	32.9	16.8	12.9	13.3	13.3	5.6	3.2
2	1.4	3.8	2.6	9.0	6.6	32.1	17.1	14.1	15.0	13.0	5.4	3.0
3	1.3	3.3	2.6	9.0	6.2	31.4	17.5	16.9	15.7	12.1	5.3	2.8
4	1.1	2.2	2.4	9.0	6.2	30.3	17.4	19.7	14.3	11.0	5.1	2.5
5	1.0	3.3	2.1	8.9	6.0	28.5	16.4	21.0	13.6	10.4	6.0	2.7
6	.9	4.7	2.0	8.7	6.3	25.8	14.6	21.8	15.3	9.8	7.1	2.7
7	.9	4.7	2.4	8.7	7.0	22.7	14.3	22.3	19.3	9.5	8.0	2.9
8	.9	4.2	3.6	9.1	7.2	20.0	13.1	22.5	21.2	9.1	8.6	3.0
9	.9	3.7	6.4	9.7	7.8	18.3	13.3	21.7	22.2	8.7	8.9	3.0
10	.9	3.4	9.4	10.3	8.8	18.8	13.6	19.7	22.9	8.3	8.7	2.8
11	.9	3.1	11.4	10.6	10.6	19.9	13.1	16.4	23.0	8.7	7.8	3.0
12	1.0	2.9	12.8	10.5	13.8	20.3	12.3	13.7	22.5	11.5	6.8	3.1
13	1.0	2.8	13.3	10.0	16.3	21.8	12.4	12.0	21.2	14.8	6.1	3.5
14	1.0	2.6	12.7	9.3	18.3	23.6	13.9	11.1	20.2	16.4	5.6	3.4
15	1.0	2.3	11.3	8.8	22.0	25.3	15.0	10.7	17.4	16.5	5.1	3.1
16	.9	2.1	9.9	9.4	24.7	27.0	14.8	11.4	15.6	15.0	4.8	3.0
17	1.2	2.2	8.7	11.1	26.4	28.2	13.4	11.4	14.0	13.0	4.7	2.9
18	1.7	2.1	8.2	12.5	27.1	29.0	12.2	10.8	13.1	12.8	4.5	2.8
19	2.2	2.3	7.7	14.4	26.7	29.5	11.2	9.8	12.8	13.0	4.5	3.1
20	2.2	2.6	7.4	16.0	26.0	29.9	10.2	9.8	12.5	12.9	4.6	2.9
21	2.1	2.8	6.9	16.7	25.3	30.0	10.2	9.4	12.1	12.0	5.0	2.7
22	1.9	2.9	6.3	17.2	24.8	29.0	9.5	8.7	11.5	10.7	8.6	2.6
23	1.7	2.9	6.1	17.2	24.4	26.9	9.1	9.0	11.7	8.9	9.6	2.3
24	1.3	2.8	6.5	16.3	26.3	23.3	8.6	10.1	13.5	7.8	8.6	2.3
25	1.2	2.6	8.9	14.3	28.9	19.8	8.5	11.8	14.4	6.9	7.1	2.7
26	1.0	2.4	10.2	12.2	31.3	17.0	9.7	15.0	13.9	6.4	5.8	2.9
27	.9	2.6	11.5	10.4	32.5	16.0	11.0	17.7	13.0	6.0	4.9	3.0
28	.8	2.5	12.5	9.4	32.9	15.5	12.3	18.7	12.3	5.8	4.5	3.2
29	.8	2.7	12.5	8.0	.....	14.8	12.4	17.7	12.3	6.0	3.9	3.5
30	.7	3.0	11.5	7.5	.....	15.4	12.4	15.0	13.0	5.9	3.7	4.2
31	1.4	.....	10.8	6.9	.....	16.3	.....	12.7	.....	5.8	3.4	.....
1910.												
1	4.3	2.1	1.8	4.7	8.7	13.8	3.8	5.4	14.3	7.2	5.8	2.9
2	4.0	2.0	1.8	4.6	7.1	12.7	3.8	5.6	11.6	8.4	5.5	2.8
3	3.5	1.9	1.8	4.6	6.9	12.8	3.7	6.1	9.9	9.2	5.4	2.9
4	3.1	1.8	1.8	3.4	6.6	13.1	3.6	6.3	7.7	9.8	5.6	3.5
5	2.8	1.8	1.8	3.4	6.5	14.7	3.5	6.1	7.5	10.6	6.2	4.0
6	2.5	1.8	1.8	4.0	5.8	16.0	3.4	5.8	7.2	11.8	6.8	4.7
7	2.1	1.8	1.8	6.0	5.6	16.5	3.3	5.4	6.9	13.1	6.3	7.1
8	2.0	1.7	2.2	9.0	5.4	15.9	3.2	5.0	6.7	14.7	5.9	7.6
9	2.0	1.7	2.6	11.8	5.3	14.7	3.2	4.7	7.2	15.3	5.6	7.1
10	1.8	1.7	3.2	12.4	5.2	13.0	3.0	4.4	8.0	15.6	6.1	6.4
11	1.8	1.7	3.7	13.4	5.0	12.0	3.0	4.3	10.2	15.6	6.4	6.0
12	1.7	1.7	3.9	13.6	5.5	11.0	2.9	4.8	13.2	15.7	6.7	5.8
13	1.6	1.7	4.6	13.1	5.2	10.1	2.9	6.1	13.5	15.5	6.4	5.4
14	1.6	1.7	5.0	13.0	4.8	9.2	2.8	7.4	12.1	14.7	6.0	5.0
15	1.9	1.7	5.0	11.8	5.0	8.6	3.2	7.9	11.0	13.7	5.8	4.7
16	2.6	1.6	4.9	10.7	5.0	8.0	12.0	8.0	11.2	12.9	5.3	4.5
17	3.7	1.6	4.9	9.8	5.3	7.7	12.8	7.6	11.1	11.9	4.8	4.4
18	5.0	1.6	5.6	7.9	8.6	7.1	14.8	7.1	10.2	11.0	4.3	4.3
19	5.2	1.6	5.6	8.2	14.7	6.9	13.4	6.6	9.5	11.7	3.9	3.9
20	5.3	1.6	6.0	8.1	16.7	6.3	11.7	6.3	8.9	13.7	3.6	3.5
21	5.6	1.6	6.1	8.6	18.9	5.9	10.7	7.6	8.7	13.8	3.5	3.2
22	5.0	1.6	5.7	8.8	20.5	5.8	10.0	8.9	8.5	12.2	3.3	2.9
23	4.2	1.6	5.1	9.5	21.2	5.6	9.9	11.1	8.3	10.6	3.1	2.8
24	4.0	1.6	4.7	10.5	21.2	5.4	9.0	13.7	8.0	8.9	3.7	2.6
25	3.5	1.7	4.3	11.5	20.4	5.4	8.2	14.8	7.6	7.9	3.5	2.4
26	3.1	2.0	3.9	12.0	18.7	5.0	7.3	15.6	7.3	7.3	3.5	2.2
27	2.9	2.1	3.9	12.3	16.7	4.7	6.7	16.3	6.9	6.9	3.6	2.1
28	2.6	2.1	4.0	12.1	15.3	4.5	6.0	16.7	6.5	6.8	3.4	2.0
29	2.4	1.9	4.7	11.4	.....	4.3	5.8	16.7	6.3	7.1	3.2	2.0
30	2.3	1.8	4.8	10.4	.....	4.1	5.5	16.2	6.2	7.3	3.1	2.0
31	2.1	.....	4.7	9.6	.....	3.9	.....	15.0	.....	6.6	3.0	.....

Daily gage height, in feet, of Tennessee River at Johnsonville, Tenn., for the years ending Sept. 30, 1876–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June.	July.	Aug.	Sept.
1911.												
1	2.0	1.3	1.4	5.6	7.8	8.3	9.6	11.6	4.2	3.8	4.6	1.8
2	2.0	1.4	1.6	6.7	7.9	8.8	9.6	10.4	3.8	3.3	4.1	1.6
3	2.0	1.2	1.6	10.0	7.8	8.7	9.2	9.4	3.6	3.0	4.2	1.4
4	2.0	1.2	1.6	16.4	8.0	8.3	9.1	9.0	3.4	2.9	4.8	1.3
5	2.0	1.1	1.8	21.0	8.9	8.0	15.1	9.5	3.2	3.0	5.0	1.2
6	2.3	1.2	2.0	23.3	9.8	7.6	19.7	11.0	3.1	3.2	4.4	1.3
7	2.7	1.2	2.7	24.1	10.6	7.1	23.7	11.8	3.0	3.0	4.5	1.4
8	2.9	1.2	3.0	24.6	12.7	6.8	26.2	11.6	3.0	2.9	4.4	2.1
9	3.0	1.2	6.8	24.9	16.8	6.4	28.1	10.6	3.1	2.7	4.7	2.8
10	2.8	1.2	9.2	24.8	20.8	6.3	29.2	9.2	3.2	2.4	4.8	2.7
11	2.7	1.2	10.5	24.0	23.4	6.1	30.1	8.1	3.1	2.3	4.6	2.7
12	2.6	1.1	9.7	21.5	24.9	7.8	30.9	7.3	2.9	2.6	4.2	2.7
13	2.4	1.0	9.4	17.0	25.3	12.5	31.6	6.7	2.8	2.7	3.8	2.8
14	2.3	1.0	8.2	12.9	25.5	15.4	33.2	6.4	2.7	2.8	3.5	3.1
15	2.3	1.0	7.8	10.1	25.7	16.4	34.7	5.9	2.7	2.8	3.2	2.9
16	2.9	.9	5.9	8.6	25.7	15.3	35.7	5.7	2.7	2.9	3.0	2.7
17	3.5	.9	4.9	8.4	25.3	13.1	36.1	5.4	2.7	3.3	2.9	2.3
18	3.7	.9	4.6	7.0	23.7	10.8	35.8	5.1	2.4	3.7	2.8	2.0
19	3.3	.9	3.8	6.5	20.4	8.9	35.3	4.9	2.2	3.7	3.0	1.9
20	2.9	.8	3.5	6.1	16.8	7.9	34.1	4.7	2.0	3.7	3.2	2.1
21	2.5	.8	3.3	5.8	14.1	7.3	32.9	4.6	2.0	3.7	3.3	2.1
22	2.1	.8	2.9	5.6	12.0	6.9	32.2	4.6	2.1	4.3	3.7	1.8
23	1.9	.7	2.6	5.4	10.9	6.5	31.6	5.0	2.2	6.0	3.4	1.6
24	1.8	.7	2.7	5.4	10.6	6.1	30.9	5.3	2.2	6.6	3.2	1.5
25	1.6	.7	3.0	5.2	9.4	5.9	29.9	6.5	2.2	6.1	2.9	1.4
26	1.4	.7	3.1	5.5	8.9	6.0	28.1	6.6	2.4	5.6	2.7	1.3
27	1.3	.7	3.2	6.0	8.6	6.2	24.7	6.2	3.2	5.8	3.3	1.3
28	1.3	.8	3.3	5.8	8.4	7.0	21.3	5.8	3.6	5.6	3.0	1.2
29	1.2	1.2	3.3	5.8	.....	7.9	16.2	5.3	3.9	5.7	2.7	1.2
30	1.2	1.2	4.3	6.7	.....	8.6	13.0	4.9	3.7	5.7	2.6	1.1
31	1.2	.....	4.7	7.5	.....	9.3	.....	4.5	.....	5.3	2.2	.....
1912.												
1	1.1	2.7	4.8	29.6	15.2	26.2	29.1	31.5	10.5	6.1	5.1	4.5
2	1.1	2.5	5.0	30.4	16.1	25.2	31.6	32.3	10.8	7.3	5.0	3.8
3	1.4	2.2	5.1	31.0	17.0	24.1	33.5	32.3	10.8	9.3	5.0	3.5
4	1.7	2.0	4.9	30.5	17.5	22.8	34.7	31.7	10.4	8.9	4.7	3.2
5	1.7	1.9	4.5	29.0	17.2	21.0	35.3	30.8	9.4	8.9	4.4	3.0
6	1.4	1.8	4.3	26.8	16.2	19.0	35.4	29.9	8.8	7.8	4.3	2.8
7	1.1	2.0	4.0	23.7	14.5	17.2	35.1	29.2	8.3	7.7	4.8	2.5
8	.9	2.2	3.8	19.7	12.4	16.1	34.7	28.3	7.4	9.3	5.2	2.3
9	.9	2.2	3.7	16.0	10.5	16.4	34.4	27.1	6.9	10.9	5.6	2.3
10	.8	2.2	3.3	14.5	9.2	18.0	34.0	25.2	6.5	12.1	5.5	2.1
11	1.0	2.2	3.2	14.6	8.2	19.0	33.6	22.8	6.3	12.6	5.8	2.0
12	1.4	2.4	4.6	14.8	7.6	19.1	33.0	20.4	5.9	11.8	6.4	1.9
13	1.7	2.8	11.7	13.7	7.0	19.1	32.0	18.5	5.6	11.1	6.4	1.7
14	1.8	3.5	14.9	12.6	6.8	18.9	29.8	16.9	5.3	11.1	5.8	1.6
15	1.8	4.3	18.8	11.7	6.2	20.7	26.6	16.2	5.1	10.5	5.2	1.8
16	1.8	5.0	21.3	10.6	6.2	23.0	23.2	13.5	4.8	9.8	4.8	2.1
17	2.2	5.3	22.4	9.6	6.4	25.0	20.5	11.8	4.6	9.5	5.0	2.2
18	3.3	5.7	22.1	8.9	7.0	26.4	19.7	10.7	4.4	8.9	4.9	2.2
19	3.7	5.9	20.3	9.6	7.3	26.8	20.1	9.7	4.5	8.5	4.5	2.2
20	4.2	5.7	17.5	10.2	7.6	26.8	20.3	9.0	4.6	7.9	4.0	2.2
21	4.7	5.4	15.0	11.0	11.8	26.8	19.6	8.5	4.6	7.4	4.0	2.2
22	5.0	5.2	12.8	11.2	16.4	26.7	18.3	8.2	4.7	7.3	4.0	2.0
23	5.3	5.0	11.5	10.0	17.9	26.5	17.0	8.1	4.8	6.8	4.0	2.0
24	5.7	5.3	13.4	9.1	19.1	27.5	16.4	8.1	4.7	6.4	4.3	2.3
25	6.0	5.5	15.1	8.6	19.3	28.6	16.8	7.9	4.5	6.0	4.3	4.6
26	6.2	5.3	15.5	8.3	20.7	29.2	17.0	7.5	4.4	5.9	4.4	5.8
27	5.5	5.0	22.3	8.2	22.7	28.9	20.0	6.9	4.3	5.8	4.6	6.1
28	4.7	4.8	26.3	8.0	24.6	27.7	24.8	6.4	4.4	5.8	4.6	5.9
29	3.9	4.7	28.1	8.1	25.9	27.1	28.0	6.4	4.8	5.6	5.0	6.1
30	3.3	4.7	28.4	9.9	.....	27.3	30.4	6.7	5.2	5.5	5.1	5.6
31	2.8	.....	29.0	13.2	.....	28.1	.....	8.5	.....	5.0	4.8	.....

Daily gage height, in feet, of Tennessee River at Johnsonville, Tenn., for the years ending Sept. 30, 1876–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1913.												
1	5.1	1.9	1.4	6.6	30.1	22.5	31.3	6.2	12.7	3.4	2.0	1.4
2	4.8	1.8	1.3	7.9	30.0	25.3	30.7	6.1	11.5	3.3	2.2	1.4
3	4.5	1.8	1.9	8.5	30.0	26.3	30.6	6.0	11.2	3.6	2.4	1.4
4	4.2	1.8	2.4	9.7	29.0	25.8	30.9	5.9	11.2	3.5	2.6	1.4
5	4.0	1.7	2.6	11.8	28.9	25.5	31.4	5.7	10.6	3.0	2.7	1.3
6	3.9	1.6	4.3	12.6	27.1	24.9	31.7	5.5	9.8	2.9	2.5	1.2
7	3.2	1.4	7.9	19.4	24.4	23.6	31.4	5.3	9.1	2.6	2.4	1.0
8	2.9	1.4	9.2	27.4	21.5	21.0	30.0	5.2	9.1	2.4	2.4	1.0
9	2.6	1.5	9.5	29.5	19.0	17.0	27.5	5.0	9.0	2.3	2.4	.9
10	2.1	1.5	10.3	29.6	15.0	13.5	25.9	5.0	9.8	2.6	2.3	1.0
11	2.2	1.8	10.9	29.2	14.0	11.8	25.4	4.9	9.2	2.7	2.3	1.0
12	2.2	1.8	10.4	30.1	16.0	10.5	23.7	4.6	8.2	2.9	2.3	1.0
13	2.0	1.7	9.4	29.8	17.1	9.7	21.8	4.4	7.4	3.4	2.3	.8
14	1.8	1.7	8.0	29.3	18.7	10.6	19.9	4.4	7.4	3.3	2.1	.7
15	1.7	1.5	7.3	28.2	19.2	15.5	18.0	4.6	7.9	3.2	1.7	.6
16	1.6	2.6	6.6	26.6	19.1	21.0	16.2	4.6	7.6	3.1	1.9	.7
17	1.5	2.8	5.2	24.4	19.0	24.0	14.5	4.4	6.9	2.9	2.1	1.0
18	1.6	2.8	4.7	22.5	18.0	24.9	13.1	4.5	6.2	2.8	2.7	1.2
19	1.6	2.6	4.5	22.0	16.3	25.2	12.2	5.0	5.5	2.7	2.8	1.0
20	1.8	2.4	4.1	21.7	14.3	25.4	11.6	5.1	5.0	2.7	2.6	.9
21	2.0	2.4	4.0	21.7	12.4	26.3	11.1	5.0	4.6	2.7	2.5	.8
22	2.2	2.1	3.7	21.3	11.5	27.5	10.4	4.9	4.2	2.4	2.1	.7
23	2.5	1.9	3.6	21.3	10.1	28.0	10.0	5.2	4.0	2.1	2.0	.7
24	2.7	1.7	3.4	22.4	9.4	28.5	9.3	5.8	4.0	2.0	2.0	.7
25	2.6	1.7	5.1	24.2	9.0	28.4	8.7	6.8	4.0	1.9	1.9	.7
26	2.6	1.6	5.8	25.8	8.8	29.4	8.1	8.3	3.9	2.0	1.8	.8
27	2.6	1.5	6.2	27.1	11.5	32.1	7.6	9.3	3.8	2.0	1.8	.8
28	2.5	1.5	5.8	28.1	16.4	33.0	7.0	10.8	3.7	1.8	1.7	1.3
29	2.3	1.5	5.7	28.9	.....	33.3	6.6	13.0	3.6	1.8	1.7	1.7
30	2.1	1.4	5.8	29.6	.....	32.7	6.4	14.0	3.5	1.7	1.6	2.0
31	2.0	.....	6.2	29.9	.....	32.1	.....	13.8	.....	1.7	1.5	.....

Daily discharge, in second feet, of Tennessee River at Johnsonville, Tenn., for the years ending Sept. 30, 1890–1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1890.												
1	47,000	18,300	95,800	29,300	.....	.....	.....	98,400	61,200	26,200	46,200	33,800
2	47,000	18,300	84,600	32,500	.....	.....	.....	91,500	62,000	25,600	44,100	30,600
3	37,200	18,700	78,600	32,500	.....	.....	.....	85,500	66,900	23,900	39,900	32,500
4	33,100	19,200	73,500	36,500	.....	.....	.....	77,800	50,600	22,800	33,100	23,900
5	33,100	20,200	76,000	33,800	.....	.....	.....	72,700	45,500	21,700	37,800	25,000
6	31,200	20,700	62,800	39,900	.....	.....	.....	68,500	42,000	21,200	41,300	35,800
7	28,600	21,700	56,500	42,000	.....	.....	.....	65,200	38,500	20,200	32,500	33,100
8	28,600	29,900	54,300	39,900	.....	.....	.....	62,800	37,200	19,700	29,900	29,300
9	28,600	36,500	52,800	37,800	.....	.....	.....	62,800	36,500	19,700	36,500	26,200
10	27,400	38,500	47,700	35,100	.....	.....	.....	64,400	39,900	19,700	35,800	23,900
11	23,300	39,900	43,400	26,800	.....	.....	.....	71,900	44,800	20,200	35,800	24,500
12	21,200	42,000	39,900	26,800	.....	.....	.....	76,000	49,900	21,200	35,800	23,900
13	20,700	51,300	39,200	26,800	.....	.....	.....	75,200	53,500	21,700	37,800	36,500
14	20,200	69,400	36,500	26,200	.....	.....	.....	72,700	44,100	20,200	42,000	28,600
15	17,400	78,600	35,800	38,500	.....	.....	.....	71,900	42,700	19,200	42,700	23,300
16	16,500	82,000	35,100	.....	.....	.....	.....	70,200	37,200	19,700	40,600	23,900
17	16,500	86,300	33,800	.....	.....	.....	.....	62,800	33,800	21,700	38,500	25,000
18	16,500	95,800	30,600	.....	.....	.....	.....	55,800	31,200	21,700	34,400	26,200
19	16,500	107,000	29,300	.....	.....	.....	.....	58,800	30,600	20,200	45,500	26,800
20	16,100	133,000	28,600	.....	.....	.....	70,200	62,800	29,300	19,200	29,300	27,400
21	15,700	141,000	28,000	.....	.....	.....	78,600	71,900	28,600	18,300	26,200	28,000
22	15,700	141,000	28,000	.....	.....	.....	101,000	72,700	28,000	18,700	25,000	28,600
23	15,700	137,000	28,000	.....	.....	.....	104,000	76,000	26,200	19,200	17,800	29,300
24	15,700	130,000	28,000	.....	.....	.....	133,000	78,600	25,600	24,500	17,800	38,500
25	15,700	121,000	26,800	.....	.....	.....	140,000	82,900	25,000	26,200	21,700	53,500
26	15,700	111,000	26,200	.....	.....	.....	133,000	89,800	24,500	27,400	20,700	56,500
27	15,700	107,000	25,600	.....	.....	.....	123,000	96,700	24,500	36,500	20,700	59,600
28	15,700	106,000	25,600	.....	.....	.....	120,000	105,000	25,600	44,100	21,200	54,300
29	16,500	106,000	26,200	.....	.....	.....	118,000	91,500	26,200	36,500	22,800	50,600
30	17,400	103,000	26,800	.....	.....	.....	109,000	82,000	26,200	39,900	32,500	44,800
31	18,300	.....	28,000	.....	.....	.....	.....	81,200	.....	44,800	33,800	.....

Daily discharge, in second feet, of Tennessee River at Johnsonville, Tenn., for the years ending Sept. 30, 1890–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1891.												
1	40,600	58,100	20,200	89,800	166,000	.....	.....	60,400	26,800	42,000	33,100	46,200
2	37,200	54,300	19,700	90,600	181,000	.....	.....	57,300	26,800	37,200	46,200	42,700
3	33,800	47,700	19,200	109,000	194,000	.....	.....	55,000	25,000	31,800	55,800	39,200
4	36,500	39,200	19,200	109,000	211,000	.....	.....	51,300	29,900	28,600	85,500	36,500
5	39,200	43,400	19,200	96,700	227,000	.....	.....	47,700	33,800	26,800	92,400	33,800
6	39,900	39,200	19,200	90,600	229,000	.....	.....	40,600	33,800	25,600	101,000	31,200
7	55,800	33,800	33,800	100,000	232,000	.....	.....	42,700	32,500	24,500	113,000	28,000
8	52,800	33,100	29,300	110,000	235,000	.....	.....	40,600	31,800	24,500	111,000	26,200
9	48,400	32,500	29,300	113,000	238,000	.....	.....	38,500	29,300	24,500	109,000	21,200
10	43,400	31,800	29,300	104,000	241,000	.....	.....	37,200	28,000	25,000	88,100	27,400
11	39,900	29,900	29,300	96,700	250,000	.....	.....	35,800	31,200	25,000	55,000	29,300
12	40,600	27,400	31,800	89,800	259,000	.....	.....	33,800	36,500	25,000	44,800	30,600
13	40,600	26,800	33,100	105,000	275,000	.....	.....	33,100	36,500	25,000	38,500	30,600
14	42,000	26,200	46,200	102,000	271,000	.....	.....	31,800	37,800	25,000	35,100	30,600
15	33,100	25,000	52,800	104,000	277,000	.....	.....	31,200	38,500	26,200	31,800	28,000
16	30,600	24,500	50,600	105,000	284,000	.....	.....	30,600	39,900	28,000	30,600	26,200
17	28,000	24,500	50,600	105,000	287,000	.....	.....	29,900	49,100	26,200	28,000	25,000
18	28,000	29,900	39,200	104,000	289,000	.....	.....	29,300	50,600	25,600	26,800	23,300
19	26,800	31,200	39,200	102,000	290,000	.....	.....	28,600	44,800	25,000	26,200	21,700
20	26,200	29,300	31,800	88,900	292,000	.....	.....	28,000	47,000	25,000	24,500	21,200
21	25,000	26,800	29,900	82,000	295,000	.....	.....	27,400	48,400	22,800	23,900	20,700
22	25,000	26,200	28,000	75,200	299,000	.....	.....	30,600	47,000	20,700	23,300	20,200
23	26,200	26,200	26,200	76,900	302,000	.....	.....	31,200	52,100	20,200	23,300	19,700
24	32,500	26,200	25,600	88,900	302,000	.....	88,900	30,600	55,000	23,900	23,300	19,200
25	37,200	23,300	26,800	104,000	301,000	.....	88,100	29,900	56,500	26,200	22,800	18,300
26	38,500	22,800	29,300	126,000	294,000	.....	85,500	28,600	52,800	26,200	22,800	17,400
27	45,500	22,200	33,100	128,000	285,000	.....	82,000	28,600	41,300	25,600	25,000	17,000
28	49,100	21,700	36,500	157,000	277,000	.....	88,900	35,800	40,600	25,600	27,400	16,500
29	58,800	21,200	43,400	158,000	.....	.....	71,000	37,200	39,900	25,000	32,500	16,100
30	62,000	21,200	50,600	150,000	.....	.....	74,400	46,200	42,700	23,900	39,900	15,700
31	62,000	.....	78,600	146,000	.....	.....	.....	46,200	.....	27,400	45,500	.....
1892.												
1	14,900	12,600	39,900	100,000	86,300	73,500	97,500	.....	54,300	44,800	31,800	29,900
2	14,500	12,600	36,500	93,200	82,900	65,200	96,700	.....	51,300	39,200	31,800	29,900
3	14,900	12,600	33,100	86,300	73,500	59,600	118,000	.....	62,800	39,900	33,800	28,000
4	14,500	12,600	32,500	85,500	58,100	57,300	149,000	.....	62,800	45,500	34,400	26,200
5	14,100	12,600	30,600	82,000	52,100	52,100	165,000	.....	72,700	45,500	31,800	25,000
6	14,500	12,600	36,500	80,300	49,100	47,700	.....	.....	79,500	52,800	30,600	25,000
7	14,500	12,600	47,700	76,900	49,100	47,700	.....	.....	70,200	55,800	29,300	26,200
8	14,500	12,600	48,400	76,900	68,500	47,000	.....	70,200	68,500	59,600	28,600	26,200
9	14,100	12,600	56,500	74,400	94,100	46,200	.....	65,200	75,200	75,200	28,600	28,000
10	14,100	12,600	62,800	74,400	110,000	60,400	.....	72,700	77,800	116,000	29,300	24,500
11	14,100	12,900	68,500	74,400	113,000	66,900	.....	72,700	75,200	163,000	29,300	20,700
12	13,700	14,100	73,500	77,800	114,000	67,700	.....	79,500	70,200	176,000	28,600	19,200
13	13,700	16,500	75,200	85,500	109,000	66,100	.....	82,900	65,200	168,000	35,800	19,200
14	13,700	17,000	76,000	98,400	109,000	65,200	.....	55,800	62,000	155,000	37,200	27,400
15	13,700	16,500	71,000	126,000	108,000	68,500	.....	49,900	58,100	136,000	31,800	26,800
16	13,700	15,300	62,800	151,000	105,000	70,200	.....	50,600	55,800	124,000	26,800	25,000
17	13,700	15,300	55,000	167,000	100,000	66,900	.....	47,700	53,500	113,000	25,000	23,300
18	13,700	17,400	49,100	179,000	91,500	65,200	.....	44,100	47,700	106,000	24,500	21,200
19	13,700	21,200	42,000	190,000	82,900	65,200	.....	49,100	41,300	97,500	23,900	19,700
20	13,700	23,900	38,500	199,000	83,800	69,400	.....	59,600	38,500	83,800	25,600	19,200
21	13,700	23,300	37,200	203,000	87,200	82,900	.....	66,100	35,800	75,200	25,600	21,200
22	13,700	23,300	35,800	218,000	96,700	88,900	.....	66,100	34,400	70,200	25,600	28,600
23	13,300	28,000	42,700	230,000	108,000	103,000	.....	62,800	34,400	65,200	26,200	36,500
24	13,300	34,400	52,100	234,000	115,000	123,000	.....	61,200	35,100	53,500	23,900	36,500
25	13,300	34,400	55,800	237,000	115,000	110,000	.....	59,600	45,500	53,500	23,300	33,800
26	13,300	37,200	58,800	239,000	109,000	113,000	.....	58,100	49,100	49,900	23,900	30,600
27	12,900	32,500	62,000	233,000	101,000	110,000	.....	54,300	52,800	45,500	28,600	28,600
28	12,900	31,200	68,500	217,000	87,200	104,000	.....	53,500	55,800	42,700	29,300	27,400
29	12,900	32,500	83,800	189,000	81,200	104,000	.....	55,800	54,300	38,500	29,300	23,900
30	12,600	39,900	90,600	146,000	.....	104,000	.....	63,600	47,700	36,500	28,000	21,700
31	12,600	.....	94,100	113,000	.....	98,400	.....	66,900	.....	33,100	28,000	.....

Daily discharge, in second feet, of Tennessee River at Johnsonville, Tenn., for the years ending Sept. 30, 1890–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1893.												
1	21,700	12,900	32,500	88,900	33,800	268,000	56,500	103,000	140,000	37,200	20,200	13,700
2	22,200	12,900	34,400	92,400	41,300	248,000	52,800	113,000	174,000	30,600	19,200	13,300
3	23,300	12,900	37,800	96,700	41,300	237,000	46,200	122,000	203,000	30,600	19,200	23,300
4	22,200	13,700	39,200	72,700	73,500	195,000	44,100	131,000	212,000	28,600	18,300	23,300
5	19,700	14,500	39,900	66,900	74,400	150,000	43,400	141,000	199,000	28,000	18,700	23,300
6	18,300	14,900	40,600	58,100	74,400	113,000	43,400	159,000	178,000	26,200	18,300	25,000
7	17,400	14,100	39,200	54,300	73,500	108,000	42,700	180,000	187,000	25,600	18,300	31,800
8	16,500	14,500	39,900	50,600	70,200	97,500	42,000	190,000	192,000	31,800	18,700	31,800
9	16,100	15,300	38,500	42,000	55,800	94,100	87,200	202,000	202,000	27,400	19,700	31,800
10	16,100	14,900	37,800	45,500	55,800	87,200	127,000	209,000	201,000	26,200	20,200	29,900
11	15,700	15,300	36,500	36,500	53,500	85,500	127,000	213,000	190,000	25,600	20,700	28,600
12	15,300	20,200	35,800	35,100	54,300	94,100	157,000	219,000	185,000	25,600	21,200	26,800
13	14,900	21,200	35,100	34,400	76,900	103,000	127,000	221,000	181,000	24,500	21,200	28,000
14	14,900	27,400	61,200	33,100	103,000	114,000	107,000	212,000	158,000	23,300	21,700	29,900
15	14,900	34,400	63,600	31,200	127,000	118,000	161,000	192,000	141,000	23,300	21,700	30,600
16	14,900	36,500	65,200	28,000	154,000	118,000	199,000	163,000	130,000	22,200	21,700	30,600
17	14,500	37,200	103,000	27,400	190,000	115,000	242,000	139,000	95,800	21,200	21,200	29,900
18	14,500	33,800	118,000	38,500	227,000	109,000	247,000	122,000	71,000	20,200	21,200	55,000
19	14,500	32,500	135,000	24,500	248,000	95,800	239,000	109,000	51,300	20,200	19,700	63,600
20	14,500	33,100	132,000	23,900	266,000	82,000	221,000	85,500	44,100	20,200	19,200	60,400
21	14,100	35,800	126,000	21,700	278,000	73,500	192,000	80,300	43,400	19,700	18,700	52,100
22	13,700	39,200	131,000	21,700	280,000	63,600	168,000	75,200	42,700	19,200	20,200	43,400
23	13,700	40,600	133,000	21,700	279,000	62,800	131,000	71,000	40,600	18,700	25,000	36,500
24	13,700	39,900	127,000	21,700	279,000	66,100	97,500	62,800	39,200	18,700	25,600	29,900
25	13,700	36,500	120,000	22,200	280,000	59,600	85,500	58,100	37,800	19,200	23,300	27,400
26	13,700	33,100	113,000	22,800	280,000	59,600	77,800	55,800	37,200	19,200	17,400	26,200
27	13,700	33,800	103,000	25,000	279,000	59,600	81,200	49,900	37,200	21,700	17,400	23,900
28	13,300	36,500	83,800	29,300	276,000	62,000	90,600	51,300	38,500	24,500	16,500	22,200
29	12,900	37,800	70,200	26,800	.....	63,600	95,800	53,500	39,200	25,600	16,100	21,200
30	12,900	33,100	62,800	34,400	.....	60,400	99,300	75,200	39,900	25,600	14,900	20,200
31	12,900	.....	51,300	33,800	.....	58,100	.....	87,200	.....	22,200	14,100	.....
1894.												
1	19,200	21,700	17,400	19,700	47,700	76,000	66,900	31,800	31,800	17,000	22,200	20,200
2	18,700	21,700	17,800	19,200	44,100	76,900	58,100	30,600	29,900	16,500	21,200	19,200
3	18,300	20,700	18,700	19,200	42,700	76,000	76,000	29,300	27,400	16,500	21,200	18,300
4	17,800	20,200	19,700	19,700	98,400	73,500	81,200	28,600	25,600	17,800	21,700	17,800
5	16,500	19,700	20,200	20,700	163,000	71,900	104,000	29,300	23,900	20,700	21,700	18,700
6	16,100	19,200	23,300	25,600	194,000	76,900	110,000	29,300	22,200	22,800	20,200	19,700
7	15,700	18,700	31,800	26,800	201,000	86,300	110,000	28,000	21,200	24,500	18,700	19,700
8	14,900	18,300	29,900	41,300	215,000	93,200	100,000	28,600	20,700	26,800	17,800	18,700
9	16,100	17,000	28,600	47,000	239,000	93,100	88,900	29,900	20,200	28,600	17,400	17,800
10	15,300	16,500	28,000	46,200	248,000	90,600	93,200	31,800	19,200	26,800	17,000	15,700
11	15,700	16,100	29,300	55,000	257,000	83,800	107,000	31,800	18,700	23,900	17,000	14,900
12	16,100	15,700	28,000	79,500	257,000	77,800	104,000	30,600	17,400	21,200	17,000	14,900
13	16,500	15,300	26,800	99,300	258,000	73,500	95,800	29,900	17,000	25,000	16,500	14,900
14	17,400	14,900	25,600	99,300	258,000	70,200	86,300	30,600	16,500	19,200	16,100	14,500
15	16,500	15,700	25,000	88,100	254,000	66,900	82,000	31,200	16,100	19,200	16,100	13,700
16	16,500	16,100	25,600	83,800	247,000	63,600	77,800	33,800	16,100	20,200	15,700	13,700
17	16,500	19,200	29,300	88,900	218,000	62,800	74,400	35,100	16,100	20,200	14,900	13,700
18	16,100	25,600	33,800	98,400	218,000	71,000	69,400	33,800	15,700	19,200	14,100	13,700
19	20,000	19,200	35,100	86,300	218,000	82,000	62,800	31,200	16,100	18,300	14,100	14,100
20	29,900	18,300	31,800	77,800	142,000	104,000	61,200	29,300	16,100	19,200	14,100	15,300
21	27,400	17,800	29,900	64,400	124,000	117,000	55,800	27,400	16,100	21,700	17,000	15,700
22	37,800	17,800	29,300	76,000	109,000	117,000	50,600	29,300	16,100	22,200	20,700	15,700
23	33,100	18,300	25,000	78,600	101,000	118,000	46,200	30,600	16,100	20,700	20,200	15,700
24	29,300	18,700	25,000	77,800	94,100	123,000	43,400	31,200	16,100	19,200	21,200	15,300
25	25,000	18,700	24,500	76,000	88,100	134,000	40,600	32,500	19,200	19,200	22,200	14,500
26	22,200	17,800	24,500	74,400	83,800	136,000	38,500	35,800	17,400	20,700	24,500	13,300
27	19,700	17,800	23,300	66,100	80,300	126,000	35,800	39,200	17,400	21,700	28,000	12,600
28	18,700	17,400	22,200	66,100	78,600	115,000	35,100	40,600	17,400	22,200	29,300	12,600
29	18,700	17,400	21,200	55,800	.....	101,000	34,400	39,900	17,800	21,200	26,200	12,600
30	18,700	17,400	20,200	52,100	.....	77,800	32,500	37,800	17,400	22,200	23,900	12,600
31	18,300	.....	19,700	49,900	.....	66,900	.....	35,100	.....	22,800	21,700	.....

Daily discharge, in second feet, of Tennessee River at Johnsonville, Tenn., for the years ending Sept. 30, 1890–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1895.												
1	12,200	9,940	10,800	40,600	85,500	51,300	107,000	57,300	55,800	19,200	44,100	23,900
2	11,500	9,940	10,800	47,000	88,900	52,100	83,800	55,000	52,100	19,200	51,300	22,800
3	11,200	9,650	10,800	44,800	82,900	55,800	82,000	52,100	47,000	19,200	44,800	21,200
4	10,500	9,650	10,800	38,500	76,000	71,900	74,400	49,900	42,700	22,800	36,500	21,200
5	10,500	9,650	11,200	32,500	71,900	88,900	67,700	47,000	39,200	33,100	29,900	21,200
6	10,200	9,940	11,200	29,300	68,500	104,000	62,000	44,100	37,800	37,800	25,600	20,700
7	10,200	10,500	11,200	26,200	66,900	122,000	57,300	46,200	33,800	39,200	25,000	20,200
8	10,200	11,200	11,200	28,000	64,400	136,000	56,500	42,000	30,600	41,300	21,200	19,700
9	10,200	11,800	11,800	43,400	66,100	147,000	60,400	39,900	28,600	43,400	20,200	19,200
10	10,800	11,800	12,600	70,200	68,500	147,000	71,000	47,700	27,400	46,200	19,700	18,700
11	11,200	11,500	13,700	85,500	65,200	133,000	86,300	52,100	26,800	46,200	18,300	18,300
12	11,500	11,500	13,300	106,000	62,800	113,000	94,100	56,500	28,000	50,600	19,200	20,700
13	11,500	11,200	14,500	133,000	55,000	103,000	96,700	61,200	28,600	49,900	19,700	21,200
14	11,200	10,800	15,700	151,000	47,700	90,600	98,400	64,400	28,000	46,200	20,200	19,700
15	10,800	10,800	17,400	164,000	42,000	97,500	97,500	63,600	26,200	42,000	20,200	17,800
16	10,500	10,500	26,200	168,000	38,500	116,000	92,400	62,000	24,500	37,800	18,300	16,500
17	10,200	10,500	49,900	190,000	36,500	116,000	82,900	61,200	23,900	35,800	18,300	15,700
18	10,200	10,500	62,000	201,000	35,100	126,000	76,000	60,400	22,800	33,800	18,300	16,100
19	10,500	10,800	63,600	207,000	34,400	122,000	73,500	58,100	22,200	30,600	20,700	17,800
20	11,800	10,800	57,300	203,000	35,100	132,000	68,500	55,000	21,700	29,900	18,300	18,700
21	12,600	10,800	47,700	188,000	35,800	160,000	67,700	51,300	22,200	31,200	18,300	17,800
22	12,200	10,800	38,500	167,000	37,800	186,000	76,900	47,000	22,800	29,300	19,700	16,500
23	11,800	10,500	31,800	153,000	40,600	200,000	83,800	44,800	22,800	25,000	26,200	15,700
24	11,200	10,500	27,400	144,000	43,400	190,000	81,200	43,400	21,700	23,900	35,100	14,900
25	10,800	10,800	23,900	133,000	45,500	194,000	73,500	42,700	20,700	22,800	37,800	14,100
26	10,500	10,800	22,200	124,000	46,200	194,000	62,000	42,000	20,700	21,700	36,500	13,700
27	10,200	10,800	21,700	118,000	49,100	194,000	59,600	39,900	20,700	21,200	34,400	13,300
28	10,200	10,800	20,700	118,000	51,300	193,000	58,100	41,300	20,200	19,700	31,200	13,300
29	9,940	10,800	23,300	118,000	.....	185,000	59,600	48,400	19,700	18,700	28,600	12,200
30	9,940	10,800	25,000	109,000	.....	163,000	59,600	56,500	19,200	18,300	27,400	11,800
31	9,940	.....	29,300	101,000	.....	135,000	.....	58,800	.....	20,700	26,200	.....
1896.												
1	11,200	9,370	11,800	51,300	54,300	39,900	92,400	49,100	23,900	21,700	68,500	15,300
2	10,800	9,650	12,200	47,000	89,800	39,900	122,000	50,600	23,900	18,700	58,100	15,300
3	10,500	9,940	12,200	44,100	157,000	39,200	155,000	50,600	22,800	17,800	48,400	18,300
4	10,500	9,940	13,300	41,300	194,000	37,800	181,000	47,700	21,200	17,400	39,900	18,700
5	10,200	9,940	13,700	39,200	211,000	36,500	195,000	43,400	20,200	18,700	34,400	17,400
6	10,200	10,200	14,100	37,800	216,000	37,800	202,000	40,600	19,700	24,500	30,600	16,100
7	9,940	10,200	13,700	36,500	206,000	49,100	207,000	38,500	21,700	28,000	28,000	14,900
8	9,940	10,200	13,300	35,800	193,000	60,400	212,000	35,800	26,800	28,000	26,800	13,700
9	9,940	10,800	12,900	36,500	176,000	62,800	217,000	34,400	31,800	26,800	25,600	13,300
10	9,650	11,200	12,600	37,200	167,000	58,800	222,000	34,400	33,100	26,200	25,600	12,600
11	9,650	11,800	12,600	37,800	165,000	51,300	229,000	33,100	31,200	26,200	25,600	11,800
12	9,650	12,200	12,600	35,100	164,000	45,500	232,000	31,800	28,600	30,600	25,000	11,500
13	9,650	12,200	12,900	33,800	158,000	41,300	227,000	29,900	28,000	54,300	22,800	11,500
14	9,650	12,200	12,900	31,200	158,000	39,200	201,000	28,600	29,900	89,800	21,200	12,600
15	9,650	11,800	12,600	29,800	160,000	39,900	152,000	26,200	36,500	115,000	19,700	13,700
16	9,650	11,800	12,600	27,400	162,000	43,400	103,000	24,500	37,800	122,000	18,700	14,100
17	9,650	11,500	12,600	26,200	158,000	66,900	73,500	22,800	36,500	112,000	18,300	13,700
18	9,650	12,200	12,600	25,000	151,000	98,400	58,100	20,700	30,600	98,400	18,300	12,900
19	9,650	13,300	12,600	22,800	144,000	118,000	49,900	20,700	28,600	95,800	17,800	12,200
20	9,650	13,700	13,300	23,300	133,000	133,000	45,500	20,700	25,600	91,500	17,800	11,500
21	9,650	13,700	13,700	22,800	118,000	150,000	42,000	20,700	22,800	88,900	17,400	11,200
22	9,650	13,300	13,700	22,200	98,400	163,000	39,200	20,700	21,200	88,900	17,000	11,200
23	9,650	12,600	13,700	21,700	82,900	166,000	38,500	20,200	20,200	84,600	17,000	10,800
24	9,650	12,600	13,700	22,200	70,200	163,000	37,200	20,200	19,700	71,000	17,000	10,500
25	9,650	12,200	13,700	23,900	60,400	153,000	36,500	19,700	20,700	57,300	16,500	10,500
26	9,650	11,800	13,700	28,000	55,000	136,000	35,100	19,200	21,200	49,100	16,100	10,500
27	9,650	11,800	19,700	33,100	47,700	118,000	37,200	19,200	22,800	50,600	15,700	10,200
28	9,370	11,800	58,800	39,200	42,700	100,000	42,000	20,200	21,700	54,300	15,300	10,500
29	9,370	11,800	86,300	37,800	40,600	86,300	48,400	22,800	23,900	53,500	14,900	10,500
30	9,370	11,800	77,800	53,500	.....	78,600	51,300	23,900	24,500	55,000	14,900	10,800
31	9,370	.....	60,400	54,300	.....	75,200	.....	24,500	.....	65,200	14,900	.....

Daily discharge, in second feet, of Tennessee River at Johnsonville, Tenn., for the years ending Sept. 30, 1890–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1897.												
1	11,800	10,200	78,600	20,700	40,600	174,000	.....	56,500	29,900	31,800	55,800	16,500
2	12,900	10,200	77,800	20,200	36,500	186,000	.....	56,500	29,300	31,800	44,800	16,100
3	13,700	10,200	72,700	19,700	39,200	195,000	.....	52,800	28,000	32,500	36,500	16,100
4	13,300	10,200	77,800	19,200	49,100	206,000	.....	49,100	27,400	31,200	31,200	15,300
5	12,900	10,200	85,500	21,200	55,800	212,000	.....	47,000	26,800	28,600	27,400	14,900
6	13,700	10,200	90,600	23,300	74,400	202,000	.....	47,000	26,800	26,800	24,500	13,700
7	14,100	10,200	87,200	25,600	87,200	184,000	.....	52,800	26,800	25,000	22,800	12,900
8	14,500	10,800	74,400	25,600	101,000	184,000	.....	61,200	26,800	24,500	22,800	12,900
9	14,500	11,500	59,600	25,000	110,000	194,000	.....	61,200	26,800	22,800	23,300	12,600
10	14,900	11,500	49,900	24,500	113,000	205,000	.....	58,100	26,200	22,800	22,200	11,800
11	14,900	11,200	42,000	23,900	116,000	215,000	.....	54,300	25,600	22,800	22,800	11,800
12	14,100	11,800	36,500	23,300	120,000	227,000	.....	52,800	25,600	22,800	23,900	11,500
13	13,300	17,400	33,100	22,800	124,000	241,000	.....	54,300	26,200	23,900	24,500	11,500
14	12,600	26,200	31,800	23,300	125,000	258,000	.....	67,700	25,600	25,600	27,400	11,200
15	11,800	32,500	33,800	24,500	117,000	273,000	.....	88,100	27,400	25,600	29,300	10,800
16	11,200	29,900	36,500	26,800	105,000	281,000	.....	111,000	30,600	26,200	27,400	10,500
17	10,800	34,400	41,300	29,900	93,200	291,000	.....	131,000	31,200	26,200	25,000	10,500
18	10,500	38,500	43,400	39,900	88,900	302,000	.....	144,100	28,600	25,600	22,800	10,200
19	10,500	37,800	41,300	52,800	86,300	315,000	.....	153,000	25,600	25,600	20,700	9,940
20	10,200	33,800	37,200	67,700	86,300	342,000	.....	153,000	23,900	25,000	18,700	9,650
21	10,200	29,900	35,100	74,400	76,000	371,000	.....	141,000	22,800	28,000	17,400	9,650
22	10,800	26,200	31,200	75,200	71,000	393,000	.....	115,000	22,800	36,500	17,400	9,650
23	11,200	23,900	29,300	75,200	73,500	404,000	.....	87,200	21,700	40,600	17,400	9,650
24	11,500	21,200	30,600	73,500	82,000	410,000	77,800	66,100	20,700	39,900	17,800	9,370
25	11,500	19,200	30,600	72,700	91,500	407,000	69,400	54,300	21,200	38,500	17,800	9,370
26	11,500	18,700	29,900	66,900	113,000	402,000	66,100	47,000	23,900	37,800	17,800	9,090
27	11,500	18,700	29,900	69,400	140,000	397,000	58,800	42,700	26,200	35,800	17,800	9,090
28	10,800	26,200	25,600	56,500	158,000	389,000	54,300	39,200	27,400	37,200	17,800	9,090
29	10,800	43,400	21,700	44,100	.....	380,000	50,600	36,500	29,300	47,700	18,300	9,090
30	10,500	60,400	22,800	43,400	.....	370,000	48,400	35,100	31,800	63,600	18,300	9,090
31	10,200	.....	21,700	42,000	.....	356,000	.....	31,800	.....	66,100	17,000	.....
1898.												
1	9,090	11,200	9,370	42,000	.....	28,600	.....	62,000	26,200	21,200	36,500	21,700
2	9,090	11,200	9,370	36,500	.....	29,300	.....	60,400	28,600	18,700	39,200	21,200
3	8,820	10,800	9,650	32,500	.....	29,300	.....	58,100	26,800	17,800	39,200	21,200
4	8,820	10,500	10,500	29,900	.....	28,000	.....	54,300	24,500	16,500	47,000	21,200
5	8,820	9,940	14,100	27,400	.....	26,800	.....	50,600	21,700	16,500	51,300	20,700
6	8,560	9,650	20,200	26,200	.....	25,000	.....	47,000	20,700	16,100	50,600	20,200
7	8,560	9,650	23,900	24,500	.....	24,500	.....	44,100	19,200	16,100	44,800	52,800
8	8,560	9,650	24,500	23,300	52,800	23,300	.....	41,300	18,700	16,100	37,200	95,800
9	8,560	9,650	25,000	22,800	44,800	23,300	.....	38,500	17,800	15,300	39,900	118,000
10	8,560	10,200	25,600	21,700	39,900	22,800	.....	35,800	15,700	17,400	69,400	126,000
11	8,560	10,500	25,000	21,700	36,500	23,300	.....	33,100	14,900	18,300	95,800	117,000
12	8,560	10,800	23,900	44,800	35,100	23,300	.....	31,200	15,300	16,500	101,000	93,200
13	8,560	11,200	22,200	49,900	33,800	23,300	.....	29,300	15,300	15,300	89,800	71,000
14	8,560	11,200	20,700	55,000	33,100	23,900	.....	28,600	14,500	15,700	76,000	54,300
15	8,560	10,800	19,700	94,100	31,800	26,800	.....	28,000	14,500	16,500	71,900	45,500
16	8,560	10,500	18,700	139,000	30,600	31,800	101,000	28,000	14,100	14,100	81,200	39,200
17	8,560	10,500	17,800	178,000	29,300	38,500	91,500	28,000	14,500	19,200	92,400	34,400
18	8,560	10,800	17,400	.....	28,600	52,800	85,500	26,800	15,300	19,200	98,400	30,600
19	8,560	10,800	16,500	.....	28,000	58,800	81,200	25,600	15,700	18,700	93,200	27,400
20	8,560	10,800	18,700	.....	27,400	61,200	82,000	24,500	15,700	18,300	79,500	25,000
21	9,370	10,800	33,100	.....	26,800	59,600	103,000	23,900	15,700	20,200	62,000	23,300
22	9,650	10,500	54,300	.....	25,600	55,800	117,000	32,500	16,100	25,000	51,300	22,800
23	9,940	9,940	80,300	.....	25,000	52,800	114,000	31,800	16,500	26,200	40,600	22,200
24	10,200	9,650	94,100	.....	24,500	51,300	104,000	23,300	18,300	24,500	36,500	21,700
25	10,200	9,650	98,400	.....	23,900	.....	90,600	26,800	23,300	23,900	33,800	21,700
26	10,500	9,650	98,400	.....	23,900	.....	81,200	25,000	30,600	22,200	32,500	21,200
27	10,500	9,650	94,900	.....	23,300	.....	76,000	23,300	32,500	21,200	29,900	22,200
28	11,500	9,370	86,300	.....	26,800	.....	73,500	21,700	31,200	23,300	29,900	25,600
29	11,200	9,090	69,400	.....	.....	.....	69,400	21,200	27,400	26,800	26,200	29,300
30	11,200	9,090	57,300	.....	.....	.....	65,200	21,200	24,500	30,600	25,000	33,800
31	10,800	.....	48,400	.....	.....	.....	.....	22,800	.....	30,600	22,200	.....

Daily discharge, in second feet, of Tennessee River at Johnsonville, Tenn., for the years ending Sept. 30, 1890–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1899.												
1	35,100	37,800	37,200	35,100	57,300	205,000	.....	89,800	26,800	17,400	21,700	11,500
2	31,800	33,100	33,800	34,400	52,100	212,000	.....	80,300	25,600	17,400	21,700	11,200
3	26,800	31,200	32,500	34,400	53,500	211,000	.....	69,400	25,000	18,700	23,900	10,800
4	23,900	28,600	32,500	33,800	58,100	207,000	.....	62,000	25,000	19,200	24,500	10,500
5	21,700	26,200	31,800	36,500	83,800	217,000	.....	59,600	24,500	18,700	25,000	11,800
6	19,700	25,000	32,500	44,800	131,000	211,000	.....	52,800	23,900	18,700	23,900	12,600
7	19,200	24,500	34,400	75,200	175,000	208,000	.....	48,400	23,900	18,300	21,200	12,200
8	19,200	23,300	35,100	126,000	202,000	192,000	.....	46,200	24,500	18,300	19,200	13,700
9	46,200	22,200	36,500	159,000	218,000	183,000	.....	44,100	25,600	17,400	17,800	14,900
10	79,500	23,300	37,200	179,000	222,000	184,000	.....	47,000	25,600	16,100	17,000	14,100
11	88,900	23,900	38,500	188,000	224,000	188,000	.....	54,300	24,500	15,300	16,100	14,100
12	77,800	25,000	37,800	186,000	228,000	193,000	.....	61,200	23,900	14,900	16,100	13,700
13	62,800	25,600	36,500	186,000	230,000	198,000	.....	73,500	22,800	14,900	15,700	12 900
14	53,500	25,600	34,400	193,000	234,000	194,000	.....	79,500	21,700	15,700	15,300	12,600
15	44,800	26,200	33,100	181,000	238,000	188,000	.....	79,500	21,200	15,300	15,300	12,200
16	39,900	26,800	29,900	158,000	242,000	204,000	.....	75,200	22,200	14,900	14,900	11,500
17	35,100	28,600	28,600	135,000	244,000	226,000	.....	67,700	24,500	14,900	14,500	11,500
18	33,100	26,800	26,800	116,000	242,000	241,000	99,300	63,600	28,600	14,500	14,100	11,500
19	31,200	26,800	26,200	102,000	224,000	259,000	89,800	61,200	31,800	14,500	14,500	11,500
20	29,900	26,200	29,900	91,500	177,000	274,000	81,200	58,800	33,100	14,100	14,100	11,800
21	28,000	25,000	29,900	82,900	163,000	287,000	73,500	55,800	33,800	13,700	14,100	11,800
22	29,300	25,000	33,100	75,200	140,000	300,000	67,700	50,600	33,800	13,700	14,500	11,500
23	34,400	27,400	39,200	62,000	129,000	307,000	62,800	45,500	31,200	13,700	15,700	10,800
24	44,100	31,800	44,800	69,400	125,000	313,000	62,000	40,600	28,000	15,700	15,700	10,800
25	53,500	38,500	47,000	75,200	117,000	319,000	70,200	38,500	25,600	19,200	14,500	10,500
26	54,300	44,100	44,800	73,500	122,000	321,000	83,800	35,800	23,900	19,700	13,700	10,200
27	50,600	46,200	41,300	81,200	151,000	324,000	103,000	33,100	21,700	20,700	13,300	9,940
28	45,500	44,800	37,800	82,900	185,000	326,000	106,000	31,800	20,700	21,200	12,900	9,650
29	44,800	43,400	36,500	79,500	.....	330,000	104,000	29,900	19,200	23,900	12,200	9,650
30	41,300	39,900	35,100	71,900	.....	333,000	98,400	28,600	18,700	24,500	12,200	9,940
31	39,900	.....	35,100	65,200	.....	335,000	.....	27,400	.....	23,300	11,500	.....
1900.												
1	10,200	9,650	14,100	45,500	36,500	84,600	98,400	98,400	29,900	235,000	39,900	17,800
2	10,200	9,650	14,100	41,300	33,800	89,800	89,800	85,500	29,900	217,000	48,400	20,200
3	10,200	9,370	14,100	36,500	31,200	95,800	79,500	75,200	31,200	190,000	50.600	20,200
4	9,940	9,370	13,700	32,500	29,300	95,800	75,200	67,700	34,400	156,000	47,000	19,200
5	9,940	9,370	13,300	28,600	26,800	93,200	70,200	58,100	41,300	131,000	41,300	17,800
6	9,940	9,370	13,300	25,000	25,000	91,500	66,100	52,100	52,100	111,000	36,500	17,000
7	9,940	9,370	12,600	21,700	28,000	97,500	64,400	47,000	61,200	88,900	31,800	15,700
8	9,940	9,650	12,200	19,700	33,800	107,000	64,400	42,700	75,200	70,200	28,000	15,300
9	9,650	9,650	12,200	18,300	70,200	118,000	66,900	41,300	83,800	58,800	25,600	15,300
10	9,650	9,650	12,200	17,400	76,000	128,000	67,700	39,900	83,800	50,600	24,500	14,900
11	9,370	9,650	12,900	16,500	76,900	133,000	72,700	39,200	80,300	44,800	20,700	14,500
12	9,370	10,200	15,300	22,200	82,900	137,000	107,000	37,200	73,500	41,300	19,700	13,700
13	9,370	10,500	36,500	37,200	82,900	141,000	139,000	34,400	66,100	37,200	18,300	12,900
14	9,650	10,800	49,100	59,600	91,500	142,000	151,000	32,500	59,600	35,100	16,500	12,200
15	9,650	10,500	55,000	71,900	113,000	139,000	150,000	31,200	71,000	34,400	16,100	11,800
16	9,940	10,500	62,000	78,600	133,000	127,000	136,000	29,300	79,500	33,100	15,700	11,500
17	10,800	10,500	63,600	82,000	149,000	111,000	118,000	28,000	77,800	31,200	15,300	11,200
18	11,500	10,200	58,800	77,800	160,000	94,100	115,000	27,400	74,400	28,600	14,900	11,200
19	11,500	10,200	53,500	73,500	167,000	82,000	162,000	26,800	71,000	26,800	14,900	11,800
20	11,500	9,940	53,500	69,400	169,000	77,800	194,000	26,800	69,400	26,200	14,500	12,600
21	11,200	9,940	59,600	76,000	163,000	81,200	218,000	26,800	63,600	25,600	15,300	15,700
22	10,800	9,940	62,000	86,300	146,000	95,800	230,000	26,200	63,600	29,900	16,100	20,200
23	10,500	9,940	56,500	95,800	119,000	104,000	240,000	26,200	83,800	27,400	15,700	23,900
24	10,200	10,200	55,000	98,400	100,000	109,000	238,000	23,300	101,000	25,600	15,300	26,200
25	10,200	10,500	62,000	93,200	91,500	118,000	230,000	33,100	127,000	25,000	14,900	26,200
26	9,940	10,500	71,000	83,800	87,200	133,000	217,000	33,800	152,000	26,200	16,500	23,900
27	9,650	10,800	72,700	74,400	86,300	145,000	194,000	31,200	193,000	26,200	15,750	21,700
28	9,650	11,500	71,900	61,200	85,500	146,000	168,000	28,000	218,000	25,600	14,900	17,800
29	9,650	12,600	65,200	54,300	.....	135,000	142,000	25,600	240,000	37,200	14,500	15,700
30	9,650	13,700	58,100	47,000	.....	120,000	118,000	26,200	243,000	47,000	14,500	14,900
31	9,650	.....	51,300	41,300	.....	108,000	.....	28,000	.....	38,500	15,300	.....

Daily discharge, in second feet, of Tennessee River at Johnsonville, Tenn., for the years ending Sept. 30, 1890–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1901.												
1	15,700	33,800	108,000	43,400	63,600	29,900	137,000	169,000	176,000	55,800	16,500	103,000
2	15,700	33,800	113,000	39,900	63,600	29,900	152,000	153,000	141,000	51,300	16,100	87,200
3	15,300	28,600	109,000	42,000	66,100	29,300	158,000	134,000	139,000	45,500	15,700	76,900
4	14,900	25,600	93,200	42,700	87,200	28,000	163,000	118,000	110,000	39,900	15,700	55,000
5	14,500	21,700	71,900	43,400	119,000	26,800	167,000	101,000	95,800	37,200	15,700	68,500
6	13,700	20,200	55,000	44,100	137,000	26,800	168,000	84,600	82,000	34,400	15,700	66,100
7	13,700	18,700	45,500	42,700	141,000	29,300	173,000	71,900	71,000	34,400	15,700	64,400
8	19,200	17,800	39,900	41,300	137,000	28,600	177,000	61,200	62,000	35,100	17,000	63,600
9	19,700	17,800	40,600	38,500	128,000	28,000	180,000	52,800	54,300	33,800	18,700	58,100
10	19,200	19,200	47,000	37,200	118,000	37,200	181,000	48,400	52,800	32,500	17,800	51,300
11	18,700	21,200	54,300	39,900	109,000	66,900	175,000	44,100	54,300	30,600	16,500	44,800
12	17,400	21,700	54,300	63,600	102,000	113,000	150,000	42,000	56,500	29,300	40,600	39,200
13	20,700	21,700	53,500	108,000	92,400	141,000	129,000	41,300	55,000	29,900	55,800	35,800
14	30,600	21,200	47,700	153,000	78,600	149,000	104,000	38,500	55,000	31,800	54,300	34,400
15	40,600	19,200	41,300	173,000	74,400	143,000	86,300	37,800	55,800	33,800	50,600	39,900
16	36,500	18,700	37,200	183,000	68,500	129,000	76,900	37,200	51,300	31,800	46,200	45,500
17	31,800	17,000	33,100	189,000	63,600	118,000	73,500	35,800	46,200	28,600	56,500	57,300
18	26,800	16,500	30,600	193,000	61,200	87,200	76,000	35,800	42,000	26,200	113,000	73,500
19	23,900	16,100	28,600	194,000	57,300	70,200	88,900	35,100	40,600	24,500	153,000	84,600
20	20,200	15,700	25,600	189,000	52,800	67,700	105,000	33,800	45,500	21,200	181,000	93,200
21	17,400	48,400	25,600	170,000	48,400	52,100	139,000	33,800	52,800	21,700	202,000	88,900
22	16,100	65,200	25,600	133,000	44,800	47,000	168,000	37,800	56,500	22,200	212,000	85,500
23	16,500	58,800	28,000	95,800	39,900	47,000	183,000	38,500	56,500	22,800	218,000	78,600
24	17,400	50,600	32,500	76,000	38,500	45,500	191,000	70,200	53,500	22,800	223,000	70,200
25	18,700	52,800	36,500	78,600	37,200	44,100	194,000	104,000	50,600	21,700	225,000	60,400
26	19,200	60,400	39,200	84,600	34,400	42,700	198,000	128,000	50,600	21,200	226,000	51,300
27	19,200	58,800	39,900	89,800	33,100	42,700	200,000	146,000	55,800	20,700	222,000	44,800
28	21,200	66,900	43,400	83,800	31,800	47,700	199,000	158,000	53,500	19,700	212,000	38,500
29	23,300	70,200	46,200	78,600	.....	62,000	195,000	170,000	50,600	19,200	194,000	35,100
30	28,000	100,000	45,500	73,500	.....	91,500	186,000	178,000	54,300	18,700	163,000	33,100
31	39,900	.....	42,700	69,400	.....	118,000	.....	182,000	.....	17,400	129,000	.....
1902.												
1	34,400	16,500	15,700	166,000	199,000	113,000	293,000	50,600	34,400	25,600	15,300	10,800
2	35,100	16,500	15,700	181,000	215,000	142,000	298,000	47,000	31,800	25,600	15,700	11,800
3	33,100	16,100	16,100	191,000	224,000	161,000	298,000	46,200	27,400	22,200	17,400	12,900
4	31,200	16,100	16,100	199,000	225,000	176,000	289,000	46,200	26,200	26,200	19,700	11,100
5	29,300	16,100	15,700	206,000	221,000	188,000	276,000	55,000	25,600	46,200	19,200	14,500
6	28,600	16,100	15,700	213,000	219,000	199,000	267,000	65,200	23,900	52,800	17,000	14,500
7	28,600	16,100	15,700	221,000	216,000	210,000	260,000	66,900	21,200	47,000	14,900	14,100
8	28,000	15,700	15,300	228,000	213,000	222,000	249,000	60,400	21,200	42,700	14,100	13,300
9	26,800	15,300	15,700	234,000	204,000	232,000	230,000	52,100	20,700	37,800	13,700	12,200
10	26,800	15,300	17,400	234,000	185,000	240,000	200,000	46,200	20,700	32,500	14,100	11,500
11	26,200	15,300	18,700	221,000	150,000	246,000	166,000	41,300	20,200	27,400	14,500	11,200
12	25,600	15,300	19,700	181,000	115,000	251,000	135,000	38,500	19,200	24,500	14,500	10,800
13	24,500	15,700	20,700	126,000	89,800	255,000	113,000	37,200	18,700	22,200	14,500	10,800
14	24,500	15,700	31,800	85,500	71,900	255,000	97,500	36,500	18,700	20,700	13,300	10,800
15	23,300	15,700	49,100	64,400	63,600	248,000	83,800	32,500	18,700	19,700	12,900	10,500
16	23,300	15,700	70,200	54,300	60,400	231,000	75,200	32,500	18,300	18,700	13,300	10,500
17	23,300	15,700	114,000	48,400	59,600	205,000	70,200	31,800	17,800	17,800	14,100	10,500
18	23,300	15,300	145,000	40,600	57,300	176,000	64,400	30,600	17,800	19,200	14,100	10,800
19	23,300	15,300	163,000	42,000	54,300	155,000	61,200	30,600	17,800	22,200	13,700	11,500
20	23,900	15,300	173,000	44,100	52,800	144,000	59,600	28,600	17,400	24,500	12,900	11,800
21	23,900	15,300	179,000	44,800	50,600	139,000	55,800	28,600	17,400	21,200	12,600	12,200
22	23,900	15,300	183,000	50,600	47,000	136,000	53,500	28,000	17,400	21,200	11,800	11,800
23	22,200	15,300	179,000	58,100	53,500	132,000	50,600	27,400	17,800	18,700	11,500	11,500
24	21,700	15,300	154,000	66,900	55,800	124,600	49,100	26,200	20,200	17,800	11,200	11,200
25	20,200	15,300	113,000	68,500	61,200	111,000	47,000	25,600	22,800	16,500	11,200	11,200
26	19,700	15,300	80,300	70,200	69,400	95,800	45,500	25,600	22,800	16,100	10,800	11,800
27	18,700	14,900	66,100	89,800	81,200	87,200	42,700	25,600	21,700	14,900	10,800	13,300
28	17,800	14,900	62,000	107,000	95,800	87,200	40,600	25,600	21,200	14,500	11,200	14,100
29	17,400	14,900	76,900	128,000	.....	194,000	40,600	25,600	20,200	14,500	11,200	15,300
30	17,400	14,900	104,000	146,000	.....	251,000	55,000	25,000	22,800	14,100	11,200	16,500
31	16,500	.....	140,000	174,000	.....	283,000	.....	24,500	.....	14,500	10,800	.....

Daily discharge, in second feet, of Tennessee River at Johnsonville, Tenn., for the years ending Sept. 30, 1890–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903.												
1	21,700	11,200	42,700	57,300	52,800	.....	177,000	75,200	35,800	28,000	18,300	14,100
2	23,900	11,200	47,700	54,300	49,900	.....	171,000	69,400	54,300	28,600	18,300	13,700
3	23,900	10,800	55,000	62,000	47,000	.....	165,000	66,900	73,500	28,600	16,500	12,900
4	22,800	10,500	58,800	70,200	68,500	.....	158,000	65,200	82,900	28,600	16,500	12,600
5	21,200	10,500	66,900	82,900	109,000	.....	152,000	62,000	103,000	26,800	16,100	12,600
6	20,700	10,500	76,000	81,200	141,000	.....	144,000	57,300	132,000	26,800	16,500	12,600
7	20,200	10,500	85,500	74,400	162,000	.....	131,000	52,800	146,000	25,600	18,300	12,600
8	19,700	11,200	86,300	71,000	171,000	.....	127,000	49,900	133,000	24,500	19,700	12,200
9	18,700	11,200	77,800	67,700	183,000	.....	118,000	47,000	119,000	23,900	23,900	11,800
10	17,400	11,200	68,500	66,100	195,000	.....	124,000	44,800	106,000	23,900	25,600	11,500
11	16,500	10,800	60,400	66,100	204,000	.....	141,000	43,400	98,400	24,500	26,800	11,200
12	15,700	10,800	53,500	65,200	210,000	.....	158,000	41,300	96,700	25,000	26,200	11,200
13	15,300	10,800	49,100	74,400	214,000	.....	169,000	39,900	89,800	25,000	25,000	10,800
14	15,700	10,800	45,500	78,600	219,000	.....	183,000	39,200	82,900	30,600	23,900	10,800
15	17,400	12,200	54,300	76,000	221,000	.....	186,000	42,700	76,000	33,100	23,300	10,500
16	18,700	12,600	131,000	76,900	230,000	.....	208,000	60,400	66,100	31,200	21,700	10,500
17	19,700	12,600	154,000	69,400	233,000	.....	216,000	73,500	58,800	30,600	21,200	10,500
18	18,700	12,200	.....	66,100	233,000	.....	220,000	68,500	52,100	32,500	21,200	10,200
19	17,800	11,800	.....	59,600	237,000	.....	219,000	58,100	45,500	33,800	21,700	10,200
20	17,400	11,800	.....	54,300	240,000	.....	216,000	49,900	40,600	33,100	23,300	10,200
21	18,300	11,500	.....	49,900	240,000	.....	211,000	47,700	36,500	32,500	24,500	10,200
22	18,300	11,500	.....	46,200	240,000	.....	203,000	44,800	32,500	31,200	24,500	10,200
23	17,400	11,200	.....	43,400	240,000	.....	189,000	40,600	31,200	29,900	22,800	10,200
24	16,500	11,500	.....	39,900	240,000	.....	171,000	37,200	31,200	26,200	21,700	10,200
25	15,700	12,600	.....	38,500	239,000	.....	152,000	33,800	29,900	25,000	20,700	10,200
26	14,500	17,800	.....	36,500	236,000	.....	135,000	31,200	29,900	23,900	19,700	10,200
27	14,100	29,300	.....	35,100	222,000	.....	121,000	28,600	29,900	22,200	18,700	10,200
28	12,900	36,500	.....	36,500	203,000	.....	107,000	28,000	31,200	21,200	17,800	10,200
29	12,600	36,500	.....	44,100	.....	.....	94,900	26,800	30,600	20,200	17,000	10,200
30	12,200	38,500	.....	53,500	.....	.....	83,800	27,400	29,300	19,200	15,700	10,200
31	11,500	.....	62,000	55,000	.....	.....	.....	31,800	.....	18,300	15,300	.....
1904.												
1	10,200	9,370	14,900	22,800	43,400	49,100	.....	30,600	25,600	18,700	14,900	15,700
2	10,200	9,370	13,700	23,300	37,800	47,000	.....	29,900	26,200	17,800	14,900	15,700
3	9,940	9,940	12,900	23,900	33,100	49,100	.....	28,000	29,900	17,400	14,900	15,300
4	9,940	10,500	12,200	24,500	29,300	55,800	.....	31,800	36,500	17,400	15,300	14,900
5	9,650	10,800	11,800	23,300	27,400	56,500	.....	36,500	39,900	20,200	16,500	14,500
6	9,370	11,800	11,500	22,200	25,500	52,800	.....	42,700	40,600	21,200	16,100	13,300
7	9,370	12,600	11,200	19,700	23,900	51,300	.....	43,400	38,500	22,200	15,700	13,300
8	9,370	13,700	10,800	18,700	22,800	49,900	.....	39,900	35,100	23,300	16,100	12,900
9	9,940	13,700	10,800	17,400	22,200	53,500	.....	39,200	33,800	25,600	16,500	12,600
10	9,370	14,100	10,500	16,500	23,300	61,200	.....	38,500	34,400	26,800	17,400	11,800
11	9,940	13,300	10,500	16,100	23,900	66,100	.....	37,800	32,500	26,200	18,700	11,800
12	10,500	12,900	10,500	15,700	25,000	76,000	.....	37,800	28,600	23,900	20,700	11,500
13	10,500	12,200	10,500	15,300	31,200	85,500	.....	37,800	25,600	21,700	22,200	12,600
14	10,500	12,200	10,500	14,900	35,100	94,100	.....	39,900	22,800	19,700	24,500	12,900
15	10,200	11,800	10,500	14,900	36,500	97,500	.....	42,700	21,700	19,700	25,600	12,600
16	10,200	11,500	10,500	14,500	35,100	100,000	55,000	43,400	20,700	19,700	25,000	11,800
17	10,200	11,500	10,500	15,300	33,100	99,300	49,900	40,600	19,700	19,700	23,300	11,500
18	10,800	11,800	10,500	16,100	29,900	97,500	44,800	38,500	18,700	19,700	23,300	10,800
19	11,200	13,700	10,500	17,400	28,000	92,400	40,600	34,400	17,400	20,200	22,800	10,500
20	11,200	17,800	12,200	18,300	26,800	82,900	37,200	32,500	17,000	20,200	21,200	10,200
21	10,800	19,700	17,800	18,700	25,000	71,900	35,100	30,600	17,000	18,700	20,700	10,200
22	10,500	17,800	28,600	23,300	24,500	66,100	34,400	28,600	17,400	18,300	21,200	9,940
23	10,200	22,800	36,500	42,000	26,200	80,300	34,400	26,200	17,000	17,400	20,700	9,650
24	9,940	28,600	29,300	54,300	26,200	113,000	33,800	25,000	16,100	17,400	19,200	9,940
25	9,940	28,600	26,800	61,200	26,800	137,000	33,100	23,900	15,300	16,500	18,300	10,200
26	9,650	25,000	29,300	64,400	31,800	163,000	39,900	23,300	15,300	15,700	17,000	9,940
27	9,370	22,200	31,800	76,000	39,900	194,000	39,900	22,200	15,300	14,900	15,700	9,370
28	9,370	19,700	31,200	77,800	47,000	216,000	37,200	22,800	15,700	14,100	15,300	9,370
29	9,650	17,400	28,600	69,400	49,900	228,000	35,100	21,200	17,400	14,100	15,300	9,370
30	9,650	20,700	25,600	59,600	.....	230,000	32,500	20,700	18,700	14,100	14,900	9,370
31	9,370	.....	23,900	50,600	.....	227,000	.....	25,000	.....	14,900	15,700	.....

Daily discharge, in second feet, of Tennessee River at Johnsonville, Tenn., for the years ending Sept. 30, 1890–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905.												
1	9,090	7,150	9,090	86,300	34,400	168,000	45,500	44,800	61,200	70,200	28,600	32,500
2	9,090	7,150	9,370	84,600	35,100	147,000	42,700	52,100	52,100	74,400	27,400	31,200
3	8,820	7,150	9,650	72,700	31,800	118,000	39,900	57,300	45,500	78,600	25,000	32,500
4	8,560	7,150	9,940	60,400	29,900	94,100	38,500	62,000	39,900	84,600	23,300	31,200
5	8,560	7,360	10,500	49,900	28,000	78,600	38,500	62,800	39,900	76,900	21,700	29,300
6	8,300	7,580	10,800	41,300	30,600	67,700	37,800	60,400	37,200	62,800	21,200	35,800
7	8,300	7,810	12,600	37,200	40,600	60,400	37,200	61,200	33,800	50,600	21,200	31,200
8	8,300	8,050	14,900	34,400	58,100	55,000	35,800	61,200	31,200	41,300	21,700	27,400
9	8,300	8,050	20,200	32,500	85,500	62,000	35,100	59,600	28,600	36,500	21,200	23,900
10	8,560	8,050	23,900	32,500	129,000	106,000	33,100	55,800	26,800	34,400	20,700	21,200
11	8,560	8,050	27,400	32,500	164,000	141,000	33,100	52,800	25,000	35,800	19,700	22,800
12	8,560	8,050	29,900	38,500	182,000	165,000	35,800	49,100	23,900	35,100	18,700	22,200
13	8,300	8,050	31,800	80,300	190,000	168,000	39,200	52,800	23,300	38,500	21,700	22,200
14	8,050	8,050	30,600	109,900	194,000	164,000	41,300	58,800	21,700	42,700	23,900	22,200
15	8,050	8,050	26,800	118,000	194,000	163,000	42,700	60,400	21,200	43,400	28,000	21,200
16	8,050	8,050	24,500	117,000	192,000	158,000	44,100	57,300	20,700	43,400	36,500	19,700
17	7,810	8,300	20,700	124,000	183,000	147,000	45,500	52,100	20,700	50,600	46,200	18,700
18	7,810	8,560	18,700	129,000	165,000	128,000	47,700	47,000	21,200	66,900	54,300	17,400
19	7,580	8,560	17,400	128,000	141,000	105,000	49,100	45,500	22,800	73,500	57,300	16,500
20	7,580	8,560	16,100	113,000	124,000	88,900	47,700	58,800	23,300	70,200	55,000	16,500
21	7,580	8,560	15,700	94,100	115,000	76,000	44,800	82,000	23,900	60,400	51,300	16,500
22	7,360	8,300	14,900	74,400	127,000	68,500	42,000	94,100	23,300	48,400	47,000	16,100
23	7,360	8,560	14,500	61,200	164,000	70,200	37,800	109,000	28,000	41,300	42,000	16,100
24	7,360	8,820	14,900	52,100	181,000	74,400	36,500	132,000	33,800	33,800	37,200	15,700
25	7,360	9,090	15,700	44,800	189,000	76,000	34,400	139,000	55,000	32,500	35,800	15,300
26	7,150	9,370	16,100	40,600	193,000	74,400	33,100	153,000	57,300	31,200	32,500	14,500
27	7,150	9,370	26,800	34,400	193,000	70,200	33,100	138,000	54,300	29,900	29,900	14,100
28	7,150	9,370	62,000	33,100	187,000	64,400	33,100	150,000	50,600	29,900	28,000	13,300
29	7,150	9,370	80,300	31,800	.....	58,100	34,400	119,000	58,100	29,300	32,500	12,600
30	7,150	9,370	88,100	29,900	.....	52,800	39,200	95,800	62,000	28,000	36,500	12,600
31	7,150	.....	84,600	33,100	.....	49,100	.....	75,200	.....	28,000	35,100	.....
1906.												
1	11,800	22,800	16,500	76,900	137,000	47,000	.....	45,500	25,000	39,200	64,400	44,100
2	11,800	23,300	15,700	69,400	113,000	44,800	.....	44,100	29,900	37,800	58,100	42,000
3	11,800	23,300	16,500	62,000	95,800	43,400	.....	42,000	29,300	35,100	54,300	47,000
4	11,500	23,300	19,700	64,400	85,500	47,000	.....	39,900	31,200	31,800	52,100	62,000
5	11,500	20,200	19,700	68,500	76,000	62,800	.....	38,500	31,800	29,300	54,300	72,700
6	11,500	19,200	22,200	72,700	72,700	78,600	.....	37,200	31,800	27,400	59,600	71,900
7	12,200	18,300	23,300	90,600	67,700	82,900	.....	38,500	31,200	26,800	60,400	66,100
8	12,200	17,400	39,200	103,000	66,900	88,100	.....	37,800	31,200	25,600	56,500	58,800
9	12,200	16,500	58,800	104,000	57,300	87,200	.....	38,500	31,800	23,900	53,500	54,300
10	11,800	15,700	63,600	114,000	48,400	78,600	.....	39,900	30,600	22,800	51,300	54,300
11	11,800	14,900	64,400	109,000	47,700	69,400	.....	39,900	29,300	22,800	49,900	58,800
12	12,900	14,500	62,800	100,000	46,200	66,100	.....	44,100	27,400	23,900	48,400	65,200
13	16,500	14,500	66,900	89,800	43,400	58,100	.....	50,600	26,200	23,300	44,800	66,900
14	20,700	14,100	71,000	89,800	40,600	54,300	.....	53,500	25,000	35,800	42,700	69,400
15	20,200	14,100	67,700	88,900	39,200	59,600	.....	52,100	23,900	54,300	40,600	69,400
16	19,700	13,700	81,200	82,900	37,800	73,500	.....	47,000	23,300	46,200	40,600	62,800
17	19,700	14,100	89,800	77,800	35,800	101,000	77,800	42,000	22,200	46,200	39,900	55,000
18	22,200	14,500	94,900	73,500	34,400	112,000	70,200	37,200	23,900	62,000	38,500	47,700
19	23,900	14,100	85,500	70,200	33,100	113,000	69,400	33,100	31,200	87,200	38,500	41,300
20	27,400	13,700	82,900	71,900	32,500	111,000	69,400	31,800	39,900	98,400	42,700	37,200
21	27,400	13,300	74,400	76,000	31,800	116,000	71,000	29,300	50,600	101,000	45,500	34,400
22	26,200	13,300	70,200	80,300	31,200	126,000	72,700	28,000	50,600	109,000	48,400	37,200
23	24,500	12,900	76,900	87,200	31,800	126,000	71,000	26,800	46,200	115,000	48,400	40,600
24	22,800	12,900	95,800	126,000	32,500	121,000	65,200	25,000	41,300	111,000	49,900	49,900
25	25,000	12,900	113,000	158,000	37,200	120,000	57,300	23,900	35,800	103,000	48,400	71,000
26	18,700	12,900	121,000	177,000	37,800	116,000	51,300	22,800	33,100	98,400	47,000	79,500
27	18,300	12,900	118,000	176,000	41,300	91,500	46,200	22,800	29,900	100,000	44,100	79,500
28	18,700	12,900	111,000	167,000	45,500	89,800	44,100	25,000	29,900	97,500	43,400	74,400
29	22,200	12,900	108,000	166,000	.....	93,200	44,800	26,800	32,500	88,900	42,700	71,000
30	23,300	17,400	98,400	166,000	.....	111,000	46,200	29,900	36,500	78,600	43,400	86,300
31	22,800	.....	87,200	158,000	.....	131,000	.....	31,200	.....	70,200	46,200	.....

Daily discharge, in second feet, of Tennessee River at Johnsonville, Tenn., for the years ending Sept. 30, 1890–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907.												
1	114,000	39,200	116,000	110,000	.....	70,200	57,300	106,000	43,400	41,300	22,800	23,300
2	121,000	36,500	84,600	141,000	.....	118,000	50,600	128,000	51,300	42,700	21,700	22,800
3	113,000	34,400	64,400	169,000	.....	172,000	45,500	124,000	58,100	41,300	21,200	22,200
4	135,000	32,500	55,800	.....	.....	197,000	40,600	107,000	59,600	42,000	21,700	20,700
5	165,000	28,600	49,900	.....	.....	206,000	40,600	91,500	55,000	44,100	26,800	19,200
6	183,000	28,600	47,700	.....	.....	204,000	47,000	84,600	52,800	42,700	29,900	18,700
7	194,000	28,000	45,500	.....	.....	199,000	53,500	135,000	51,300	39,200	29,300	19,200
8	204,000	27,400	43,400	.....	.....	.....	54,300	153,000	52,100	39,200	27,400	19,700
9	205,000	26,800	42,000	.....	.....	.....	55,000	173,000	56,500	32,500	23,900	18,700
10	195,000	26,200	40,600	.....	109,000	.....	57,300	173,000	60,400	29,900	22,200	18,700
11	181,000	25,600	39,900	.....	98,400	.....	71,000	163,000	62,000	28,600	21,200	19,200
12	162,000	25,000	41,300	.....	90,600	.....	77,800	158,000	61,200	26,800	22,200	19,200
13	139,000	23,900	41,300	.....	78,600	.....	76,900	161,000	62,000	26,200	23,900	19,200
14	113,000	22,800	42,000	.....	73,500	.....	74,400	162,000	74,400	25,600	22,800	19,700
15	88,100	24,500	41,300	.....	66,100	.....	71,900	167,000	84,600	29,300	22,200	23,300
16	71,900	24,500	42,700	.....	60,400	.....	68,500	176,000	87,200	32,500	21,700	25,000
17	62,800	24,500	62,000	.....	55,800	.....	64,400	173,000	82,900	32,500	23,900	28,600
18	55,800	129,000	82,000	.....	49,900	.....	58,800	162,000	78,600	35,800	26,800	28,600
19	52,800	154,000	62,000	.....	48,400	.....	54,300	144,000	76,000	42,700	26,200	26,200
20	51,300	176,000	105,000	.....	47,000	.....	52,100	122,000	82,900	43,400	25,000	23,900
21	51,300	179,000	97,500	.....	45,500	.....	49,100	100,000	93,200	41,300	23,900	22,200
22	53,500	171,000	89,800	.....	44,100	.....	49,100	78,600	88,100	38,500	22,800	21,200
23	55,800	175,000	89,800	.....	39,900	.....	49,100	69,400	71,900	36,500	22,800	20,200
24	55,000	183,000	89,800	.....	39,900	.....	52,100	58,800	55,800	33,800	22,200	21,200
25	53,500	190,000	87,200	.....	46,200	.....	55,000	52,800	47,700	32,500	21,300	27,400
26	53,500	197,000	78,600	.....	51,300	.....	55,800	48,400	44,100	29,900	22,200	30,600
27	57,300	200,000	76,900	.....	54,300	.....	58,800	47,000	42,700	28,000	23,300	35,100
28	55,800	201,000	67,700	.....	57,300	.....	60,400	46,200	42,700	27,400	23,900	51,300
29	52,100	193,000	67,700	.....	.....	.....	66,900	43,400	42,000	26,200	24,500	62,800
30	46,200	158,000	61,200	.....	.....	.....	72,700	40,600	42,700	25,000	23,900	64,400
31	42,000	.....	91,500	.....	.....	.....	.....	39,200	.....	22,800	22,800	.....
1908.												
1	58,800	14,100	91,500	85,500	51,300	.....	.....	111,000	47,000	25,600	19,700	36,500
2	51,300	14,500	82,900	104,000	61,200	.....	.....	114,000	47,700	28,000	19,700	38,500
3	40,600	15,300	68,500	118,000	74,400	.....	.....	105,000	47,000	28,600	19,200	37,800
4	36,500	16,500	56,500	132,000	82,000	.....	.....	92,400	47,000	29,300	19,200	33,100
5	33,100	17,000	47,700	150,000	83,800	.....	.....	79,500	54,300	28,600	18,700	28,600
6	32,500	17,400	41,300	161,000	94,100	.....	.....	82,000	61,200	26,200	21,200	28,000
7	29,900	18,700	37,200	167,000	94,900	.....	.....	104,000	62,000	26,200	22,200	31,200
8	27,400	17,400	32,500	159,000	94,900	.....	.....	127,000	54,300	25,600	23,900	33,800
9	26,800	17,800	32,500	149,000	89,800	.....	.....	121,000	49,900	28,600	23,900	30,600
10	25,000	20,700	33,800	141,000	85,500	.....	.....	.....	53,500	36,500	23,300	27,400
11	22,800	23,300	31,800	133,000	102,000	.....	.....	.....	55,000	42,700	23,300	24,500
12	23,300	25,600	30,600	122,000	126,000	.....	.....	.....	53,500	44,100	25,000	23,300
13	23,300	26,800	31,800	110,000	155,000	.....	.....	.....	49,900	44,100	27,400	24,500
14	22,800	27,400	32,500	102,000	170,000	.....	.....	.....	47,000	44,800	29,900	26,200
15	21,700	29,900	33,800	99,300	.....	.....	.....	.....	42,700	44,800	31,200	26,800
16	21,200	38,500	35,800	104,000	.....	.....	.....	.....	39,900	44,100	31,200	25,600
17	20,200	50,600	45,500	119,000	.....	.....	.....	.....	37,800	46,200	28,000	22,200
18	19,700	58,100	49,100	137,000	.....	.....	.....	.....	35,100	34,400	25,600	20,200
19	18,700	54,300	52,800	149,000	.....	.....	.....	.....	33,100	29,900	23,900	18,700
20	17,800	45,500	53,500	147,000	.....	.....	.....	.....	31,200	28,000	22,800	17,400
21	17,400	39,900	52,800	134,000	.....	.....	.....	.....	29,900	26,800	22,200	16,100
22	17,000	37,800	51,300	108,000	.....	.....	.....	.....	29,900	26,200	21,200	15,700
23	16,500	39,900	50,600	100,000	.....	.....	.....	.....	31,200	26,200	20,200	15,300
24	16,500	39,900	55,800	86,300	.....	.....	87,200	52,800	31,200	25,000	19,700	18,700
25	16,100	46,200	56,500	77,800	.....	.....	82,900	47,700	29,300	24,500	21,200	18,700
26	15,700	55,800	58,100	69,400	.....	.....	100,000	47,700	28,000	23,900	24,500	17,400
27	15,300	66,900	58,100	62,800	.....	.....	112,000	47,000	26,800	23,300	29,300	17,000
28	14,900	81,200	58,100	58,100	.....	.....	107,000	49,900	26,200	23,300	37,800	16,100
29	14,500	91,500	58,800	55,000	.....	.....	95,800	52,100	25,000	22,200	39,900	15,300
30	14,500	95,800	60,400	52,100	.....	.....	104,000	51,300	25,000	21,200	37,800	14,900
31	14,500	.....	70,200	49,100	.....	.....	.....	48,400	.....	20,200	35,100	.....

Daily discharge, in second feet, of Tennessee River at Johnsonville, Tenn., for the years ending Sept. 30, 1890–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909.												
1	14,500	22,200	20,700	67,700	44,100	274,000	129,000	94,900	98,400	98,400	37,200	22,200
2	14,100	25,600	19,200	62,000	44,100	266,000	132,000	105,000	113,000	95,800	35,800	21,200
3	13,700	22,800	19,200	62,000	41,300	260,000	135,000	130,000	119,000	88,100	35,100	20,200
4	12,900	17,400	18,300	62,000	41,300	250,000	134,000	155,000	107,000	78,600	33,800	18,700
5	12,600	22,800	17,000	61,200	39,900	234,000	126,000	167,000	101,000	73,500	39,900	19,700
6	12,200	31,200	16,500	59,600	42,000	210,000	110,000	174,000	116,000	68,500	47,700	19,700
7	12,200	31,200	18,300	59,600	47,000	182,000	107,000	178,000	151,000	66,100	54,300	20,700
8	12,200	28,000	24,500	62,800	48,400	158,000	96,700	180,000	168,000	62,800	58,800	21,200
9	12,200	25,000	42,700	67,700	52,800	142,000	98,400	173,000	177,000	59,600	61,200	21,200
10	12,200	23,300	65,200	72,700	60,400	147,000	101,000	155,000	184,000	56,500	59,600	20,200
11	12,200	21,700	82,000	75,200	75,200	157,000	96,700	126,000	185,000	59,600	52,800	21,200
12	12,600	20,700	94,100	74,400	103,000	160,000	89,800	102,000	180,000	82,900	45,500	21,700
13	12,600	20,200	98,400	70,200	125,000	174,000	90,600	87,200	168,000	111,000	40,600	23,900
14	12,600	19,200	93,200	64,400	142,000	190,000	104,000	79,500	159,000	126,000	37,200	23,300
15	12,600	17,800	81,200	60,400	176,000	205,000	113,000	76,000	134,000	126,000	33,800	21,700
16	12,200	17,000	69,400	65,200	200,000	221,000	111,000	82,000	118,000	113,000	31,800	21,200
17	13,300	17,400	59,600	79,500	215,000	231,000	99,300	82,000	104,000	95,800	31,200	20,700
18	15,300	17,000	55,800	91,500	222,000	239,000	88,900	76,900	96,700	94,100	29,900	20,200
19	17,400	17,800	52,100	108,000	218,000	243,000	80,300	68,500	94,100	95,800	29,900	21,700
20	17,400	19,200	49,900	122,000	212,000	247,000	71,900	68,500	91,500	94,900	30,600	20,700
21	17,000	20,200	46,200	128,000	205,000	248,000	71,900	65,200	88,100	87,200	33,100	19,700
22	16,100	20,700	42,000	133,000	201,000	239,000	66,100	59,600	82,900	76,000	58,800	19,200
23	15,300	20,700	40,600	133,000	197,000	220,000	62,800	62,000	84,600	61,200	66,900	17,800
24	13,700	20,200	43,400	125,000	214,000	187,000	58,800	71,000	100,000	52,800	58,800	17,800
25	13,300	19,200	61,200	107,000	238,000	156,000	58,100	85,500	108,000	46,200	47,700	19,700
26	12,600	18,300	71,900	88,900	259,000	131,000	67,700	113,000	104,000	42,700	38,500	20,700
27	12,200	19,200	82,900	73,500	270,000	122,000	78,600	137,000	95,800	39,900	32,500	21,200
28	11,800	18,700	91,500	65,200	274,000	118,000	89,800	146,000	89,800	38,500	29,900	22,200
29	11,800	19,700	91,500	54,300	.....	111,000	90,600	137,000	89,800	39,900	26,200	23,900
30	11,500	21,200	82,900	50,600	.....	117,000	90,600	113,000	95,800	39,200	25,000	28,000
31	14,100	.....	76,900	46,200	.....	125,000	.....	93,200	.....	38,500	23,300	.....
1910.												
1	28,600	17,000	15,700	31,200	59,600	103,000	25,600	35,800	107,000	48,400	38,500	20,700
2	26,800	16,500	15,700	30,600	47,700	93,200	25,600	37,200	83,800	57,300	36,500	20,200
3	23,900	16,100	15,700	30,600	46,200	94,100	25,000	40,600	69,400	63,600	35,800	20,700
4	21,700	15,700	15,700	23,300	44,100	96,700	24,500	42,000	52,100	68,500	37,200	23,900
5	20,200	15,700	15,700	23,300	43,400	111,000	23,900	40,600	50,600	75,200	41,300	26,800
6	18,700	15,700	15,700	26,800	38,500	122,000	23,300	38,500	48,400	85,500	45,500	31,200
7	17,000	15,700	15,700	39,900	37,200	126,000	22,800	35,800	46,200	96,700	42,000	47,700
8	16,500	15,300	17,400	62,000	35,800	121,000	22,200	33,100	44,800	111,000	39,200	51,300
9	16,500	15,300	19,200	85,500	35,100	111,000	22,200	31,200	48,400	116,000	37,200	47,700
10	15,700	15,300	22,200	90,600	34,400	95,800	21,200	29,300	54,300	118,000	40,600	42,700
11	15,700	15,300	25,000	99,300	33,100	87,200	21,200	28,600	71,900	118,000	42,700	39,900
12	15,300	15,300	26,200	101,000	36,500	78,600	20,700	31,800	97,500	119,000	44,800	38,500
13	14,900	15,300	30,600	96,700	34,400	71,000	20,700	40,600	100,000	118,000	42,700	35,800
14	14,900	15,300	33,100	95,800	31,800	63,600	20,200	49,900	88,100	111,000	39,900	33,100
15	16,100	15,300	33,100	85,500	33,100	58,800	22,200	53,500	78,600	102,000	38,500	31,200
16	19,200	14,900	32,500	76,000	33,100	54,300	87,200	54,300	80,300	94,900	35,100	29,900
17	25,000	14,900	32,500	68,500	35,100	52,100	94,100	51,300	79,500	86,300	31,200	29,300
18	33,100	14,900	37,200	53,500	58,800	47,700	111,000	47,700	71,900	78,600	28,600	28,600
19	34,400	14,900	37,200	55,800	111,000	46,200	99,300	44,100	66,100	84,600	26,200	26,200
20	35,100	14,900	39,900	55,000	128,000	42,000	84,600	42,600	61,200	102,000	24,500	23,900
21	37,200	14,900	40,600	58,800	148,000	39,200	76,000	51,300	59,600	103,000	23,900	22,200
22	33,100	14,900	37,800	60,400	162,000	38,500	70,200	61,200	58,100	88,900	22,800	20,700
23	28,000	14,900	33,800	66,100	168,000	37,200	69,400	79,500	56,500	75,200	21,700	20,200
24	26,800	14,900	31,200	74,400	168,000	35,800	62,000	102,000	54,300	61,200	25,000	19,200
25	23,900	15,300	28,600	82,900	161,000	35,800	55,800	111,000	51,300	53,500	23,900	18,300
26	21,700	16,500	26,200	87,200	146,000	33,100	49,100	118,000	49,100	49,100	23,900	17,400
27	20,700	17,000	26,200	89,800	128,000	31,200	44,800	125,000	46,200	46,200	24,500	17,000
28	19,200	17,000	26,800	88,100	116,000	29,900	39,900	128,000	43,400	45,500	23,300	16,500
29	18,300	16,100	31,200	82,000	.....	28,600	38,500	128,000	42,000	47,700	22,200	16,500
30	17,800	15,700	31,800	73,500	.....	27,400	36,500	124,000	41,300	49,100	21,700	16,500
31	17,000	.....	31,200	66,900	.....	26,200	.....	113,000	.....	44,100	21,200	.....

Daily discharge, in second feet, of Tennessee River at Johnsonville, Tenn., for the years ending Sept. 30, 1890–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1911.												
1	16,500	13,700	14,100	37,200	52,800	56,500	66,900	83,800	28,000	25,600	30,600	15,700
2	16,500	14,100	14,900	44,800	53,500	60,400	66,900	73,500	25,600	22,800	27,400	14,900
3	16,500	13,300	14,900	70,200	52,800	59,600	63,600	65,200	24,500	21,200	28,000	14,100
4	16,500	13,300	14,900	126,000	54,300	56,500	62,800	62,000	23,300	20,700	31,800	13,700
5	16,500	12,900	15,700	167,000	61,200	54,300	114,000	66,100	22,200	21,200	33,100	13,300
6	17,800	13,300	16,500	187,000	68,500	51,300	155,000	78,600	21,700	22,200	29,300	13,700
7	19,700	13,300	19,700	194,000	75,200	47,700	191,000	85,500	21,200	21,200	29,900	14,100
8	20,700	13,300	21,200	199,000	93,200	45,500	213,000	83,800	21,200	20,700	29,300	17,000
9	21,200	13,300	45,500	202,000	129,000	42,700	230,000	75,200	21,700	19,700	31,200	20,200
10	20,200	13,300	63,600	201,000	165,000	42,000	240,000	63,600	22,200	18,300	31,800	19,700
11	19,700	13,300	74,400	194,000	188,000	40,600	248,000	55,000	21,700	17,800	30,600	19,700
12	19,200	12,900	67,700	171,000	202,000	52,800	256,000	49,100	20,700	19,200	28,000	19,700
13	18,300	12,600	65,200	131,000	205,000	91,500	262,000	44,800	20,200	19,700	25,600	20,200
14	17,800	12,600	55,800	94,900	207,000	117,000	276,000	42,700	19,700	20,200	23,900	21,700
15	17,800	12,600	52,800	71,000	209,000	126,000	290,000	39,200	19,700	20,200	22,200	20,700
16	20,700	12,200	39,200	58,800	209,000	116,000	299,000	37,800	19,700	20,700	21,200	19,700
17	23,900	12,200	32,500	57,300	205,000	96,700	302,000	35,800	19,700	22,800	20,700	17,800
18	25,000	12,200	30,600	47,000	191,000	76,900	300,000	33,800	18,300	25,000	20,200	16,500
19	22,800	12,200	25,600	43,400	161,000	61,200	295,000	32,500	17,400	25,000	21,200	16,100
20	20,700	11,800	23,900	40,600	129,000	53,500	284,000	31,200	16,500	25,000	22,200	17,000
21	18,700	11,800	22,800	38,500	105,000	49,100	274,000	30,600	16,500	25,000	22,800	17,000
22	17,000	11,800	20,700	37,200	87,200	46,200	267,000	30,600	17,000	28,600	25,000	15,700
23	16,100	11,500	19,200	35,800	77,800	43,400	262,000	33,100	17,400	39,900	23,300	14,900
24	15,700	11,500	19,700	35,800	75,200	40,600	256,000	35,100	17,400	44,100	22,200	14,500
25	14,900	11,500	21,200	34,400	65,200	39,200	247,000	43,400	17,400	40,600	20,700	14,100
26	14,100	11,500	21,700	36,500	61,200	39,900	230,000	44,100	18,300	37,200	19,700	13,700
27	13,700	11,500	22,200	39,900	58,800	41,300	200,000	41,300	22,200	38,500	22,800	13,700
28	13,700	11,800	22,800	38,500	57,300	47,000	169,000	38,500	24,500	37,200	21,200	13,300
29	13,300	13,300	22,800	38,500	.....	53,500	124,000	35,100	26,200	37,800	19,700	13,300
30	13,300	13,300	28,600	44,800	.....	58,800	95,800	32,500	25,000	37,800	19,200	12,900
31	13,300	.....	31,200	50,600	.....	64,400	.....	29,900	.....	35,100	17,400	.....
1912.												
1	12,900	19,700	31,800	244,000	115,000	.....	.....	.....	74,400	40,600	33,800	29,900
2	12,900	18,700	33,100	251,000	123,000	.....	.....	.....	76,900	49,100	33,100	25,600
3	14,100	17,400	33,800	257,000	131,000	.....	.....	.....	76,900	64,400	33,100	23,900
4	15,300	16,500	32,500	252,000	135,000	.....	.....	.....	73,500	61,200	31,200	22,200
5	15,300	16,100	29,900	239,000	133,000	.....	.....	.....	65,200	61,200	29,300	21,200
6	14,100	15,700	28,600	219,000	124,000	.....	.....	.....	60,400	52,800	28,600	20,200
7	12,900	16,500	26,800	191,000	109,000	.....	.....	.....	56,500	52,100	31,800	18,700
8	12,200	17,400	25,600	155,000	90,600	.....	.....	.....	49,900	64,400	34,400	17,800
9	12,200	17,400	25,600	122,000	74,400	.....	.....	.....	46,200	77,800	37,200	17,800
10	11,800	17,400	22,800	109,000	63,600	.....	.....	.....	43,400	88,100	36,500	17,000
11	12,600	17,400	22,200	110,000	55,800	.....	.....	.....	42,000	92,400	38,500	16,500
12	14,100	18,300	30,600	111,000	51,300	.....	.....	.....	39,200	85,500	42,700	16,100
13	15,300	20,200	84,600	102,000	47,000	.....	.....	.....	37,200	79,500	42,700	15,300
14	15,700	23,900	112,000	92,400	45,500	.....	.....	.....	35,100	79,500	38,500	14,900
15	15,700	28,600	147,000	84,600	41,300	.....	.....	.....	33,800	74,400	34,400	15,700
16	15,700	33,100	169,000	75,200	41,300	.....	.....	.....	31,800	68,500	31,800	17,000
17	17,400	35,100	179,000	66,900	42,700	.....	.....	85,500	30,600	66,100	33,100	17,400
18	22,800	37,800	176,000	61,200	47,000	.....	.....	76,000	29,300	61,200	32,500	17,400
19	25,000	39,200	160,000	66,900	49,100	.....	.....	67,700	29,900	58,100	29,900	17,400
20	28,000	37,800	135,000	71,900	51,300	.....	.....	62,000	30,600	53,500	26,800	17,400
21	31,200	35,800	113,000	78,600	85,500	.....	.....	58,100	30,600	49,900	26,800	17,400
22	33,100	34,400	94,100	80,300	126,000	.....	.....	55,800	31,200	49,100	26,800	16,500
23	35,100	33,100	82,900	70,200	139,000	.....	.....	55,000	31,800	45,500	26,800	16,500
24	37,800	35,100	99,300	62,800	150,000	.....	.....	55,000	31,200	42,700	28,600	17,800
25	39,900	36,500	114,000	58,800	151,000	.....	.....	53,500	29,900	39,900	28,600	30,600
26	41,300	35,100	118,000	56,500	164,000	.....	.....	50,600	29,300	39,200	29,300	38,500
27	36,500	33,100	178,000	55,800	182,000	.....	.....	46,200	28,600	38,500	30,600	40,600
28	31,200	31,800	214,000	54,300	199,000	.....	.....	42,700	29,300	38,500	30,600	39,200
29	26,200	31,200	230,000	55,000	211,000	.....	.....	42,700	31,800	37,200	33,100	40,600
30	22,800	31,200	233,000	69,400	.....	.....	.....	44,800	34,400	36,500	33,800	37,200
31	20,200	.....	239,000	97,500	.....	.....	.....	58,100	.....	33,100	31,800	.....

Daily discharge, in second feet, of Tennessee River at Johnsonville, Tenn., for the years ending Sept. 30, 1890–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1913.												
1	33,800	16,100	14,100	44,100	.....	180,000	.....	41,300	93,200	23,300	16,500	14,100
2	31,800	15,700	13,700	53,500	.....	205,000	.....	40,600	82,900	22,800	17,400	14,100
3	29,900	15,700	16,100	58,100	.....	214,000	.....	39,900	80,300	24,500	18,300	14,100
4	28,000	15,700	18,300	67,700	.....	210,000	.....	39,200	80,300	23,900	19,200	14,100
5	26,800	15,300	19,200	85,500	.....	207,000	.....	37,800	75,200	21,200	19,700	13,700
6	26,200	14,900	28,600	92,400	.....	202,000	.....	36,500	68,500	20,700	18,700	13,300
7	22,200	14,100	53,500	152,000	.....	190,000	.....	35,100	62,800	19,200	18,300	12,600
8	20,700	14,100	63,600	224,000	.....	167,000	.....	34,400	62,800	18,300	18,300	12,600
9	19,200	14,500	66,100	243,000	.....	131,000	.....	33,100	62,000	17,800	18,300	12,200
10	17,000	14,500	72,700	.....	.....	100,000	.....	33,100	68,500	19,200	17,800	12,600
11	17,400	15,700	77,800	.....	.....	85,500	.....	32,500	63,600	19,700	17,800	12,600
12	17,400	15,700	73,500	.....	.....	74,400	.....	30,600	55,800	20,700	17,800	12,600
13	16,500	15,300	65,200	.....	132,000	67,700	.....	29,300	49,900	23,300	17,800	11,800
14	15,700	15,300	54,300	.....	146,000	75,200	.....	29,300	49,900	22,800	17,000	11,500
15	15,300	14,500	49,100	.....	150,000	118,000	.....	30,600	53,500	22,200	15,300	11,200
16	14,900	19,200	44,100	.....	150,000	167,000	.....	30,600	51,300	21,700	16,100	11,500
17	14,500	20,200	34,400	.....	149,000	194,000	.....	29,300	46,200	20,700	17,000	12,600
18	14,900	20,200	31,200	.....	140,000	202,000	.....	29,900	41,300	20,200	19,700	13,300
19	14,900	19,200	29,900	.....	125,000	204,000	.....	33,100	36,500	19,700	20,200	12,600
20	15,700	18,300	27,400	.....	107,000	206,000	.....	33,800	33,100	19,700	19,200	12,200
21	16,500	18,300	26,800	.....	90,600	214,000	.....	33,100	30,600	19,700	18,700	11,800
22	17,400	17,000	25,000	.....	82,900	.....	.....	32,500	28,000	18,300	17,000	11,500
23	18,700	16,100	24,500	.....	71,000	.....	.....	34,400	26,800	17,000	16,500	11,500
24	19,700	15,300	23,300	.....	65,200	.....	64,400	38,500	26,800	16,500	16,500	11,500
25	19,200	15,300	33,800	.....	62,000	.....	59,600	45,500	26,800	16,100	16,100	11,500
26	19,200	14,900	38,500	.....	60,400	.....	55,000	56,500	26,200	16,500	15,700	11,800
27	19,200	14,500	41,300	.....	82,900	.....	51,300	64,400	25,600	16,500	15,700	11,800
28	18,700	14,500	38,500	.....	126,000	.....	47,000	76,900	25,000	15,700	15,300	13,700
29	17,800	14,500	37,800	.....	.....	.....	44,100	95,800	24,500	15,700	15,300	15,300
30	17,000	14,100	38,500	.....	.....	.....	42,700	104,000	23,900	15,300	14,900	16,500
31	16,500	.....	41,300	.....	.....	.....	.....	103,000	.....	15,300	14,500	.....

Monthly discharge of Tennessee River at Johnsonville, Tenn., for the years ending Sept. 30, 1890–1913.

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).
	Maximum.	Minimum.	Mean.	Per square mile.	
1890.					
October	47,000	15,700	22,700	0.590	0.68
November	141,000	18,300	74,300	1.93	2.15
December	95,800	25,600	43,000	1.12	1.29
January [a]	.....	26,200	78,200	2.03	2.34
February [a]	.....	.....	140,000	3.64	3.79
March [a]	.....	.....	230,000	5.97	6.88
April [a]	.....	.....	123,000	3.19	3.56
May	105,000	55,800	76,000	1.97	2.27
June	66,900	24,500	37,900	.984	1.10
July	44,800	18,300	24,600	.639	.74
August	46,200	17,800	32,900	.855	.99
September	59,600	23,300	33,500	.870	.97
The year	.....	15,700	75,900	1.97	26.76
1891.					
October	62,000	25,000	39,500	1.03	1.19
November	58,100	21,200	30,900	.803	.90
December	78,600	19,200	33,900	.881	1.02
January	158,000	75,200	107,000	2.78	3.20
February [a]	302,000	166,000	260,000	6.75	7.03
March [a]	.....	.....	230,000	5.97	6.88
April [a]	.....	71,000	119,000	3.09	3.45
May	60,400	27,400	37,300	.969	1.12
June	56,500	25,000	39,500	1.03	1.15
July	42,000	20,200	26,300	.683	.79
August	113,000	22,880	47,900	1.24	1.43
September	46,200	15,700	26,000	.675	.75
The year	.....	15,700	82,000	2.13	28.91

[a] Period of probable backwater extends over part or whole of month. See "Backwater" in station description.

Monthly discharge of Tennessee River at Johnsonville, Tenn., for the years ending Sept. 30, 1890–1913—Continued.

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).
	Maximum.	Minimum.	Mean.	Per square mile.	
1892.					
October	14,900	12,600	13,800	0.358	0.41
November	39,900	12,600	20,400	.530	.59
December	94,100	30,600	55,400	1.44	1.66
January	239,000	74,400	143,000	3.71	4.28
February	115,000	49,100	91,000	2.36	2.54
March	123,000	46,200	76,400	1.98	2.28
April [a]	.....	96,700	221,000	5.74	6.40
May [a]	.....	44,100	69,900	1.82	2.10
June [a]	79,500	34,400	56,200	1.46	1.63
July	176,000	33,100	79,400	2.06	2.38
August	37,200	23,300	28,700	.745	.86
September	36,500	19,200	26,000	.675	.75
The year	.....	12,600	73,300	1.90	25.88
1893.					
October	23,300	12,900	15,800	.410	.47
November	40,600	12,900	26,600	.691	.77
December	135,000	32,500	73,800	1.92	2.21
January	96,700	21,700	40,700	1.06	1.22
February [a]	280,000	33,800	154,000	4.00	4.16
March [a]	268,000	58,100	107,000	2.78	3.20
April [a]	247,000	42,000	118,000	3.06	3.41
May [a]	221,000	49,900	127,000	3.30	3.80
June	212,000	37,200	118,000	3.06	3.41
July	37,200	18,700	24,300	.631	.73
August	25,600	14,100	19,700	.512	.59
September	63,600	13,300	31,100	.808	.90
The year	280,000	12,900	70,600	1.83	24.87
1894.					
October	37,800	14,900	20,000	.519	.60
November	25,600	14,900	18,300	.475	.53
December	35,100	17,400	25,500	.662	.76
January	99,300	19,200	60,600	1.57	1.81
February [a]	258,000	42,700	164,000	4.26	4.44
March	136,000	62,800	90,400	2.35	2.71
April	110,000	32,500	70,700	1.84	2.05
May	40,600	27,400	32,100	.834	.96
June	31,800	15,700	19,300	.501	.56
July	28,600	16,500	21,200	.551	.64
August	29,300	14,100	19,700	.512	.59
September	20,200	12,600	15,700	.408	.46
The year	258,000	12,600	45,600	1.18	16.11
1895.					
October	12,600	9,940	10,800	.281	.32
November	11,800	9,650	10,700	.278	.31
December	63,600	10,800	24,400	.634	.73
January	207,000	26,200	112,000	2.91	3.36
February	88,900	34,400	55,100	1.43	1.49
March	200,000	51,300	133,000	3.45	3.98
April	107,000	56,500	75,700	1.97	2.20
May	64,400	39,900	51,300	1.33	1.53
June	55,800	19,200	28,600	.743	.83
July	50,600	18,300	31,500	.818	.94
August	51,300	18,300	26,800	.696	.80
September	23,900	11,800	17,800	.462	.52
The year	207,000	9,650	48,300	1.25	17.01
1896.					
October	11,200	9,370	9,820	.255	.29
November	13,700	9,370	11,600	.301	.34
December	86,300	11,800	20,700	.538	.62
January	54,300	21,700	34,100	.886	1.02
February	216,000	40,600	132,000	3.43	3.70
March	166,000	36,500	81,600	2.12	2.44
April [a]	232,000	35,100	119,000	3.09	3.45
May	50,600	19,200	29,500	.766	.88
June	37,800	19,700	25,900	.673	.75
July	122,000	17,400	57,500	1.49	1.72
August	68,500	14,900	24,800	.644	.74
September	18,700	10,200	12,900	.335	.37
The year	232,000	9,370	46,200	1.20	16.32

[a] Period of probable backwater extends over part or whole of month. See "Backwater" in station description.

Monthly discharge of Tennessee River at Johnsonville, Tenn., for the years ending Sept. 30, 1890–1913—Continued.

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).
	Maximum.	Minimum.	Mean.	Per square mile.	
1897.					
October	14,900	10,200	12,200	0.317	0.37
November	60,400	10,200	22,200	.577	.64
December	90,600	21,700	46,400	1.21	1.40
January	75,200	19,200	40,400	1.05	1.21
February[a]	158,000	36,500	91,900	2.39	2.49
March[a]	410,000	174,000	289,000	7.51	8.66
April[a]	.....	48,400	168,000	4.36	4.86
May	153,000	31,800	72,500	1.88	2.17
June	31,800	20,700	26,400	.686	.77
July	66,100	22,800	32,200	.836	.96
August	55,800	17,000	24,100	.626	.72
September	16,500	9,090	11,500	.299	.33
The year	410,000	9,090	69,700	1.81	24.58
1898.					
October	11,500	8,560	9,290	.241	.28
November	11,200	9,090	10,300	.268	.30
December	98,400	9,370	38,300	.995	1.15
January[a]	.....	21,700	109,000	2.83	3.26
February[a]	.....	23,300	50,800	1.32	1.38
March[a]	.....	22,800	40,800	1.06	1.22
April[a]	.....	65,200	105,000	2.73	3.05
May	62,000	21,200	33,800	.878	1.01
June	32,500	14,100	20,200	.525	.59
July	30,600	14,100	19,900	.517	.60
August	101,000	22,200	55,600	1.44	1.66
September	126,000	20,200	43,300	1.12	1.25
The year	.....	8,560	44,600	1.16	15.75
1899.					
October	88,900	19,200	41,500	1.08	1.24
November	46,200	22,200	30,100	.782	.87
December	47,000	26,200	35,200	.914	1.05
January[a]	193,000	33,800	100,000	2.60	3.00
February	244,000	52,100	167,000	4.34	4.52
March[a]	335,000	183,000	248,000	6.44	7.42
April[a]	.....	62,000	150,000	3.90	4.35
May	89,800	27,400	54,600	1.42	1.64
June	33,800	18,700	25,400	.660	.74
July	24,500	13,700	17,400	.452	.52
August	25,000	11,500	16,700	.434	.50
September	14,900	9,650	11,700	.304	.34
The year	.....	9,650	74,300	1.93	26.19
1900.					
October	11,500	9,370	10,100	.262	.30
November	13,700	9,370	10,300	.268	.30
December	72,700	12,200	41,200	1.07	1.23
January	98,400	16,500	54,400	1.41	1.63
February	169,000	25,000	89,100	2.31	2.40
March	146,000	77,800	112,000	2.91	3.36
April	240,000	64,400	136,000	3.53	3.94
May	98,400	23,300	39,600	1.03	1.19
June	243,000	29,900	91,000	2.36	2.63
July	235,000	25,000	63,900	1.66	1.91
August	50,600	14,500	22,900	.595	.69
September	26,200	11,200	16,800	.436	.49
The year	243,000	9,370	57,000	1.48	20.07
1901.					
October	40,600	13,700	21,500	.558	.64
November	100,000	15,700	35,300	.917	1.02
December	113,000	25,600	49,500	1.29	1.49
January	194,000	37,200	94,600	2.46	2.84
February	141,000	31,800	76,000	1.97	2.05
March	149,000	26,800	65,100	1.69	1.95
April[a]	200,000	73,500	152,000	3.95	4.41
May[a]	182,000	33,800	84,600	2.20	2.54
June	176,000	40,600	67,400	1.75	1.95
July	55,800	17,400	29,500	.766	.88
August	226,000	15,700	102,000	2.65	3.06
September	103,000	33,100	61,000	1.58	1.76
The year	226,000	13,700	69,700	1.81	24.59

[a] Period of probable backwater extends over part or whole of month. See "Backwater" in station description.

Monthly discharge of Tennessee River at Johnsonville, Tenn., for the years ending Sept. 30, 1890–1913—Continued.

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).
	Maximum.	Minimum.	Mean.	Per square mile.	
1902.					
October	35,100	16,500	24,600	0.639	0.74
November	16,500	14,900	15,500	.403	.45
December	183,000	15,300	74,200	1.93	2.22
January	234,000	40,600	129,000	3.35	3.86
February [a]	225,000	47,000	122,000	3.17	3.30
March [a]	283,000	87,200	184,000	4.78	5.51
April [a]	298,000	40,600	136,000	3.53	3.94
May	66,900	24,500	37,500	.974	1.12
June	34,400	17,400	21,400	.556	.62
July	52,800	14,100	24,500	.636	.73
August	19,700	10,800	13,700	.356	.41
September	16,500	10,500	12,300	.319	.36
The year	298,000	10,500	65,900	1.71	23.26
1903.					
October	23,900	11,500	17,600	.457	.53
November	38,500	10,500	14,700	.382	.43
December [a]	.....	42,700	78,900	2.05	2.36
January	82,900	35,100	59,800	1.55	1.79
February [a]	240,000	47,000	189,000	4.91	5.11
March [a]	.....	.....	190,000	4.94	5.70
April [a]	220,000	83,800	162,000	4.21	4.70
May	75,200	26,800	47,900	1.24	1.43
June	146,000	29,300	66,800	1.74	1.94
July	33,800	18,300	26,900	.699	.81
August	26,800	15,300	20,700	.538	.62
September	14,100	10,200	11,200	.291	.32
The year	.....	10,200	72,900	1.89	25.74
1904.					
October	11,200	9,370	10,000	.260	.30
November	28,600	9,370	15,600	.405	.45
December	36,500	10,500	17,300	.449	.52
January	77,800	14,500	31,200	.810	.93
February	49,900	22,200	30,700	.797	.86
March [a]	230,000	47,000	101,000	2.62	3.02
April [a]	.....	32,500	69,400	1.80	2.01
May	43,400	20,700	32,800	.852	.98
June	40,600	15,300	24,300	.631	.70
July	26,800	14,100	19,300	.501	.58
August	25,600	14,900	18,700	.486	.56
September	15,700	9,370	11,800	.306	.34
The year	.....	9,370	31,900	.829	11.25
1905.					
October	9,090	7,150	7,940	.206	.24
November	9,370	7,150	8,270	.215	.24
December	88,100	9,090	26,100	.678	.78
January	129,000	29,900	66,100	1.72	1.98
February	194,000	28,000	128,000	3.32	3.46
March [a]	168,000	49,100	101,000	2.62	3.02
April	49,100	33,100	39,300	1.02	1.14
May	158,000	44,800	78,000	2.03	2.34
June	62,000	20,700	35,500	.922	1.03
July	84,600	28,000	48,500	1.26	1.45
August	57,300	18,700	32,300	.839	.97
September	35,800	12,600	21,400	.556	.62
The year	194,000	7,150	48.900	1.27	17.27
1906.					
October	27,400	11,500	18,200	.473	.55
November	23,300	12,900	15,800	.410	.46
December	121,000	15,700	68,900	1.79	2.06
January	177,000	62,000	104,000	2.70	3.11
February	137,000	31,200	53,600	1.39	1.45
March	131,000	43,400	87,700	2.28	2.63
April [a]	.....	44,100	87,200	2.26	2.52
May	53,500	22,800	36,300	.943	1.09
June	50,600	22,200	32,100	.834	.93
July	115,000	22,800	60,400	1.57	1.81
August	64,400	38,500	48,300	1.25	1.44
September	86,300	34,400	59,000	1.53	1.71
The year	177,000	11,500	56,000	1.45	19.76

[a] Period of probable backwater extends over part or whole of month. See "Backwater" in station description.

Monthly discharge of Tennessee River at Johnsonville, Tenn., for the years ending Sept. 30, 1890–1913—Continued.

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).
	Maximum.	Minimum.	Mean.	Per square mile.	
1907.					
October	205,000	42,000	103,000	2.68	3.09
November [a]	201,000	22,800	92,800	2.41	2.69
December	116,000	39,900	66,000	1.71	1.97
January [a]	.....	.....	85,800	2.23	2.57
February [a]	.....	39,900	79,900	2.08	2.17
March [a]	206,000	.....	123,000	3.19	3.68
April [a]	77,800	40,600	58,000	1.51	1.68
May	176,000	39,200	112,000	2.91	3.36
June	93,200	42,000	62,100	1.61	1.80
July	44,100	22,800	34,200	.888	1.02
August	29,900	21,200	23,800	.618	.71
September	64,400	18,700	26,400	.686	.77
The year	206,000	18,700	72,300	1.88	25.51
1908.					
October	58,800	14,500	24,100	.626	.72
November	95,800	14,100	38,100	.990	1.10
December	91,500	30,600	50,100	1.30	1.50
January	167,000	49,100	111,000	2.88	3.32
February [a]	.....	51,300	135,000	3.51	3.79
March [a]	.....	.....	110,000	2.86	3.30
April [a]	.....	.....	84,300	2.19	2.44
May [a]	127,000	47,000	74,600	1.94	2.24
June	62,000	25,000	41,100	1.07	1.19
July	46,200	20,200	30,600	.795	.92
August	39,900	18,700	25,400	.660	.76
September	38,500	14,900	24,000	.623	.70
The year	.....	14,100	62,100	1.61	21.98
1909.					
October	17,400	11,500	13,400	.348	.40
November	31,200	17,000	21,200	.551	.61
December	98,400	16,500	55,800	1.45	1.67
January	133,000	46,200	79,100	2.05	2.36
February	274,000	39,900	143,000	3.71	3.86
March	274,000	111,000	192,000	4.99	5.75
April	135,000	58,100	95,000	2.47	2.76
May [a]	180,000	59,600	111,000	2.88	3.32
June	185,000	82,900	120,000	3.12	3.48
July	126,000	38,500	74,500	1.94	2.24
August	66,900	23,300	40,900	1.06	1.22
September	28,000	17,800	21,000	.545	.61
The year	274,000	11,500	80,300	2.09	28.28
1910.					
October	37,200	14,900	22,400	.582	.67
November	17,000	14,900	15,600	.405	.45
December	40,600	15,700	27,100	.704	.81
January [a]	101,000	23,300	66,500	1.73	1.99
February [a]	168,000	31,800	76,900	2.00	2.08
March [a]	126,000	26,200	65,700	1.71	1.97
April	111,000	20,200	45,300	1.18	1.32
May	128,000	28,600	62,900	1.63	1.88
June	107,000	41,300	63,400	1.65	1.84
July	119,000	44,100	81,200	2.11	2.43
August	45,500	21,200	32,300	.839	.97
September	51,300	16,500	27,800	.722	.81
The year	168,000	14,900	48,800	1.27	17.22
1911.					
October	25,000	13,300	17,800	.462	.53
November	14,100	11,500	12,600	.327	.36
December	74,400	14,100	31,000	.805	.93
January	202,000	34,400	89,300	2.32	2.68
February [a]	209,000	52,800	118,000	3.06	3.19
March	126,000	39,200	60,400	1.57	1.81
April [a]	302,000	62,800	211,000	5.48	6.11
May	85,500	29,900	49,500	1.29	1.49
June	28,000	16,500	20,900	.543	.61
July	44,100	17,800	26,800	.696	.80
August	33,100	17,400	24,900	.647	.75
September	21,700	12,900	16,300	.423	.47
The year	302,000	11,500	56,000	1.45	19.73

[a] Period of probable backwater extends over part or whole of month. See "Backwater" in station description.

Monthly discharge of Tennessee River at Johnsonville, Tenn., for the years ending Sept. 30, 1890–1913—Continued.

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).
	Maximum.	Minimum.	Mean.	Per square mile.	
1912.					
October	41,300	11,800	21,700	0.564	0.65
November	39,200	15,700	26,700	.694	.77
December [a]	239,000	22,200	104,000	2.70	3.11
January [a]	257,000	54,300	117,000	3.04	3.50
February [a]	211,000	41,300	103,000	2.68	2.89
March [a]	.....	.....	170,000	4.42	5.10
April [a]	.....	.....	190,000	4.94	5.51
May [a]	.....	42,700	120,000	3.12	3.60
June	76,900	28,600	42,400	1.10	1.23
July	92,400	33,100	57,400	1.49	1.72
August	42,700	26,800	32,500	.844	.97
September	40,600	14,900	22,500	.584	.65
The year	.....	11,800	84,000	2.18	29.70
1913.					
October	33,800	14,500	19,800	.514	.59
November	20,200	14,100	16,000	.416	.46
December	77,800	13,700	39,400	1.02	1.18
January [a]	.....	44,100	161,000	4.18	4.82
February [a]	.....	60,400	131,000	3.40	3.54
March [a]	.....	67,700	184,000	4.78	5.51
April [a]	.....	42,700	119,000	3.09	3.45
May	104,000	29,300	44,000	1.14	1.31
June	93,200	23,900	49,400	1.28	1.43
July	24,500	15,300	19,500	.506	.58
August	20,200	14,500	17,300	.449	.52
September	16,500	11,200	12,700	.330	.37
The year	.....	11,200	67,500	1.75	23.76

[a] Period of probable backwater extends over part or whole of month. See "Backwater" in station description.

Discharge and horsepower table for Tennessee River at Johnsonville, Tenn., for the years ending Sept. 30, 1890–1913.

Gage height.	Discharge in second-feet.	Theoretical horsepower per foot of fall.	Days of deficient discharge.											
			1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901
−0.98	7,000	795	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
− .83	7,300	830	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
− .69	7,600	864	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
− .52	8,000	909	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
− .32	8,500	966	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
− .13	9,000	1,020	.....	.....	.....	.....	.....	.....	.....	.....	18	.....	.....	.....
+ .05	9,500	1,080	.....	.....	.....	.....	.....	.....	5	7	26	.....	8	.....
.22	10,000	1,140	.....	.....	.....	.....	.....	9	30	12	39	4	34	.....
.55	11,000	1,250	.....	.....	.....	.....	.....	47	47	34	58	10	54	.....
.85	12,000	1,360	.....	.....	.....	.....	.....	68	65	51	65	21	64	.....
1.38	14,000	1,590	.....	.....	31	16	9	78	108	62	65	36	78	2
1.87	16,000	1,820	8	1	45	36	35	84	118	70	82	63	104	13
2.76	20,000	2,270	32	13	53	63	133	115	144	91	109	85	119	44
3.69	25,000	2,840	64	43	69	107	183	153	183	129	166	117	130	64
4.51	30,000	3,410	116	117	102	135	225	177	208	179	211	155	165	86
5.28	35,000	3,980	136	154	122	158	245	188	222	197	232	181	181	108
6.01	40,000	4,550	170	183	141	188	256	208	252	216	246	204	194	139
7.42	50,000	5,680	192	215	166	206	267	245	273	236	258	221	209	179
Over 7.42	Over 50,000	Over 5,680	365	365	366	365	365	365	366	365	365	365	365	365

Discharge and horsepower table for Tennessee River at Johnsonville, Tenn., for the years ending Sept. 30, 1890–1913—Continued.

Gage height.	Discharge in second-feet.	Theoretical horsepower per foot of fall.	Days of deficient discharge.											
			1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913
−0.98	7,000	795	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
− .83	7,300	830	.....	.....	.....	10	.....	.....	.....	.....	.....	.....	.....	.....
− .69	7,600	864	.....	.....	.....	19	.....	.....	.....	.....	.....	.....	.....	.....
− .52	8,000	909	.....	.....	.....	22	.....	.....	.....	.....	.....	.....	.....	.....
− .32	8,500	966	.....	.....	.....	41	.....	.....	.....	.....	.....	.....	.....	.....
− .13	9,000	1,020	.....	.....	.....	53	.....	.....	.....	.....	.....	.....	.....	.....
+ .05	9,500	1,080	.....	.....	13	63	.....	.....	.....	.....	.....	.....	.....	.....
.22	10,000	1,140	.....	.....	28	65	.....	.....	.....	.....	.....	.....	.....	.....
.55	11,000	1,250	11	27	59	67	.....	.....	.....	.....	.....	.....	.....	.....
.85	12,000	1,360	28	43	74	67	8	.....	.....	3	.....	9	1	11
1.38	14,000	1,590	40	58	93	71	23	.....	.....	22	.....	42	7	25
1.87	16,000	1,820	91	67	128	81	33	.....	13	27	35	59	20	70
2.76	20,000	2,270	134	96	174	95	48	10	41	58	61	110	47	134
3.69	25,000	2,840	170	124	218	126	76	50	75	94	101	167	58	156
4.51	30,000	3,410	196	149	254	149	100	81	118	103	130	189	85	176
5.28	35,000	3,980	208	166	273	183	122	89	139	112	161	206	127	195
6.01	40,000	4,550	213	179	298	211	149	101	158	124	198	231	155	206
7.42	50,000	5,680	234	201	315	243	199	148	186	144	242	256	181	221
Over 7.42	Over 50,000	Over 5,680	365	365	366	365	365	365	366	365	365	365	366	365

NOTE.—The above table gives the theoretical horsepower per foot fall that may be developed at different rates of discharge and shows the number of days on which the discharge and corresponding horsepower were respectively less than the amounts given in the columns for discharge and horsepower. In using this table, allowance should be made for the various losses, the principal ones being the wheel loss, which may be as large as 20 per cent, and the head loss, which may be as large as 5 per cent.

SOUTH FORK OF HOLSTON RIVER AT BLUFF CITY, TENN.

Location.—At highway bridge at Bluff City, Tenn., 300 feet below Virginia & Southwestern Railway bridge, 1 mile below the mouth of Indian Creek, and about 10 miles above mouth of Watauga River.

Records available.—July 17, 1900, to September 30, 1913.

Drainage area.—828 square miles.

Gage.—Vertical staff attached to downstream side of bridge pier nearest the right bank; read once daily to tenths.

Control.—Shallow ledge; probably permanent. Depth and velocity of current very irregular.

Discharge measurements.—Made from downstream side of bridge; also from railroad bridge 300 feet above, where the section is much better except at low stages, when the current becomes sluggish.

Floods.—The flood of June 14, 1907, reached a stage of 11.7 feet.

Winter flow.—Not affected by ice. "Frozen," reported by observer has probably referred to water at foot of gage rather than in channel.

Accuracy.—No discharge measurements were made during the year ending September 30, 1913, consequently the accuracy of the estimates of discharge in the following tables depends on the permanency of the gage and of the discharge relation.

Cooperation.—Since January 1, 1905, gage heights have been furnished by the United States Weather Bureau.

Daily gage height, in feet, of South Fork of Holston River at Bluff City, Tenn., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	0.6	0.4	0.3	2.2	3.0	3.4	2.9	1.5	2.4	0.7	0.4	1.1
2	.5	.5	.4	1.7	2.6	2.7	2.6	1.4	2.2	.7	.5	.8
3	.5	.4	.4	1.6	2.4	2.1	2.4	1.4	1.9	.7	.7	.7
4	.5	.3	.6	1.6	3.3	1.9	2 2	1.3	1.7	1.3	.6	.6
5	.4	.3	1.5	1.6	3.3	1.8	2.1	1.1	1.9	1.4	.4	.6
6	.4	.3	1.5	1.8	2.9	1.7	1.9	1.1	1.9	1.3	.4	.5
7	.4	.5	1.4	2.1	2.5	1.5	1.8	1.1	1.8	1.1	.3	.4
8	.4	1.6	1.2	2.0	2.2	1.4	1.8	1.1	3.1	.8	.9	.5
9	.4	1.3	1.0	2.3	2.0	1.3	1.8	1.1	2.3	.7	.6	.5
10	.3	1.0	.9	2.0	1.9	1.4	1.7	1.0	1.9	.6	.4	.6
11	.3	.8	.8	1.8	1.9	1.7	1.6	1.0	1.7	.6	.3	.4
12	.3	.7	.7	1.9	3.0	2.0	2.8	.9	1.5	.7	.3	.4
13	.3	.6	.5	2.5	2.5	1.9	2.6	.9	1.6	1.1	.3	.3
14	.4	.7	.3	2.4	2.2	6.2	2.8	.9	1.4	.8	1.2	.3
15	.7	.7	.3	2.1	2.0	7.4	2.8	.9	1.3	.6	1.0	.2
16	.7	.6	.4	1.8	1.9	6.5	2.6	1.0	1.2	.7	.9	.4
17	.5	.6	.6	1.6	1.8	4.4	2.5	1.1	1.1	.6	.6	.4
18	.4	.6	.6	1.6	1.6	3.4	2.4	1.2	1.1	.6	.4	.4
19	.6	.6	.6	1.8	1.5	2.9	2.1	1.3	1.1	.5	.4	.5
20	.6	.5	.5	1.6	1.5	2.6	1.9	1.1	1.0	.6	.5	.5
21	.5	.5	.5	1.6	1.6	2.4	1.8	1.1	1.0	1.0	.5	.7
22	.4	.5	.4	1.8	1.5	2.8	1.7	1.8	.9	.6	.4	1.9
23	.5	.5	.4	2.0	1.4	2.4	1.6	2.6	.9	.5	.6	1.4
24	.6	.4	.6	2.0	1.4	2.2	1.5	6.6	1.0	.5	1.3	1.0
25	.5	.4	.6	3.7	1.4	2.0	1.4	4.4	1.2	.5	1.0	.8
26	.4	.4	.5	3.9	1.3	1.9	1.4	3.0	1.2	.5	.6	.6
27	.4	.5	.3	3.6	1.8	9.1	1.4	3.2	1.0	.5	.4	.6
28	.4	.4	.5	5.5	3.4	7.7	1.6	6.1	.9	.4	.4	.5
29	.4	.4	.6	4.1	.....	4.8	1.5	4.4	.9	.6	.4	.5
30	.4	.3	.9	3.3	.....	3.8	1.5	3.3	.8	.5	.6	.7
31	.4	.....	2.4	2.8	.....	3.3	.....	2.7	.....	.4	1.8	.....

Daily discharge, in second-feet, of South Fork of Holston River at Bluff City, Tenn., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	420	325	285	1,680	2,630	3,180	2,500	1,020	1,900	475	325	715
2	370	370	325	1,190	2,130	2,250	2,130	940	1,680	475	370	530
3	370	325	325	1,100	1,900	1,580	1,900	940	1,380	475	475	475
4	370	285	420	1,100	3,040	1,380	1,680	860	1,190	860	420	420
5	325	285	1,020	1,100	3,040	1,280	1,580	715	1,380	940	325	420
6	325	285	1,020	1,280	2,500	1,190	1,380	715	1,380	860	325	370
7	325	370	940	1,580	2,010	1,020	1,280	715	1,280	715	285	325
8	325	1,100	785	1,480	1,680	940	1,280	715	2,760	530	590	370
9	325	860	650	1,790	1,480	860	1,280	715	1,790	475	420	370
10	285	650	590	1,480	1,380	940	1,190	650	1,380	420	325	420
11	285	530	530	1,280	1,380	1,190	1,100	650	1,190	420	285	325
12	285	475	475	1,380	2,630	1,480	2,370	590	1,020	475	285	325
13	285	420	370	2,010	2,010	1,380	2,130	590	1,100	715	285	285
14	325	475	285	1,900	1,680	8,270	2,370	590	940	530	785	285
15	475	475	285	1,580	1,480	11,100	2,370	590	860	420	650	245
16	475	420	325	1,280	1,380	8,950	2,130	650	785	475	590	325
17	370	420	420	1,100	1,280	4,730	2,010	715	715	420	420	325
18	325	420	420	1,100	1,100	3,180	1,900	785	715	420	325	325
19	420	420	420	1,280	1,020	2,500	1,580	860	715	370	325	370
20	420	370	370	1,100	1,020	2,130	1,380	715	650	420	370	370
21	370	370	370	1,100	1,100	1,900	1,280	715	650	650	370	475
22	325	370	325	1,280	1,020	2,370	1,190	1,280	590	420	325	1,380
23	370	370	325	1,480	940	1,900	1,100	2,130	590	370	420	940
24	420	325	420	1,480	940	1,680	1,020	9,180	650	370	860	650
25	370	325	420	3,610	940	1,480	940	4,730	785	370	650	530
26	325	325	370	3,910	860	1,380	940	2,630	785	370	420	420
27	325	370	285	3,460	1,280	15,100	940	2,900	650	370	325	420
28	325	325	370	6,780	3,180	11,800	1,100	8,050	590	325	325	370
29	325	325	420	4,220	.....	5,440	1,020	4,730	590	420	325	370
30	325	285	590	3,040	.....	3,760	1,020	3,040	530	370	420	475
31	325	.....	1,900	2,370	.....	3,040	.....	2,250	.....	325	1,280	.....

NOTE.—Daily discharge computed from a rating curve fairly well defined below 3,320 second-feet (gage height, 3.5 feet). See "Accuracy" in station description.

Monthly discharge of South Fork of Holston River at Bluff City, Tenn., for the year ending Sept. 30, 1913.

[Drainage area, 828 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
October	475	285	352	0.425	0.49	C.
November	1,100	285	422	.510	.57	B.
December	1,900	285	518	.626	.72	B.
January	6,780	1,100	1,950	2.36	2.72	B.
February	3,180	860	1,680	2.03	2.11	B.
March	15,100	860	3,530	4.26	4.91	C.
April	2,500	940	1,540	1.86	2.08	B.
May	9,180	590	1,820	2.20	2.54	B.
June	2,760	530	1,040	1.26	1.41	B.
July	940	325	592	.594	.68	C.
August	1,280	285	448	.541	.62	C.
September	1,380	245	454	.548	.61	C.
The year	15,100	245	1,190	1.44	19.46	

HOLSTON RIVER NEAR ROGERSVILLE, TENN.

Location.—At Virginia & Southwestern Railway bridge near Austins Mill, a small railway station 3 miles south of Rogersville, 150 feet below mouth of Honeycut Creek and about 2 miles below Dodson Creek, both small streams from the south.

Records available.—March 10, 1902, to September 30, 1913. Discharge measurements were begun in 1904 by the United States Geological Survey. No gage heights or estimates of flow have been published by the United States Geological Survey prior to January 1, 1904, but it is thought that the 1904 discharge rating curve is applicable to the United States Weather Bureau gage heights back to the beginning.

Drainage area.—3,060 square miles.

Gage.—Vertical staff attached to downstream side of bridge pier nearest the right bank, read once daily to tenths.

Control.—Practically permanent. Section good for measurements.

Discharge measurements.—Made from top of the high-decked steel railroad bridge.

Floods.—The flood of March 28, 1913, reached a maximum height of 19.1 feet by the gage datum.

Winter flow.—Not affected by ice to any considerable extent.

Accuracy.—This station was not visited by engineers of the Geological Survey during the year ending September 30, 1913, and the last discharge measurement at the station was made June 21, 1912. Nothing is known as to the effect of the flood of March 28, 1913, on the discharge relation or of the permanency of the gage since last inspected. Therefore no estimates of discharge subsequent to that date have been prepared for publication.

Cooperation.—Gage maintained and gage-height records furnished by the United States Weather Bureau.

Daily gage height, in feet, of Holston River near Rogersville, Tenn., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	1.8	1.5	1.5	4.0	4.1	5.0	4.5	2.4	4.0	1.8	1.7	1.9
2	1.8	1.6	1.5	3.2	4.1	4.3	4.0	2.3	3.4	2.1	1.8	1.9
3	1.8	1.6	1.6	2.8	3.6	3.8	3.8	2.5	3.4	1.9	2.0	1.8
4	1.7	1.5	2.0	2.8	4.0	3.3	3.6	2.4	3.0	1.9	1.9	1.7
5	1.7	1.5	2.6	2.8	4.3	3.1	3.4	2.4	3.3	2.1	1.8	1.7
6	1.7	1.5	3.1	2.8	4.0	3.0	3.4	2.3	3.2	2.2	1.7	1.6
7	1.6	1.6	2.7	3.8	3.8	2.8	3.3	2.4	2.9	2.1	1.7	1.9
8	1.6	2.2	2.4	3.7	3.3	2.5	3.1	2.4	2.9	1.9	3.7	1.8
9	1.6	2.8	2.1	4.2	3.1	2.4	3.0	2.4	3.8	1.8	2.6	1.8
10	1.6	2.4	2.1	3.8	3.0	2.4	3.0	2.3	3.2	1.7	2.0	1.8
11	1.6	2.0	2.0	3.3	3.0	2.6	2.8	2.3	3.0	1.7	1.9	1.7
12	1.6	1.8	1.9	3.5	4.0	3.1	2.7	2.2	2.7	1.7	1.8	1.7
13	1.6	1.7	1.9	3.9	4.3	3.1	3.8	2.2	2.5	1.9	1.8	1.7
14	1.7	1.7	1.8	4.0	3.6	5.2	4.0	2.1	2.5	1.9	1.7	1.6
15	1.9	1.7	1.8	3.5	3.4	12.0	3.9	2.0	2.4	1.8	1.8	1.6
16	1.9	1.8	1.6	3.1	3.2	12.2	3.9	2.0	2.4	1.9	2.2	1.7
17	1.8	1.7	1.6	2.9	3.1	7.7	3.9	2.6	2.3	1.8	2.0	1.6
18	1.8	1.7	1.7	3.0	2.9	5.3	3.7	3.0	2.2	1.8	1.8	1.7
19	1.8	1.7	1.7	3.2	2.7	4.5	3.5	2.8	2.2	1.8	1.7	1.9
20	1.7	1.7	1.7	3.1	2.5	4.0	3.3	2.5	2.2	1.8	1.8	1.9
21	1.8	1.6	1.6	3.5	2.6	3.8	3.0	2.4	2.1	1.8	1.7	2.0
22	1.7	1.6	1.6	3.7	2.6	4.0	2.8	2.3	2.0	1.9	1.8	2.0
23	1.6	1.5	1.6	3.7	2.6	3.9	2.8	3.0	2.0	1.9	1.9	2.8
24	1.6	1.5	1.7	4.0	2.5	3.6	2.7	5.8	2.0	1.8	2.0	2.2
25	1.6	1.5	1.6	5.9	2.5	3.4	2.7	7.0	2.0	1.7	2.2	2.0
26	1.6	1.5	1.6	5.9	2.4	3.3	2.6	4.7	2.2	1.7	1.9	1.9
27	1.6	1.5	1.6	5.5	3.6	7.4	2.4	4.4	2.1	1.8	1.8	1.8
28	1.6	1.5	1.7	7.8	4.8	19.1	2.4	6.8	2.0	1.8	1.8	1.8
29	1.6	1.6	1.7	6.5	.....	8.5	2.4	6.5	1.9	1.8	1.7	1.8
30	1.6	1.6	2.3	5.0	.....	5.8	2.4	4.9	1.9	1.8	1.7	1.7
31	1.6	.....	3.2	4.3	.....	5.0	.....	4.2	.....	1.7	2.0	.....

Daily discharge, in second-feet, of Holston River near Rogersville, Tenn., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	1,570	1,030	1,030	7,150	7,470	10,600	16	1,760	1,570	1,210	4,500	4,770	39,400
2	1,570	1,210	1,030	4,770	7,470	8,120	17	1,570	1,390	1,210	3,970	4,500	21,400
3	1,570	1,210	1,210	3,720	5,930	6,530	18	1,570	1,390	1,390	4,230	3,970	11,800
4	1,390	1,030	1,950	3,720	7,150	5,050	19	1,570	1,390	1,390	4,770	3,470	8,800
5	1,390	1,030	3,230	3,720	8,120	4,500	20	1,390	1,390	1,390	4,500	3,000	7,150
6	1,390	1,030	4,500	3,720	7,150	4,230	21	1,570	1,210	1,210	5,630	3,230	6,530
7	1,210	1,210	3,470	6,530	6,530	3,720	22	1,390	1,210	1,210	6,230	3,230	7,150
8	1,210	2,350	2,780	6,230	5,050	3,000	23	1,210	1,030	1,210	6,230	3,230	6,840
9	1,210	3,720	2,150	7,790	4,500	2,780	24	1,210	1,030	1,390	7,150	3,000	5,930
10	1,210	2,780	2,150	6,530	4,230	2,780	25	1,210	1,030	1,210	14,200	3,000	5,340
11	1,210	1,950	1,950	5,050	4,230	3,230	26	1,210	1,030	1,210	14,200	2,780	5,050
12	1,210	1,570	1,760	5,630	7,150	4,500	27	1,210	1,030	1,210	12,600	5,930	20,200
13	1,210	1,390	1,760	6,840	8,120	4,500	28	1,210	1,030	1,390	21,800	9,850	.....
14	1,390	1,390	1,570	7,150	5,930	11,400	29	1,210	1,210	1,390	16,600	.....	.....
15	1,760	1,390	1,570	5,630	5,340	38,600	30	1,210	1,210	2,560	10,600	.....	.....
							31	1,210	.....	4,770	8,120	.....	.....

NOTE.—Daily discharge computed from a rating curve fairly well defined between 1,030 and 12,600 second-feet (gage heights 1.5 and 5.5 feet), and assumed as a tangent above 10,600 second-feet (gage height 5.0 feet). See "Accuracy" in station description.

Monthly discharge of Holston River near Rogersville, Tenn., for the year ending Sept. 30, 1913.

[Drainage area, 3,060 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
October	1,760	1,210	1,360	0.444	0.51	B.
November	3,720	1,030	1,410	.461	.51	B.
December	4,770	1,030	1,850	.605	.70	B.
January	21,800	3,720	7,400	2.42	2.79	B.
February	9,850	2,780	5,300	1.73	1.80	B.

DOE RIVER AT BLEVINS, TENN.

Location.—At Eastern Tennessee & Western Northern Carolina Railroad bridge, one-fourth mile west of Blevins, Tenn., 4½ miles above the mouth of Little Doe River.

Records available.—December 16, 1911, to September 30, 1913.

Drainage area.—62.2 square miles.

Gage.—Standard chain gage attached to bridge; read daily, morning and evening, to hundredths. Limits of use: Hundredths below 3.5, half tenths from 3.5 to 5.0, and tenths above 5.0 feet.

Control.—Practically permanent.

Discharge measurements.—Made from upstream side of bridge or by wading at section about one-fourth mile above bridge.

Point of zero flow.—A determination by leveling September 10, 1912, indicates that there would be no flow past the gage if the river were to fall to a stage of about 1.2 feet.

Winter flow.—Discharge relation may be occasionally affected by ice but only for short periods during unusually severe winters.

Accuracy.—Data insufficient for estimates of discharge.

No discharge measurements were made at this station during the year ending September 30, 1913.

Daily gage height, in feet, of Doe River at Blevins, Tenn., for the year ending Sept. 30, 1913.

[O. L. Wright, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	1.74	1.72	2.00	1.98	2.02	2.35	2.28	2.21	2.25	1.85	1.75	1.85
2	1.72	1.72	1.99	1.93	2.00	2.20	2.24	2.14	2.18	1.87	2.09	1.80
3	1.72	1.71	1.88	1.97	2.02	2.15	2.20	2.10	2.15	2.02	2.03	1.80
4	1.72	1.72	1.88	1.96	2.05	2.10	2.18	2.07	2.22	1.98	1.90	1.88
5	1.70	1.69	1.92	1.95	2.07	2.10	2.12	2.05	2.18	1.89	1.78	1.85
6	1.70	1.70	1.92	2.00	2.09	2.09	2.09	2.06	2.15	1.85	1.76	1.82
7	1.70	2.52	1.88	2.03	2.08	2.10	2.08	2.06	2.31	1.84	2.40	1.80
8	1.70	2.06	1.82	2.00	2.08	2.11	2.10	2.15	2.45	1.82	2.25	1.78
9	1.70	1.95	1.79	1.95	2.10	1.98	2.10	2.04	2.38	1.80	2.01	1.80
10	1.69	1.86	1.81	1.96	2.11	2.18	2.05	2.00	2.22	1.80	1.95	1.78
11	1.70	1.83	1.80	1.92	2.15	2.09	2.14	2.00	2.10	1.79	1.90	1.75
12	1.68	1.80	1.75	2.02	1.98	2.08	2.37	1.99	2.08	1.95	1.86	1.76
13	1.70	1.82	1.71	2.00	1.92	2.15	2.50	1.99	2.05	1.90	1.80	1.76
14	1.81	1.87	1.66	2.02	1.94	4.3	2.57	1.98	2.00	1.86	1.92	1.77
15	1.80	1.82	1.64	2.00	1.95	4.2	2.48	1.97	1.98	1.79	1.84	1.78
16	1.70	1.79	1.61	1.96	1.90	3.05	2.48	2.00	1.95	1.80	1.85	1.80
17	1.70	1.78	1.63	1.98	1.95	2.50	2.45	2.13	1.96	1.89	1.80	1.78
18	1.70	1.79	1.75	2.01	1.93	2.35	2.33	2.06	2.00	1.82	1.82	1.90
19	1.77	1.78	1.80	2.00	1.93	2.25	2.25	2.02	1.98	1.75	1.80	1.88
20	1.72	1.74	1.80	2.00	2.03	2.25	2.20	1.99	1.94	1.80	1.80	1.84
21	1.66	1.76	1.80	2.01	2.00	2.65	2.13	2.00	1.90	1.77	1.79	1.93
22	1.70	1.76	1.78	2.05	1.98	2.33	2.11	2.00	1.93	1.75	1.87	2.01
23	1.74	1.75	1.82	2.02	1.95	2.25	2.10	2.49	1.92	1.75	2.05	1.90
24	1.67	1.72	1.80	2.05	1.96	2.20	2.09	3.02	1.90	1.80	1.89	1.88
25	1.70	1.72	1.79	2.29	1.94	2.18	2.05	2.52	1.88	1.90	1.80	1.85
26	1.70	1.74	1.80	2.15	1.95	2.30	2.05	2.67	1.86	1.89	1.80	1.83
27	1.69	1.76	1.92	2.28	2.65	4.75	2.19	2.82	1.84	1.85	1.79	1.81
28	1.68	1.76	1.82	2.60	2.60	3.12	2.28	2.74	1.85	1.81	1.76	1.80
29	1.70	1.72	1.92	2.45	.....	2.60	2.25	2.53	1.86	1.80	1.75	1.80
30	1.68	1.84	2.28	2.13	.....	2.50	2.23	2.42	1.85	1.78	2.05	1.96
31	1.70	.....	1.98	2.12	.....	2.30	.....	2.34	.....	1.75	1.95	.....

NOTE.—Observer reported ice floating in river Jan. 3, 1913. Discharge relation probably not materially affected by ice during the year ending Sept. 30, 1913.

DOE RIVER AT VALLEY FORGE, TENN.

Location.—At Eastern Tennessee & Western North Carolina Railroad bridge at Valley Forge, about 4 miles above the mouth of the river.

Records available.—December 11, 1911, to September 30, 1913.

Drainage area.—132 square miles.

Gage.—Standard chain gage attached to bridge; read daily, morning and evening, to hundredths. Limits of use: Hundredths below 3.5, half-tenths from 3.5 to 5.0, and tenths above 5.0 feet.

Control.—Practically permanent.

Discharge measurements.—Made from upstream side of bridge or by wading at a section about 40 feet above the bridge. The current makes a decided angle with the bridge.

Point of zero flow.—A determination by leveling September 9, 1912, indicated that there would be no flow past the gage if the river were to fall to a stage of about —0.1 foot.

Winter flow.—Ice may affect the discharge relation for short periods, but only during unusually severe winters.

Accuracy.—Data insufficient for estimates of discharge.

No discharge measurements were made at this station during the year ending September 30, 1913.

Daily gage height, in feet, of Doe River at Valley Forge, Tenn., for the year ending Sept. 30, 1913.

[W. C. Garrison, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	1.22	1.10	1.20	1.45	1.60	2.22	2.00	1.90	2.00	1.25	1.12	1.25
2	1.20	1.20	1.34	1.50	1.60	2.00	1.90	1.78	1.98	1.30	1.95	1.18
3	1.16	1.12	1.35	1.45	1.65	1.80	1.82	1.70	1.78	1.82	1.40	1.18
4	1.16	1.10	1.31	1.25	1.80	1.75	1.75	1.62	1.92	1.40	1.20	1.28
5	1.14	1.10	1.34	1.50	1.65	1.72	1.70	1.60	1.75	1.38	1.10	1.28
6	1.14	1.10	1.36	1.60	1.65	1.65	1.65	1.58	1.78	1.30	1.22	1.25
7	1.12	1.94	1.32	1.55	1.50	1.50	1.62	1.62	1.70	1.25	1.30	1.22
8	1.10	1.70	1.26	1.50	1.50	1.55	1.62	1.55	2.32	1.20	2.10	1.18
9	1.10	1.42	1.20	1.50	1.40	1.52	1.62	1.55	2.10	1.20	1.60	1.20
10	1.10	1.32	1.19	1.45	1.50	1.65	1.58	1.50	1.95	1.20	1.45	1.18
11	1.10	1.26	1.22	1.45	1.60	1.72	1.58	1.48	1.80	1.30	1.32	1.12
12	1.08	1.21	1.20	1.50	1.90	1.70	2.00	1.42	1.75	1.38	1.28	1.12
13	1.10	1.19	1.06	1.60	1.35	1.70	2.05	.....	1.65	1.28	1.22	1.10
14	1.24	1.35	1.15	1.50	1.40	5.5	2.08	.....	1.60	1.20	1.40	1.10
15	1.28	1.24	1.21	1.50	1.25	4.6	2.02	.....	1.55	1.20	1.25	1.10
16	1.15	1.20	1.21	1.48	1.45	3.30	2.15	.....	1.38	1.18	1.30	1.25
17	1.12	1.14	1.16	1.45	1.55	2.45	2.10	1.68	1.35	1.35	1.20	1.30
18	1.12	1.18	1.22	1.42	1.52	2.20	1.95	1.68	1.40	1.30	1.20	1.25
19	1.20	1.18	1.19	1.62	1.48	2.02	1.85	1.55	1.45	1.20	1.20	1.30
20	1.18	1.18	1.04	1.55	1.50	1.95	1.85	1.55	1.42	1.20	1.25	1.28
21	1.11	1.16	1.12	1.65	1.60	1.88	1.78	1.52	1.40	1.20	1.20	2.00
22	1.11	1.15	1.10	1.75	1.55	2.05	1.65	1.55	1.38	1.15	1.18	1.60
23	1.20	1.15	1.10	1.65	1.55	1.95	1.60	2.10	1.35	1.10	1.42	1.30
24	1.18	1.15	1.19	1.70	1.48	1.85	1.58	3.40	1.42	1.10	1.30	1.30
25	1.10	1.14	.95	2.20	1.48	1.80	1.55	2.50	1.32	1.25	1.20	1.25
26	1.10	1.10	1.15	2.00	1.45	1.75	1.52	2.15	1.30	1.35	1.18	1.25
27	1.09	1.06	1.30	2.30	2.00	5.5	1.55	3.10	1.30	1.30	1.15	1.20
28	1.10	1.11	1.10	2.70	2.62	3.30	1.80	3.10	1.28	1.20	1.15	1.20
29	1.10	1.22	1.25	2.35	.....	2.30	1.95	2.60	1.28	1.25	1.10	1.30
30	1.10	1.19	1.60	1.98	.....	2.30	1.98	2.30	1.25	1.22	2.20	1.65
31	1.10	.....	1.52	1.80	.....	2.20	.....	2.08	.....	1.15	1.30	.....

NOTE.—Observer made no notes concerning ice. Discharge relation probably not affected by ice during the year ending Sept. 30, 1913.

LITTLE TENNESSEE RIVER AT McGHEE, TENN.

Location.—At Louisville & Nashville Railroad bridge one-third mile south of McGhee and half a mile below the mouth of Tellico River.

Records available.—November 29, 1904, to September 30, 1913.

Drainage area.—2,470 square miles.

Gage.—Chain gage on crossties, upstream side of the railroad bridge, owned by United States Weather Bureau; read once daily to tenths. Prior to December 1, 1905, the same gage was on the old railroad bridge 1,000 feet below. The present datum is 0.3 foot higher than the original datum, allowing for slope in river measured at gage height 4 feet.

Control.—Practically permanent.

Discharge measurements.—Made from the downstream side of the railroad bridge.

Floods.—The flood of February 22, 1906, reached a height of 22.2 feet by the gage datum. The United States Weather Bureau reports a height of 39 feet March, 1867, and 38.5 feet in 1884.

Point of zero flow.—Report of the United States Engineers shows the controlling ledge below the gage to be about 2.5 feet lower than low water at the gage. The assumption that their low water is the same as lowest records places the point of zero flow at about −0.3 foot by gage datum.

Winter flow.—Ice does not affect the discharge relation.

Accuracy.—No discharge measurements have been made at this station since November 3, 1911, and the accuracy of estimates of discharge depends, therefore, on the permanency of the gage and of the discharge relation since that date.

Cooperation.—Gage-height records furnished by the United States Weather Bureau.

Daily gage height, in feet, of Little Tennessee River at McGhee, Tenn., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	3.1	2.7	2.6	4.3	6.0	8.1	7.8	4.1	4.6	2.8	3.0	2.6
2	3.1	2.9	2.6	4.1	5.2	6.4	6.9	4.0	4.6	3.2	3.4	2.4
3	3.0	3.2	3.1	4.5	5.0	5.6	6.4	3.9	4.2	3.4	3.6	2.4
4	3.0	2.8	3.7	4.4	5.9	5.3	6.0	3.9	4.1	3.4	3.4	2.4
5	2.9	2.7	4.2	4.2	5.4	5.0	5.9	3.8	4.0	3.2	3.0	2.2
6	2.9	2.7	6.8	4.2	5.1	4.8	5.6	3.8	4.0	3.2	2.8	2.6
7	2.9	3.1	5.6	4.7	4.8	4.6	5.3	3.7	4.0	3.2	3.2	2.8
8	2.8	4.3	4.4	4.7	4.6	4.4	5.2	3.9	4.2	3.0	3.0	2.6
9	2.8	3.7	3.9	4.5	4.4	4.3	5.1	4.0	4.5	2.8	3.0	2.4
10	2.8	3.2	3.5	4.5	4.3	4.5	4.9	3.9	4.9	2.8	3.4	2.4
11	2.8	3.0	3.5	4.2	4.5	6.4	4.8	3.8	4.3	2.8	3.0	2.6
12	2.7	3.0	3.4	4.5	10.3	5.8	5.9	3.7	4.0	3.4	3.0	2.4
13	3.1	2.9	3.4	5.5	7.2	5.2	5.6	3.6	3.8	4.4	2.8	2.2
14	3.3	2.9	3.3	5.1	5.8	15.1	5.1	3.6	3.7	3.4	2.8	2.2
15	3.5	2.9	3.2	5.0	5.3	17.5	5.2	3.5	3.6	3.0	3.2	2.4
16	3.3	2.9	3.2	4.4	4.9	12.9	5.6	3.6	3.5	2.8	3.0	2.6
17	3.1	2.8	3.1	4.1	4.7	9.6	5.1	3.9	3.5	2.8	3.0	2.4
18	2.8	2.8	3.2	5.1	4.4	7.9	5.1	4.0	3.4	2.8	2.8	3.0
19	2.8	2.8	3.4	5.5	4.2	7.1	4.9	3.8	3.5	2.8	2.6	2.8
20	3.9	2.8	3.3	4.7	4.2	6.5	4.9	3.7	3.8	2.6	2.6	2.6
21	3.4	2.8	3.1	4.5	4.7	6.7	4.8	3.6	3.6	2.6	3.0	2.8
22	3.2	2.7	3.0	5.3	4.6	8.7	4.5	3.5	3.4	2.6	3.2	3.0
23	3.0	2.7	3.0	4.7	4.4	6.7	4.4	4.6	3.5	2.6	3.0	3.0
24	3.0	2.7	3.9	5.0	4.3	6.1	4.3	13.5	3.5	2.6	2.8	2.8
25	2.9	2.7	3.6	10.1	4.1	5.8	4.3	7.4	3.4	3.2	2.8	2.6
26	2.9	2.7	3.4	7.1	4.0	5.8	4.2	5.6	3.4	3.0	2.6	2.4
27	2.8	2.6	3.3	6.7	5.7	13.7	4.4	5.0	3.3	3.2	2.4	2.4
28	2.8	2.6	3.7	10.4	15.1	17.4	4.3	5.8	3.3	3.4	2.4	2.4
29	2.7	2.6	3.4	7.2	.....	11.1	4.2	5.2	3.2	3.4	2.4	2.4
30	2.7	2.6	3.6	6.0	.....	9.1	4.2	5.0	3.1	3.0	2.6	2.6
31	2.7	.....	6.5	5.6	.....	8.5	.....	4.6	.....	3.0	2.8	.....

Daily discharge, in second-feet, of Little Tennessee River at McGhee, Tenn., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	3,200	2,420	2,250	6,220	11,200	17,800	16,900	5,680	7,060	2,600	2,990	2,250
2	3,200	2,790	2,250	5,680	8,820	12,500	14,000	5,410	7,060	3,420	3,890	1,940
3	2,990	3,420	3,200	6,780	8,220	10,000	12,500	5,150	5,950	3,890	4,380	1,940
4	2,990	2,600	4,630	6,500	10,900	9,120	11,200	5,150	5,680	3,890	3,890	1,940
5	2,790	2,420	5,950	5,950	9,420	8,220	10,900	4,890	5,410	3,420	2,990	1,650
6	2,790	2,420	13,700	5,950	8,520	7,640	10,000	4,890	5,410	3,420	2,600	2,250
7	2,790	3,200	10,000	7,350	7,640	7,060	9,120	4,630	5,410	3,420	3,420	2,600
8	2,600	6,220	6,500	7,350	7,060	6,500	8,820	5,150	5,950	2,990	2,990	2,250
9	2,600	4,630	5,150	6,780	6,500	6,220	8,520	5,410	6,780	2,600	2,990	1,940
10	2,600	3,420	4,130	6,780	6,220	6,780	7,930	5,150	7,930	2,600	3,890	1,940
11	2,600	2,990	4,130	5,950	6,780	12,500	7,640	4,890	6,220	2,600	2,990	2,250
12	2,420	2,990	3,890	6,780	25,300	10,600	10,900	4,630	5,410	3,890	2,990	1,940
13	3,200	2,790	3,890	9,720	15,000	8,820	10,000	4,380	4,890	6,500	2,600	1,650
14	3,650	2,790	3,650	8,520	10,600	43,000	8,520	4,380	4,630	3,890	2,600	1,650
15	4,130	2,790	3,420	8,220	9,120	52,100	8,820	4,130	4,380	2,990	3,420	1,940
16	3,650	2,790	3,420	6,500	7,930	34,600	10,000	4,380	4,130	2,600	2,990	2,250
17	3,200	2,600	3,200	5,680	7,350	22,900	8,520	5,150	4,130	2,600	2,990	1,940
18	2,600	2,600	3,420	8,520	6,500	17,200	8,520	5,410	3,890	2,600	2,600	2,990
19	2,600	2,600	3,890	9,720	5,950	14,600	7,930	4,890	4,130	2,600	2,250	2,600
20	5,150	2,600	3,650	7,350	5,950	12,800	7,930	4,630	4,890	2,250	2,250	2,250
21	3,890	2,600	3,200	6,780	7,350	13,400	7,640	4,380	4,380	2,250	2,990	2,600
22	3,420	2,420	2,990	9,120	7,060	19,800	6,780	4,130	3,890	2,250	3,420	2,990
23	2,990	2,420	2,990	7,350	6,500	13,400	6,500	7,060	4,130	2,250	2,990	2,990
24	2,990	2,420	5,150	8,220	6,220	11,500	6,220	36,900	4,130	2,250	2,600	2,600
25	2,790	2,420	4,380	24,600	5,680	10,600	6,220	15,600	3,890	3,420	2,600	2,250
26	2,790	2,420	3,890	14,600	5,410	10,600	5,950	10,000	3,890	2,990	2,250	1,940
27	2,600	2,250	3,650	13,400	10,300	37,700	6,500	8,220	3,650	3,420	1,940	1,940
28	2,600	2,250	4,630	25,600	43,000	51,700	6,220	10,600	3,650	3,890	1,940	1,940
29	2,420	2,250	3,890	15,000	.....	28,100	5,950	8,820	3,420	3,890	1,940	1,940
30	2,420	2,250	4,380	11,200	.....	21,200	5,950	8,220	3,200	2,990	2,250	2,250
31	2,420	.....	12,800	10,000	.....	19,200	.....	7,060	.....	2,990	2,600	.....

NOTE.—Daily discharge computed from a rating curve fairly well defined between 1,390 and 1,650 second-feet (gage heights, 2 and 2.2 feet), well defined between 1,790 and 8,820 second-feet (gage heights, 2.3 and 5.2 feet), and fairly well defined between 9,120 and 24,200 second-feet (gage heights, 5.3 and 10 feet). Above gage height 13 feet the rating curve is extended as a tangent, the difference being 380 per tenth. See "Accuracy" in station description.

Monthly discharge of Little Tennessee River at McGhee, Tenn., for the year ending Sept. 30, 1913.

[Drainage area, 2,470 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
October	5,150	2,420	3,000	1.21	1.40	A.
November	6,220	2,250	2,830	1.15	1.28	A.
December	13,700	2,250	4,720	1.91	2.20	A.
January	25,600	5,680	9,300	3.77	4.35	B.
February	43,000	5,410	9,880	4.00	4.16	C.
March	52,100	6,220	18,000	7.29	8.40	C.
April	16,900	5,950	8,750	3.54	3.95	B.
May	36,900	4,130	7,080	2.87	3.31	B.
June	7,930	3,200	4,920	1.99	2.22	B.
July	6,500	2,250	3,140	1.27	1.46	B.
August	4,380	1,940	2,880	1.17	1.35	B.
September	2,990	1,650	2,190	.887	.99	B.
The year	52,100	1,650	6,380	2.58	35.07	

TUCKASEGEE RIVER AT BRYSON, N. C.

Location.—At highway bridge in the town of Bryson, half a mile below the mouth of Deep Creek and about 15 miles above the junction of Tuckasegee River with Little Tennessee River.

Records available.—November 7, 1897, to September 30, 1913.

Drainage area.—662 square miles.

Gage.—Vertical staff attached to the right bank bridge pier; read daily, morning and evening, to half tenths. Limits of use: Hundredths below 1.5, half-tenths from 1.5 to 2.5, and tenths above 2.5 feet.

Control.—Bowlders. Probably changes slightly after each flood, but change appears to be temporary as conditions quickly return to normal.

Discharge measurements.—Made from the downstream side of the bridge.

Floods.—The flood of March 19, 1899, reached a height of 11.0 feet.

Winter flow.—Discharge relation not affected by ice.

Accuracy.—Excellent for low and ordinary stages; discharge rating curves not so well defined for high stages, as they depend on one discharge measurement made in 1901.

No discharge measurements were made at this station during the year ending September 30, 1913.

Daily gage height, in feet, of Tuckasegee River at Bryson, N. C., for the year ending Sept. 30, 1913.

[J. M. Welch, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	1.48	1.30	1.20	1.8	2.4	2.8	3.1	1.9	2.0	1.5	1.7	1.22
2	1.40	1.30	1.40	1.7	2.15	2.5	2.9	1.85	1.9	1.45	1.8	1.20
3	1.40	1.25	1.5	1.75	2.6	2.3	2.8	1.8	1.9	1.6	1.6	1.18
4	1.40	1.28	1.65	1.6	2.6	2.1	2.7	1.8	1.9	1.8	1.45	1.18
5	1.45	1.30	2.4	1.6	2.3	2.1	2.6	1.75	2.0	1.55	1.40	1.35
6	1.35	1.6	2.8	1.65	2.2	2.1	2.5	1.7	1.9	1.45	1.7	1.40
7	1.32	1.85	2.0	1.8	2.1	2.0	2.5	1.75	1.85	1.40	1.45	1.30
8	1.30	1.8	1.7	1.8	2.0	1.9	2.35	1.8	2.4	1.35	1.42	1.25
9	1.30	1.55	1.6	1.8	1.9	1.9	2.3	1.9	2.2	1.35	1.75	1.25
10	1.30	1.40	1.5	1.7	1.9	2.3	2.25	1.8	2.05	1.30	1.5	1.22
11	1.30	1.35	1.5	1.65	2.6	2.3	2.7	1.7	1.9	1.38	1.65	1.12
12	1.25	1.30	1.45	2.8	3.0	2.2	3.1	1.7	1.8	2.0	1.5	1.15
13	1.25	1.30	1.45	2.2	2.35	2.3	2.5	1.65	1.8	1.65	1.40	1.15
14	1.5	1.30	1.38	1.95	2.2	7.0	2.4	1.65	1.7	1.48	1.8	1.30
15	1.55	1.30	1.35	1.8	2.1	5.9	2.45	1.65	1.7	1.40	1.55	1.30
16	1.35	1.25	1.35	1.75	2.0	4.2	2.45	1.7	1.6	1.40	1.45	1.40
17	1.30	1.25	1.35	1.7	2.0	3.5	2.4	1.8	1.6	1.38	1.42	1.6
18	1.30	1.25	1.5	2.25	1.45	3.1	2.4	1.7	1.6	1.40	1.30	1.48
19	1.7	1.25	1.45	1.95	1.85	2.8	2.4	1.65	1.8	1.40	1.30	1.42
20	1.6	1.25	1.35	1.8	2.0	2.8	2.3	1.65	1.6	1.30	1.6	1.32
21	1.40	1.25	1.35	1.9	2.2	3.2	2.2	1.6	1.6	1.25	1.5	2.0
22	1.35	1.25	1.35	1.8	2.0	3.0	2.1	1.6	1.7	1.28	1.6	1.55
23	1.35	1.25	1.40	1.8	1.9	2.8	2.05	3.9	1.6	1.35	1.5	1.40
24	1.32	1.25	1.40	2.15	1.9	2.6	2.0	3.6	1.6	1.25	1.42	1.30
25	1.30	1.20	1.45	2.9	1.8	2.6	2.0	2.6	1.6	1.40	1.30	1.30
26	1.30	1.20	1.38	2.4	2.9	3.5	1.95	2.25	1.6	1.6	1.25	1.25
27	1.28	1.20	1.5	3.6	5.6	9.3	2.0	2.3	1.5	1.8	1.25	1.20
28	1.30	1.22	1.42	3.2	3.4	5.0	2.0	2.8	1.5	1.75	1.20	1.20
29	1.30	1.15	1.40	2.7	.....	4.2	1.9	2.3	1.55	1.6	1.25	1.32
30	1.45	1.20	2.6	2.4	.....	3.8	1.95	2.15	1.55	1.5	1.55	1.55
31	1.32	.....	2.15	2.7	.....	3.4	.....	1.7	.....	1.55	1.28	.....

Daily discharge, in second-feet, of Tuckasegee River at Bryson, N. C., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	906	700	600	1,350	2,340	3,090	3,690	1,500	1,660	930	1,200	620
2	810	700	810	1,200	1,900	2,520	3,290	1,420	1,500	870	1,350	600
3	810	650	930	1,280	2,710	2,160	3,090	1,350	1,500	1,060	1,060	580
4	810	680	1,130	1,060	2,710	1,820	2,900	1,350	1,500	1,350	870	580
5	870	700	2,340	1,060	2,160	1,820	2,710	1,280	1,660	995	810	755
6	755	1,060	3,090	1,130	1,990	1,820	2,520	1,200	1,500	870	1,200	810
7	722	1,420	1,660	1,350	1,820	1,660	2,520	1,280	1,420	810	870	700
8	700	1,350	1,200	1,350	1,660	1,500	2,250	1,350	2,340	755	834	650
9	700	995	1,060	1,350	1,500	1,500	2,160	1,500	1,990	755	1,280	650
10	700	810	930	1,200	1,500	2,160	2,080	1,350	1,740	700	930	620
11	700	755	930	1,130	2,710	2,160	2,900	1,200	1,500	788	1,130	520
12	650	700	870	3,090	3,490	1,990	3,690	1,200	1,350	1,660	930	550
13	650	700	870	1,990	2,250	2,160	2,520	1,130	1,350	1,130	810	550
14	930	700	788	1,580	1,990	19,000	2,340	1,130	1,200	906	1,350	700
15	995	700	755	1,350	1,820	12,600	2,430	1,130	1,200	810	995	700
16	755	650	755	1,280	1,660	6,350	2,430	1,200	1,060	810	870	810
17	700	650	755	1,200	1,660	4,560	2,340	1,350	1,060	788	834	1,060
18	700	650	930	2,080	870	3,690	2,340	1,200	1,060	810	700	906
19	1,200	650	870	1,580	1,420	3,090	2,340	1,130	1,350	810	700	834
20	1,060	650	755	1,350	1,660	3,090	2,160	1,130	1,060	700	1,060	722
21	810	650	755	1,500	1,990	3,900	1,990	1,060	1,060	650	930	1,660
22	755	650	755	1,350	1,660	3,490	1,820	1,060	1,200	680	1,060	995
23	755	650	810	1,350	1,500	3,090	1,740	5,540	1,060	755	930	810
24	722	650	810	1,900	1,500	2,710	1,660	4,800	1,060	650	834	700
25	700	600	870	3,290	1,350	2,710	1,660	2,710	1,060	810	700	700
26	700	600	788	2,340	3,290	4,560	1,580	2,080	1,060	1,060	650	650
27	680	600	930	4,800	11,100	32,300	1,660	2,160	930	1,350	650	600
28	700	620	834	3,900	4,330	8,800	1,660	3,090	930	1,280	600	600
29	700	550	810	2,900	.....	6,350	1,500	2,160	995	1,060	650	722
30	870	600	2,710	2,340	.....	5,290	1,580	1,900	995	930	995	995
31	722	.....	1,900	2,900	.....	4,330	.....	1,200	.....	995	680	.....

NOTE.—Daily discharge determined by means of a discharge rating curve that is well defined below 3,460 second-feet (gage height, 3.0 feet) and poorly defined above that point.

Monthly discharge of Tuckasegee River at Bryson, N. C., for the year ending Sept. 30, 1913.

[Drainage area, 662 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
October	1,200	650	782	1.18	1.36	A.
November	1,420	550	735	1.11	1.24	B.
December	3,090	600	1,100	1.66	1.91	B.
January	4,800	1,060	1,860	2.81	3.24	B.
February	11,100	870	2,380	3.60	3.75	C.
March	32,300	1,500	5,040	7.61	8.77	C.
April	3,690	1,500	2,320	3.50	3.90	A.
May	5,540	1,060	1,710	2.58	2.97	B.
June	2,340	930	1,310	1.98	2.21	A.
July	1,660	650	920	1.39	1.60	A.
August	1,350	600	918	1.39	1.60	A.
September	1,660	520	745	1.13	1.26	B.
The year	32,300	520	1,650	2.49	33.81	

HIWASSEE RIVER AT MURPHY, N. C.

Location.—At highway bridge near the Louisville & Nashville Railroad station half a mile above the mouth of Valley River.

Records available.—June 26, 1896, to August 8, 1897; October 19, 1897, to September 30, 1913.

Drainage area.—410 square miles.

Gage.—Chain gage attached to downstream side of bridge; read once daily to half-tenths. Limits of use: Half-tenths below 7.0 and tenths above 7.0. Original wire-rope gage was near the same point on bridge. Datum unchanged since October 20, 1897. Record of datum of former gage lost when wire rope broke August 8, 1897.

Control.—Rock and gravel; less permanent than the channel at measuring section, at which the bottom is rough and rocky. Discharge relation also changed to some extent by rebuilding railroad bridge piers 80 feet downstream, but relation has been apparently constant since.

Discharge measurements.—Made from upstream side of bridge.

Floods.—The flood of March 19, 1899, reached a height of 18.4 feet.

Point of zero flow.—Approximately at gage height 4.4 feet.

Winter flow.—Not affected by ice.

Regulation.—The few small mill dams on the stream are so far upstream that diurnal fluctuation is practically nil.

Accuracy.—No discharge measurements were made at this station during the year ending September 30, 1913, but six measurements made in 1914 made it desirable to revise the rating curve. The new rating used, beginning January 1, 1913, probably applies to the years 1909–1912. The maximum difference between the two ratings is about 7 per cent and occurs at gage height 7.2 feet, discharge about 2,270 second-feet, the new curve giving the smaller discharge. Discharge data published for 1909–1912 should be revised, if considered necessary, by those using them. The maximum difference in the monthly means is about 6 per cent.

Daily gage height, in feet, of Hiwassee River at Murphy, N. C., for the year ending Sept. 30, 1913.

[Miss Willie Mingus, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	5.4	5.3	5.25	5.75	6.25	6.85	6.8	5.8	5.7	5.55	5.5	5.05
2	5.35	5.5	5.25	5.65	6.05	6.5	6.8	5.7	5.7	5.40	5.45	5.05
3	5.3	5.3	5.5	5.8	6.05	6.2	6.7	5.7	5.6	5.35	5.30	5.05
4	5.3	5.3	5.35	5.7	6.25	6.2	6.6	5.7	5.6	5.5	5.25	5.5
5	5.45	5.3	5.95	5.7	6.2	6.05	6.5	5.7	5.55	5.75	5.20	5.10
6	5.35	5.25	6.55	5.65	6.1	6.0	6.45	5.65	5.6	5.40	5.25	5.30
7	5.3	5.6	6.05	5.6	6.0	6.0	6.4	5.65	5.9	5.30	5.20	5.10
8	5.3	5.7	5.8	5.55	5.95	5.9	6.35	5.95	5.6	5.25	5.5	5.05
9	5.25	5.5	5.65	5.75	5.85	5.9	6.25	5.85	7.6	5.25	5.6	5.05
10	5.25	5.45	5.55	5.7	5.8	6.45	6.25	5.8	7.6	5.25	5.45	5.20
11	5.2	5.4	5.5	5.7	6.1	6.85	6.4	5.65	5.9	5.25	5.40	5.20
12	5.2	5.4	5.5	6.0	6.65	6.5	6.25	5.6	5.8	6.2	5.25	5.05
13	5.2	5.35	5.5	6.25	6.8	6.3	6.2	5.6	5.8	5.7	5.20	5.05
14	5.3	5.6	5.4	6.0	6.55	13.0	6.2	5.6	5.7	5.5	5.20	5.10
15	5.5	5.4	5.4	5.8	6.3	11.0	6.3	5.6	5.65	5.40	5.20	5.05
16	5.3	5.35	5.4	5.8	6.1	8.7	6.2	5.7	5.6	5.40	5.40	5.10
17	5.2	5.3	5.35	5.7	6.05	7.4	6.1	6.0	5.55	5.30	5.25	5.15
18	5.2	5.3	5.5	5.85	6.0	7.2	6.05	5.75	5.5	5.25	5.20	5.10
19	5.5	5.3	5.4	5.85	5.9	6.85	6.05	5.6	5.55	5.35	5.15	5.15
20	6.1	5.3	5.4	5.75	6.0	6.8	6.0	5.7	5.5	5.20	5.5	5.10
21	5.6	5.3	5.35	5.8	6.1	6.8	5.95	5.6	5.65	5.20	5.55	5.5
22	5.5	5.3	5.35	5.8	6.05	7.1	5.9	5.55	5.45	5.20	5.30	5.25
23	5.5	5.3	5.35	5.75	5.95	6.8	5.9	6.0	5.5	5.15	5.25	5.00
24	5.4	5.25	5.5	5.85	5.9	6.7	5.9	7.4	5.5	5.20	5.20	5.10
25	5.55	5.25	5.45	7.0	8.0	6.6	5.85	6.4	5.55	5.20	5.20	5.05
26	5.25	5.25	5.45	6.4	5.8	6.55	5.85	6.0	5.45	5.20	5.10	5.00
27	5.3	5.25	5.5	7.9	5.85	11.8	5.9	5.6	5.5	5.65	5.10	5.05
28	5.3	5.25	5.5	7.8	7.6	8.7	5.9	5.95	5.85	5.35	5.10	5.00
29	5.3	5.25	5.5	6.75	.....	7.7	5.85	5.8	5.4	5.30	5.10	5.05
30	5.25	5.25	5.55	6.35	.....	7.4	5.8	7.1	5.5	5.35	5.5	6.0
31	5.25	.....	5.85	6.35	.....	7.2	.....	5.7	.....	5.35	5.15	.....

Daily discharge, in second-feet, of Hiwassee River at Murphy, N. C., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	475	405	370	730	1,160	1,810	1,750	770	690	570	530	232
2	440	550	370	650	975	1,420	1,750	690	690	455	492	232
3	405	405	550	770	975	1,110	1,640	690	610	420	385	232
4	405	405	440	690	1,160	1,110	1,530	690	610	530	352	530
5	512	405	930	690	1,110	975	1,420	690	570	730	320	260
6	440	370	1,550	650	1,020	930	1,360	650	610	455	352	385
7	405	630	1,020	610	930	930	1,310	650	850	385	320	260
8	405	710	795	570	890	850	1,260	890	610	352	530	232
9	370	550	670	730	810	850	1,160	810	2,930	352	610	232
10	370	512	590	690	770	1,360	1,160	770	2,930	352	492	320
11	335	475	550	690	1,020	1,810	1,310	650	850	352	455	320
12	335	475	550	930	1,580	1,420	1,160	610	770	1,110	352	232
13	335	440	550	1,160	1,750	1,210	1,110	610	770	690	320	232
14	405	630	475	930	1,480	15,400	1,110	610	690	530	320	260
15	550	475	475	770	1,210	10,400	1,210	610	650	455	320	232
16	405	440	475	770	1,020	5,120	1,110	690	610	455	455	260
17	335	405	440	690	975	2,580	1,020	930	570	385	352	290
18	335	405	550	810	930	2,270	975	730	530	352	320	260
19	550	405	475	810	850	1,810	975	610	570	420	290	290
20	1,070	405	475	730	930	1,750	930	690	530	320	530	260
21	630	405	440	770	1,020	1,750	890	610	650	320	570	530
22	550	405	440	770	975	2,130	850	570	492	320	385	352
23	550	405	440	730	890	1,750	850	930	530	290	352	205
24	475	370	550	810	850	1,640	850	2,580	530	320	320	260
25	590	370	512	2,000	3,700	1,530	810	1,310	570	320	320	232
26	370	370	512	1,310	770	1,480	810	930	492	320	260	205
27	405	370	550	3,500	810	12,400	850	610	530	650	260	232
28	405	370	550	3,310	2,930	5,120	850	890	810	420	260	205
29	405	370	550	1,700	.....	3,120	810	770	455	385	260	232
30	370	370	590	1,260	.....	2,580	770	2,130	530	420	530	930
31	370	.....	840	1,260	.....	2,270	.....	690	.....	420	290	.....

NOTE.—Daily discharge computed from a rating curve well defined below 3,700 second-feet (gage height, 8.0 feet). Above gage height 10.5 feet the rating curve is a tangent, the difference being 250 per tenth.

Monthly discharge of Hiwassee River at Murphy, N. C., for the year ending Sept. 30, 1913.

[Drainage area, 410 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
October	1,070	335	452	1.10	1.27	A.
November	710	370	443	1.08	1.20	A.
December	1,550	370	589	1.44	1.66	A.
January	3,500	570	1,050	2.56	2.95	A.
February	3,700	770	1,200	2.93	3.05	B.
March	15,400	850	2,930	7.15	8.24	B.
April	1,750	770	1,120	2.73	3.05	A.
May	2,580	570	841	2.05	2.36	B.
June	2,930	455	774	1.89	2.11	A.
July	1,110	290	447	1.09	1.26	A.
August	610	260	384	.937	1.08	A.
September	930	205	298	.727	.81	A.
The year	15,400	205	877	2.14	29.04	

NOTE.—See "Accuracy" under station description.

HIWASSEE RIVER AT RELIANCE, TENN.

Location.—At Louisville & Nashville Railroad bridge at Reliance, Tenn., 1 mile below the mouth of Lost Creek and 2 miles above Spring Creek.

Records available.—August 17, 1900, to September 30, 1913.

Drainage area.—1,180 square miles.

Gage.—Vertical staff attached to a tree on right bank 150 feet above the bridge; read once daily to half-tenths. Limits of use: Half-tenths below 2.5, and tenths above 2.5 feet.

Control.—A rock ledge crosses the river diagonally. The lower end of the natural dam has been built up to some extent to pond the water for a small mill.

Discharge measurements.—Made from the upstream side of 5-span steel highway bridge 1,000 feet below gage.

Floods.—The flood of November 19, 1906, reached a height of 15.2 feet.

Winter flow.—Not affected by ice.

Regulation.—None above. The operation of a small mill below may affect the low-water flow.

Accuracy.—Estimates of discharge subsequent to March 26, 1913, not prepared for publication, as it is assumed that the change in the discharge relation indicated by the discharge measurement made May 15, 1913, was caused by the rise of March 27, and data are insufficient to determine a new discharge rating curve.

The following discharge measurement was made by W. E. Hall and B .M. Hall, jr.: May 15, 1913: Gage height, 1.65 feet; discharge, 1,770 second-feet.

Daily gage height, in feet, of Hiwassee River at Reliance, Tenn., for the year ending Sept. 30, 1913.

[C. V. Higdon, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	1.4	1.3	1.25	2.05	2.8	3.7	3.8	2.0	1.8	1.6	1.4	1.0
2	1.4	1.3	1.25	2.4	2.4	2.9	2.9	1.85	1.85	1.45	1.5	1.0
3	1.65	1.4	1.35	1.95	2.4	2.6	2.9	1.8	1.8	1.4	1.6	.95
4	1.65	1.35	1.5	2.25	2.5	2.6	2.8	1.85	1.75	1.4	1.5	.95
5	1.7	1.3	1.55	2.0	2.5	2.5	2.7	1.75	1.65	1.75	1.3	1.0
6	1.4	1.35	2.7	1.9	2.4	2.3	2.5	1.75	1.75	1.6	1.2	1.0
7	1.25	1.45	2.4	1.85	2.25	2.3	2.6	1.9	1.75	1.5	1.3	1.0
8	1.3	2.2	2.0	1.9	2.15	2.1	2.5	1.9	2.5	1.4	1.35	1.0
9	1.2	1.7	1.8	2.05	2.05	2.1	2.4	1.9	2.6	1.2	1.35	1.0
10	1.25	1.45	1.7	1.95	2.15	2.25	2.45	1.95	3.0	1.2	1.65	.95
11	1.25	1.45	1.6	1.9	2.15	2.0	2.4	1.9	2.25	1.35	1.5	1.2
12	1.2	1.45	1.55	1.8	4.8	2.7	2.4	1.7	2.0	1.5	1.35	1.0
13	1.2	1.4	1.5	2.7	3.4	3.0	2.35	1.75	1.9	2.0	1.2	.95
14	1.25	1.4	1.4	2.4	2.9	8.6	2.5	1.75	1.3	1.5	1.2	.95
15	1.7	1.4	1.4	2.15	2.45	7.9	2.5	1.65	1.25	1.35	1.2	.95
16	1.5	1.35	1.4	2.0	2.45	5.8	2.5	1.7	1.2	1.3	1.2	1.0
17	1.3	1.35	1.4	1.95	2.35	4.6	2.4	1.85	1.6	1.3	1.5	1.0
18	1.3	1.35	1.55	2.2	2.2	4.1	2.2	2.0	1.6	1.25	1.2	1.0
19	1.5	1.35	1.65	2.1	2.2	3.1	2.1	1.75	1.7	1.15	1.15	1.05
20	3.2	1.3	1.6	2.4	2.2	3.2	2.2	1.7	1.6	1.15	1.1	1.05
21	1.9	1.3	1.5	2.6	2.6	3.1	2.2	1.7	1.55	1.1	1.3	1.2
22	1.65	1.3	1.4	2.2	2.35	3.7	2.05	1.7	1.65	1.1	1.35	1.7
23	1.45	1.3	1.4	2.05	2.3	3.1	2.05	3.3	1.65	1.0	1.2	1.25
24	1.5	1.25	1.6	2.6	2.2	3.0	2.1	4.8	1.6	1.1	1.2	1.1
25	1.45	1.3	1.75	4.2	2.15	2.7	1.95	2.8	1.45	1.2	1.15	1.0
26	1.4	1.3	1.6	3.0	2.05	2.7	2.0	2.8	1.45	1.25	1.05	.95
27	1.35	1.3	1.6	3.5	4.5	8.6	2.1	2.15	1.45	1.35	1.0	.95
28	1.3	1.25	1.7	4.2	5.6	6.8	2.05	2.15	1.45	2.2	1.05	.95
29	1.3	1.25	1.6	3.2	.....	4.2	2.0	2.0	1.45	1.7	1.05	1.0
30	1.3	1.25	1.8	3.2	.....	3.8	2.0	1.9	1.4	1.35	1.05	1.2
31	1.3	.....	2.2	2.7	.....	3.8	.....	1.85	.....	1.3	1.0	.....

Daily discharge, in second-feet, of Hiwassee River at Reliance, Tenn., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	1,180	1,040	975	2,370	4,300	7,300	16	1,330	1,110	1,180	2,260	3,330	15,800
2	1,180	1,040	975	3,200	3,200	4,600	17	1,040	1,110	1,180	2,160	3,080	10,700
3	1,580	1,180	1,110	2,160	3,200	3,730	18	1,040	1,110	1,410	2,710	2,710	8,780
4	1,580	1,110	1,330	2,830	3,460	3,730	19	1,330	1,110	1,580	2,480	2,710	5,230
5	1,660	1,040	1,410	2,260	3,460	3,460	20	5,560	1,040	1,490	3,200	2,710	5,560
6	1,180	1,110	4,010	2,050	3,200	2,950	21	2,050	1,040	1,330	3,730	3,730	5,230
7	975	1,260	3,200	1,950	2,830	2,950	22	1,580	1,040	1,180	2,710	3,080	7,300
8	1,040	2,710	2,260	2,050	2,600	2,480	23	1,260	1,040	1,180	2,370	2,950	5,230
9	910	1,660	1,850	2,370	2,370	2,480	24	1,330	975	1,490	3,730	2,710	4,910
10	975	1,260	1,660	2,160	2,600	2,830	25	1,260	1,040	1,760	9,160	2,600	4,010
11	975	1,260	1,490	2,050	2,600	2,260	26	1,180	1,040	1,490	4,910	2,370	4,010
12	910	1,260	1,410	1,850	11,600	4,010	27	1,110	1,040	1,490	6,590	10,300	.....
13	910	1,180	1,330	4,010	6,240	4,910	28	1,040	975	1,660	9,160	15,000	.....
14	975	1,180	1,180	3,200	4,600	28,400	29	1,040	975	1,490	5,560	.....	.....
15	1,660	1,180	1,180	2,600	3,330	25,200	30	1,040	975	1,850	5,560	.....	.....
							31	1,040	.....	2,710	4,010	.....	.....

Monthly discharge of Hiwassee River at Reliance, Tenn., for the year ending Sept. 30, 1913.

[Drainage area, 1,180 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
October	5,560	910	1,350	1.14	1.31	A.
November	2,710	975	1,170	.992	1.11	A.
December	4,010	975	1,610	1.36	1.57	A.
January	9,160	1,850	3,460	2.93	3.38	A.
February	15,000	2,370	4,170	3.53	3.68	B.

NOTE.—See "Accuracy" in station description.

OCOEE RIVER AT COPPER HILL, TENN.

Location.—At highway bridge in town of Copper Hill, Tenn., half a mile above the mouth of Fightingtown Creek.

Records available.—March 21, 1903, to September 30, 1913.

Drainage area.—374 square miles.

Gage.—Chain gage attached to upstream side of bridge, installed August 2, 1911; read daily, morning and evening, to half-tenths. Limits of use: Hundredths below 0.5, half-tenths from 0.5 to 1.5, and tenths above 1.5 feet. See Water-Supply Paper 323 for history of gage.

Control.—Practically permanent.

Discharge measurements.—Made from the downstream side of bridge.

Floods.—The flood of November 19, 1906, reached a height of 18.5 feet.

Winter flow.—Ice does not affect the discharge relation.

Regulation.—As there are only a few small water powers operating above, the diurnal fluctuation is noticeable only during extremely low stages.

Accuracy.—A new discharge rating curve was used for the year ending September 30, 1913 (also for 1912), which differs from the previous curves principally above 1,200 second-feet, the new curve giving the larger discharge for a given gage height above that point. The change in rating is based chiefly on four discharge measurements made in 1913, and the new curve is well defined between 350 and

3,100 second-feet (gage heights 0.7 and 4.4 feet) and fairly well defined between 3,200 and 8,700 second-feet (gage heights 4.5 and 8.0 feet). The highest discharge measurement prior to 1913 was at gage height 3.4 feet, whereas two of the 1913 measurements are at a stage of about 7.5 feet. Errors in estimates of discharge published prior to 1912, due to what now appears to have been erroneous extensions of the discharge rating curves used, are less than 10 per cent below discharge 3,000 second-feet, but above that point the discharge computations should be revised by those using them on the basis of a rating table derived (as explained on p. 14) from the data published below. The data for 1911, published in Water-Supply Paper 303, are within the accuracy ratings assigned, but the new rating curve should probably have been used beginning about October 17, 1911.

Discharge measurements of Ocoee River at Copper Hill, Tenn., in the year ending Sept. 30, 1913.

[Hydrographer, W. E. Hall.]

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.
	Feet.	*Sec.-ft.*		*Feet.*	*Sec.-ft.*
Feb. 27	7.54	7,960	Feb. 28	4.08	2,800
Do	7.40	7,340	Do	3.77	2,530

Daily gage height, in feet, of Ocoee River at Copper Hill, Tenn., for the year ending Sept. 30, 1913.

[W. R. Ledford, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	1.1	1.2	0.85	1.4	2.2	3.0	3.2	1.8	1.7	1.25	1.35	0.55
2	1.0	1.05	.9	1.3	1.9	2.4	3.2	1.8	1.8	1.1	1.5	.55
3	.95	1.0	.85	2.2	2.1	2.4	3.1	1.7	1.7	1.1	1.0	.55
4	1.4	.95	.85	1.6	2.4	2.4	3.0	1.7	1.6	1.1	.9	.55
5	1.2	.95	1.3	1.45	2.1	2.2	3.0	1.6	1.8	1.1	.8	.6
6	1.1	1.0	2.4	1.4	2.0	2.0	2.8	1.6	1.7	1.1	.8	.6
7	1.1	1.8	1.6	1.4	1.9	2.1	2.7	1.8	1.6	1.0	.8	.55
8	1.0	1.6	1.4	1.6	1.8	2.0	2.6	2.0	1.8	.9	1.75	.55
9	.9	1.3	1.3	1.6	1.8	2.0	2.6	1.9	2.6	.9	1.8	.55
10	.9	1.2	1.25	1.4	1.9	3.2	2.6	1.8	1.9	.9	1.0	.55
11	.95	1.1	1.2	1.45	3.0	3.0	2.6	1.7	1.6	1.4	.8	.55
12	.95	1.1	1.2	2.2	3.3	2.5	2.6	1.6	1.5	2.0	.9	.5
13	.9	1.25	1.1	2.0	2.5	2.8	2.6	1.6	1.45	1.5	.8	.5
14	1.4	1.3	1.1	1.7	2.2	8.0	2.6	1.6	1.4	.6	.8	.5
15	1.25	1.2	1.1	1.6	2.0	6.2	2.6	1.5	1.4	.1	.8	.6
16	1.1	1.1	1.05	1.6	1.9	4.8	2.4	1.5	1.35	.1	.8	.65
17	1.0	1.0	1.05	1.6	1.8	3.8	2.2	2.1	1.25	.5	.8	.55
18	.95	.9	1.1	1.8	1.8	3.5	2.2	1.6	1.25	.85	.8	.6
19	2.6	.9	1.2	1.8	1.8	3.2	2.1	1.5	1.2	.8	.8	.6
20	1.9	.9	1.1	1.7	2.4	3.4	2.1	1.7	1.1	.7	1.2	.6
21	1.5	.9	1.05	1.7	2.2	3.7	2.0	1.5	1.15	.7	.9	.6
22	1.4	.9	1.05	1.8	2.1	3.3	2.0	2.2	1.2	.7	.8	.6
23	1.2	.9	1.3	1.6	2.0	3.1	1.9	5.2	1.2	.75	.8	.55
24	1.1	.9	1.6	1.6	1.9	3.0	1.8	3.5	1.15	.75	.75	.5
25	1.0	.9	1.3	2.4	1.9	2.9	1.8	2.8	1.1	.9	.7	.5
26	1.0	.9	1.2	2.8	1.9	3.5	1.9	2.0	1.1	.9	.65	.5
27	1.0	.9	1.3	2.6	6.4	7.4	2.0	1.9	1.2	1.3	.65	.5
28	.95	.9	1.2	3.7	3.8	4.5	2.0	1.8	1.2	1.25	.6	.5
29	.95	.9	1.2	3.0	.....	4.2	1.9	1.7	1.3	1.1	.6	1.6
30	.95	.85	1.5	2.4	.....	3.8	1.8	1.6	1.6	.9	.6	1.7
31	.95	.....	1.7	2.6	.....	3.4	.....	1.6	.....	.9	.6	.....

Daily discharge, in second-feet, of Ocoee River at Copper Hill, Tenn., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	545	600	415	720	1,260	1,880	2,050	975	910	630	690	290
2	490	518	440	660	1,040	1,400	2,050	975	975	545	780	290
3	465	490	415	1,260	1,180	1,400	1,960	910	910	545	490	290
4	720	465	415	845	1,400	1,400	1,880	910	845	545	440	290
5	600	465	660	750	1,180	1,260	1,880	845	975	545	390	310
6	545	490	1,400	720	1,110	1,110	1,720	845	910	545	390	310
7	545	975	845	720	1,040	1,180	1,640	975	845	490	390	290
8	490	845	720	845	975	1,110	1,560	1,110	975	440	942	290
9	440	660	660	845	975	1,110	1,560	1,040	1,560	440	975	290
10	440	600	630	720	1,040	2,050	1,560	975	1,040	440	490	290
1	465	545	600	750	1,880	1,880	1,560	910	845	720	390	290
12	465	545	600	1,260	2,140	1,480	1,560	845	780	1,110	440	270
13	440	630	545	1,110	1,480	1,720	1,560	845	750	780	390	270
14	720	660	545	910	1,260	8,700	1,560	845	720	310	390	270
15	630	600	545	845	1,110	5,390	1,560	780	720	130	390	310
16	545	545	518	845	1,040	3,510	1,400	780	690	130	390	330
17	490	490	518	845	975	2,560	1,260	1,180	630	270	390	290
18	465	440	545	975	975	2,300	1,260	845	630	415	390	310
19	1,560	440	600	975	975	2,050	1,180	780	600	390	390	310
20	1,040	440	545	910	1,400	2,220	1,180	910	545	350	600	310
21	780	440	518	910	1,260	2,480	1,110	780	572	350	440	310
22	720	440	518	975	1,180	2,140	1,110	1,260	600	350	390	310
23	600	440	660	845	1,110	1,960	1,040	3,970	600	370	390	290
24	545	440	845	845	1,040	1,880	975	2,300	572	370	370	270
25	490	440	660	1,400	1,040	1,800	975	1,720	545	440	350	270
26	490	440	660	1,720	1,040	2,300	1,040	1,110	545	440	330	270
27	490	440	660	1,560	5,710	7,520	1,110	1,040	600	660	330	270
28	465	440	600	2,480	2,560	3,200	1,110	975	600	630	310	270
29	465	440	600	1,880	.....	2,910	1,040	910	660	545	310	845
30	465	415	780	1,400	.....	2,560	975	845	845	440	310	910
31	465	.....	910	1,560	.....	2,220	.....	845	.....	440	310	.....

NOTE.—Daily discharge computed from a rating curve well defined between 350 and 3,100 second-feet (gage heights 0.7 and 4.4 feet), and fairly well defined between 3,200 and 8,700 second-feet (gage heights 4.5 and 8.0 feet). It should be observed that no discharge measurements were made at the station subsequent to the high water during March, and that the accuracy of the estimates of discharge thereafter depends on the permanency of the gage and of the discharge relation.

Monthly discharge of Ocoee River at Copper Hill, Tenn., for the year ending Sept. 30, 1913.

[Drainage area, 374 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
October	1,560	440	583	1.56	1.80	A.
November	975	415	527	1.41	1.57	B.
December	1,400	415	629	1.68	1.94	A.
January	2,480	660	1,070	2.86	3.30	A.
February	5,710	975	1,410	3.77	3.93	A.
March	8,700	1,110	2,470	6.60	7.61	B.
April	2,050	975	1,410	3.77	4.21	A.
May	3,970	780	1,100	2.94	3.39	A.
June	1,560	545	766	2.05	2.29	A.
July	1,110	130	478	1.28	1.48	B.
August	975	310	451	1.21	1.40	B.
September	910	270	330	.882	.98	B.
The year	8,700	130	933	2.49	33.90	

BIG BEAR RIVER NEAR RED BAY, ALA.

Location.—At Norman Bridge, 2½ miles east of Red Bay and about 4 miles below Blue Creek.

Records available.—August 24 to September 30, 1913.

Gage.—Vertical staff gage attached to a sweet gum tree on left bank 25 feet upstream from bridge; read daily, morning and evening, to tenths.

Control.—Probably shifting; at extreme low water current sluggish and irregular.

Discharge measurements.—Made from the bridge.

Winter flow.—Not affected by ice.

Cooperation.—Gage readings furnished by the Geological Survey of Alabama.

The following discharge measurement was made by W. E. Hall:

August 24, 1913: Gage height, 0.70 foot; discharge, 39 second-feet.

Daily gage height, in feet, of Big Bear River near Red Bay, Ala., for the year ending Sept. 30, 1913.

Day.	Aug.	Sept.	Day.	Aug.	Sept.	Day.	Aug.	Sept.
1	.....	0.6	11	.....	0.6	21	.....	1.15
2	.....	.6	12	.....	.6	22	.....	.95
3	.....	.6	13	.....	.6	23	.....	.85
4	.....	.6	14	.....	.6	24	0.7	.8
5	.....	.6	15	.....	.6	25	.75	.8
6	.....	.6	16	.....	.6	26	.7	.7
7	.....	.6	17	.....	.6	27	.7	.7
8	.....	.6	18	.....	.95	28	.7	.7
9	.....	.6	19	.....	1.15	29	.65	1.35
10	.....	.6	20	.....	1.2	30	.65	2.8
						31	.6	.....

MISCELLANEOUS FLOOD STAGES.

Miscellaneous flood stages for gaging stations in the Ohio River basin during the flood of March–April, 1913.

Stream.	Date.	Gage height.
		Feet.
Little Wabash River at Golden Gate, Ill.	Mar. 27	28.8
Little Wabash River at Carmi, Ill.	Mar. 29	[a] 36.3
Skillet Fork River at Wayne City, Ill.	(b)	26.5

[a] Crest stage. [b] Gage was read once during the flood; date not known.

DRAINAGE AREAS.

Drainage areas above certain points on Ohio River and some of its principal tributaries.[a]

River.	Point.	Area (square miles).[b]
Allegheny	Kittanning, Pa.	[c] 8,935
Do.	Mouth of Kiskiminitas River	[d] 9,300
Do.	Freeport, Pa. (includes Buffalo Creek)	11,350
Do.	Mouth	11,680
Ohio	Pittsburgh, Pa.	19,020
Do.	Davis Island Dam, Pa.	19,310
Do.	Beaver Dam, Pa. (Dam No. 6)	22,690
Do.	Wheeling, W. Va. (includes both Wheeling Creeks)	24,980
Do.	Marietta, Ohio (includes Muskingum River)	35,560
Do.	Parkersburg, W. Va. (includes Little Kanawha River)	37,950
Do.	Point Pleasant, W. Va. (includes Kanawha River)	52,690
Do.	Catlettsburg, Ky. (includes Big Sandy River)	60,570
Do.	Portsmouth, Ohio (includes Scioto River)	68,730
Do.	Cincinnati, Ohio (includes Licking River)	76,320
Do.	Mouth of Miami River	[d] 76,580
Do.	Mouth of Kentucky River	[d] 83,130
Do.	Louisville, Ky.	91,190
Do.	Evansville, Ind.	107,100
Do.	Mouth of Wabash River	[d] 107,700
Do.	Mouth of Cumberland River	[d] 144,000
Do.	Paducah, Ky. (includes Tennessee River)	202,700
Do.	Cairo, Ill. (total Ohio River)	203,900
Kiskiminitas	Avonmore, Pa.	[c] 1,729
Do.	Mouth	1,883
Monongahela	Morgantown, W. Va. (includes Deckers Creek)	2,674
Do.	Mouth	7,339
Muskingum	....do	8,083
Little Kanawha	....do	2,339
Kanawha	....do	12,200
Big Sandy	....do	4,265
Scioto	....do	6,410
Licking	Falmouth, Ky. (includes South Fork)	3,237
Do.	Mouth	3,636
South Fork of Licking	....do	943
Miami	....do	5,410
Kentucky	Frankfort, Ky.	5,410
Do.	Mouth	6,912
Wabash	Mount Carmel, Ill.	28,590
Do.	Mouth	32,890
Cumberland	Nashville, Tenn.	12,860
Do.	Mouth	17,860
Tennessee	Chattanooga, Tenn.	21,420
Do.	Florence, Ala.	30,790
Do.	Johnsonville, Tenn.	38,470
Do.	Mouth	40,740

[a] These areas were determined in July, 1914, from 1 : 500,000 scale state maps published by the United States Geological Survey, with the exception of the areas of Kanawha River and of Tennessee River above Chattanooga, Tenn., which areas were determined from topographic sheets.

[b] Four significant figures published in this table, but three significant figures in body of report. Attempts should not be made to determine small intermediate areas by subtraction of values in this table unless it be understood that values so determined are subject to errors which may be as great as 100 square miles.

[c] Values other than these used in body of report.

[d] Area of tributary not included.

SUMMARY OF DISCHARGE PER SQUARE MILE.

The following summary of discharge per square mile is given to allow ready comparison of relative rates of run-off from different areas in the Ohio River drainage system. It shows in a general way the seasonal distribution of run-off and the effect of snow, ground, surface, and artificial storage. But the most important fact worth noting is the almost entire lack of uniformity or agreement between any two streams. It indicates that the discharge of each stream is a law unto itself, and that all projects dependent upon stream flow, if they are to be developed along the safest and most economical lines, must be based on records of stream flow collected with great care over a long series of years as near the location of the project under consideration as possible.

Summary of discharge, in second-feet per square mile, for river stations in the Ohio River drainage basin in the year ending Sept. 30, 1913.

Station.	Drainage area.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Year.
	Sq. mi.													
Allegheny River at Red House, N. Y	1,640	1.26	1.55	1.84	6.22	1.22	5.84	3.30	1.86	0.56	0.27	0.17	0.14	2.04
Allegheny River at Kittanning, Pa	9,010	1.72	1.40	1.62	6.89	1.94	6.25	2.44	1.42	.90	.43	.17	.14	2.12
Kiskiminitas River at Avonmore, Pa	1,720	1.66	1.24	1.16	5.99	1.44	2.74	1.23	1.86	.70	.37	.24	.29	1.59
Blacklick Creek at Blacklick, Pa	386	2.21	1.09	1.61	7.93	1.71	3.50	1.23	2.75	.70	.29	.26	.16	1.97
Tygart River at Belington, W. Va	390	.23	.85	1.19	5.18	2.10	3.13	2.42	3.62	1.02	2.06	1.22	.72	1.98
Tygart River at Fetterman, W. Va	1,340	.21	.86	1.15	5.43	2.41	2.80	1.78	3.82	1.13	1.83	1.13	.38	1.92
West Fork River at Enterprise, W. Va	750	.15	.31	.73	5.45	1.77	2.24	.78	2.91	.46	.69	.25	.08	1.33
Cheat River near Morgantown, W. Va	1,380	.73	1.68	1.46	6.58	2.28	3.80	2.30	4.54	1.49	2.25	.75	.53	2.38
Shavers Fork at Parsons, W. Va	210	.63	2.43	1.21	4.95	2.30	5.95	4.11	5.48	1.47	2.98	1.98	1.27	2.91
New River at Radford, Va	2,720	.61	.73	.66	1.14	1.03	3.43	2.11	2.08	1.31	.86	.72	1.03	1.31
Greenbrier River at Alderson, W. Va	1,340	.19	.57	.78	3.19	1.63	4.80	2.91	2.07	1.24	.86	.48	.14	1.57
Dix River near Burgin, Ky	416	.06	.26	1.89	16.3	2.62	7.07	1.08	1.34	.84	.10	.12	.03	2.67
East Branch of White River at Shoals, Ind	4,900	.18	.20	.16	5.06	.97								
French Broad River at Asheville, N. C	987	1.18	1.26	1.31	1.71	2.03	5.53	3.69	2.32	1.93	1.36	1.53	1.47	2.11
Tennessee River at Chattanooga, Tenn	21,400	.61	.56	1.11	3.54	2.41	4.77	2.29	1.78	1.53	.64	.58	.42	1.68
Tennessee River at Florence, Ala	30,800	.53	.45	1.05	4.03	3.19	4.94	2.65	1.46	1.36	.54	.50	.37	1.75
Tennessee River at Johnsonville, Tenn	38,500	.51	.42	1.02	4.18	3.40	4.78	3.09	1.14	1.28	.51	.45	.33	1.75
South Fork of Holston River at Bluff City, Tenn	828	.42	.51	.63	2.36	2.03	4.26	1.86	2.20	1.26	.59	.54	.55	1.44
Holston River near Rogersville, Tenn	3,060	.44	.46	.60	2.42	1.73								
Little Tennessee River at McGhee, Tenn	2,470	1.21	1.15	1.91	3.77	4.00	7.29	3.54	2.87	1.99	1.27	1.17	.89	2.58
Tuckasegee River at Bryson, N. C	662	1.18	1.11	1.66	2.81	3.60	7.61	3.50	2.58	1.98	1.39	1.39	1.13	2.49
Hiwassee River at Murphy, N. C	410	1.10	1.08	1.44	2.56	2.93	7.15	2.73	2.05	1.89	1.09	.94	.73	2.14
Hiwassee River at Reliance, Tenn	1,180	1.14	.99	1.36	2.93	3.53								
Ocoee River at Copper Hill, Tenn	374	1.56	1.41	1.68	2.86	3.77	6.60	3.77	2.94	2.05	1.28	1.21	.88	2.49

APPENDIX.

A condensed history of the United States Engineer Corps gage on Tennessee River at Florence, Ala., was prepared at the office of the secretary of the Mississippi River Commission, St. Louis, Mo., under the direction of Maj. Clarke S. Smith, Corps of Engineers, United States Army, by Kivas Tully, assistant engineer, and was forwarded to the Survey in January, 1915, too late to be incorporated in the description of the Florence station on pages 151–157. A few changes were made in the description under "Gage" and "Bench marks" from information contained in the commission's history of the gage, and the description agrees with the history in all essential details. No change was made in the next to the last paragraph under "Gage," and it will be observed that the conclusions therein agree with those under "Recapitulation" in the history of the gage.

In order to make the gage record as complete as possible for the period 1871–1894, for which no estimates of discharge are published, the description of the Florence station on pages 151–157 is supplemented by the following extracts from the condensed history furnished by the Mississippi River Commission:

Condensed history of the United States Engineer Corps gage on the Tennessee River at Florence, Ala.

This gage was established under authority of act of Congress of January 21, 1871, by Maj. William E. Merrill, Corps of Engineers, United States Army, on November 6, 1871. See Report Chief of Engineers, 1872, page 430. * * *

The following is taken from Maj. Merrill's first report above referred to:

"*Florence gage.*—This gage is located just below the north abutment of the railroad bridge over the Tennessee River, the upper portion of the gage being on the abutment. Plank and posts are of yellow pine. The zero is the low water of 1871 and the range of the gage is from 0.4 to +33.8. The bench marks are the southwest corner of the top of first small pier, north of the bridge, which reads 30.193, and the top of the northwest corner of the bridge seat on the abutment, which reads 32.261. The observer is Mr. W. P. Stradford."

The original records of the engineer gage received at this office in 1901, when charge of these gages was transferred here, do not contain the field notes of the gage inspections prior to 1885, and inquiry at Washington and elsewhere has failed to locate them.

The first record of gage inspection is * * * stated to be by Capt. Eric Bergland, November 24, 1885. This entry is possibly a copy from some other book and does not contain level notes; it states "On December 23, 1885, Asst. Engineer Robert Hooke tested gage from B. M. No. 1, * * * finding portion correct, and on the inclined portion, 0′ to 19′, the following elevations: XIX on gage 18.906, XIII on gage 12.936, VII on gage 6.981."

No corrections have been applied to gage record for errors found in gage at above inspection. * * *

A gage inspection report by Asst. Engineer John Ewens dated March 22, 1887, * * * states: "The present gage is the original one, and (the observer says) has never been disturbed * * *."

The upper section of the gage is so fixed that a movement in any direction is quite impossible by any of the means of disturbance generally encountered; it is attached to the downstream face of the downstream and shore abutment of the bridge; it is fastened by huge iron bolts sunk into the rock and ended with huge iron nuts. The inclined portion (that reads from 19 to 0.0), though not so formidably built, has not changed any more than the vertical section just described."

From the above description, the original gage must have been inclined from 0.4 foot to 19 feet and vertical from 19 feet to 33.8 feet. * * *

Two bench marks were established at the time the gage was built; one of these has since been destroyed. Several other benches have been established near by at different times. * * *

October 23, 1894. Report of inspections received early in 1894 * * * states: "Last inspection April 19, 1890."—K. T.

"The gage from 34.0 feet to 9.1 feet on downstream face of rock approach to the bridge; the remaining sections were located about 50 feet above; the rock shoal opposite the latter site and the approach piling to the draw opening that has been put in since last inspection causes the water at present stage (and up to a stage of 6.0 feet, the gage keeper says) to pile up on that side a height of nearly 1 foot above the natural surface of the water. To overcome this completely, this part of the gage was moved down to same (river) cross section as upper part of the gage, where the water surface is normal at all stages. The recent repairs to the bridge enabled me to put a section reading from −2.0 to 21.0 on cribwork of the pivot pier near downstream side, directly in line with upper portion of the gage; this site is about 75 feet from the bank at present stage. The water-surface elevation was taken at the bank and at this site and found to be the same. At the former low-water site it was found to be +0.83 foot higher. * * *"

Recapitulation.—Original gage established November 6, 1871, in two sections, one inclined from 0.4 foot to 19.0 feet and the other vertical from 19.0 to 33.8 feet. This gage remained practically intact until August 18, 1889, when it was rebuilt with four vertical sections, as follows:

No. 1, 34 feet to 18 feet; No. 2, 19.0 feet to 9.0 feet; No. 3, 10.0 to 6.2 feet; No. 4, 6.2 to 0.0 feet.

Description of gages for 1893 * * * contains the following: "Vertical gage in 3 sections, * * * sections 1 and 2 (34.0 to 18) (19.0 to 9.1) are on lower face of rock approach to bridge. Section 3 (10.0 to 0.0) is driven in the ground on upper side of approach to which sections 1 and 2 are fastened." It is not known exactly when this section 3 was put in.

The inspection of October 23, 1894, describes the gage practically the same as in the preceding paragraph. No correction has been made to the records for slope from low-water section while it was upstream from other sections. The gage was then rebuilt from −2 to 21 feet and placed on the cribwork of the pivot pier of the draw span near downstream side, directly in line with the upper portion of the gage (see note on this alignment * * *). The gage remained in this position until November 6, 1898, when it was built in one section from −2.1 to 32.6 feet on the cribwork of pivot pier. It was inspected several times from 1894 to 1898 and rebuilt as settlement of cribwork made it necessary. It was maintained in one section on the cribwork until November 15, 1901, when the present steel gage was built by this office. The installation of this gage was completed on February 14, 1902, and it has been in use

since then, with exception of short periods of time when the lower section was knocked off or paint was washed off too much to be read. Whenever this has occurred a temporary section was used, and the records corrected for any error before publication.

The present gage consists of sections of steel $\frac{3}{8}$ by $7\frac{1}{4}$ inches attached to face of stone draw pier of Southern Railway bridge, by bolts leaded in stone. These are graduated to allow for batter of pier, which is 1 inch to 1 foot. These sections make one continuous gage reading from −1.92 to 33.5 feet.

The foregoing has been held until after the low-water inspection of 1914 in order that additional information might be added concerning records of 1890–1894.

This inspection was made under my direction by Assistant Engineer Kivas Tully, on November 19 and 20, 1914, with the following results: The gage was found practically correct, but the lower graduations were rather indistinct on account of the paint being somewhat worn off by action of the water. Slope of water surface was also determined along the right bank above and below the bridge for a short distance; the results show a slope at the bridge of about 0.8 foot in 100 feet, at about the zero stage which then prevailed.

Mr. Robert E. Coburn, observer at this station since November, 1882, was closely questioned in regard to location of low-water section during the period from April 19, 1890, to October 23, 1894, and stated that he had no recollection of where the low-water section was located during that period.

He pointed out the site of the gage before described as being attached to "lower face of rock approach," etc. Some of the bolts which undoubtedly held this gage are still in place but the gage itself has disappeared.

It should be noted that the alignment of the bridge is not normal to direction of flow of the river; therefore while the gages on the shore abutment were in line of the bridge they were not on a line normal to the river flow, which they should have been to agree with later gages at the pivot pier. No corrections have been determined for differences due to this fact.

The daily records at this station from November 7, 1871, to date are complete, and with the exception of the period in 1893–94 and possibly earlier, when readings were taken on the section readings from 0 to 10 feet before described, are very good. The records have been corrected before printing for errors found in the gage at inspections where such errors were well determined. The printed records, with the exceptions noted, can therefore be accepted as reliable.

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