DEPARTMENT OF THE INTERIOR

UNITED STATES GEOLOGICAL SURVEY

CHARLES D. WALCOTT, DIRECTOR

WATER POWERS OF ALABAMA

WITH

AN APPENDIX ON STREAM MEASUREMENTS IN MISSISSIPPI

BY

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LETTER OF TRANSMITTAL.

SIR: I have the honor to transmit herewith a manuscript entitled "The Water Powers of Alabama, with an Appendix on Stream Measurements in Mississippi," and to request that it be published as a water-supply paper of the Survey.

Very respectfully,   F. H. NEWELL,
                                                         Chief Engineer.

Hon. CHARLES D. WALCOTT,
   Director United States Geological Survey.

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WATER POWERS OF ALABAMA.

By Benjamin M. Hall.

INTRODUCTION.

Prior to 1896 no systematic investigation had ever been made of the water supply and water powers of Alabama. In 1885 Prof. Dwight Porter, in his report for the Tenth Census of the United States, Volume XVI, upon the water powers of the eastern Gulf slope, gave an excellent description of the most important water-power streams in the Mobile drainage basin, with such estimates of power as were possible from a reconnaissance and a study of rainfall, drainage areas, and the navigation surveys made by the United States Engineer Corps.

During the last seven years the systematic stream measurements by the United States Geological Survey, at stations maintained by the army engineers, the Weather Bureau, and the State geological survey, have furnished a reliable basis for water-power estimates. The United States Geological Survey has also made measurements of many smaller streams in order to compare their discharges with those at the regular stations and to ascertain the percentage of water furnished to the main rivers by different tributaries. It has also run levels along some of the streams that have not been surveyed by the army engineers.

In 1902 the writer prepared for Dr. E. A. Smith, State geologist, a report embodying all data obtainable at that time. This was published by the Alabama geological survey as Bulletin No. 7. This paper contains all of the material of Bulletin No. 7, and includes also the results of hydrographic work in 1902 and 1903. It gives an estimate and short description of the water powers in the crystalline and Paleozoic regions, and is intended to meet the demands of those who are interested in water powers and desire to have in one volume the records and results of all the hydrographic investigations from 1896 to the present.

Very recently two large water powers have been developed on Tallapoosa River; one of these is at Tallassee, Ala., and the other is 3 miles above Tallassee.

Some of the largest undeveloped powers in the State are mentioned below:

Power site No. 3, on Tallapoosa River, at Double Bridge Ferry, about 10 miles above Tallassee, where a dam 80 feet high is proposed by the Cherokee Development and Manufacturing Company.

At Black and Sanford Shoal, on Big Sandy Creek, near Dadeville, there is a fall of 80 feet.

Thirty-one locks on the Coosa River are capable of furnishing from 1,300 to 4,500 horsepower each, or an aggregate of 100,000 horsepower during the low season of an ordinary year like 1900.

Seven power sites on the Cahaba River are capable of furnishing from 500 to 1,100 horsepower each.

The following shoals are on Tennessee River:

Power sites on Tennessee River.

Shoal.	Fall.	Minimum horsepower.	
		Driest years.	Average years.
	Feet.		
Elk River	26	15,600	30,550
Mussel	85	51,000	99,875
Little Mussel	23	13,800	27,025
Colbert	21	12,600	24,675

These and other powers will be described more fully in the body of the work.

The water powers of Alabama are conveniently located for running cotton factories and other manufacturing plants, and also for generating electricity that can be transmitted to cities for power, light, etc. The larger powers are all close to water transportation, and are also on important railroads. These advantages naturally make them more valuable.

GENERAL TOPOGRAPHIC AND GEOLOGIC FEATURES.

The five principal drainage basins of the State are as follows:

The Apalachicola basin, draining to the Chattahoochee and Apalachicola River and entering the Gulf at Apalachicola, Fla.

The Choctawhatchee basin, draining to the Gulf through Choctawhatchee Bay.

The Pensacola basin, draining to Pensacola Bay and Perdido Bay, near Pensacola, Fla.

The Mobile basin, including the waters of Tallapoosa, Coosa, Cahaba, Alabama, Black Warrior, and Tombigbee rivers and draining into the Gulf at Mobile, Ala.

HYDROGRAPHIC MAP
OF
ALABAMA
SHOWING
GAGING STATIONS, FALL LINES
AND SOME OF THE
LARGER WATER POWERS
Compiled by
B. M. HALL, C. & M.E.,
Consulting Engineer, U.S.G.S.

Scale

0   5   10   30   60 miles

LEGEND

O   Hydrographic gaging stations
×   Large utilized water powers
\   Large undeveloped water powers
═══ Fall line between Crystalline and Cretaceous
▦▦▦ Fall line between Crystalline and Paleozoic
── Fall line between Paleozoic and Cretaceous

Note: *The powers on smaller
streams are not shown*

GULF OF MEXICO

The Tennessee basin, draining into Tennessee River and thence through the Mississippi to the Gulf at New Orleans.

The water powers of the State are mainly in the Mobile and Tennessee basins, which practically cover the entire State, except a small area in the southeast corner.

Geologically the State may be divided into three areas, which differ very greatly from one another in the hardness and durability of their rocks and show a corresponding difference in the profiles of their streams: First, the crystalline area underlain by igneous and metamorphic rocks; second, the Paleozoic area of hard sedimentary rocks, sandstone, limestone, and shale; and third, the Coastal Plain formed by Mesozoic and later sediments, chiefly soft limestones and unconsolidated sands and clays.

It may be said in a general way that the streams have their greatest falls in passing from an older to a younger geologic formation. Tallassee Falls, on the Tallapoosa, and Wetumka Falls, on the Coosa, are at the point where the streams flow from the crystalline to the Cretaceous rocks. The falls on Talladega Creek and other small streams entering Coosa River from the southeast in Talladega, Calhoun, and Cleburne counties are at the contact of the crystalline and the Paleozoic. The shoals above Centerville on the Cahaba, above Tuscaloosa on the Black Warrior, and near Tuscumbia on Tennessee River are at the point where the Paleozoic adjoins the Cretaceous. As Coosa River flows from the Paleozoic on to the crystalline near Talladega Springs, the shoals above this point reverse the general order by being made in passing from a younger to an older formation.

The crystalline area in Alabama is a triangle on the east side of the State, including Cleburne, Randolph, Chambers, Lee, Tallapoosa, Clay, Coosa, and parts of Elmore, Chilton, and Talladega counties. The "fall line" dividing the crystalline region from the Cretaceous and later formations of the Coastal Plain on the southwest runs from Columbus, Ga., crossing the Tallapoosa at Tallassee and the Coosa at Wetumka. The northwestern boundary between the crystalline rocks and the Paleozoic formations recrosses the Coosa near Marble Valley post-office in Coosa County, and runs in a northeasterly direction toward Cedartown, Ga., crossing the Alabama line near Warner.

The crystalline area is a plateau ranging in elevations from 500 to 2,000 feet above sea level. The rivers flow over bed rock in a succession of shoals and eddies between high hills, and present conditions most favorable to the development of water powers with high head.

Tallapoosa River and its tributaries drain the larger part of the area. On Tallapoosa River there is a fall of 64 feet utilized as one power at Tallassee, and also a 40-foot dam about 3 miles above Tallassee. Similar developments are contemplated at several different

points above. The falls on Coosa River from Marble Valley to Wetumka, 235 feet in 45 miles, and on numerous eastern tributaries of the Coosa, are in this area; as are also the western tributaries of the Chattahoochee between West Point and Columbus, Ga.

The Paleozoic area includes the greater portion of northern Alabama, being bounded on the southeast by the crystalline area, and on the southwest by the Cretaceous and later formations of the Coastal Plain. The line of division between the Paleozoic area and the Coastal Plain begins near Strasburg, in Chilton County, and runs northwesterly through Centerville, Tuscaloosa, and Tuscumbia to a point on Tennessee River near Waterloo. The Paleozoic area is somewhat higher than the Coastal Plain, and slightly lower than the crystalline area. Its rivers have considerable fall, as is shown by the following figures:

Coosa River from Greensport to Marble Valley falls 132 feet in 97 miles.

Cahaba River above Centerville has a fall of 120 feet in 21 miles.

Black Warrior River above Tuscaloosa has a fall of 100 feet in 30 miles.

Tennessee River above Waterloo has a fall of 155 feet in 41 miles, 85 feet of which is in a distance of only 14 miles.

There are many important creeks and many large limestone springs in this region on which no measurements have yet been made. The area is rich in coal and iron, the most productive mines being in the drainage basins of Cahaba and Black Warrior rivers.

The Coastal Plain is a large area in southern and western Alabama, covering about two-thirds of the State, and is underlain by Cretaceous and younger formations. In the upper portion of this area the streams are not sluggish. Alabama River is navigable in the whole region, but the Cahaba falls 120 feet in a distance of 87 miles from Centerville to the mouth of the river; and the Black Warrior falls 59 feet in 132 miles from Tuscaloosa down to Demopolis.

There are many streams in this area that have a constant water supply and sufficient fall for the development of good water powers. One of these is Pea River, in the southeastern part of the State, where a dam is now being constructed to give a power head of 20 feet. No hydrographic work has yet been done on the streams of southern Alabama that rise in the Coastal Plain, but systematic work is to be taken up in this region at an early date.

As the investigations in this State have been confined so far mainly to the Mobile and Tennessee basins, only the streams of these basins will be considered. It is to be remembered that from West Point, Ga., southward the boundary between Georgia and Alabama is on the west bank of Chattahoochee River, along the line where ordinary vegetation ceases to grow. This leaves all of the water power of the

main stream in Georgia. There are many creeks flowing into the river from Alabama, some of which have considerable fall, as they come from a high plateau. Holland Creek, opposite Columbus, Ga., furnishes the Columbus water supply by gravity, having a fall of 117 feet in less than 4 miles. No doubt many of the others have as much fall, but as they have not been examined, a report on them can not be made at present. However, a recent reconnaissance along the Chattahoochee gives the following estimate of power obtained from some of them for twelve hours each day.

Powers on tributaries of Chattahoochee River, per foot of fall.

	Horsepower.
Big Uchee Creek, Russell County	7
Ihagee Creek, Russell County	2
Hatchechubbee Creek, Russell County	7
Cowikee Creek, Barbour County	11
Yattayabba Creek, Henry County	9
Omussee Creek, Henry County	7

FIELD WORK.

Aside from certain surveys made to obtain maps and profiles of Tallapoosa River and Big Sandy Creek, the work done by the United States Geological Survey in this State deals exclusively with the amount of water flowing in the streams, and is intended to give a safe basis for calculation of low-water volumes at all seasons of the year, and for several consecutive years, in order to arrive at the value of the streams for water power, irrigation, municipal supply, mining, navigation, etc. In order to do this certain convenient stations have been established on important rivers. At each of these stations a gage rod is set to show the fluctuations of the streams; and a gage reader is employed to observe the height of the water every morning at the same hour, and to make a weekly report of the same. As far as possible the river stations of the United States Weather Bureau and the United States Engineer Corps have been utilized for this purpose. From time to time the hydrographer or one of his field assistants visits the station and makes an accurate meter measurement of the stream, noting the height of the water on the gage at the time the measurement is made. After a number of such discharge measurements have been made at different gage heights, a rating table is made from the data thus obtained. This table gives the amount of water flowing in the stream, at that station, for any gage height shown on the rod. Thus, by inspection of the table of daily gage heights, the flow of the stream is shown for every day in the year, or years, covered by the observation of gage height. At seasons of uniform low water, when the daily fluctuations of the rod are very slight for weeks at a time, discharge measurements are made of the stream at many points above and below the gage station in order to establish

a relation between the discharge at these points and at the station. In like manner the principal tributaries are measured for the same purpose, where it is practicable to do so. In this way it is possible to arrive at a close estimate of the flow of all the streams of the watershed, and to make a rating table for each that will represent its flow under average conditions, not including the floods caused by local rains. Such tributaries as have not been measured can be estimated by watershed comparison with similar tributaries that have been measured.

The actual gage heights and discharge measurements are published in order to show the data upon which the conclusions are based. The regular gaging stations are as follows:

Gaging stations.

Station.	Stream.	Observer.
Milstead	Tallapoosa River	Seth Johnson.
Sturdevant	do	B. F. Neighbors.
Dadeville	Big Sandy Creek	T. H. Finch.
Alexander	Hillabee Creek	J. H. Chisolm.
Nottingham	Talladega Creek	R. M. McClatchy.
Riverside	Coosa River	J. W. Foster.
Cordova	Black Warrior River	A. B. Logan.
Montgomery	Alabama River	United States Weather Bureau.
Selma	do	Do.
Tuscaloosa	Black Warrior River	W. S. Wyman, jr.
Epes	Tombigbee River	J. C. Horton.
Rome, Ga	Coosa River	W. M. Towers.
Chattanooga, Tenn	Tennessee River	United States Weather Bureau.
Palos	Locust Fork of Black Warrior River.	United States Engineer Corps.
Centerville	Cahaba River	Clyde Lowrey.
Jenifer	Choccolocco Creek	W. J. Tolbert.
Columbus, Miss	Tombigbee River	J. J. Richards.

EXPLANATION OF TABLES.

GAGE HEIGHTS.

The "Table of gage heights" is a record of the height of water on a gage rod, graded to feet and hundredths of a foot, set into the river vertically, and fastened permanently to a convenient tree or pier. The rod is read every day in the year, at the same time of day, which

is about 8 o'clock in the morning. Inches are not used in these records, as the daily height of water on the gage is written in feet and decimals of a foot.

DISCHARGE MEASUREMENTS.

These records show the date, the gage height at time of measurement, and the amount of water in cubic feet per second, or "second-feet," flowing in the river. A small stream filling a rectangular flume 1 foot wide and 1 foot deep has a stream whose sectional area is 1 square foot. The volume of this stream will vary in proportion to the speed with which the water flows through the flume. If the water is moving at a velocity of 1 foot per second, the flow or volume of water is 1 cubic foot per second, or 1 second-foot, and would fill a vessel 5 feet wide, 5 feet long, and 4 feet deep in just 100 seconds, as such a vessel would hold 100 cubic feet of water. If the water in the flume 1 foot wide and 1 foot deep flows with a velocity of 2 feet per second, the volume will be 2 cubic feet per second, or 2 second-feet, and so on for any other velocity. In the same way if the flume is 20 feet wide, and 5 feet deep, its sectional area will be 100 square feet, and if the average velocity is 3 feet per second, the volume will be 300 cubic feet per second, or 300 second-feet. In each of the discharge measurements here enumerated, a cross section of the stream is measured, and velocities taken with an electric current meter at many points of the cross section. Instead of multiplying the entire cross section by an average velocity, the area is divided up into a large number of small sections by soundings from 5 to 10 feet apart, and the area of each of the small sections multiplied by the velocity at the small section, thus giving the second-feet flowing in each small section. The sum of the discharges of all the small sections makes the total discharge of the stream.

RATING TABLE.

This is a table showing the discharges in second-feet (cubic feet per second) for all stages of water on the gage. Hence, when the gage heights are known, the corresponding discharges can be taken from the rating table and written opposite each daily gage height, thus giving the flow in second-feet on each day in the entire year.

ESTIMATED MONTHLY DISCHARGE.

This table gives in the first three columns the maximum, minimum, and mean discharge for each month in second-feet.

Columns 4 and 5 give the "run-off" from the drainage area. The run-off, like rainfall, is given in inches. For instance, a run-off of 2.23 inches from a given drainage area means that enough water ran off to have covered the entire drainage area or watershed to a depth

of 2.23 inches. This is convenient in estimating the proportion of the rainfall that can be stored for irrigation, city water supply, or other purposes. The run-off in second-feet per square mile of drainage area is obtained by dividing the mean discharge by the number of square miles in the drainage area, and is useful in estimating the mean discharge of a tributary whose drainage area is known, and in comparing different drainage areas. The "run-off" is not a fixed percentage of the rainfall, but is that part of the rainfall which is not lost by evaporation into the air or by percolation into subterranean outlets. Being a remainder and not a percentage, it necessarily forms a much larger proportion of a heavy annual rainfall than it does of a small annual rainfall. For instance, in the crystalline region of Georgia or Alabama, where the annual precipitation is 45 to 55 inches, the run-off is equal to fully one-half of the rainfall, while in regions having an annual precipitation of only 10 to 20 inches annually the run-off is frequently less than one-fifth of the rainfall. Again, the geologic character of the watershed makes a vast difference in the run-off, even where the annual rainfall is the same and where practically the same conditions of climate, topography, forest area, and cultivation exist. There will be a smaller run-off from the watershed where the rocks are permeable and a part of the rain water sinks into the ground and furnishes the supply to artesian wells in the lower country under which the same strata run. In a comparison of two such watersheds, one in the crystalline region and the other in a regularly stratified formation, the difference of run-off should form a basis for estimating the artesian supply obtainable from the latter as a fountain head.

HORSEPOWER.

The data for the table headed "Net horsepower per foot of fall, with a turbine efficiency of 80 per cent for the minimum monthly discharge of Tallapoosa River at Milstead, Ala.," were obtained as follows:

The theoretical horsepower available at any point on a stream is the product of the fall by the weight of water falling in a given time. It may be found by the formula H. P. $=\dfrac{Q \times h \times 62\frac{1}{2}}{550}$, where Q is discharge in second-feet and h is fall in feet. To find the net horsepower developed by the water wheel the theoretical horsepower has to be reduced by a coefficient dependent upon the efficiency of the wheel. In the table this efficiency is assumed to be 80 per cent, and we have net H. P. $= 80$ per cent $\times \dfrac{Qh \times 62.5}{550}$.

Thus in the table for Tallapoosa River, pages 23–24, for June, 1899, the mean monthly discharge was 1,287 second-feet, so that for a fall of 1 foot the minimum net H. P. $=\dfrac{1,287 \times 1 \times 62.5}{550} \times 80$ per cent $= 117$.

To find the minimum net horsepower available at a shoal on any stream, multiply the total fall of the shoal by the "net horsepower per foot of fall."

TALLAPOOSA RIVER AND TRIBUTARIES.

TALLAPOOSA RIVER AT MILSTEAD.

Tallapoosa River rises in west-central Georgia and flows southwesterly into Alabama. Six miles above Montgomery it joins the Coosa to form Alabama River. Its upper tributaries drain an area between the Chattahoochee and Coosa basins. At Tallassee, Ala., it crosses the southern fall line. The shoals at this place have a fall of 60 feet, forming an obstruction to navigation. The drainage area is largely wooded, with cultivated fields at short intervals.

A gaging station was established on August 7, 1897, at the bridge of the Tallassee and Montgomery Railway, about one-fourth of a mile from Milstead, Ala. The bridge is of iron, two spans of about 155 feet each, with short wooden trestles at each end. The initial point of measurement is the end of the iron bridge, on the left bank, downstream side. The rod of the wire gage is fastened to the outside of the guard rail on the downstream side of the bridge. The bench mark is the top of the second crossbeam from the left bank pier at the downstream end, and is 60 feet above datum. The channel is straight at the bridge and bends above and below. The current is sluggish at low water and obstructed by the center pier of the bridge. The banks are high, but overflow at extreme high water for several hundred feet on each side. The bed is fairly constant, and all the water is confined to the main channel by railroad embankments.

Milstead station has been discontinued on account of the large dams of the Tallassee Manufacturing Company and the Montgomery Power Company a short distance above. When these dams are storing water the flow is almost entirely cut off at Milstead and makes the record show a deficiency of water that does not exist. The dams were completed early in 1902, and as the estimated minimum flow for that year is a great deal less than at Sturdivant, 39 miles above, it is thought best not to publish the Milstead records for 1902 and 1903 and to discontinue the station. Sturdivant station is above both dams and gives the correct flow at that point.

IRR 107—04——2

The following discharge measurements were made by M. R. Hall, James R. Hall, and others:

Discharge measurements of Tallapoosa River at Milstead.

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.
1897.	*Feet.*	*Second-feet.*	**1899.**	*Feet.*	*Second-feet.*
May 3	6.20	7,333	April 17	6.34	7,444
July 15	1.95	1,692	April 18	5.63	6,853
August 7.............	2.42	2,292	May 17	2.80	3,000
September 4.........	1.60	1,271	June 26.............	2.05	1,847
November 23........	1.20	677	September 9........	1.36	1,016
December 16	3.58	4,210	November 8........	1.25	972
1898.			December 18	2.66	2,844
January 19...........	2.13	1,889	**1900.**		
February 19.........	2.20	2,045	February 23........	9.20	9,956
March 18	2.56	2,646	March 5	6.70	7,088
April 26	5.83	6,648	December 3	2.95	3,031
May 17	1.55	1,059	**1901.**		
June 22.............	3.05	3,421	February 12........	10.70	11,759
July 7	1.62	1,262	March 13	5.55	5,644
August 5.............	13.67	15,295	October 29	1.70	1,583
September 3	2.76	3,010			
November 29........	5.16	5,477			

Daily gage height, in feet, of Tallapoosa River at Milstead.

Day.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1897.												
1									1.70	0.80	0.90	1.50
2									1.80	.80	1.00	1.50
3									1.60	.80	1.10	1.50
4									1.60	.70	1.10	1.60
5									1.60	.70	1.10	1.80
6									1.40	.70	1.10	2.00
7								2.45	1.40	.70	1.10	2.10
8								1.90	1.30	.60	1.10	2.00
9								1.70	1.20	.70	1.20	1.90
10								1.50	1.20	.70	1.20	1.90
11								1.50	1.10	.70	1.30	1.90
12								2.70	1.10	.70	1.30	2.00
13								2.20	1.10	.70	1.30	1.90
14								2.00	1.10	.80	1.30	5.50
15								1.80	1.40	.80	1.20	4.70
16								1.60	1.20	.80	1.20	3.60
17								1.90	1.10	.80	1.20	2.80
18								2.20	1.00	.90	1.20	2.40
19								2.80	1.10	.90	1.20	2.10
20								9.70	1.10	.90	1.10	2.00
21								7.40	1.10	.80	1.20	1.90
22								8.50	1.00	.80	1.10	2.00
23								5.30	1.00	.90	1.10	2.40
24								3.40	1.00	.90	1.20	2.40
25								2.90	1.00	.80	1.20	2.40
26								2.80	1.00	.90	1.20	2.80
27								2.30	1.00	.90	1.20	2.60
28								2.00	.90	.90	1.60	2.50
29								1.80	.90	.90	1.50	2.30
30								1.70	.80	.90	1.50	2.20
31								1.70		.90		2.40

Daily gage height, in feet, of Tallapoosa River at Milstead—Continued.

Day.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1898.												
1	2.90	2.30	1.90	4.80	2.60	1.10	1.50	3.60	4.30	1.30	2.30	4.90
2	1.90	2.20	1.80	3.90	2.30	1.10	1.30	2.90	3.20	1.30	2.20	4.40
3	1.80	2.10	1.90	3.10	2.20	1.10	1.20	2.80	2.70	1.40	2.20	7.70
4	1.70	2.00	2.40	3.00	2.10	1.10	1.10	11.50	2.70	16.00	2.10	10.00
5	1.70	2.00	2.90	17.00	2.00	1.10	1.20	14.00	4.00	32.00	2.10	8.60
6	1.80	2.00	2.80	18.80	2.00	1.10	1.30	8.90	4.60	23.50	2.20	6.80
7	1.80	2.00	2.50	12.10	1.90	1.00	1.70	10.10	6.00	16.40	2.70	5.60
8	1.80	2.00	2.30	7.10	1.90	.90	2.90	8.50	5.60	22.80	4.20	4.80
9	1.90	2.00	2.20	5.20	1.80	.90	4.90	7.90	4.50	14.00	2.80	4.60
10	1.90	1.90	2.00	4.00	1.80	.90	3.60	5.30	3.50	7.90	3.00	6.70
11	1.90	1.90	2.00	3.40	1.70	.80	4.40	17.30	2.90	5.90	7.10	6.10
12	2.40	1.90	2.00	3.10	1.70	.90	2.00	22.60	2.60	4.90	5.10	5.50
13	2.40	1.90	1.90	3.00	1.70	1.20	1.70	10.10	2.50	3.80	5.00	5.00
14	2.60	1.90	1.90	2.90	1.60	1.20	2.70	7.70	2.40	3.40	5.90	4.40
15	2.40	1.80	2.70	2.80	1.60	1.10	3.50	6.10	2.20	3.00	5.50	4.00
16	2.40	1.80	2.60	2.60	1.60	1.20	5.10	4.20	2.00	2.70	5.40	3.80
17	2.40	1.80	2.50	2.40	1.60	2.10	2.40	3.40	1.80	2.60	6.20	3.60
18	2.30	1.80	2.60	2.40	1.60	1.80	2.80	2.80	1.70	4.40	6.10	3.40
19	2.20	2.20	2.50	2.20	1.50	1.40	3.05	2.60	1.60	5.00	14.40	4.30
20	2.20	2.30	2.40	2.40	1.50	1.40	2.30	2.80	1.60	4.40	12.20	7.60
21	3.10	2.30	2.20	2.80	1.40	1.40	1.90	2.50	1.50	3.70	10.00	7.00
22	3.10	2.10	2.00	2.70	1.40	3.00	1.60	2.30	1.50	3.30	8.00	5.20
23	3.00	2.00	1.90	2.80	1.30	2.40	1.60	2.20	1.50	3.10	10.00	4.40
24	2.90	2.00	1.90	14.50	1.30	2.20	1.50	2.00	1.60	2.70	8.80	6.40
25	2.60	1.90	1.80	11.60	1.20	2.10	1.50	2.10	1.80	2.60	7.90	6.00
26	2.90	1.80	1.80	5.90	1.20	1.80	2.50	8.10	2.00	2.50	5.30	4.60
27	3.60	1.90	1.80	4.30	1.20	1.50	2.60	10.20	1.80	2.40	4.60	4.20
28	3.90	1.90	1.70	3.30	1.30	1.80	4.10	8.40	1.60	2.40	4.10	3.90
29	3.10	......	2.20	2.95	1.20	2.70	2.80	7.00	1.50	2.40	4.90	3.80
30	2.65	......	4.20	2.80	1.20	1.90	2.90	5.20	1.50	2.40	5.40	3.70
31	2.40	......	5.30	......	1.10	......	3.80	5.10	......	2.30	......	4.00
1899.												
1	5.00	17.00	27.00	18.00	4.30	2.40	2.80	3.00	2.40	.70	1.50	2.40
2	4.60	11.60	19.00	12.20	4.00	2.90	2.30	2.70	2.30	.70	1.40	2.50
3	3.90	24.50	13.50	6.50	3.90	2.40	1.90	3.10	2.10	.80	1.40	2.60
4	3.90	20.00	9.60	6.40	3.80	2.40	1.80	3.10	.90	.90	1.30	2.60
5	3.90	12.90	14.20	8.50	3.70	2.30	1.60	2.50	1.80	1.00	1.30	2.90
6	3.80	11.90	13.20	9.70	3.60	2.20	1.50	2.30	1.60	1.40	1.20	2.20
7	7.40	17.50	10.10	10.30	3.50	2.10	1.50	2.20	1.60	1.40	1.20	2.00
8	8.00	27.00	8.60	13.00	3.60	2.00	2.00	2.00	1.40	1.30	1.20	1.90
9	7.10	19.00	7.70	13.00	3.50	1.90	2.20	1.80	1.40	1.30	1.20	1.80
10	6.40	13.80	7.20	11.20	3.40	1.70	2.00	1.60	1.30	1.30	1.20	1.90
11	18.50	10.00	6.80	8.40	3.30	1.90	1.80	1.50	1.40	1.40	1.30	2.00
12	16.80	8.30	6.60	7.00	3.20	2.00	1.70	1.70	1.20	1.40	1.30	15.20
13	13.00	7.40	6.50	6.50	3.10	2.00	1.50	1.60	1.20	1.30	1.30	13.20
14	11.60	7.00	6.40	6.20	3.10	2.70	1.40	1.60	1.10	1.30	1.30	8.20
15	9.40	6.10	7.20	6.00	3.00	2.70	1.30	1.50	1.00	1.20	1.30	5.00
16	7.80	10.40	12.20	7.10	2.90	2.60	1.30	4.00	1.00	1.10	1.30	3.70
17	12.70	11.50	11.00	6.60	2.80	2.10	1.20	3.90	1.00	1.20	1.60	3.00
18	10.00	10.60	10.20	5.60	2.70	1.90	1.10	2.20	1.00	1.10	1.50	2.60
19	8.00	9.30	14.80	5.50	2.60	1.80	1.60	1.90	1.10	1.20	1.50	2.50
20	6.50	8.30	13.90	5.40	2.50	1.80	1.40	1.70	1.00	1.30	1.50	2.70
21	5.70	8.30	10.40	5.20	2.60	1.70	8.40	1.50	.90	1.40	1.40	2.70
22	5.30	8.40	8.30	5.00	2.70	1.50	16.75	1.60	1.00	1.50	1.40	2.70
23	5.10	7.60	8.10	4.90	2.60	1.50	14.00	2.00	1.00	1.60	1.60	2.60
24	5.20	6.90	8.70	10.00	3.30	1.50	16.95	2.60	.90	1.80	1.80	9.30
25	5.20	6.40	8.70	10.00	4.60	1.50	7.90	1.90	.90	1.50	2.20	9.40
26	5.10	6.30	7.30	7.50	3.30	2.00	6.70	1.80	.90	1.40	4.60	7.20
27	4.80	25.00	6.90	5.80	2.80	2.50	6.80	3.70	.90	1.30	6.20	5.00
28	4.70	37.00	6.80	5.80	2.60	2.50	8.40	2.80	.80	1.20	4.80	4.00
29	5.10	......	9.00	4.90	2.50	2.20	10.10	2.10	.80	1.30	3.60	3.50
30	5.20	......	8.90	4.60	2.60	2.70	5.40	1.90	.80	1.50	2.80	3.10
31	6.50	......	13.85	......	2.50	......	4.40	2.30	......	1.60	......	2.90

Daily gage height, in feet, of Tallapoosa River at Milstead—Continued.

Day.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1900.												
1	2.70	2.50	13.20	5.50	6.30	2.60	9.00	6.50	2.70	1.80	2.50	3.30
2	2.60	2.40	13.10	5.30	5.90	2.70	9.10	4.50	8.00	1.60	3.30	3.30
3	2.40	2.30	10.70	5.00	5.40	3.00	10.60	3.50	8.10	1.50	6.10	3.30
4	2.30	4.50	8.00	5.30	4.90	3.50	7.10	2.80	4.40	1.80	6.50	3.50
5	2.30	4.20	6.80	4.80	4.70	3.30	8.00	2.70	3.00	3.30	7.10	3.90
6	2.80	4.30	6.10	4.70	3.90	3.50	5.20	2.50	2.40	6.40	5.50	3.90
7	2.20	4.40	5.60	4.60	3.80	3.30	4.40	2.30	2.20	3.40	4.10	3.80
8	2.20	3.80	10.90	4.60	3.70	5.90	4.00	2.20	2.00	3.20	3.50	3.80
9	2.20	5.20	13.80	4.50	3.60	9.70	3.60	2.10	1.80	2.60	3.00	3.10
10	2.20	8.90	12.70	4.60	3.50	6.90	7.60	2.00	1.70	2.60	2.90	3.10
11	2.60	19.00	10.00	5.50	3.30	5.60	5.50	1.90	1.70	3.00	2.70	2.80
12	7.30	30.00	7.90	10.60	3.20	4.60	4.10	1.90	1.60	2.80	2.60	2.80
13	6.00	43.25	6.60	11.50	3.10	5.30	4.70	1.80	1.50	3.40	2.60	2.80
14	4.50	42.00	5.90	9.00	3.00	4.00	6.70	1.90	1.50	3.30	2.50	7.70
15	4.00	31.90	5.40	6.60	2.90	3.80	6.00	2.20	14.00	3.30	2.50	9.10
16	3.40	22.80	7.00	5.30	2.90	3.50	5.10	2.70	25.60	2.70	2.50	7.30
17	3.00	13.50	7.20	4.70	2.80	4.50	3.80	3.10	18.00	2.70	2.50	5.20
18	2.90	8.90	5.60	13.90	2.80	5.90	3.80	2.50	11.00	2.20	2.50	4.20
19	3.70	7.00	5.40	17.00	2.80	5.00	3.60	4.00	5.30	2.10	2.50	4.00
20	9.50	6.10	6.00	15.00	2.90	5.90	4.20	3.60	3.60	2.00	2.50	8.60
21	7.50	6.50	11.40	16.90	2.80	5.90	3.00	2.50	3.00	1.90	2.50	17.00
22	5.90	9.80	10.50	13.30	3.00	5.50	2.80	2.20	2.50	2.00	4.00	13.50
23	4.60	9.50	10.30	10.30	3.10	5.40	2.70	2.00	2.30	4.80	4.00	10.40
24	3.90	8.90	15.50	13.20	3.40	20.00	2.60	2.30	2.20	12.10	3.90	11.30
25	3.50	8.40	15.20	12.50	3.50	25.04	2.50	3.30	2.00	10.50	3.50	8.70
26	3.10	8.00	16.00	9.40	5.00	20.00	2.50	3.40	2.00	9.00	10.50	6.60
27	3.00	7.00	13.70	7.50	4.50	16.00	2.80	3.60	2.00	6.00	8.80	5.60
28	2.80	6.00	11.20	6.40	3.20	18.00	2.90	2.70	2.00	4.20	6.70	5.00
29	2.70	......	8.70	6.20	2.70	13.80	3.20	2.60	2.00	2.20	4.50	4.60
30	2.60	......	7.10	6.10	3.00	9.00	8.10	2.10	1.90	2.90	3.70	4.30
31	2.50	......	6.20	......	2.50	......	10.60	3.20	......	2.70	......	11.00
1901.												
1	14.30	7.40	5.30	26.00	5.00	8.70	5.10	2.10	4.00	2.20	1.70	2.00
2	15.50	7.20	5.20	22.00	4.80	8.60	4.20	2.20	3.50	2.90	1.70	2.00
3	14.50	7.50	5.10	23.00	4.70	9.70	4.30	2.30	2.90	6.10	1.70	1.95
4	11.00	24.07	5.00	18.00	4.60	10.90	4.00	2.20	2.70	6.40	1.80	2.20
5	9.80	26.00	4.90	14.20	4.40	8.00	3.30	2.10	2.40	5.10	1.95	2.40
6	8.70	18.30	4.70	10.80	4.30	7.30	3.60	2.10	2.20	4.00	1.95	2.40
7	7.40	12.60	4.50	9.60	4.20	12.10	4.00	2.60	2.10	3.20	2.00	2.30
8	6.10	10.50	4.40	7.20	4.20	10.10	4.40	2.60	2.00	2.50	1.90	2.20
9	5.30	13.10	4.40	6.80	4.10	6.30	4.70	2.30	2.00	2.10	1.90	2.20
10	5.00	14.00	4.70	6.20	3.90	5.90	3.70	2.30	1.90	2.00	2.00	2.20
11	6.00	12.60	7.70	5.80	3.80	4.50	2.90	2.10	1.90	1.90	1.90	2.30
12	24.20	10.90	6.00	5.60	3.80	4.10	2.60	2.30	1.80	1.90	1.80	2.50
13	30.50	9.80	5.50	6.10	3.80	4.20	2.60	2.90	1.80	1.90	1.80	2.40
14	22.00	8.20	6.00	8.80	4.50	5.00	2.10	2.50	2.80	2.00	1.75	2.60
15	18.00	7.70	5.50	10.70	4.30	7.30	2.20	2.10	4.20	2.10	1.75	6.00
16	11.50	6.90	5.10	8.70	4.00	5.70	2.30	3.20	3.10	2.10	1.80	13.40
17	12.20	6.60	4.50	7.70	3.60	6.00	5.30	8.90	3.00	2.00	1.80	9.00
18	12.10	6.50	4.10	11.00	3.50	5.20	4.80	8.00	5.60	1.90	1.80	6.00
19	9.70	6.30	4.00	23.00	3.50	4.40	4.30	6.60	9.10	1.90	1.90	3.90
20	8.00	6.20	6.00	22.00	4.00	4.00	3.50	5.90	7.10	1.80	2.10	3.60
21	7.10	5.90	7.90	13.40	10.50	3.60	3.30	9.60	5.00	1.80	2.20	3.40
22	6.80	5.80	6.30	10.70	16.20	3.30	3.10	7.20	3.80	1.70	2.20	3.20
23	6.40	5.70	6.20	8.90	14.20	3.30	2.80	20.75	2.70	1.70	2.30	3.10
24	6.20	6.00	10.10	7.60	12.00	3.20	3.50	21.00	2.30	1.70	2.20	3.10
25	7.00	6.10	8.90	6.90	9.00	9.10	2.40	9.40	2.10	1.70	2.20	3.00
26	6.80	6.10	10.20	6.50	10.00	3.00	2.20	5.90	2.10	1.60	2.10	2.90
27	6.70	6.10	14.30	6.10	8.40	2.90	2.50	4.20	2.00	1.70	2.30	2.95
28	6.70	5.50	17.50	5.80	6.40	2.80	2.50	5.90	2.10	1.70	2.20	3.05
29	6.60	......	15.00	5.50	6.00	2.60	2.50	8.70	2.30	1.70	2.10	38.00
30	6.80	......	9.90	5.20	5.10	2.60	2.20	7.70	2.50	1.70	2.00	47.00
31	7.00	......	31.50	......	4.80	......	2.20	4.70	......	1.70	......	39.00

Rating table for Tallapoosa River at Milstead for 1897.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
0.5	330	1.5	1,070	3.0	3,129	5.0	5,909
.6	350	1.6	1,200	3.2	3,407	5.2	6,187
.7	380	1.7	1,333	3.4	3,685	5.4	6,465
.8	420	1.8	1,467	3.6	3,963	5.6	6,743
.9	470	1.9	1,600	3.8	4,241	5.8	7,021
1.0	530	2.0	1,733	4.0	4,519	6.0	7,299
1.1	620	2.2	2,007	4.2	4,797	7.0	8,689
1.2	720	2.4	2,285	4.4	5,075	8.0	10,079
1.3	830	2.6	2,573	4.6	5,353	9.0	11,469
1.4	950	2.8	2,851	4.8	5,631		

Rating table for Tallapoosa River at Milstead for 1898.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
0.8	540	2.0	1,920	4.0	4,220	10.0	11,120
.9	655	2.1	2,035	4.5	4,795	10.5	11,695
1.0	770	2.2	2,150	5.0	5,370	11.0	12,270
1.1	885	2.3	2,265	5.5	5,945	11.5	12,845
1.2	1,000	2.4	2,380	6.0	6,520	12.0	13,420
1.3	1,115	2.5	2,495	6.5	7,095	12.5	13,995
1.4	1,230	2.6	2,610	7.0	7,670	13.0	14,570
1.5	1,345	2.7	2,725	7.5	8,245	13.5	15,145
1.6	1,460	2.8	2,840	8.0	8,820	14.0	15,720
1.7	1,575	2.9	2,955	8.5	9,395	14.5	16,295
1.8	1,690	3.0	3,070	9.0	9,970	15.0	16,870
1.9	1,805	3.5	3,645	9.5	10,545		

Rating table for Tallapoosa River at Milstead for 1899.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
0.7	320	4.0	4,362	12.5	14,817	21.0	25,272
.8	430	4.5	4,977	13.0	15,432	21.5	25,887
.9	550	5.0	5,592	13.5	16,047	22.0	26,502
1.0	672	5.5	6,207	14.0	16,662	22.5	27,117
1.1	795	6.0	6,822	14.5	17,277	23.0	27,732
1.2	918	6.5	7,437	15.0	17,892	23.5	28,347
1.3	1,041	7.0	8,052	15.5	18,507	24.0	28,962
1.4	1,164	7.5	8,667	16.0	19,122	24.5	29,577
1.5	1,287	8.0	9,282	16.5	19,737	25.0	30,192
1.6	1,410	8.5	9,897	17.0	20,352	25.5	30,807
1.7	1,533	9.0	10,512	17.5	20,977	26.0	31,422
1.8	1,656	9.5	11,127	18.0	21,582	26.5	32,037
1.9	1,779	10.0	11,742	18.5	22,179	27.1	32,652
2.0	1,902	10.5	12,357	19.0	22,812	27.5	33,287
2.5	2,517	11.0	12,972	19.5	23,427	27.9	33,779
3.0	3,132	11.5	13,587	20.0	24,042		
3.5	3,747	12.0	14,202	20.5	24,657		

Rating table for Tallapoosa River at Milstead for 1900 and 1901.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
1.5	1,337	3.5	3,587	7.5	8,087	26.0	28,900
1.6	1,450	3.6	3,700	8.0	8,650	27.0	30,025
1.7	1,562	3.7	3,812	8.5	9,212	28.0	31,150
1.8	1,675	3.8	3,925	9.0	9,775	29.0	32,275
1.9	1,787	3.9	4,037	10.0	10,900	30.0	33,400
2.0	1,900	4.0	4,150	11.0	12,025	31.0	34,525
2.1	2,012	4.1	3,262	12.0	13,150	32.0	35,650
2.2	2,125	4.2	4,375	13.0	14,275	33.0	36,775
2.3	2,237	4.3	4,487	14.0	15,400	34.0	37,900
2.4	2,350	4.4	4,600	15.0	16,525	35.0	39,025
2.5	2,462	4.5	4,712	16.0	17,650	36.0	41,150
2.6	2,575	4.6	4,825	17.0	18,775	37.0	41,275
2.7	2,687	4.7	4,937	18.0	19,900	38.0	42,400
2.8	2,800	4.8	5,050	19.0	21,025	39.0	43,525
2.9	2,912	4.9	5,162	20.0	22,150	40.0	44,650
3.0	3,025	5.0	5,275	21.0	23,275	41.0	45,775
3.1	3,137	5.5	5,837	22.0	24,400	42.0	46,900
3.2	3,250	6.0	6,400	23.0	25,525	43.0	48,025
3.3	3,362	6.5	6,962	24.0	26,650		
3.4	3,475	7.0	7,525	25.0	27,775		

Estimated monthly discharge of Tallapoosa River at Milstead.

[Drainage area, 3,840 square miles.]

Month.	Discharge in second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1897.					
August 7–31	12,440	1,070	3,173	0.83	0.77
September	1,467	420	742	.19	.21
October	470	380	424	.11	.12
November	1,200	470	729	.19	.21
December	6,604	1,070	2,214	.58	.67
1898.					
January	4,105	1,575	2,426	.63	0.72
February	2,265	1,690	1,912	.50	.52
March	5,715	1,575	2,313	.60	.69
April	21,240	2,150	5,748	1.50	1.67
May	2,610	885	1,493	.39	.45
June	3,070	540	1,314	.34	.38
July	5,485	885	2,493	.65	.75
August	25,610	1,920	7,418	1.93	2.22
September	6,520	1,345	2,637	.69	.77
October	36,420	1,115	7,280	1.90	2.19
November	16,180	2,035	6,049	1.58	1.76
December	11,120	3,530	5,741	1.50	1.73
The year	36,420	540	3,902	1.02	13.85
1899.					
January	22,197	4,116	8,417	2.19	2.53
February	44,952	6,945	15,688	4.09	4.26
March	32,652	7,314	12,399	3.23	3.72
April	21,582	5,100	9,016	2.35	2.62
May	4,731	2,517	3,351	.87	1.00
June	2,999	1,287	2,040	.53	.59
July	20,290	795	4,985	1.30	1.50
August	4,362	1,287	2,222	.58	.67
September	2,394	430	984	.26	.29
October	1,656	320	1,014	.26	.30
November	7,068	918	1,787	.47	.53
December	18,138	1,656	4,728	1.23	1.42
The year	44,952	320	5,553	1.45	19.43

Estimated monthly discharge of Tallapoosa River at Milstead—Continued.

Month.	Discharge in second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1900.					
January	10,335	2,125	3,728	.97	1.12
February	48,305	2,237	12,950	3.37	3.50
March	17,650	5,723	10,208	2.66	3.07
April	18,775	4,712	9,016	2.35	2.62
May	6,736	2,462	3,718	.97	1.12
June	27,831	2,575	8,317	2.17	2.42
July	11,572	2,462	5,405	1.41	1.63
August	6,960	1,675	2,814	.73	.84
September	28,447	1,337	4,975	1.30	1.45
October	13,262	1,337	3,787	.99	1.14
November	11,460	2,462	4,224	1.10	1.23
December	18,775	2,800	6,475	1.69	1.95
The year	48,305	1,337	6,301	1.64	22.09
1901.					
January	33,962	5,275	11,476	2.99	3.45
February	28,900	5,837	10,440	2.72	2.83
March	35,087	4,150	8,374	2.18	2.52
April	28,900	5,499	12,020	3.13	3.49
May	17,875	3,587	6,440	1.68	1.94
June	13,262	2,775	5,976	1.56	1.74
July	5,387	2,012	3,398	.88	1.01
August	23,275	2,012	5,904	1.54	1.78
September	9,887	1,675	3,137	.82	.91
October	6,849	1,562	2,364	.62	.71
November	2,237	1,562	1,855	.48	.54
December	a 70,000	1,843	8,282	2.16	2.49
The year	a 70,000	1,562	6,639	1.73	23.41

a Approximate.

Net horsepower per foot of fall with a turbine efficiency of 80 per cent for the minimum monthly discharge of Tallapoosa River at Milstead.

Month.	1899.			1900.			1901.		
	Minimum discharge.	Minimum net horsepower per foot of fall.	Duration of minimum.	Minimum discharge.	Minimum net horsepower per foot of fall.	Duration of minimum.	Minimum discharge.	Minimum net horsepower per foot of fall.	Duration of minimum.
	Sec.-feet.		*Days.*	*Sec.-feet.*		*Days.*	*Sec.-feet.*		*Days.*
January	4,116	374	1	2,125	193	4	5,275	480	1
February	6,945	631	1	2,237	203	1	5,837	531	1
March	7,314	665	1	5,725	520	2	4,150	377	1
April	5,100	464	1	4,712	428	1	5,500	500	1
May	2,517	229	3	2,462	224	1	3,587	326	2
June..........	1,287	117	4	2,575	234	1	2,575	234	2
July	795	72	1	2,462	224	2	2,012	183	1
August.........	1,287	117	3	1,675	152	1	2,012	183	5
September	430	39	3	1,337	122	2	1,675	152	2
October	320	29	2	1,337	122	1	1,562	142	10
November	918	83	5	2,462	244	9	1,562	142	3
December	1,656	151	1	2,800	255	3	1,843	168	1

TALLAPOOSA RIVER NEAR SUSANNA.

This station was established July 27, 1900, by J. R. Hall. It is located at the mouth of Blue Creek, which is 10 feet above the east landing of McCartys Ferry, 13 miles southwest of Dadeville and 3 miles from Susanna, the nearest post-office. The rod is graduated to feet and tenths. It is 18 feet long and is nailed vertically to a tree overhanging the water on the south side of the creek at the junction of the creek and the river. The gage is referred to a bench mark on a white hickory tree about 40 feet from the rod on the south bank of the creek, and is 376.67 feet above tide water. Discharge measurements are made from a boat held in place by a wire stretched across the river, upon which the distances from the initial point are tagged. The section is an exceptionally good one, depth and current being almost uniform the entire width of the stream. This station was discontinued March 30, 1901.

During 1900 and 1901 the following discharge measurements were made by James R. Hall:

Discharge measurements of Tallapoosa River near Susanna.

Date.	Gage height.	Discharge.
1900.	*Feet.*	*Second-feet.*
July 27	1.80	2,309
August 9	1.55	1,900
September 28	1.50	1,809
November 24	2.40	3,629
1901.		
July 9	2.80	5,628
February 27	2.90	5,135

Daily gage height, in feet, of Tallapoosa River near Susanna.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1900.												
1								5.80	2.40	1.40	1.80	2.00
2								4.00	3.80	1.40	1.70	2.00
3								2.00	4.80	1.40	1.70	2.10
4								1.80	4.20	1.35	1.65	2.20
5								1.80	2.25	1.30	1.65	2.30
6								2.10	1.50	2.80	1.65	2.50
7								2.20	1.45	3.00	1.60	2.40
8								1.70	1.45	2.50	1.60	2.40
9								1.55	1.40	1.85	1.60	2.40
10								1.50	1.35	1.80	1.60	2.30
11								1.40	1.35	1.75	1.60	2.10
12								1.40	1.35	1.70	1.55	2.00
13								1.40	1.35	1.90	1.55	1.90
14								1.40	1.30	2.40	1.60	3.90
15								1.40	1.35	2.45	1.60	3.90
16								1.90	11.70	2.40	1.60	2.80
17								1.95	8.40	2.35	1.75	2.60
18								1.95	4.80	2.30	1.75	2.50
19								1.80	3.00	2.20	1.80	2.40
20								1.75	2.50	2.10	1.85	4.50
21								1.70	1.80	1.90	1.85	5.80
22								1.70	1.80	1.70	1.90	4.50
23								1.90	1.80	3.90	2.40	4.00
24								2.00	1.70	6.00	2.40	4.00
25								2.05	1.60	5.00	3.00	3.70
26								2.50	1.50	4.30	4.90	3.20
27							1.80	2.15	1.50	4.10	4.20	2.80
28							1.90	2.00	1.50	2.30	3.90	2.70
29							1.80	1.90	1.45	2.20	3.00	2.60
30							4.00	1.80	1.45	1.90	2.80	2.70
31							6.80	2.25	....	1.85	....	2.90

Daily gage height, in feet, of Tallapoosa River near Susanna—Continued.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1901.												
1	6.0	3.40	2.70									
2	6.0	3.45	2.60									
3	5.1	3.30	2.65									
4	4.5	11.50	2.70									
5	3.9	9.50	2.65									
6	3.5	6.50	2.60									
7	3.2	4.40	2.50									
8	3.0	4.30	2.40									
9	2.9	4.80	2.50									
10	2.8	4.90	2.70									
11	3.4	4.50	3.30									
12	13.5	4.00	3.10									
13	11.5	3.50	2.90									
14	8.0	3.04	2.60									
15	6.1	3.30	2.50									
16	4.5	3.20	2.40									
17	5.0	3.10	2.40									
18	4.5	3.10	2.40									
19	3.9	3.05	2.45									
20	3.4	3.00	3.00									
21	3.2	2.90	3.40									
22	3.1	2.85	2.90									
23	3.0	2.80	2.70									
24	3.1	2.90	3.30									
25	3.4	3.00	3.40									
26	3.1	3.00	3.60									
27	3.2	2.90	7.40									
28	3.1	2.80	6.90									
29	3.0	......	6.10									
30	3.2	......	4.10									
31	3.3	......	......									

Rating table for Tallapoosa River near Susanna for 1900 and 1901.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
1.0	....	2.6	4,730	4.2	11,930	7.0	24,530
1.2	....	2.8	5,630	4.4	12,830	8.0	29,030
1.4	1,680	3.0	6,530	4.6	13,730	9.0	33,530
1.6	1,960	3.2	7,430	4.8	14,630	10.0	38,030
1.8	2,320	3.4	8,330	5.0	15,530	11.0	42,530
2.0	2,740	3.6	9,230	5.5	17,780	11.7	45,680
2.2	3,230	3.8	10,130	6.0	20,030		
2.4	3,850	4.0	11,030	6.5	22,280		

Estimated monthly discharge of Tallapoosa River near Susanna.

[Drainage area, 2,610 square miles.]

Month.	Discharge in second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1900.					
July 27 to 31			8,364		
August	19,130	1,680	3,258	1.25	1.44
September	45,680	1,570	6,083	2.33	2.60
October	20,030	1,570	4,776	1.83	2.11
November	15,080	1,885	3,676	1.41	1.57
December	19,130	2,520	6,288	2.41	2.78
1901.					
January	53,780	5,630	13,265	5.08	5.86
February	44,780	5,630	11,303	4.33	4.51
March	26,330	3,850	7,546	2.89	3.31

Net horsepower per foot of fall, with a turbine efficiency of 80 per cent for the minimum monthly discharge of Tallapoosa River near Susanna.

Month.	1900.			1901.		
	Minimum discharge.	Minimum net horse-power per foot of fall.	Duration of minimum.	Minimum discharge.	Minimum net horse-power per foot of fall.	Duration of minimum.
	Second-feet.		*Days.*	*Second-feet.*		*Days.*
January				5,630	512	1
February				5,630	512	2
March				3,850	350	4
July	2,320	211	2			
August	1,680	153	5			
September	1,570	143	1			
October	1,570	143	1			
November	1,885	171	2			
December	2,520	229	1			

TALLAPOOSA RIVER AT STURDEVANT.

This station was established July 19, 1900, by J. R. Hall. It is located at the Columbus and Western Railroad bridge, a fourth of a mile west of Sturdevant. This railroad belongs to the Central of Georgia Railway. The gage rod is 20 feet long, and is graduated to feet and tenths. It is in two sections, and is fastened vertically, the shorter section to a post at the edge of the water on the east bank about 20 feet below the bridge, and the longer section to the first stone pier from the east bank. The initial point of sounding is the east end of the bridge. The section is broken by three piers and by some large rocks below the bridge. The gage is referred to a bench mark consisting of a nail in the southwest corner of pier No. 2, on the east side of the river, 455.70 feet above tide water and 14.20 feet above the zero of the gage. The observer is B. F. Neighbors, farmer and postmaster at Sturdevant, who lives a fourth of a mile from the station. This station being above the big new dams at Tallassee, is intended to replace Milstead station.

The following discharge measurements were made by James R. Hall, W. E. Hall, M. R. Hall, and assistants:

Discharge measurements of Tallapoosa River at Sturdevant.

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.
1900	*Feet.*	*Second-feet.*	1903	*Feet.*	*Second-feet.*
July 20	2. 85	2, 603	May 22	4. 00	4, 580
August 13	1. 95	1, 887	July 25	2. 45	2, 247
1901			August 22...........	2. 20	1, 837
March 8	3. 40	3, 774	August 24...........	1. 88	1, 485
1902			Do	1. 86	1, 616
July 11	1. 85	1, 440	October 3 ......,....	1. 05	834
September 17	. 80	658	Do	1. 05	835
October 9	1. 08	858	November 24........	1. 58	1, 148
November 12........	1. 34	1, 000			

Daily gage height, in feet, of Tallapoosa River at Sturdevant.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1900.												
1								4.30	3.40	1.80	2.50	2.90
2								3.40	6.10	1.70	3.40	2.80
3								2.80	4.20	1.60	4.70	2.70
4								2.50	2.90	1.60	3.60	3.00
5								2.40	2.50	3.30	3.30	3.20
6								2.35	2.20	3.00	3.20	3.30
7								2.25	2.00	3.00	2.90	3.20
8								2.20	1.90	2.90	2.70	3.00
9								2.10	1.80	3.10	2.60	2.80
10								2.00	1.70	3.20	2.50	2.70
11								1.95	1.60	3.30	2.40	2.60
12								1.90	1.60	3.40	2.40	2.60
13								2.00	1.60	3.50	2.40	2.70
14								2.10	1.80	3.50	2.30	4.70
15								2.60	8.80	3.00	2.30	3.00
16								3.40	12.00	2.60	2.30	3.70
17								3.00	7.00	2.60	2.30	3.20
18								2.80	5.00	2.20	2.20	3.10
19							2.95	4.00	3.80	2.10	2.20	3.00
20							2.80	2.90	3.00	2.00	2.20	5.20
21							3.05	2.40	2.70	1.90	2.50	6.80
22							2.75	2.30	2.50	2.10	3.20	5.30
23							2.65	2.40	2.40	5.00	3.50	4.90
24							2.55	2.70	2.30	7.30	3.20	5.60
25							2.65	2.50	2.20	6.40	4.80	4.70
26							2.60	2.80	2.10	5.40	5.90	4.20
27							2.50	2.60	2.00	4.20	5.40	3.90
28							2.70	2.50	2.00	3.60	3.40	3.60
29							6.50	2.40	2.00	2.90	3.20	3.40
30							7.60	2.30	1.90	2.70	3.10	3.50
31							5.00	2.80	......	2.60	......	7.50
1901.												
1	7.0	4.6	3.8	7.4	3.8	5.5	4.0	3.1	3.2	2.4	1.6	1.7
2	6.8	4.5	3.8	6.8	3.7	5.5	3.5	2.8	2.9	4.5	1.6	1.7
3	6.0	5.8	3.7	8.3	3.7	5.3	3.2	2.5	2.7	6.0	1.6	2.1
4	5.4	12.9	3.7	7.4	3.6	5.2	3.0	2.3	2.6	3.4	1.6	2.2
5	4.9	9.4	3.6	5.7	3.5	4.8	2.9	2.3	2.4	2.7	1.7	2.3
6	5.2	7.7	3.6	5.0	3.5	4.6	2.8	2.2	2.3	2.3	1.8	2.2
7	5.1	6.5	3.5	4.7	3.4	5.6	4.3	2.1	2.2	2.1	1.8	2.1
8	4.0	5.4	3.4	4.4	3.4	4.9	4.0	2.4	2.1	2.0	1.8	2.1
9	4.0	5.7	3.4	4.2	3.3	3.8	3.4	2.2	2.0	2.0	1.8	2.2
10	4.1	5.4	3.9	4.0	3.3	3.6	3.0	2.0	2.0	2.0	1.8	2.2
11	6.0	5.2	4.3	3.9	3.3	3.4	2.6	2.2	2.0	1.9	1.7	2.3
12	14.1	5.1	4.0	3.9	3.2	3.3	2.3	2.4	2.0	1.9	1.7	2.2
13	11.0	4.8	4.0	4.1	3.2	3.2	2.2	2.3	2.0	2.1	1.7	2.1
14	9.2	4.6	3.6	6.0	3.4	4.9	2.1	2.2	4.0	2.1	1.8	3.0
15	6.1	4.4	3.4	6.4	3.3	4.4	2.1	2.0	3.4	2.0	1.8	7.8
16	5.3	4.3	3.3	5.3	4.2	4.1	2.0	5.3	2.8	2.0	1.8	5.9
17	5.7	4.2	3.3	4.7	3.1	3.8	2.2	7.2	3.6	1.9	1.8	4.1
18	5.3	4.2	3.2	4.4	3.0	3.6	3.8	5.9	7.0	1.9	1.8	3.5
19	4.0	4.1	3.2	8.5	3.0	3.3	3.6	5.3	5.2	1.8	2.0	3.0
20	4.4	4.1	3.6	9.0	3.3	3.1	3.2	6.6	4.3	1.8	2.2	2.8
21	4.3	4.0	4.3	6.7	6.1	3.0	3.0	5.8	3.4	1.7	2.2	2.6
22	4.2	4.0	3.9	5.2	7.6	2.9	2.8	5.6	3.0	1.7	2.3	2.5
23	4.1	4.0	3.7	4.8	7.0	2.8	2.4	11.7	2.4	1.7	2.2	2.5
24	4.2	4.0	4.5	4.6	6.5	2.7	2.2	8.3	2.3	1.7	2.2	3.0
25	4.3	4.0	4.3	4.4	5.3	2.7	2.1	5.2	2.2	1.7	2.1	2.8
26	4.2	4.0	5.4	4.3	6.8	2.6	2.1	4.0	2.1	1.7	2.1	2.7
27	4.1	3.9	8.7	4.2	4.5	2.6	2.1	3.3	2.0	1.6	2.0	2.6
28	4.3	3.9	8.2	4.1	4.4	2.5	2.1	4.4	2.0	1.6	1.9	2.8
29	4.5	......	7.5	4.0	4.3	2.5	2.0	5.2	2.2	1.6	1.8	15.7
30	4.5	......	5.0	3.9	4.2	5.2	2.1	4.3	2.3	1.6	1.8	17.2
31	4.6	......	8.9	......	4.0	......	2.8	3.5	......	1.6	......	12.0

Daily gage height, in feet, of Tallapoosa River at Sturdevant—Continued.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1902.												
1	11.10	6.90	13.70	8.00	3.50	3.60	1.00	1.10	1.80	2.90	.9	2.30
2	8.40	11.40	11.00	7.20	3.40	3.10	1.00	1.30	1.50	2.50	.8	3.20
3	6.30	9.10	9.60	5.30	3.40	2.80	.90	1.20	1.30	2.30	.8	7.00
4	4.00	7.00	8.50	5.00	3.30	2.40	.90	1.10	1.90	1.90	.8	5.70
5	3.60	5.60	7.20	4.80	3.30	2.20	.80	2.00	1.60	1.60	1.2	4.50
6	3.40	5.00	6.00	4.70	3.30	2.10	1.40	1.80	1.50	1.40	2.8	4.10
7	3.30	4.80	5.50	4.60	3.20	2.10	1.20	2.50	1.40	1.20	2.7	4.00
8	3.20	4.30	5.00	6.40	3.20	2.00	1.10	2.30	1.20	1.00	2.6	3.90
9	3.10	4.00	4.80	5.20	3.20	2.20	1.20	1.10	1.50	1.90	2.50	3.70
10	3.00	3.80	4.60	5.00	3.20	2.10	1.10	1.10	1.40	1.80	2.30	3.30
11	2.90	3.70	4.50	4.80	3.10	2.00	1.90	1.20	1.10	2.30	2.10	2.90
12	2.90	3.60	4.40	4.50	3.10	1.90	1.60	1.20	1.00	2.00	1.90	2.60
13	2.80	3.50	4.80	4.40	3.10	1.80	1.50	1.40	.90	1.80	1.70	2.30
14	2.80	3.50	4.60	4.30	3.10	1.80	2.00	1.30	.80	1.60	1.50	2.10
15	2.70	4.10	5.90	4.20	4.20	1.70	2.30	1.00	.70	1.50	1.30	2.00
16	2.70	4.50	8.40	4.10	4.00	1.70	2.10	.90	.60	1.40	1.20	7.80
17	2.60	4.00	10.20	4.50	3.50	1.60	1.80	.80	.60	1.30	1.10	8.00
18	2.60	3.80	7.40	5.40	3.40	1.60	2.80	.70	.60	1.20	2.20	5.00
19	2.90	3.60	5.70	4.80	3.30	1.60	2.30	.60	.60	1.20	2.00	4.20
20	2.90	3.50	5.30	4.30	3.10	1.50	1.70	.50	.60	1.20	1.80	4.10
21	3.50	3.50	5.20	4.10	3.00	1.50	1.50	.50	.60	1.1	1.40	4.30
22	4.00	3.50	5.00	4.00	2.90	1.40	1.30	.50	.60	1.1	1.20	4.50
23	3.80	3.40	4.80	3.90	2.80	1.40	1.20	.60	.50	1.1	1.10	3.80
24	3.70	3.40	4.80	3.80	2.70	1.30	1.10	.60	.50	1.0	1.10	3.30
25	3.60	3.70	5.10	3.70	2.60	1.30	1.00	.50	.80	1.0	3.80	3.00
26	3.50	3.80	4.90	3.70	2.50	1.30	.90	.40	.80	1.0	5.20	2.80
27	3.40	3.90	6.80	3.70	2.40	1.20	.90	1.20	3.00	1.0	5.00	2.60
28	4.00	16.10	16.10	3.60	2.40	1.20	.80	2.40	4.10	1.0	4.30	2.50
29	4.50	....	14.60	3.60	2.30	1.20	.90	6.00	3.20	.9	2.80	2.40
30	5.00	....	10.90	3.50	2.30	1.10	1.00	3.40	4.10	.9	2.30	2.60
31	5.00	....	9.20	....	2.20	....	1.00	2.30	....	.9	....	3.90
1903.												
1	3.6	2.9	11.0	9.0	3.8	3.5	3.6	4.7	2.1	1.1	1.2	1.4
2	3.7	2.7	9.2	7.8	3.8	5.0	3.5	4.1	1.9	1.1	1.3	1.4
3	3.6	2.6	7.6	5.9	3.7	4.5	3.4	3.8	1.6	1.1	1.5	1.5
4	3.5	3.2	6.5	5.5	3.7	4.2	3.3	3.5	1.4	1.0	1.8	1.5
5	3.5	4.1	5.9	5.2	3.9	6.2	4.4	3.2	1.3	1.0	2.0	1.5
6	3.4	4.3	5.5	5.1	5.4	8.1	3.6	3.4	1.2	1.0	2.1	1.6
7	3.3	4.5	5.4	5.0	4.9	5.3	4.0	3.2	1.2	.9	2.1	1.6
8	3.2	19.2	5.1	4.9	4.5	5.0	4.4	3.0	1.1	1.1	2.0	1.6
9	3.1	14.0	4.9	8.1	4.3	4.8	4.5	2.8	1.1	2.7	1.8	1.7
10	3.0	10.0	5.3	7.6	4.1	4.5	3.6	2.7	1.0	2.0	1.6	1.8
11	3.1	12.1	6.5	6.0	4.0	5.5	3.3	2.5	1.0	1.5	1.5	1.8
12	3.7	13.8	5.8	5.5	4.0	4.5	3.1	2.2	.9	1.2	1.4	1.7
13	3.5	9.3	5.3	6.0	6.5	4.0	3.0	2.1	.9	1.0	2.1	1.7
14	3.3	6.6	5.1	6.2	6.3	3.8	3.2	2.0	1.0	.9	1.9	1.7
15	3.2	5.4	5.0	5.6	13.7	3.6	3.4	1.9	2.1	.9	1.8	1.6
16	3.0	4.8	4.9	5.2	9.5	3.5	3.1	3.0	3.2	1.0	1.7	1.6
17	2.8	14.6	4.8	4.7	6.8	3.3	2.9	3.8	2.8	1.2	1.6	1.6
18	2.7	12.0	4.7	4.5	5.3	3.2	2.7	5.6	2.4	1.5	1.6	1.5
19	2.6	10.2	4.6	4.4	4.9	3.1	2.6	3.8	2.2	1.4	1.8	1.5
20	2.6	8.9	4.5	10.6	4.4	3.1	2.5	3.0	2.0	1.3	1.7	1.9
21	2.5	5.2	4.5	6.5	4.2	3.0	2.4	2.5	1.9	1.2	1.7	2.0
22	2.5	4.6	5.3	5.4	4.1	2.9	2.3	2.3	1.7	1.1	1.7	1.9
23	2.5	4.2	8.4	5.1	3.8	2.9	2.2	2.2	1.5	1.1	1.6	1.9
24	2.5	4.0	9.5	4.6	3.7	2.8	2.1	2.1	1.4	1.0	1.6	1.9
25	2.5	3.8	8.2	4.2	3.6	2.8	2.1	1.8	1.4	1.0	1.6	2.1
26	2.5	3.7	6.0	4.1	3.5	3.0	2.4	1.7	1.3	1.0	1.5	2.9
27	2.5	3.7	5.6	4.0	3.5	5.8	2.2	1.6	1.3	.9	1.5	2.5
28	3.0	16.0	5.4	3.9	3.4	5.1	2.1	1.5	1.2	.9	1.5	2.2
29	3.1	....	5.3	3.9	3.3	4.5	2.0	1.5	1.2	.9	1.5	2.0
30	3.1	....	10.0	3.9	3.3	4.0	1.9	2.0	1.2	1.0	1.5	1.9
31	3.1	....	9.8	....	3.2	....	5.8	2.4	....	1.1	....	1.7

Rating table for Tallapoosa River at Sturdevant for 1900, 1901, and 1902.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
0. 6	555	3. 0	3, 140	5. 4	6, 860	10. 5	14, 765
. 8	660	3. 2	3, 450	5. 6	7, 170	11. 0	15, 540
1. 0	775	3. 4	3, 760	5. 8	7, 480	11. 5	16, 315
1. 2	910	3. 6	4, 070	6. 0	7, 790	12. 0	17, 090
1. 4	1, 055	3. 8	4, 380	6. 5	8, 565	12. 5	17, 865
1. 6	1, 220	4. 0	4, 690	7. 0	9, 340	13. 0	18, 640
1. 8	1, 410	4. 2	5, 000	7. 5	10, 115	13. 5	19, 415
2. 0	1, 640	4. 4	5, 310	8. 0	10, 890	14. 0	20, 190
2. 2	1, 910	4. 6	5, 620	8. 5	11, 665	14. 5	20, 965
2. 4	2, 210	4. 8	5, 930	9. 0	12, 440	15. 0	21, 740
2. 6	2, 520	5. 0	6, 240	10. 0	13, 215		
2. 8	2, 830	5. 2	6, 550	9. 5	13, 990		

Rating table for Tallapoosa River at Sturdevant for 1903.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
0. 90	765	2. 20	1, 885	4. 60	5, 470	7. 00	9, 070
. 95	789	2. 30	2, 025	4. 70	5, 620	7. 60	9, 970
1. 00	810	2. 40	2, 170	4. 80	5, 770	8. 00	10, 570
1. 05	834	2. 50	2, 320	4. 90	5, 920	8. 90	11, 920
1. 10	859	2. 60	2, 470	5. 00	6, 070	9. 00	12, 070
1. 15	885,	2. 70	2, 620	5. 10	6, 220	9. 20	12, 370
1. 20	912	2. 80	2, 770	5. 20	6, 370	9. 30	12, 520
1. 25	940	2. 90	2, 920	5. 30	6, 520	9. 50	12, 820
1. 30	970	3. 00	3, 070	5. 40	6, 670	9. 80	13, 270
1. 35	1, 002	3. 10	3, 220	5. 50	6, 820	10. 00	13, 570
1. 40	1, 036	3. 20	3, 370	5. 60	6, 970	10. 20	13, 870
1. 45	1, 072	3. 30	3, 520	5. 70	7, 120	11. 00	15, 070
1. 50	1, 110	3. 40	3, 670	5. 80	7, 270	12. 00	16, 570
1. 55	1, 150	3. 50	3, 820	5. 90	7, 420	12. 10	16, 720
1. 60	1, 194	3. 60	3, 970	6. 00	7, 570	13. 00	18, 070
1. 65	1, 240	3. 70	4, 120	6. 10	7, 720	13. 80	19, 270
1. 70	1, 288	3. 80	4, 270	6. 20	7, 870	14. 00	19, 570
1. 75	1, 338	3. 90	4, 420	6. 30	8, 020	14. 60	20, 470
1. 80	1, 390	4. 00	4, 570	6. 40	8, 170	16. 00	22, 570 ·
1. 85	1, 444	4. 10	4, 720	6. 50	8, 320	19. 00	27, 070
1. 90	1, 500	4. 20	4, 870	6. 60	8, 470	19. 20	27, 370
1. 95	1, 560	4. 30	5, 020	6. 70	8, 620		
2. 00	1, 620	4. 40	5, 170	6. 80	8, 770		
2. 10	1, 750	4. 50	5, 320	6. 90	8, 920		

Estimated monthly discharge of Tallapoosa River at Sturdevant.

[Drainage area, 2,500 square miles.]

Month.	Discharge in second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1900.					
July 19–31			4,002	1.60	0.77
August	5,155	1,520	2,533	1.01	1.16
September	17,090	1,220	3,602	1.44	1.61
October	9,805	1,220	3,398	1.36	1.57
November	7,635	1,910	3,275	1.31	1.46
December	10,115	2,520	4,330	1.73	1.99
1901.					
January	20,345	4,690	7,035	2.81	3.24
February	18,485	4,535	6,468	2.59	2.70
March	12,285	3,450	5,315	2.13	2.46
April	12,440	4,535	6,772	2.61	2.91
May	10,270	3,140	4,885	1.95	2.25
June	7,170	2,365	4,452	1.78	1.99
July	5,155	1,640	2,795	1.12	1.29
August	16,625	1,640	4,793	1.92	2.21
September	9,340	1,640	2,852	1.14	1.27
October	7,790	1,220	1,946	.78	.90
November	2,055	1,220	1,502	.70	.78
December	24,150	1,310	4,670	1.87	2.16
The year	24,150	1,220	4,457	1.78	24.16
1902.					
January	15,695	2,520	4,550	1.82	2.10
February	23,245	3,760	6,288	2.52	2.62
March	23,245	5,310	9,708	3.88	4.47
April	10,890	3,914	5,677	2.27	2.53
May	5,000	1,910	3,240	1.30	1.50
June	4,070	840	1,544	.62	.69
July	2,830	660	1,004	.40	.46
August	7,790	470	1,298	.52	.60
September	4,845	510	1,255	.50	.56
October	2,985	715	1,180	.47	.54
November	6,550	660	2,011	.80	.89
December	10,890	1,640	4,412	1.76	2.03
The year	23,245	470	3,514	1.40	18.99

Estimated monthly discharge of Tallapoosa River at Sturdevant—Continued.

Month.	Discharge in second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1903.					
January	4,120	2,320	3,128	1.25	1.44
February	27,370	2,470	9,841	3.94	4.10
March	15,070	5,320	8,035	3.21	3.70
April............................	14,470	4,420	6,988	2.79	3.11
May	19,120	3,370	5,688	2.27	2.62
June	10,720	2,770	4,845	1.94	2.16
July	7,270	1,500	3,204	1.28	1.48
August	6,970	1,110	2,771	1.11	1.28
September........................	3,370	765	I,271	.51	.57
October	2,620	765	939	.37	.43
November........................	1,750	912	1,285	.51	.57
December	2,920	1,036	1,410	.56	.65
The year	27,370	765	4,117	1,645	22.11

Net horsepower per foot of fall with a turbine efficiency of 80 per cent for the minimum monthly discharge of Tallapoosa River at Sturdevant.

Month.	1901.			1902.			1903.		
	Minimum discharge.	Minimum net horsepower per foot of fall.	Duration of minimum.	Minimum discharge.	Minimum net horsepower per foot of fall.	Duration of minimum.	Minimum discharge.	Minimum net horsepower per foot of fall.	Duration of minimum..
	Sec.-feet.		Days.	Sec.-feet.		Days.	Sec.-feet.		Days.
January	4,690	426	3	2,520	229	2	2,320	211	7
February	4,535	412	2	3,760	342	2	2,470	225	1
March	3,450	314	2	5,310	483	1	5,320	484	2
April	4,535	412	3	3,914	356	1	4,420	402	3
May	3,140	285	2	1,910	174	1	3,370	306	1
June............	2,365	215	2	840	76	1	2,770	252	2
July	1,640	149	2	660	60	2	1,500	136	1
August	1,640	149	2	470	43	1	1,110	101	2
September	1,640	149	7	510	46	2	765	70	2
October.........	1,220	111	5	715	65	3	765	70	6
November	1,220	111	4	660	60	3	912	83	1
December......	1,310	119	2	1,640	15	1	1,036	94	2
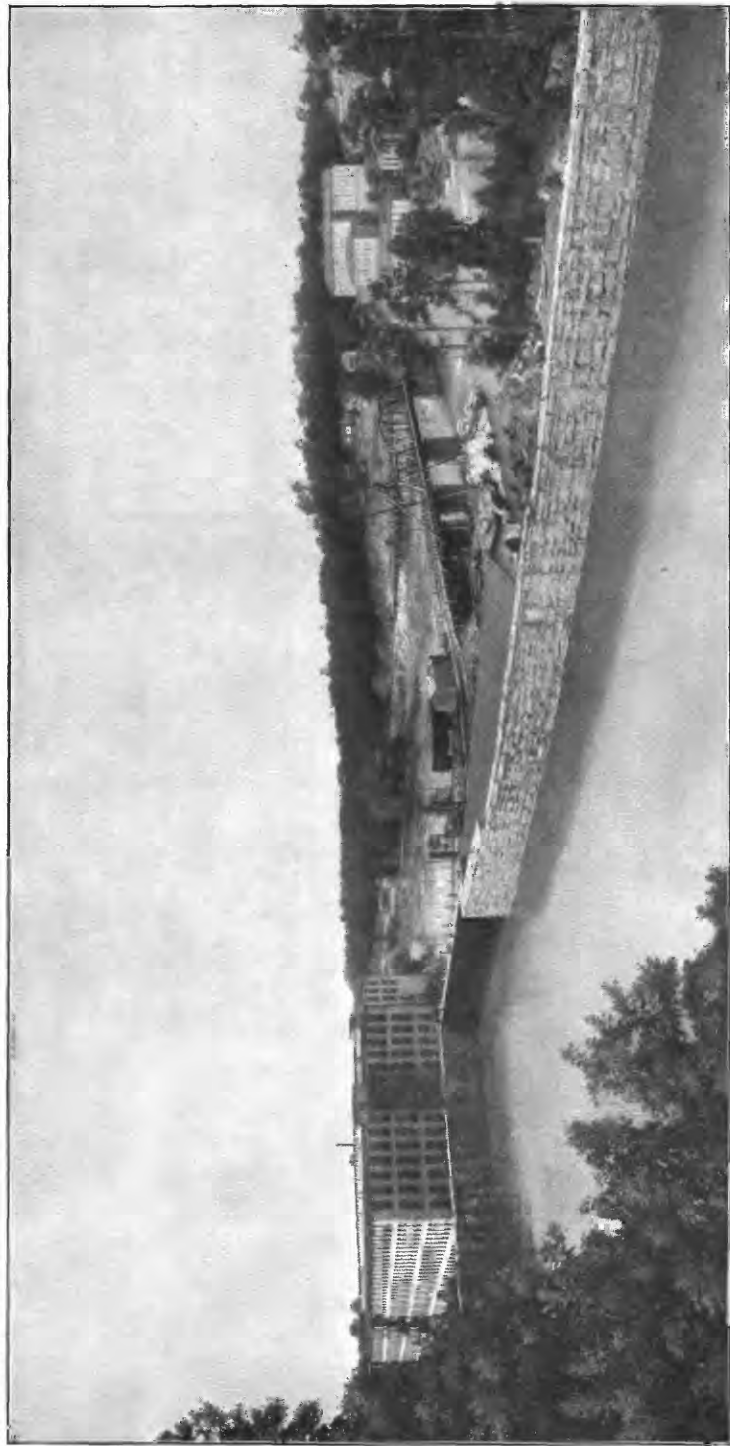
CANAL, POWER HOUSE, AND MILLS OF TALLASSEE FALLS MANUFACTURING COMPANY AT TALLASSEE, ALA.

On Tallapoosa River; view from east bank.

DESCRIPTION OF TALLAPOOSA RIVER.

A survey of a part of Tallapoosa River in Alabama was made in June and July, 1900, under supervision of B. M. Hall, resident hydrographer, by Field Engineer James R. Hall, levelman and topographer.

The survey began at the hydrographic station on Tallapoosa River, at Milstead, Ala., and ran up the river 64 miles to the head of the shoal above Griffin Ferry. The elevations are above sea level.

Elevations of bench marks and water surface along Tallapoosa River from Milstead to Griffin Shoals.

Distance from Milstead.	Location.	Bench mark.	Water surface.
Miles.		*Feet.*	*Feet.*
6. 0	Water surface of tail-water at Tallassee mills..............	....	206. 3
6. 2	Water surface above crest of Tallassee dam................	....	269. 9
8. 5	Upper end of Tallassee pond	....	269. 9
9. 5	Water surface below Montgomery Power Company's dam.	....	295. 25
9. 5	Crest of Montgomery Power Company's dam	....	335. 25
15. 7	Upper end of Montgomery Power Company's pond	....	335. 25
16. 5	Water surface at Double Bridge Ferry...................	....	351. 46
16. 8	Water surface at mouth of Wind Creek	....	352. 45
16. 8	Bench mark No. 7, bunch of mulberry trees at the mouth of Wind Creek...	357. 85	....
17. 8	Bench mark No. 22, crooked willow on small branch at north end of Taylor's field.............................	363. 30	....
17. 8	Water surface at bench mark No. 22.....................	....	356. 18
18. 5	Water surface opposite mouth of Kowaliga Creek........	....	357. 16
18. 75	Bench mark No. 33, mulberry 100 feet above old Baker field.	371. 73	....
18. 75	Water surface at bench mark No. 33....................	....	359. 75
19. 4	Bench mark No. 42, willow at Garnetts Ford.............	364. 60	....
19. 4	Water surface at Garnetts Ford	....	360. 55
19. 7	Bench mark No. 46, pine at mouth of High Falls Branch.	373. 98	....
19. 7	Water surface at "blue hole" at mouth of High Falls Branch	....	362. 40
20. 1	Water surface at "blue hole" at foot of Long Branch Shoals.	....	362. 40
21. 0	Bench mark No. 62, mulberry, 300 yards above mouth of Long Branch...	382. 45	....
21. 0	Water surface at bench mark No. 62, top of Long Branch Shoals...	....	367. 23
21. 3	Bench mark No. 70, white hickory at McCartys Ferry, mouth of Blue Creek..................................	376. 67	....
21. 3	Water surface at McCartys Ferry, mouth of Blue Creek ..	....	367. 80
23. 0	Top of shoal opposite mouth of Peru Branch............	....	372. 55
23. 8	Water surface at mouth of Gold Mine Branch............	....	375. 17
23. 8	Bench mark No. 100, mulberry at mouth of Gold Mine Branch..	386. 00	....
24. 4	Bench mark No. 110, water oak at Robinsons Ferry......	404. 40	....
24. 4	Water surface at Robinsons Ferry	....	380. 20
25. 6	Water surface at top of upper Robinsons Shoals..........	....	389. 10
25. 6	Bench mark No. 124, small sycamore at mouth of small branch	395. 10	....

Elevations of bench marks and water surface along Tallapoosa River from Milstead to Griffin Shoals—Continued.

Distance from Milstead.	Location.	Bench mark.	Water surface.
Miles.		Feet.	Feet..
27.7	Water surface at mouth of small branch in Pace's field....	--------	390.09
28.7	Bench mark No. 140, water oak at foot of Hardy Shoals, in Pace's field..........	414.30	--------
29.5	Bench mark No. 150, dead stump 100 feet below the mouth of Big Sandy Creek..........	398.08	--------
29.5	Water surface at mouth of Big Sandy Creek..........	--------	--------
30.0	Bench mark No. 165, big red oak at Youngs Ferry	413.50	--------
30.0	Water surface at Youngs Ferry	--------	394.00
31.0	Water surface at Cherokee Bluff..........	--------	394.60
31.2	Bench mark No. 175, big walnut 200 yards above Monowa Creek	416.75	--------
34.0	Bench mark No. 180, 10-inch pine tree at third bar of Seago Shoals..........	424.72	--------
34.0	Water surface at third bar of Seago Shoals, opposite bench mark No. 180..........	--------	399.92
35.8	Bench mark No. 190, large white oak at east landing at Walkers Ferry..........	436.90	--------
35.8	Water surface at Walkers Ferry..........	--------	429.65
37.0	Bench mark No. 210, leaning white oak at mouth of small branch at upper end of Upshaw place..........	438.60	--------
37.4	Water surface at bench mark No. 210..........	--------	432.00
37.6	Water surface at top of fish trap..........	--------	436.47
38.3	Bench mark No. 215, 16-inch white oak on small branch at upper end of Locke's old field	448.90	--------
38.3	Water surface at bench mark No. 215	--------	438.00
39.3	Water surface under Central Railroad bridge at Sturdevant	--------	444.25
39.3	Bench mark on top of rail over first pier of the east end of Central Railroad bridge..........	505.90	--------
41.2	Bench mark No. 240, large water oak at east landing of Dennis Ferry	457.15	--------
41.2	Water surface at Dennis Ferry	--------	445.85
42.2	Water surface at mouth of branch on left bank of river ..	--------	448.20
45.3	Water surface 600 feet below mouth of Hillabee Creek ...	--------	472.60
48.3	Bench mark No. 310 water oak at east landing of Welchs Ferry	504.15	--------
48.3	Water surface at Welchs Ferry	--------	492.30
50.0	Bench mark No. 330, beech 150 feet above mouth of Freemans Branch	526.62	--------
50.0	Water surface 150 feet above mouth of Freemans Branch ..	--------	521.04
52.0	Water surface at Whaleys Ferry	--------	529.48
52.0	Bench mark No. 340, birch at Whaleys Ferry..........	539.38	--------
55.4	Bench mark No. 350, 10-inch birch at Millers Ferry	552.16	--------
55.4	Water surface at Millers Ferry	--------	544.00
60.8	Water surface at Griffin Ferry	--------	557.10
60.8	Bench mark No. 380, double ash tree on left bank at Griffin Ferry	564.76	--------
62.0	Bench mark No. 390, 12-inch birch at head of Griffin Shoals.	573.87	--------
62.0	Water surface at head of Griffin Shoals	--------	570.30

DAM AND SHOALS OF TALLASSEE FALLS MANUFACTURING COMPANY AT TALLASSEE, ALA.

On Tallapoosa River; looking upstream.

Above Milstead the river flows on granitic bed rock, and has numerous bluffs along its banks, affording excellent sites for dams.

There are two large developed water powers on the river, the Tal-
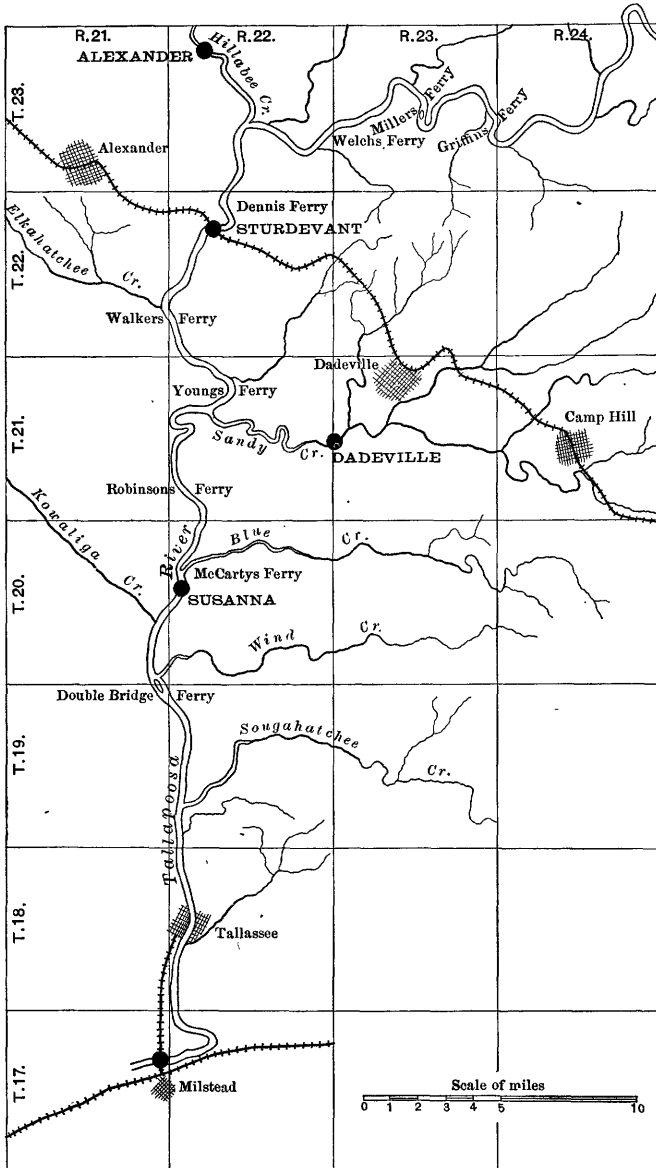

FIG. 1.—Map of Tallapoosa River from top of Griffin Shoals to Milstead.

lassee Falls plant and the Montgomery Power Company's plant, both of which are near the lower end of the area surveyed.

The Tallassee Falls dam and canal, which are 6 miles above Milstead, utilize a fall of 64 feet. The power and the large cotton manufacturing

plant were described in the Twentieth Annual Report of the United States Geological Survey, Part IV, pages 192–193.   In October, 1901,

FIG. 2.—Map of Tallapoosa River between Double Bridge Ferry and Central of Georgia Railway, showing reservoir above Cherokee dam site.

this power was capable of furnishing 8,900 net horsepower without storage during low water.   A break which occurred in the dam on

A. CANAL AND DAM OF TALLASSEE FALLS MANUFACTURING COMPANY AT TALLASSEE, ALA.

On Tallapoosa River; view across canal from left bank.

B. DAM AND NEW MILL OF TALLASSEE FALLS MANUFACTURING COMPANY AT TALLASSEE, ALA., DURING CONSTRUCTION.

On Tallapoosa River; view from right bank of river below old mill.

December 29, 1901, decreased the available head, but did not stop the machinery.
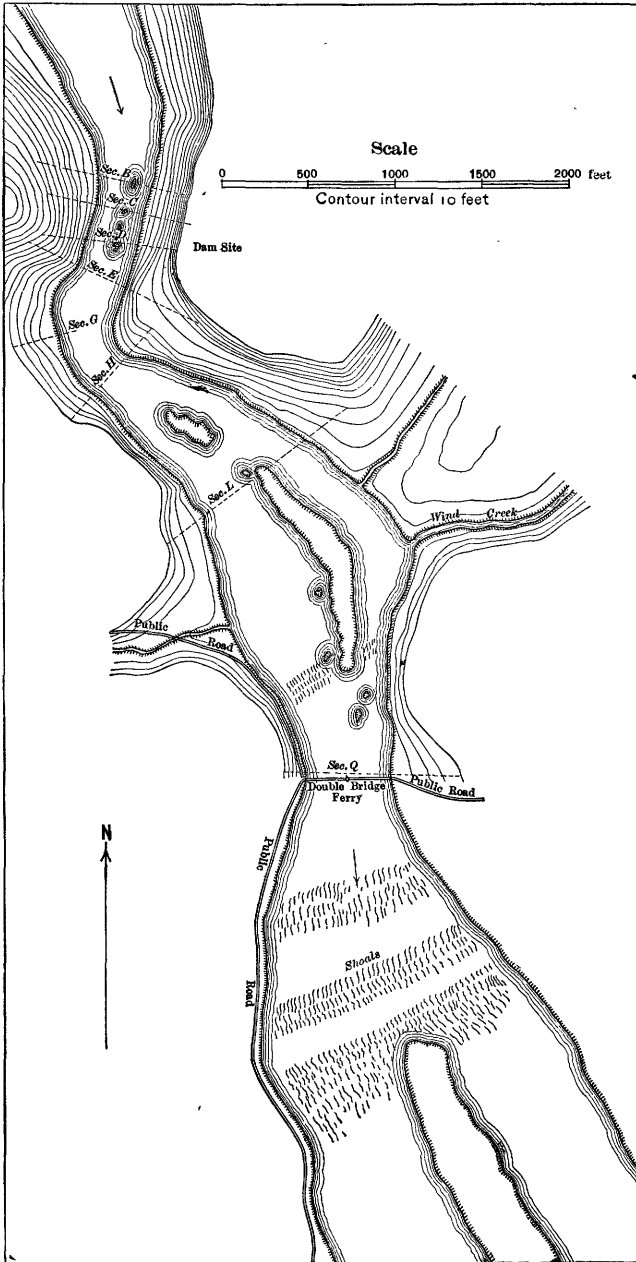
Fig. 3.—Topographic plan and location of cross sections of Tallapoosa River at Cherokee dam site.

The Montgomery Power Company has a 40-foot dam 9½ miles above Milstead. This dam backs the water 6½ miles up the river, and forms

an immense storage basin.   The power from this plant is transmitted electrically a distance of about 27 miles to Montgomery.

With river at stage of lowest water observed this plant will develop at the wheels 5,572 net horsepower from the run of the river without drawing on the storage.

The equalizing storage of this dam will add fully 25 per cent to this power and to the power at Tallassee for continuous running without materially lowering the head at either plant.

Surveys have been made for a large dam, 35 or 40 feet in height, at or near Double Bridge Ferry, to back the water beyond Robinsons Ferry, a distance of about 8 miles.   There is an excellent site for a dam, and the project is entirely feasible.   The horsepower in proportion to head would be the same as that available at the Montgomery Power Company's dam.

From the mouth of Big Sandy Creek to a point 1 mile above Griffin Ferry, a distance of 32 miles, the fall of Tallapoosa River is 176.5 feet. Nearly all of this fall can be utilized for power by developments similar to those which have been made.   A study of the table of distances and elevations will give the distribution of the fall, and will show the distance to which dams of certain heights will back the water at the various shoals.   The question of the best power sites and the proper plan of development, height, and location of dams, etc., can be determined only by special investigation and surveys.   It will be safe, however, to assume that a practicable site for a dam up to 40 feet high can be found in the vicinity of any location which may be selected, and the power obtainable can be estimated by multiplying the volume of water, or its equivalent net horsepower per foot of fall, by the proposed head to be developed.

The water supply or discharge of Tallapoosa River at different points may be closely approximated from the foregoing records of the Milstead, Susanna, and Sturdevant hydrographic stations, and also from those at the Dadeville and Alexander stations on the tributaries.

PROPOSED DAM ON TALLAPOOSA RIVER NEAR DOUBLE BRIDGE FERRY, TALLAPOOSA COUNTY.

The following is an extract from a recent report by Mr. Henry C. Jones, of Montgomery, Ala., on a proposed development of the Cherokee and Seago water powers as a combined property:

Surveys recently completed for two 40-foot dams on Tallapoosa River, one at the Cherokee dam site and one at Seago Shoals, some miles above, both the property of the Cherokee Development and Manufacturing Company, a water-power corporation enjoying a comprehensive special charter, demonstrates conclusively that the erection of one dam of 80 feet at the lower site instead of 40 feet on the separate properties offers a greater proportional output at less development cost per horsepower.

The erection of one dam would also consolidate and cheapen construction and subsequent operation of the plants, but, most of all, such a dam would create a storage

A. DAM AND POWER HOUSE OF MONTGOMERY POWER COMPANY, ABOVE TALLASSEE, ALA.

On Tallapoosa River; view from right bank below dam.

B. INTERIOR OF POWER HOUSE OF MONTGOMERY POWER COMPANY, ABOVE TALLASSEE, ALA.

reservoir 20 miles long, averaging more than one-half mile in width, from which upward of 5,000,000,000 cubic feet of water would be available without affecting speed of water-wheel machinery where proper size wheels are installed, as noted later on.
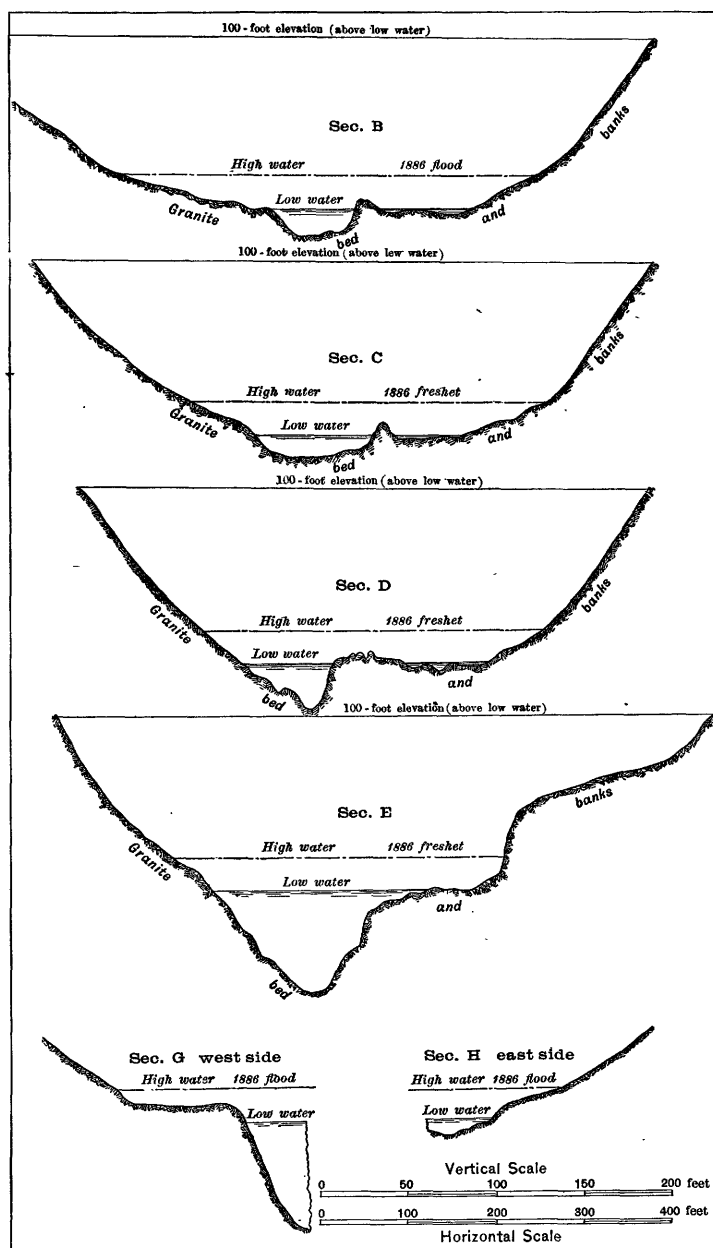

FIG. 4.—Cross section of Tallapoosa River at Cherokee dam site.

This vast quantity of stored water would be available to bridge over low-water periods, greatly increasing the power possible to derive from the actual flow of the river.

The combination of advantages at the Cherokee dam site is very interesting.   The section for the dam is extremely narrow for so large a river, being less than 400 feet from anchorage to anchorage in solid granite hills.   The contour of these hills permit
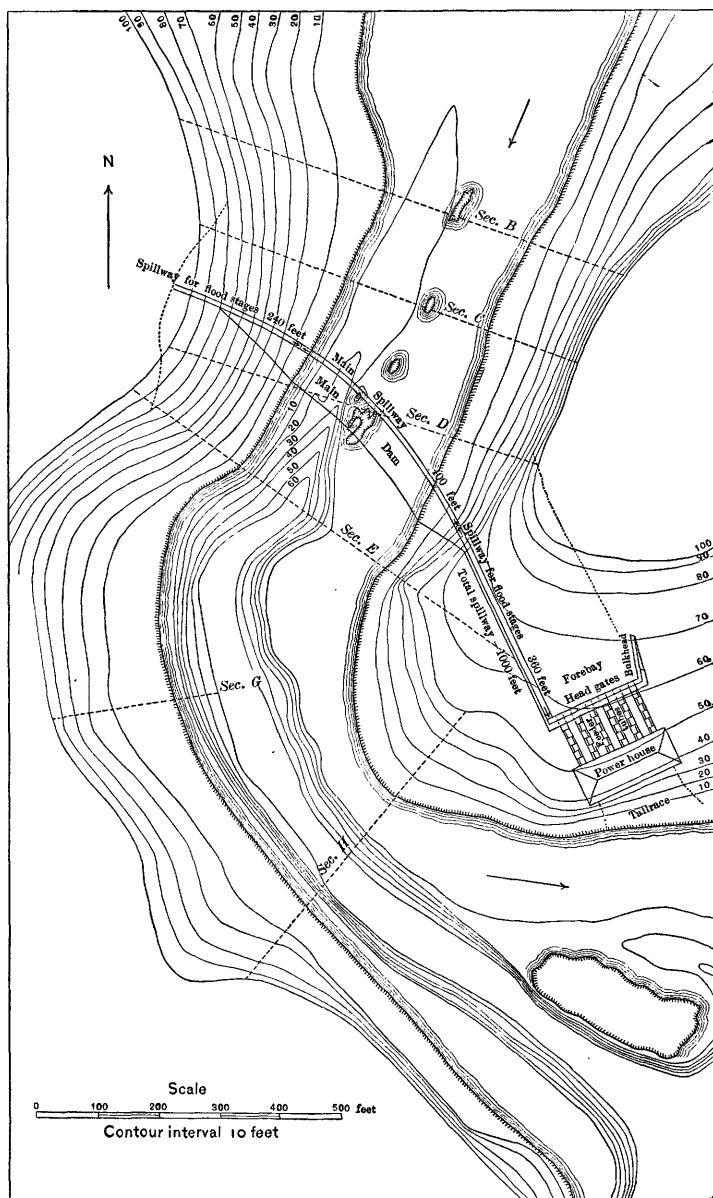
FIG. 5.—Plan of proposed development of Tallapoosa River at Cherokee power site.

the 80-foot elevation to continue, and thus increase the spillway at little cost, and sufficient for all flood stages of the river.

The bed of the stream at this section is free from bowlders or deposit, and offers a clean rock foundation to build upon.

The shape of the river at this point, with reference to its sharp bend, permits plac-ing the power house well away from the spray, flood water, and other bad features of location at main dam, and slight excavation will form a forebay connecting main dam with power house.

This narrow section, so favorable for a short, high dam, widening of the river immediately below—to more than 2,000 feet—thereby releasing flood water, ideal location for a power house, and the vast storage created by erecting a high dam assures a power development of magnitude and at less cost per horse power per year than water is now sold in many localities simply as hydraulic power in the canal, where manufacturers install and operate their own head and race work, power house, water wheel lay out, and electrical machinery.

MATERIAL.

Adjacent to this water power there is abundant timber of first quality for coffer-damming, cribbing, and all timber work. The hills on both banks are a mass of granite, or rather gneiss, which is durable and workable and can be quarried high above the river for cheap and rapid handling by gravity tram cars, conveyors, cable ways, etc.

TRANSPORTATION.

The State of Alabama and this part especially is well covered by railroads. One of the main lines from the Birmingham district to the Atlantic Seaboard passes near this water-power property. This railroad can be reached by a spur track or by utilizing the reservoir for water transportation to connect with the main line at its river crossing.

LABOR.

There is labor of two kinds—negroes, adapted to all construction work, and native whites for work requiring intelligent, persevering application.

In building the dam and on all work of a general development nature, negro labor can be employed at low cost to do good work, under proper white direction. The native white comes from a line of early settlers—sturdy stock, who laid well the foundation of thrift, law and order.

HEALTH.

The location of this water power is in that part of the South noted for its health-fulness. It is on an upland formation generally known as the Piedmont Plateau, which is well drained, has a considerable elevation above sea level, produces well, and offers every condition desired for successful home building.

RIVER DATA.

Mean monthly discharge, in second-feet, of Tallapoosa River at Milstead and Sturdevant.

Month.	At Milstead.				At Sturdevant.	
	1898.	1899.	1900.	1901.	1902.	1903.
January	2, 426	8, 417	3, 728	11, 476	4, 550	3, 140
February	1, 912	15, 688	12, 950	10, 440	6, 288	9, 500
March........................	2, 313	12, 399	10, 208	8, 374	9, 708	8, 000
April.........................	5, 784	9, 016	9, 016	12, 020	5, 677	7, 170
May..........................	1, 493	3, 351	3, 718	6, 440	3, 240	5, 750
June	1, 314	2, 040	8, 317	5, 976	1, 544	4, 800
July..........................	2, 493	4, 985	5, 405	3, 398	1, 004·	3, 140
August	7, 418	2, 222	2, 814	5, 904	1, 298	2, 830
September.....................	2, 637	984	4, 975	3, 137	1, 255	1, 100
October	7, 280	1, 014	3, 787	2, 364	1, 180	910
November	6, 049	1, 787	4, 224	1, 855	2, 011	1, 300
December	5, 741	4, 728	6, 475	8, 282	4, 412	1, 410
The year	3, 902	5, 553	6, 301	6, 639	3, 514	4, 070

Several miles above the Milstead gaging station Tallapoosa River leaves a granite bed and enters a younger formation. Milstead is on this younger formation and the river there runs over a bowlder and gravel bed—débris washed from the mountain formation above.

Measurements and observations made during low-water periods demonstrate beyond question that the part of the river flowing over a granite bed shows a greater volume than on the bowlder gravel formation.

There is still another reason why the Milstead record is inaccurate, for low water, at present:

Where there are impounding dams above, the beginning of a day's operation could not bring the river to its normal flow and reach the Milstead gage, many miles below, by 8 a. m., the time prescribed for daily observation, the Milstead gage being read at the time that over-night impounding operations would be seriously felt. Especially is this the case since the completion of the two large dams in 1902, at and near Talassee, 7 and 9 miles, respectively, above Milstead.

A gaging station was located later at Sturdevant, upon the granite formation, which shows more water at low-water stages in 1902 and 1903 than the Milstead gage 40 miles below, having 1,340 square miles more drainage area than the Sturdivant station.

The United States Geological Survey has abandoned the Milstead gage as unreliable for low-water records. (See Water-Supply and Irrigation Paper No. 83, pp. 135 and 137).

Records at Milstead for four years are given in this report. They are correct, except as to low water, as explained. The Sturdevant records are given for the past two years. This new river station is a satisfactory location, but is above the Cherokee power site, and so far above, that the drainage area is materially reduced. The discharge for the Cherokee dam site can be estimated, approximately, by adding one-fifth to one-third, varying with river stage, to the discharge for Sturdivant.

Cost of developing the Cherokee and Seago water powers as a combined property.

Main dam, containing 60,000 cubic yards of rubble masonry, at $5 per cubic yard	$300,000
Other masonry, excavating, and tailrace	50,000
Head-gates, feeders and draft tubes, machinery foundations, and power house	100,000
Water wheels, total capacity 42,000 horsepower, complete with governors, relief valves, and two exciter units, all set up to operate	175,000
(This difference between water wheel and generator capacity is a reserve required to maintain speed of wheels where storage is used with consequent reduction of head.)	
Electrical installation, total capacity 22,500 kilowatts, with exciters and switchboards, all set up to operate	225,000
Legal and incidental	50,000
Contingencies	50,000
Total development cost	950,000
Cost of Cherokee and Seago power sites, riparian and charter rights, and lands required for reservoir (approximately 15,000 acres), all controlled by the Cherokee Water Power Corporation	250,000
Actual development cost	950,000
Total investment cost	1,200,000

Total development cost per horsepower.

Electrical power, constant load at full-rated capacity twenty-four hours per day, three hundred and sixty-five days per year, river discharge supplemented by storage based on the records of the United States Geological Survey station at Milstead and Sturdivant.

Minimum water and storage, 12,500 horsepower	$76.00
Normal water and storage, 20,000 horsepower	47.50
Ordinary river stages and storage, available the greater part of the year and generally whole years together (see discharge tables, a part of this report), 30,000 horsepower	31.66

Total investment cost per horsepower.

Electrical power, constant load at full-rated capacity, twenty-four hours per day, three hundred and sixty-five days per year. River discharge supplemented by storage.

Minimum water and storage, 12,500 horsepower	$96.00
Normal water and storage, 20,000 horsepower	60.00
Ordinary river stages and storage, available the greater part of the year and generally whole years together (see discharge tables, a part of this report), 30,000 horsepower	40.00

Operating expense.

Interest at 5 per cent on $1,200,000	$60,000
Depreciation (estimated on proportion of investment subject thereto)	40,000
Total fixed charges	100,000
Actual operating	25,000
Maintenance and miscellaneous	25,000
Total operating	150,000

Total operating cost per horsepower.

Electrical power, constant load at full-rated capacity, twenty-four hours per day, three hundred and sixty-five days per year. River discharge supplemented by storage.

Minimum water and storage, 12,500 horsepower $12.00
Normal water and storage, 20,000 horsepower 7.50
Ordinary river stages and storage, available the greater part of the year and generally whole years together (see discharge tables, a part of this report), 30,000 horsepower 5.00

The available power, as will be seen by the foregoing, is based on a constant full load twenty-four hours per day, three hundred and sixty-five days per annum, which conditions are not met with in practice.

Power for industrial purposes, such as cotton mills, would be used ten to twelve hours per day on working days, or three hundred and eight days per year. Some requirements, such as general lighting and traction work, would represent a fluctuating demand, while other power of large and small units would be intermittent in character.

This means that in supplying power on a large scale for commercial purposes, water required for propulsion would be at a less ratio than full load and for less than full time, and therefore there would be available for such fluctuating load water in excess of that required to maintain the maximum or peak of that load on a constant basis.

Therefore, under actual conditions of power supply, assuming maximum load from 5 p. m. to 11 p. m., minimum from 11 p. m. to 5 a. m., a morning peak from 5 a. m. to 8 a. m., and a normal power load the remainder of the day—8 a. m. to 5 p. m.—there would be available at the various river stages for such periods of demand the following net power:

Horsepower available at proposed Tallapoosa River dam.

	5 p. m. to 11 p. m.	11 p. m. to 5 a. m.	5 a. m. to 8 a. m.	8 a. m. to 5 p. m.	Total horse-power, hours.
Minimum water and storage	25,000	3,750	12,500	10,000	300,000
Normal water and storage	40,000	6,000	20,000	16,000	480,000
Ordinary river stages and storage, available the greater part of the year and generally whole years together (see river data, a part of this report)......................	60,000	9,000	30,000	24,000	720,000

LOCATION OF POWER WITH RESPECT TO INDUSTRIES.

Alabama ranks high in extent of production and quality of its cotton, for cotton mills; in wealth of native timber, for paper making; in vast and varied mineral resources, for smelting, fusing, and refining; and for laws of extreme favor to capital and industry, promoting and protecting industrial effort.

The total output of this plant can conveniently and profitably be utilized for either of the three principal industries—cotton mills, carbide production, or manufacture of aluminum, or for such combination of the different lines offered as might give flexibility to the operation of a hydraulic plant and stability to a power company's income.

Should it be deemed expedient to disregard the advantage so apparent in utilizing this power where produced, in order to reach a present market, the total output can be transmitted to the city of Birmingham and the Birmingham district, which can employ every foot-pound of energy delivered.

BIG SANDY CREEK NEAR DADEVILLE.

This station, which was established by J. R. Hall, August 2, 1900, is located about 4½ miles southwest of Dadeville, at the highway bridge on the Dadeville-Susanna road. The gage, which is graduated to feet and tenths, is 16 feet high, and is fastened vertically to the first pier on the north side of the creek. The initial point of sounding is at the gage rod. The section is good for ordinary or flood measurements, but is rather wide and shoaly for low-water measurements. The latter can, however, be made a short distance from the gage. The station was discontinued December 31, 1901. During 1900 the following measurements were made by James R. Hall:

> July 6: Gage height, 1.20 feet; discharge, 260 second-feet.
> August 8: Gage height, 1.00 foot; discharge, 110 second-feet.
> August 8: Gage height, 1.00 foot; discharge, 116 second-feet.
> August 25: Gage height, 1.35 feet; discharge, 281 second-feet.
> November 16: Gage height, 1.10 feet; discharge, 155 second-feet.
> December 31: Gage height, 2.00 feet; discharge, 870 second-feet.

The measurements of August 8 and November 16 were made a half mile below Smith's bridge.

Daily gage height, in feet, of Big Sandy Creek near Dadeville.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1900.												
1								1.00	1.10	0.95	1.00	1.10
2								1.20	1.10	.90	1.30	1.15
3								1.10	1.40	.90	2.00	1.25
4								1.10	1.30	.90	1.80	1.40
5								1.10	1.20	3.50	1.40	1.35
6								1.05	1.05	1.80	1.20	1.30
7								1.05	1.00	1.25	1.20	1.25
8								1.00	1.00	1.20	1.20	1.20
9								1.05	.95	1.10	1.15	1.15
10								1.00	2.00	1.15	1.15	1.10
11								1.00	1.80	1.10	1.15	1.10
12								9.05	1.40	1.20	1.15	1.10
13								9.00	1.20	1.30	1.10	1.10
14								9.00	1.20	1.15	1.10	2.20
15								1.80	2.00	1.10	1.10	1.80
16								1.00	2.20	1.05	1.10	1.45
17								1.80	3.90	1.10	1.05	1.45
18								1.20	1.50	1.00	1.10	1.30
19								1.10	1.10	1.05	1.10	2.40
20								1.00	1.05	1.05	1.10	4.50
21								1.00	1.00	1.00	1.10	3.50
22								.90	1.00	1.50	1.30	1.70
23								.90	1.00	1.45	1.25	1.50
24								1.70	1.00	1.40	1.20	1.40
25								1.40	1.00	1.20	1.50	1.40
26								1.60	1.00	1.15	1.90	1.35
27								1.15	1.05	1.10	1.80	1.35
28								1.10	1.05	1.05	1.20	1.35
29								1.00	1.00	1.05	1.15	1.30
30								1.00	.90	1.05	1.10	1.75
31								1.80		1.05		2.00
1901.												
1	1.90	1.35	1.40	4.40	1.40	1.40	1.30	1.10	1.30	4.20	.85	.90
2	1.90	1.35	1.40	7.40	1.40	1.40	1.25	1.10	1.30	4.00	.85	.90
3	1.95	3.10	1.35	2.70	1.45	4.00	1.20	1.00	1.20	3.00	.85	1.40
4	1.70	6.00	1.35	2.00	1.35	5.60	1.20	1.05	1.10	3.50	.85	1.40
5	1.60	1.90	1.35	1.80	1.35	1.90	1.40	1.10	1.10	2.00	.85	1.40
6	1.50	1.75	1.40	1.60	1.35	3.50	1.50	1.05	1.10	1.80	.90	1.30
7	1.45	1.55	1.35	1.50	1.40	2.40	1.40	1.30	1.00	1.80	.90	1.10
8	1.40	2.10	1.35	1.50	1.35	1.90	1.25	1.20	1.00	1.50	1.00	1.00
9	1.40	3.50	1.40	1.50	1.35	1.50	1.20	1.10	1.00	1.40	1.00	1.10
10	1.40	2.20	1.45	1.50	1.30	1.60	1.20	1.10	.90	1.20	1.00	1.00
11	1.90	2.00	1.40	1.50	1.30	1.70	1.10	1.10	.90	1.20	1.00	1.00
12	1.70	1.70	1.35	1.55	1.35	2.00	1.10	1.20	.85	1.00	.90	1.00
13	2.50	1.50	1.35	1.65	1.35	1.80	1.10	1.15	.80	1.90	1.00	1.10
14	1.90	1.50	1.35	1.65	1.50	1.90	1.10	1.10	1.40	1.90	1.00	4.40
15	1.60	1.50	1.30	1.60	1.50	1.15	1.80	1.00	1.40	1.80	1.00	3.80
16	1.55	1.45	1.30	1.50	1.45	1.70	1.50	5.00	1.80	1.80	1.00	3.00
17	2.00	1.45	1.30	1.50	1.25	1.50	1.50	1.80	2.00	1.70	1.00	2.90
18	2.00	1.45	1.35	1.45	1.40	1.50	1.50	1.80	1.80	1.70	.90	2.50
19	1.60	1.50	1.35	6.00	1.40	1.45	1.30	1.40	1.80	1.70	.90	2.40
20	1.50	1.50	1.80	2.50	1.70	1.45	1.20	1.30	1.70	1.70	.80	2.40
21	1.50	1.45	1.60	2.40	7.00	1.40	1.15	1.20	1.40	1.60	.80	2.00
22	1.45	1.40	1.40	2.10	3.40	1.35	1.15	4.50	1.30	1.60	1.00	2.00
23	1.45	1.40	1.40	1.80	1.80	1.40	1.15	1.50	1.30	1.00	1.00	1.90
24	1.45	1.50	2.20	1.80	1.70	1.40	1.10	1.50	1.20	1.00	.85	1.80
25	1.50	1.50	2.10	1.70	1.50	1.35	1.10	1.40	1.20	.90	.85	1.50
26	1.55	1.45	1.70	1.60	2.70	1.30	1.10	1.40	1.10	.90	.80	3.00
27	1.45	1.45	1.70	1.45	1.80	1.30	1.15	1.20	1.00	a.70	.90	3.00
28	1.40	1.45	1.40	1.45	1.50	1.20	1.20	2.00	1.00	a.60	.90	21.00
29	1.40		1.40	1.45	1.50	1.15	1.15	1.50	1.80	a.70	.90	16.00
30	1.40		2.30	1.45	1.45	1.20	1.10	1.40	1.80	a.70	.90	8.00
31	1.40		13.10		1.40		1.10	1.40		.80		4.00

a Water was being held back by dams above in the morning when readings were made; 0.8 is assumed as minimum for October.

Rating table for Big Sandy Creek near Dadeville for 1900 and 1901.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
0.8	67	4.4	1,868	8.0	3,740	11.6	5,612
.9	85	4.5	1,920	8.1	3,792	11.7	5,664
1.0	115	4.6	1,972	8.2	3,844	11.8	5,716
1.1	152	4.7	2,024	8.3	3,896	11.9	5,768
1.2	204	4.8	2,076	8.4	3,948	12.0	5,820
1.3	256	4.9	2,128	8.5	4,000	12.1	5,872
1.4	308	5.0	2,180	8.6	4,052	12.2	5,924
1.5	360	5.1	2,232	8.7	4,104	12.3	5,976
1.6	412	5.2	2,284	8.8	4,156	12.4	6,028
1.7	464	5.3	2,336	8.9	4,208	12.5	6,080
1.8	516	5.4	2,388	9.0	4,260	12.6	6,132
1.9	568	5.5	2,440	9.1	4,312	12.7	6,184
2.0	620	5.6	2,492	9.2	4,364	12.8	6,236
2.1	672	5.7	2,544	9.3	4,416	12.9	6,288
2.2	724	5.8	2,596	9.4	4,468	13.0	6,340
2.3	776	5.9	2,648	9.5	4,520	13.1	6,392
2.4	828	6.0	2,700	9.6	4,572	13.2	6,444
2.5	880	6.1	2,752	9.7	4,624	13.3	6,496
2.6	932	6.2	2,804	9.8	4,676	13.4	6,548
2.7	984	6.3	2,856	9.9	4,728	13.5	6,600
2.8	1,036	6.4	2,908	10.0	4,780	13.6	6,652
2.9	1,088	6.5	2,960	10.1	4,832	13.7	6,704
3.0	1,140	6.6	3,012	10.2	4,884	13.8	6,756
3.1	1,192	6.7	3,064	10.3	4,936	13.9	6,808
3.2	1,244	6.8	3,116	10.4	4,988	14.0	6,860
3.3	1,296	6.9	3,168	10.5	5,040	14.1	6,912
3.4	1,348	7.0	3,220	10.6	5,092	14.2	6,964
3.5	1,400	7.1	3,272	10.7	5,144	14.3	7,016
3.6	1,452	7.2	3,324	10.8	5,196	14.4	7,068
3.7	1,504	7.3	3,376	10.9	5,248	14.5	7,120
3.8	1,556	7.4	3,428	11.0	5,300	14.6	7,172
3.9	1,608	7.5	3,480	11.1	5,352	14.7	7,224
4.0	1,660	7.6	3,532	11.2	5,404	14.8	7,276
4.1	1,712	7.7	3,584	11.3	5,456	14.9	7,328
4.2	1,764	7.8	3,636	11.4	5,508	15.0	7,380
4.3	1,816	7.9	3,688	11.5	5,560		

Estimated monthly discharge of Big Sandy Creek near Dadeville.

[Drainage area, 195 square miles.]

Month.	Discharge in second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1900.					
August	655	80	207	1. 06	1. 22
September	3, 150	80	355	·1. 82	2. 03
October	2, 670	80	264	1. 35	1. 56
November	870	110	261	1. 34	1. 50
December	3, 870	150	560	2. 87	3. 31
1901.					
January	880	308	425	2. 18	2. 51
February	2, 700	282	545	2. 78	2. 90
March	6, 392	256	552	2. 83	3. 26
April	3, 428	334	689	3. 53	3. 94
May	3, 220	230	480	2. 46	2. 84
June	2, 492	178	523	2. 68	2. 99
July	516	152	227	1. 16	1. 34
August	2, 180	115	369	1. 89	2. 18
September	620	67	257	1. 32	1. 47
October	1, 764	*a* 45	462	2. 37	2. 73
November	115	67	92	. 47	. 52
December	10, 500	85	1, 265	6. 49	7. 48
The year	10, 500	*a* 45	490	2. 51	34. 16

a See footnote under gage heights for 1901.

Net horsepower per foot of fall with a turbine efficiency of 80 per cent for the minimum monthly discharge of Big Sandy Creek near Dadeville.

	1900.			1901.		
	Minimum discharge.	Minimum net horse-power per foot of fall.	Duration of mini-mum.	Minimum discharge.	Minimum net horse-power per foot of fall.	Duration of mini-mum.
	Second-feet.		*Days.*	*Second-feet.*		*Days.*
January				308	28	7
February				282	26	2
March				256	23	3
April				334	30	5
May				230	21	1
June				178	16	2
July				152	14	9
August	80	7	4	115	10	2
September	80	7	1	67	6	1
October	80	7	3	a 45	a 4	1
November	110	10	1	67	6	3
December	150	14	5	85	8	2

a See footnote under gage heights for 1901.

POWERS ON BIG SANDY CREEK.

Elevations of bench marks and water surface along Big Sandy Creek between its mouth and the new bridge near Dadeville.

Distance above mouth.	Location.	Bench marks.	Water surface.
Miles.		*Feet.*	*Feet.*
0.0	Bench mark No. 150, dead stump at mouth of creek	398.08	
.0	Water surface at mouth of Big Sandy Creek		393.80
.95	Water surface below Pace's dam		402.00
.95	Water surface above Pace's dam		412.10
1.06	Bench mark No. 160, big pine on north side, 175 feet above Pace's bridge	422.30	
1.52	Creek surface		416.00
1.89	At point of Ivy Bend		419.00
2.22	Bench mark No. 162, large walnut at Tucker's house	503.85	
2.56	Bench mark No. 163, small oak at Tucker's fish trap	432.85	
2.56	Water surface above Tucker's fish trap		430.00
3.79	Bench mark No. 164, large sycamore at mouth of Lowry Branch	445.20	
3.79	Water surface at mouth of Lowry Branch		436.10
5.02	Bench mark No. 166, oak post at north end of Smith's bridge	463.95	

Elevation of bench marks and water surface along Big Sandy Creek between its mouth and the new bridge near Dadeville—Continued.

Distance above mouth.	Location.	Bench mark.	Water surface.
Miles.		*Feet.*	*Feet.*
4.92	Water surface at Smith's bridge		441.70
5.02	Zero of United States Geological Survey gage at Dadeville.	440.50	
6.34	Bench mark No. 167, wahoo tree at mouth of Young Branch	559.58	
6.34	Water surface at mouth of Young Branch		446.50
6.70	Water surface at Barnes basin		452.30
7.18	Water surface at foot of Black Shoals		465.00
7.44	Water surface at top of Black Shoals		496.30
7.78	Water surface at mouth of Buck Creek		497.30
7.78	Bench mark No. 168, small double oak at mouth of Buck Creek	503.65	
7.98	Eddy water below Sanford's dam		500.00
8.06	Bench mark No. 169, hickory at Sanford's mill	522.10	
8.06	Floor of Sanford's mill	514.00	
8.29	Water surface at Sanford's bridge above dam		506.70
8.63	Water surface at head of Sanford's pond		506.70
9.47	Water surface at second shoal above Sanford's pond		512.50
9.91	Bench mark No. 173, large white oak near north end of Cook's bridge	539.35	
9.91	Water surface at Cook's bridge		513.80
10.63	Water surface opposite mouth of Chattasofka Creek		520.60
10.63	Bench mark, 16-inch water oak on west bank of Chattasofka Creek, 50 feet above mouth	527.20	
11.10	Water surface at top of old factory shoal		540.15
12.38	Water surface at new bridge		550.80
12.38	Bench mark on upstream end of sill on west end of new bridge	562.30	
12.38	Bench mark No. 176, 6-inch maple at new bridge	563.00	

The best shoal on this creek is the Sanford and Black Shoal, near Dadeville, which has a fall of 85.8 feet in a distance of 5.2 miles. With a dam 54 feet high and a canal 1,370 feet long a practical working head of 80 feet can be developed, having 1 foot extra for grade of canal and 4 feet extra for storage at top of dam.

The city of Dadeville is now developing the most precipitous part of this shoal (December, 1903), known as the Sanford Shoal, and obtaining a power head of 40 feet, by a dam 4½ feet high and a canal about 600 feet long. The power is to be transmitted about 2 miles to Dadeville for electric lights and other purposes.

HILLABEE CREEK NEAR ALEXANDER, ALA.

This station, which was established August 20, 1900, by J. R. Hall, is located 6½ miles northeast of Alexander, on the road leading from that town to Newsite. The gage, which is graduated to feet and tenths and is placed vertically, is in two sections, the short section, which reads from 0 to 5.50 feet, being fastened to a post in the edge of the water on the north bank 20 feet from the upstream side of the bridge, the long section, which reads from 5.50 feet to 16 feet, being fastened to the upstream end of the first pier on the north bank, and arranged so that when water rises above the short section the readings are made from the long one, both sections being easily read from the north approach to the bridge. The initial point of sounding is on the south side of the first pier on the north bank. The gage is referred to a bench mark at the top of a chord on the downstream side of the bridge at the second pier from the north bank, and is 27.6 feet above the zero of the gage. The bridge is in three spans, having a total length of 276 feet, with a north approach of 116 feet and a south approach of 124 feet, making a total over all of 516 feet. The observer is J. H. Chisholm, a farmer; post-office address, Alexander, Ala.

The following measurements were made by James R. Hall, M. R. Hall, and others:

Discharge measurements of Hillabee Creek near Alexander.

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.
1900.	*Feet.*	*Second-fee .*	1903.	*Feet.*	*Second-feet.*
August 29	1.40	184	May 21	2.65	766
November 28	2.00	390	July 24	1.50	212
1901.			August 21	1.50	205
January 22	2.50	606	Do	1.50	213
September 12	1.00	139	October 5	.94	84
1902.			November 25	1.15	114
July 16	1.12	169			

Daily gage height, in feet, of Hillabee Creek near Alexander.

Day.	Jan.	Feb.	Mar.	Apr.	May	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1900.												
1									2.30	1.30	1.60	1.90
2									2.30	1.10	2.60	1.90
3									1.60	1.10	6.80	1.80
4									1.40	1.10	3.20	1.90
5									1.30	3.20	2.20	1.80
6									1.20	2.00	1.80	1.90
7									1.20	2.80	1.70	1.80
8									1.10	2.60	1.70	1.70
9									1.10	2.40	1.80	1.70
10									1.20	2.30	1.70	1.70
11									1.10	2.30	1.70	1.70
12									1.10	1.80	1.70	1.70
13									1.10	1.60	1.70	1.80
14									1.10	1.40	1.70	3.80
15									8.10	1.40	1.70	2.90
16									5.00	1.20	1.60	2.80
17									2.60	1.30	1.50	2.70
18									2.20	1.30	1.40	2.80
19									1.60	1.20	1.50	3.00
20									1.50	1.20	1.60	2.90
21									1.50	1.20	1.70	6.00
22									1.40	1.90	2.10	4.00
23									1.20	5.90	1.90	3.00
24									1.30	2.90	1.90	2.90
25									1.40	2.10	5.10	2.90
26									1.30	1.90	2.90	2.80
27									1.40	1.80	2.40	2.60
28									1.30	1.70	2.00	2.50
29								1.40	1.40	1.60	1.90	2.50
30								1.30	1.30	1.50	1.90	5.80
31								1.80		1.50		5.70
1901.												
1	5.00	2.40	2.30	5.20	2.50	2.50	2.50	1.80	2.60	1.20	1.00	1.00
2	4.90	2.40	2.30	4.40	2.50	2.40	2.50	1.40	2.00	1.20	1.00	1.00
3	4.90	4.60	2.40	4.80	2.50	3.00	2.40	1.40	1.40	1.10	1.00	2.00
4	4.70	9.40	2.40	3.10	2.40	2.50	2.30	1.20	1.20	1.10	1.00	1.60
5	3.90	6.00	2.30	2.90	2.40	2.50	2.00	1.10	1.10	1.10	1.30	1.40
6	3.60	4.10	2.20	2.80	2.40	2.60	1.80	1.10	1.10	1.20	1.10	1.20
7	3.60	3.60	2.10	2.70	2.40	2.50	2.90	1.10	1.10	1.40	1.10	1.20
8	3.40	3.10	2.10	2.60	2.40	2.50	2.10	1.00	1.10	1.20	1.00	1.20
9	2.60	3.60	2.10	2.60	2.30	2.40	1.80	1.20	1.10	1.20	1.00	1.20
10	2.50	3.00	2.40	2.50	2.30	2.40	1.80	1.20	1.10	1.20	1.00	1.90
11	8.00	2.90	2.50	2.50	2.30	2.30	1.70	1.10	1.00	1.60	1.00	1.50
12	7.60	2.90	2.30	2.40	2.20	2.00	1.60	1.10	1.00	2.00	1.00	1.40
13	7.00	2.80	2.20	3.10	2.50	2.10	1.50	1.20	1.20	2.90	1.00	1.40
14	5.90	3.00	2.20	2.90	2.30	2.00	1.40	1.60	2.50	1.60	1.00	2.00
15	4.50	3.10	2.30	2.80	2.50	2.00	1.30	2.10	2.40	1.40	1.00	3.00
16	4.30	2.60	2.40	2.70	2.20	1.90	1.40	4.40	2.40	1.20	1.00	3.00
17	4.00	2.60	2.20	2.60	2.20	2.20	1.30	2.90	2.00	1.00	1.00	2.80
18	3.50	2.40	2.20	2.60	2.10	1.90	3.40	2.00	1.80	1.00	1.00	2.70
19	3.40	2.60	2.10	10.00	2.10	1.80	2.20	2.00	1.60	1.00	1.30	2.60
20	3.00	2.70	2.10	3.20	2.90	1.80	1.80	1.80	1.40	1.00	1.30	2.00
21	2.90	2.60	3.00	3.10	3.80	1.70	2.00	4.10	1.20	1.00	1.30	1.50
22	2.90	2.40	2.40	3.00	2.90	1.70	1.90	3.40	1.40	1.00	1.30	1.50
23	2 80	2.60	2.30	2.90	2.50	1.60	1.80	3.10	1.20	1.00	1.30	1.50
24	2.60	2.60	2.80	2.80	2.50	1.60	1.80	2.90	1.10	1.00	1.30	1.60
25	2.50	2.50	2.70	2.70	2.40	1.70	1.70	2.20	1.10	1.00	1.20	1.60
26	2.60	2.40	3.50	2.60	3.90	1.70	1.70	2.20	1.20	1.00	1.20	1.70
27	2.60	2.40	3.00	2.50	2.80	1.80	1.40	2.10	2.10	1.00	1.10	1.70
28	2.50	2.40	2.70	2.50	2.60	1.80	1.60	3.80	1.60	1.00	1.10	1.80
29	2.40	......	2.60	2.50	2.50	1.70	1.40	3.60	1.40	1.00	1.10	11.00
30	2.40	......	2.70	2.50	2.30	2.60	1.40	3.40	1.20	1.00	1.10	4.90
31	2.40	......	5.20	......	2.90	......	2.00	3.00	......	1.00	......	3.90

Daily gage height, in feet, of Hillabee Creek near Alexander—Continued.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1902.												
1	3.70	5.30	4.10	3.40	1.90	1.60	0.80	0.80	1.40	3.20	0.90	1.80
2	3.50	7.70	4.00	3.20	1.90	1.60	.80	.80	3.60	3.20	.80	6.00
3	3.00	3.70	3.90	3.00	1.80	1.70	.80	.90	1.90	3.00	.70	4.20
4	2.00	3.00	2.90	3.00	1.80	1.70	.80	1.20	1.50	3.00	2.60	3.50
5	2.00	2.70	3.00	3.00	1.90	1.70	.70	1.10	1.40	3.00	3.60	2.00
6	2.00	2.50	3.50	2.90	1.90	1.60	.70	1.10	1.30	2.80	2.60	1.90
7	2.00	2.40	3.60	4.10	1.90	1.60	.70	1.00	1.20	2.60	1.10	1.90
8	1.90	2.10	2.60	3.40	1.80	1.60	.70	1.00	1.10	2.60	1.00	1.90
9	1.80	2.10	2.40	3.20	1.80	1.60	.80	.90	1.40	3.30	1.00	1.80
10	1.70	2.00	2.30	2.80	1.80	1.50	1.00	.90	1.30	4.10	1.00	1.80
11	1.70	2.00	2.30	2.60	1.80	1.50	1.10	.90	1.20	3.80	1.00	1.70
12	1.70	2.00	2.00	2.60	1.70	1.40	1.30	.90	1.10	2.10	1.00	1.60
13	1.70	1.90	2.50	2.60	1.70	1.40	1.30	.80	1.10	2.40	.90	1.60
14	1.60	1.90	3.00	2.50	1.70	1.40	1.30	.80	1.00	2.60	.90	1.60
15	1.60	2.00	3.70	2.40	1.60	1.40	1.20	.80	1.00	2.30	.80	6.00
16	1.60	2.20	8.00	2.40	1.60	1.40	1.20	.80	1.00	2.20	.80	4.00
17	1.60	2.10	3.90	2.40	1.80	1.40	1.10	1.00	1.00	2.00	1.00	2.60
18	1.60	2.10	3.40	2.40	2.00	1.30	.90	.90	1.00	1.60	1.00	2.00
19	2.00	2.00	3.10	2.30	1.90	1.30	.90	.70	1.00	1.40	.90	1.90
20	1.90	2.00	3.00	2.40	1.90	1.20	.90	.70	.90	2.60	.90	1.90
21	2.80	2.10	3.90	2.30	1.80	1.20	.80	.70	.80	2.40	.90	1.90
22	2.10	2.00	3.50	2.20	1.80	1.20	.80	.70	.80	2.00	.80	1.80
23	2.00	2.00	4.00	2.20	1.80	1.20	.80	.70	.80	1.60	.70	2.00
24	2.00	2.00	3.40	2.10	1.70	1.10	.70	.70	.80	1.40	.70	2.00
25	1.90	2.20	3.00	2.10	1.70	1.10	.70	.70	2.10	1.10	1.30	1.90
26	1.90	2.00	3.00	2.00	1.70	1.00	.80	.70	2.00	1.00	1.40	1.80
27	1.90	7.00	7.00	2.00	1.70	.90	.80	2.00	1.80	.90	1.40	1.80
28	2.90	12.50	14.00	2.00	1.60	.90	.80	1.70	1.80	.90	1.50	3.50
29	3.00	....	8.00	2.00	1.60	.80	.70	3.60	2.10	.90	1.60	2.20
30	2.70	....	4.10	2.00	1.60	.90	.70	1.90	3.40	.90	1.70	2.00
31	2.80	....	3.90	....	1.60	....	.70	1.50	....	1.00	....	1.90
1903.												
1	1.90	1.60	....	2.20	2.20	2.30	2.40	2.40	2.70	1.10	1.00	1.10
2	4.00	1.60	....	2.10	2.30	2.30	2.20	4.00	2.60	1.10	1.00	1.00
3	3.60	1.50	....	2.20	2.30	2.70	3.30	4.00	2.40	1.10	1.00	1.00
4	3.00	3.00	....	2.10	2.30	2.70	3.30	1.80	2.40	1.00	1.50	1.90
5	2.50	2.00	....	2.70	2.30	3.80	2.10	1.80	2.40	1.00	1.60	1.90
6	1.80	1.90	....	2 30	2.90	3.50	2.00	2.00	2.80	1.10	1.30	1.00
7	1.80	4.00	....	2.60	3.10	2.80	2.00	1.80	2.60	1.10	1.20	1.00
8	1.90	16.50	....	3.10	2.10	2.80	2.90	1.70	2.40	1.10	1.00	1.00
9	1.90	....	....	2.60	2.20	2.90	3.40	2.00	2.00	1.00	1.00	1.00
10	1.90	....	....	2.50	2.50	2.80	2.40	2.00	1.90	1.00	1.10	1.10
11	3.00	....	....	2.20	2.90	3.50	2.70	1.80	1.70	1.00	1.20	1.10
12	2.10	....	....	2.40	2.90	2.10	2.60	1.90	1.50	1.00	1.90	1.10
13	2.00	....	....	2.40	4.50	2.00	2.20	1.90	1.30	1.00	1.20	1.00
14	1.70	....	....	2.80	4.20	2.80	2.00	1.60	1.30	1.00	1.50	1.10
15	1.70	....	....	2.70	12.00	1.80	2.00	1.60	1.30	1.00	1.30	1.20
16	1.70	....	....	2.60	4.60	1.70	1.90	1.60	1.40	1.10	1.30	1.20
17	1.60	....	....	2.60	3.90	1.70	1.90	1.60	1.30	1.20	1.70	1.10
18	1.60	....	....	2.60	2.90	1.70	1.90	1.60	1.30	1.10	1.70	1.10
19	1.50	....	....	2.70	4.80	1.60	2.20	1.70	1.30	1.00	1.50	1.20
20	1.70	....	....	11.00	2.80	1.60	2.00	1.70	1.20	1.00	1.20	1.20
21	1.70	....	....	2.80	2.70	2.20	2.00	1.70	1.20	1.00	1.20	1.30
22	1.80	....	3.10	2.80	2.60	5.90	2.00	1.70	1.20	1.00	1.50	1.20
23	1.90	....	3.60	2.70	2.40	1.90	2.00	1.60	1.20	1.00	1.50	1.20
24	1.80	....	3.30	2.50	2.00	1.80	2.00	1.60	1.20	1.00	1.50	1.20
25	1.80	....	3.10	2.20	1.90	1.80	2.00	1.50	1.10	1.00	1.50	1.10
26	1.80	....	3.00	2.90	1.80	3.80	1.80	1.50	1.00	1.00	1.50	1.20
27	1.90	....	2.90	2.70	1.80	4.00	1.80	1.50	1.00	1.00	1.50	1.30
28	3.00	....	2.80	2.70	1.80	3.80	1.90	1.40	1.00	1.00	1.50	1.40
29	2.70	....	3.10	2.50	1.90	3.60	1.90	1.40	1.10	1.00	1.20	1.30
30	2.50	....	3.60	2.50	1.90	3.00	1.80	2.40	1.10	1.00	1.20	1.20
31	1.90	....	4.10	....	1.80	....	3.80	2.80	....	1.00	....	1.20

Rating table for Hillabee Creek near Alexander for 1900 and 1901.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
1.0	138	2.1	434	3.2	918	4.3	1,402
1.1	146	2.2	478	3.3	962	4.4	1,446
1.2	156	2.3	522	3.4	1,006	4.5	1,490
1.3	169	2.4	566	3.5	1,050	4.6	1,534
1.4	184	2.5	610	3.6	1,094	4.7	1,578
1.5	204	2.6	564	3.7	1,138	4.8	1,622
1.6	230	2.7	698	3.8	1,182	4.9	1,666
1.7	263	2.8	742	3.9	1,226	5.0	1,710
1.8	303	2.9	786	4.0	1,270		
1.9	346	3.0	830	4.1	1,314		
2.0	390	3.1	874	4.2	1,358		

Rating table for Hillabee Creek near Alexander for 1902.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
0.8	125	2.2	478	3.6	1,094	5.0	1,710
1.0	138	2.4	566	3.8	1,182	6.0	2,150
1.2	156	2.6	654	4.0	1,270	7.0	2,590
1.4	184	2.8	742	4.2	1,358	8.0	3,030
1.6	230	3.0	830	4.4	1,446	9.0	3,470
1.8	303	3.2	918	4.6	1,534	10.0	3,910
2.0	390	3.4	1,006	4.8	1,622	11.0	4,350

Rating table for Hillabee Creek near Alexander for 1903.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
0.90	80	2.00	425	3.10	920	4.20	1,415
1.00	90	2.10	470	3.20	965	4.30	1,460
1.10	106	2.20	515	3.30	1,010	4.40	1,505
1.20	126	2.30	560	3.40	1,055	4.50	1,550
1.30	150	2.40	605	3.50	1,100	4.60	1,595
1.40	178	2.50	650	3.60	1,145	4.70	1,640
1.50	210	2.60	695	3.70	1,190	4.80	1,685
1.60	248	2.70	740	3.80	1,235	4.90	1,730
1.70	290	2.80	785	3.90	1,280		
1.80	335	2.90	830	4.00	1,325		
1.90	380	3.00	875	4.10	1,370		

Estimated monthly discharge of Hillabee Creek near Alexander.

[Drainage area, 214 square miles.]

Month.	Discharge in second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1900.					
September	3,074	146	370	1.73	1.93
October	2,106	146	387	1.81	2.09
November	2,502	184	471	2.20	2.45
December	2,150	263	716	3.35	3.86
1901.					
January	3,030	566	1,198	5.60	6.46
February	3,646	566	920	4.30	4.48
March	1,798	434	617	2.88	3.32
April	3,910	566	911	4.26	4.75
May	1,226	434	624	2.92	3.37
June	830	230	439	2.05	2.29
July	1,006	169	357	1.67	1.93
August	1,446	138	535	2.50	2.89
September	654	138	249	1.16	1.29
October	786	138	181	.85	.98
November	169	138	148	.69	.77
December	4,350	138	526	2.46	2.84
The year	4,350	138	559	2.61	35.37
1902.					
January	1,138	230	459	2.14	2.47
February	5,010	346	854	3.99	4.15
March	5,670	390	1,284	6.00	6.92
April	1,314	390	647	3.02	3.37
May	390	230	294	1.37	1.58
June	263	125	186	.87	.97
July	169	120	137	.64	.74
August	1,094	120	182	.85	.98
September	1,094	125	254	1.19	1.33
October	1,314	131	525	2.45	2.82
November	1,094	120	213	1.00	1.12
December	2,150	230	569	2.66	3.07
The year	5,670	120	467	2.18	29.52

Estimated monthly discharge of Hillabee Creek near Alexander—Continued.

Month.	Discharge in second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1903.					
January	1,325	210	479	2.24	2.58
February 1 to 8			*a* 1,333	*a* 6.23	*a* 1.85
March 22 to 31			*b* 992	*b* 4.64	*b* 1.72
April	4,475	470	796	3.72	4:15
May	4,925	335	865	4.04	4.66
June	2,180	248	739	3.45	3.85
July	1,235	335	547	2.56	2.95
August	1,325	178	393	1.84	2.12
September	785	90	298	1.39	1.55
October	126	90	95	.44	.51
November	380	90	173	.81	.90
December	380	90	133	.62	.71
The year					

a 8-day period.   *b* 10-day period.

Net horsepower per foot of fall with a turbine efficiency of 80 per cent for the minimum monthly discharge of Hillabee Creek near Alexander.

Month.	1901.			1902.			1903.		
	Minimum discharge.	Minimum net horsepower per foot of fall.	Duration of minimum.	Minimum discharge.	Minimum net horsepower per foot of fall.	Duration of minimum.	Minimum discharge.	Minimum net horsepower per foot of fall.	Duration of minimum.
	Sec.-ft.		*Days.*	*Sec.-ft.*		*Days.*	*Sec.-ft.*		*Days.*
January	566	51	3	230	21	5	210	19	1
February	566	51	7	346	31	2	*a* 210	19	1
March	434	39	5	390	35	1	*b* 785	71	1
April	566	51	1	390	35	5	470	43	2
May	434	39	2	230	21	6	335	30	1
June	230	21	2	125	11	1	248	23	2
July	169	15	2	120	11	9	335	30	3
August	138	13	1	120	11	8	178	16	2
September	138	13	2	125	11	4	90	8	3
October	138	13	15	131	12	4	90	8	22
November	138	13	15	120	11	3	90	8	5
December	138	13	2	230	21	3	90	8	7

a Record for only 7 days in month.   *b* Record for only 10 days in month.

TRIBUTARIES OF TALLAPOOSA RIVER ABOVE MILSTEAD.

Side.	Stream.	Point on stream.	Drainage area.	Estimated discharge low water 1900–1901.	Net horsepower per foot of fall on 80 per cent turbine.
			Sq. miles.	Sec.-ft.	
Left	Uphapee Creek	Mouth of creek	450	45	4. 1
	.....do	Chehaw, Ala	360	40	3. 6
	Sougahatchee Creek....	Mouth of creek	240	48	4. 3
Right ..	Cedar Creek	.....do	55	14	1. 3
Left....	Wind Creek	.....do	25	8	.7
Right ..	Kowaliga Creek........	.....do	135	40	3. 6
	.....do	Kowaliga, Ala	115	35	3. 2
Left....	Blue Creek	Mouth of creek	60	20	1. 8
	Big Sandy Creek	.....do	200	70	6. 3
	.....do	Smith's bridge........	195	67	6. 1
Right ..	Elkhatchee Creek	Mouth of creek	75	37	3. 3
	Hillabee Creek........	.....do	220	141	12. 8
	.....do	Chisholme's bridge...	214	138	12. 6
	Emuckfaw Creek......	Mouth of creek	78	46	4. 2
Left....	Cohoasanocsa Creek ...	.....do	70	42	3. 8
	High Pine Creek	.....do	82	49	4. 4
Right ..	Hurricane Creek	.....do	14	8	.7
Left....	Cornhouse Creek......	.....do	72	43	3. 9
Right ..	Crooked Creek........	.....do	95	57	5. 2
	Fox Creek.............	.....do	37	22	2. 0
.Left	Little Tallapoosa River.	Mouth of river.......	590	354	32. 2
	.....do	Alabama-Georgia State line.	311	186	16. 9
	Tallapoosa River	Above Little Tallapoosa River.	767	460	41. 8
Right ..	Ketchepedrakee Creek.	Mouth of creek	49	29	2. 6
	Cane Creek	.....do	55	33	3. 0
	Muscadine Creek......	.....do	36	21	1. 9
	Tallapoosa River	Alabama-Georgia State line.	302	181	16. 4

All of these tributaries to Tallapoosa River are in the crystalline region, and have fine shoals all along their courses.

No State or Government surveys have ever been made to determine their profiles, and it is, therefore, impossible at present to make a detailed statement of the water powers. The tabulated statement given above shows discharge at certain places during low season of ordinary years, like 1900 and 1901.

This flow at any point, multiplied by the total practical fall in feet that can be brought upon a water wheel on the given stream at that point and divided by 11, gives the net available horsepower at that point during low season of a year, like 1900 or 1901.

From the discharge and drainage area at a given point can be computed the discharge at other points on the same stream if drainage area is known.

Discharge measurements have been made on these streams at various points, as is shown by the following list. As the dates of these measurements are given, the stage of water as related to minimum for 1900–1901 can be approximated by noting the stage at regular stations on the same dates.

Miscellaneous discharge measurements of tributaries of Tallapoosa River.

Date.	Stream.	Locality.	Discharge.
1900.			*Sec.-ft.*
Aug. 2	Sougahatchee Creek	Meader's bridge	125
3	Blue Creek	Susanna	34
28	Elkhatchee Creek	Island Home	184
30	Timbercut Creek	Near Welche's ferry	18
Dec. 12	Chattasofka Creek	New bridge, near Dadeville	35
1901.			
Feb. 11	Wind Creek	Starr's bridge, near Meltons Mill.	66
11	Sougahatchee Creek	Lovelady's bridge, near Thaddeus.	453
13	Blue Creek	Farrow's mill, Susanna	117
13	Channahatchee Creek	Freeman's mill, Channahatchee.	80
27	Kowaliga Creek	Benson's bridge, Kowaliga	154
Mar. 5	Emuckfaw Creek	Hamlett's mill, Zana	113
11	Moores Creek	Near Dudleyville	29
12	Chattahaspa Creek	Scott's mill, near Tiller Crossroads.	203
12	Cohoasanocsa Creek	Leverett's mill, near Milltown	122
12	High Pine Creek	Lile's gin, Happy Land	89
12	Beaverdam Creek	Near Louina	30
13	Cornhouse Creek	Swann's store, near Levelroad	31
13	Wild Cat Creek	Murphy's mill, near Gay	32
13	Tallapoosa River	Below mouth of Little Tallapoosa River, near Goldburg.	2,400
13	Crooked Creek	Near Goldburg	183
13	Hurricane Creek	Near Almond	29

A. SHOALS, NEAR HIGH SHOALS, ALA.

On tributary of Tallapoosa River.

B. GILES MILL, NEAR OFELIA, ALA.

On tributary of Tallapoosa River.

The following discharge measurement was made on Tallapoosa River near Tallapoosa, Ga., in the year 1902, by M. R. Hall:

June 2: Gage height, 1.30 feet; discharge, 114 second-feet.

COOSA RIVER AND TRIBUTARIES.

Coosa River is formed by the junction of Etowah and Oostanaula rivers at Rome, Ga. The drainage area is 4,006 square miles. Both of the tributary rivers rise in the northern part of Georgia and flow for the most part through a hilly, broken country, well wooded, about one-fourth of the land being under cultivation. Coosa River flows in a southwesterly direction into Alabama and joins the Tallapoosa 6 miles above Montgomery, Ala., to form Alabama River.

The regular stations at which measurements have been made are Riverside, Ala., and Rome, Ga., on Coosa River, and Nottingham, Ala., on Talladega Creek. Numerous miscellaneous discharge measurements have been made at other points.

COOSA RIVER AT RIVERSIDE.

This station is at Riverside, at the bridge of the Southern Railway, Georgia Pacific division, across Coosa River. The river here flows in a southerly direction, the railroad running from east to west. The town of Riverside is on the right, or west, bank of the river, and the railroad station is about 1,000 feet west of the bridge, which is of iron and about 30 feet above low water. Beginning at the left bank, there are two spans of 154 feet each; then a drawbridge 220 feet, revolving on a large center pier; then a stationary span 80 feet in length, to west, or right, bank abutment. There is no running water at low stages under the last-named span.

At low water the flowing river is 480 feet wide, including three piers, and is from 4 to 10 feet deep. Very little of the current is too slow to turn any meter. The channel is somewhat irregular, as there are shoals and some old cribs just above the bridge, but for all stages it is probably the best station that can be found on the river at a bridge and easy of access.

On September 8, 1896, a discharge measurement was made by B. M. Hall, and two bench marks were established. On September 22, 1896, another discharge measurement was made, a wire gage was put in, and Mr. J. W. Foster, sawyer at a large sawmill about 300 feet distant, on right bank of river, below the bridge, was employed as observer.

The initial point is top of left abutment at the edge toward the river, on the downstream side of the bridge, from which side soundings and meter measurements are made. The rod of wire gage is nailed to outside guard rail, downstream side, next to the last panel of

stationary bridge ~~before reaching the~~ pier at end of draw span. The rod is 14 feet long and divided to feet and tenths. The bench mark is the top of the capstone on the large circular center pier of turn span. It is 26.80 feet above datum of gage at downstream side of pier.

The drainage area is 6,850 square miles, and is mapped on the following atlas sheets of the United States Geological Survey: Springville, Anniston, Gadsden, Fort Payne, Rome, Tallapoosa, Marietta, Cartersville, Suwanee, Ellijay, Dalton, Cleveland, Ringgold, and Stevenson.

The following discharge measurements were made by B. M. Hall, M. R. Hall, and others.

Discharge measurements of Coosa River at Riverside.

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.
1896.	*Feet.*	*Second-feet.*	1899.	*Feet.*	*Second-feet.*
September 8	0.70	1,630	November 7	0.85	2,271
September 25	.50	1,403	December 9	1.20	2,727
October 30	.88	1,986	1900.		
December 21	1.57	3,272	February 10	5.03	13,493
1897.			March 21	12.50	43,759
March 31	4.53	12,515	May 5	4.15	11,196
June 17	1.54	3,747	August 21	2.32	5,609
July 21	5.55	16,925	December 28	4.25	11,335
August 20	2.58	6,174	1901.		
November 29	.80	1,854	January 8	3.85	9,572
1898.			March 18	3.70	9,333
January 27	10.00	30,359	August 24	12.95	44,554
March 9	1.60	3,538	November 14	1.70	4,039
May 3	3.22	7,758	1902.		
May 25	1.39	3,172	April 8	7.30	21,138
August 3	3.92	9,524	June 3	2.00	4,720
September 7	11.05	37,811	October 17	2.30	5,128
October 19	6.80	14,484	1903.		
November 22	5.85	16,384	March 16	10.75	40,072
1899.			April 11	8.80	30,710
April 26	9.00	29,069	June 20	2.87	7,374
May 3	4.05	10,592	July 22	2.30	5,549
May 20	2.70	6,276	August 26	1.64	4,001
June 14	2.20	5,010	October 1	1.05	2,687
August 26	1.42	3,791	November 13	1.37	3,136
September 23	1.00	2,457			

Daily gage height, in feet, of Coosa River at Riverside.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1896.												
1										0.60	1.10	1.30
2										1.75	1.40	2.10
3										3.10	1.20	4.38
4										2.75	1.10	3.80
5										2.00	1.05	3.20
6										1.50	1.10	2.50
7										1.20	1.20	2.20
8										.85	2.55	1.90
9										.70	2.30	1.70
10										.60	1.90	1.60
11										.65	1.30	1.55
12										.60	1.60	1.55
13										.60	2.25	1.60
14										.60	2.70	1.60
15										.55	4.00	1.80
16										.55	5.20	2.00
17										.55	4.70	2.10
18										.65	4.20	2.20
19										.80	3.20	2.00
20										.85	2.30	1.80
21										.75	1.60	1.70
22										.70	1.40	1.50
23										.60	1.35	1.45
24										.55	1.30	1.40
25										.60	1.25	1.35
26										.70	1.20	1.30
27									0.45	.80	1.15	1.25
28									.45	.85	1.15	1.20
29									.45	.90	1.10	1.10
30									.50	.95	1.20	1.10
31										.85		1.10
1897.												
1	1.10	2.00	5.00	4.30	3.40	1.90	1.45	2.00	1.20	.50	.70	.80
2	1.10	2.50	4.50	4.45	3.10	1.90	1.45	1.80	1.10	.50	.70	.90
3	1.10	5.35	4.25	5.20	3.05	1.90	1.40	1.60	1.30	.50	.70	.95
4	1.10	7.35	3.90	7.00	3.60	1.85	1.40	1.50	1.60	.50	.65	1.20
5	1.10	7.70	4.20	8.60	3.20	1.85	1.45	1.45	1.30	.45	.80	2.50
6	1.20	7.90	5.80	9.50	3.00	1.80	1.50	1.40	1.20	.45	1.05	3.00
7	1.25	9.00	11.40	10.50	3.80	1.50	1.50	1.50	1.10	.45	1.15	2.90
8	1.30	7.70	13.30	11.15	3.70	2.15	2.40	1.50	1.00	.45	1.10	2.40
9	1.35	6.40	12.55	12.15	2.65	2.10	2.30	1.60	.90	.45	1.00	2.15
10	1.35	5.90	12.65	11.90	2.60	1.90	2.05	1.70	.85	.45	.95	2.00
11	1.35	5.20	12.70	10.70	2.50	1.90	2.50	1.70	.80	.40	.85	1.70
12	1.30	7.35	12.80	9.10	2.55	2.00	2.70	2.00	.80	.40	.85	1.60
13	1.40	8.30	13.45	7.30	2.65	1.90	2.50	2.50	.75	.45	.85	1.60
14	2.00	8.20	14.80	6.05	2.10	1.85	2.00	2.30	.75	.45	.85	2.00
15	3.50	7.50	14.60	5.60	3.90	1.60	1.80	2.00	.80	1.45	.80	2.50
16	4.00	6.60	14.80	5.30	4.00	1.70	1.70	1.80	.85	1.65	.75	3.00
17	4.90	5.70	14.70	5.60	4.00	1.80	1.80	1.60	.85	1.40	.70	3.30
18	5.35	5.00	14.70	5.40	3.60	1.60	1.95	1.50	.80	1.35	.70	3.15
19	5.00	4.50	14.50	5.00	3.20	1.90	2.00	1.90	.80	1.20	.70	2.65
20	4.80	4.00	15.30	4.60	3.00	2.00	3.00	2.60	.75	1.00	.65	2.10
21	6.50	4.60	14.90	4.30	2.70	1.80	5.20	2.00	.75	.90	.65	2.20
22	7.00	4.65	14.70	4.00	2.35	1.70	6.40	1.70	.70	.85	.65	2.80
23	7.35	6.00	14.50	3.80	2.30	1.60	8.00	1.60	.70	.80	.65	4.20
24	7.00	7.90	13.70	3.60	2.25	1.55	6.20	1.70	.70	.70	.65	4.85
25	5.40	9.00	12.20	3.40	2.25	1.50	4.50	1.75	.65	.80	.65	4.95
26	4.70	9.00	10.60	3.30	2.15	1.45	4.00	1.60	.65	.75	.65	4.55
27	3.80	8.00	8.50	3.25	2.05	1.45	3.00	1.60	.60	.60	.65	3.85
28	3.00	6.20	6.50	2.20	2.00	1.40	2.60	1.50	.55	.65	.65	3.20
29	2.70	....	5.30	3.10	2.00	1.45	2.50	1.40	.55	.80	.70	2.95
30	2.50	....	4.90	3.20	1.95	1.45	3.00	1.35	.55	.75	.75	2.85
31	2.20	....	4.60	....	1.90	....	2.60	1.30	....	.70	....	2.50

Daily gage height, in feet, of Coosa River at Riverside—Continued.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1898.												
1	2.30	6.00	1.65	6.80	3.90	1.30	1.15	4.25	2.20	2.20	2.60	3.70
2	2.15	5.25	1.70	7.50	3.60	1.25	1.05	4.00	1.80	1.80	2.50	4.00
3	2.10	4.00	1.80	6.80	3.30	1.20	1.00	4.10	1.75	1.70	2.50	3.90
4	2.00	3.25	1.80	5.50	3.05	1.20	.95	4.00	5.80	2.00	2.45	3.70
5	1.90	3.00	1.80	5.80	2.90	1.30	.95	3.30	9.30	6.80	2.40	3.70
6	1.85	2.80	1.75	9.30	2.70	1.25	.90	4.00	10.20	11.20	2.40	3.90
7	1.75	2.75	1.70	10.50	2.55	1.20	.95	5.50	11.00	11.90	2.40	4.00
8	1.70	2.70	1.70	10.80	2.40	1.10	1.00	5.30	11.30	15.80	2.40	4.00
9	1.65	2.60	1.65	10.40	2.30	1.05	1.15	4.50	11.60	14.70	2.45	3.70
10	1.60	2.50	1.65	8.90	2.20	1.05	1.65	4.30	10.80	12.50	2.55	3.30
11	1.60	2.40	1.60	7.50	2.15	1.00	2.15	4.50	8.70	12.00	2.75	3.25
12	1.65	2.30	1.60	6.00	2.10	1.48	2.15	4.70	5.80	11.20	2.75	3.10
13	1.80	2.30	1.70	5.00	2.00	1.10	2.10	6.70	4.75	8.80	2.70	3.00
14	2.00	2.20	1.80	4.40	1.95	1.25	2.15	5.90	4.10	5.50	2.65	2.90
15	3.10	2.10	2.00	4.00	1.90	1.15	2.05	4.70	3.40	4.40	2.70	2.80
16	3.00	2.00	2.25	3.70	1.85	1.00	2.30	3.70	3.00	3.60	2.80	2.65
17	2.80	1.95	3.00	3.50	1.80	1.65	3.10	3.00	2.70	3.00	3.00	2.60
18	2.60	1.90	4.75	4.00	1.75	1.70	3.05	2.75	2.50	3.50	3.15	2.60
19	2.80	1.85	5.50	5.10	1.70	1.65	2.50	2.55	2.25	5.40	3.25	2.70
20	3.00	1.80	4.70	5.80	1.60	1.55	1.90	2.45	2.20	6.40	3.70	2.90
21	4.10	1.80	4.00	5.50	1.70	1.95	1.65	2.40	2.15	6.30	4.20	4.00
22	5.80	1.80	3.25	4.00	1.65	2.10	1.50	2.40	2.20	6.00	5.15	3.80
23	6.05	1.75	3.00	4.50	1.55	2.30	1.35	2.35	2.55	5.80	7.00	3.40
24	6.50	1.75	2.75	5.75	1.50	2.50	1.25	2.30	3.55	5.00	5.90	3.00
25	7.20	1.70	2.30	7.10	1.45	2.05	1.20	2.15	4.30	4.35	5.20	2.75
26	9.00	1.70	2.15	7.80	1.40	1.75	1.40	2.00	3.90	4.00	4.90	2.70
27	10.20	1.70	2.00	7.45	1.55	1.50	2.35	1.80	3.40	3.75	4.60	2.50
28	10.65	1.65	2.00	6.45	1.70	1.60	3.15	2.00	3.15	3.30	4.20	2.40
29	10.45	......	2.30	5.50	1.60	1.45	3.10	2.50	3.00	3.00	4.00	2.30
30	9.45	......	3.00	4.75	1.45	1.30	3.40	3.00	2.75	2.75	3.80	2.30
31	7.55	......	4.50	......	1.35	......	4.00	2.60	......	2.70	......	2.40
1899												
1	2.80	5.90	12.10	10.30	5.00	2.70	1.70	3.95	2.30	0.90	0.95	2.60
2	2.75	6.30	12.20	10.20	4.50	2.80	1.70	3.00	2.40	.90	.95	2.00
3	2.75	7.50	12.30	10.00	4.20	2.80	1.65	2.30	2.80	.90	.95	1.60
4	2.80	7.40	12.10	9.80	3.95	2.60	1.60	2.00	2.40	.90	.95	1.50
5	2.80	9.10	10.10	8.90	3.80	2.30	1.50	1.90	2.10	.90	.95	1.45
6	3.00	12.10	9.00	8.75	3.75	2.10	1.50	1.75	2.00	.90	.95	1.40
7	3.50	14.10	8.00	9.00	3.60	2.00	1.45	1.65	1.85	.90	.95	1.35
8	4.30	14.30	7.50	10.00	4.00	2.00	1.40	1.50	1.40	.90	.95	1.30
9	4.20	14.30	7.25	12.30	3.85	1.95	1.70	1.50	1.30	.95	.95	1.30
10	4.40	14.10	7.00	12.00	3.60	1.95	1.60	1.55	1.25	1.20	.95	1.35
11	5.20	13.80	6.15	11.70	3.45	1.95	1.50	1.55	1.25	1.30	.95	1.40
12	5.90	13.00	5.20	10.00	3.30	1.95	1.50	1.60	2.20	1.40	.95	5.80
13	5.60	12.00	5.50	8.90	3.20	2.00	1.40	1.50	2.50	1.30	.95	8.25
14	5.00	10.90	7.50	7.90	3.00	2.15	1.40	1.45	2.65	1.20	1.00	8.00
15	4.70	8.70	8.30	6.30	3.00	2.80	1.30	1.50	2.00	1.20	1.00	6.00
16	4.90	7.90	16.00	5.55	2.95	3.20	1.30	1.50	1.40	1.20	1.00	4.50
17	5.00	7.60	17.40	5.25	2.95	2.95	1.30	1.50	1.25	1.10	1.00	3.75
18	4.90	7.80	17.00	5.10	2.80	2.50	1.20	1.55	1.20	1.00	1.00	3.60
19	4.70	8.10	16.50	5.00	2.80	2.25	1.30	1.50	1.20	.95	1.00	3.40
20	4.60	8.20	16.30	4.80	2.75	2.00	1.50	1.45	1.10	.95	1.00	3.00
21	4.20	8.00	16.35	4.60	2.75	1.80	1.50	1.45	1.00	.90	.95	2.85
22	4.00	7.65	16.20	4.30	2.70	1.70	1.90	1.35	.95	.90	.95	2.75
23	3.90	8.00	15.90	4.75	2.70	1.70	3.20	1.30	1.00	.95	.95	3.00
24	3.90	8.10	15.70	5.65	2.65	1.60	4.70	1.30	1.00	1.20	.95	6.40
25	4.00	7.30	15.50	8.90	2.60	1.75	3.60	1.30	1.00	1.15	1.00	6.40
26	4.25	7.00	14.90	9.00	2.50	1.60	3.20	1.60	1.00	1.00	2.15	7.10
27	4.15	8.30	13.25	8.90	2.45	1.60	3.00	1.20	.95	1.00	2.90	7.00
28	4.00	11.00	11.00	8.30	2.35	1.65	3.60	1.10	.95	.95	3.00	6.60
29	3.90	......	8.00	6.90	2.30	1.70	4.20	1.50	.90	.95	3.00	6.00
30	3.75	......	7.90	5.45	2.20	1.65	5.20	2.10	.90	.90	2.75	4.85
31	3.70	......	8.50	......	2.70	......	4.75	2.10	......	.95	......	4.00

Daily gage height, in feet, of Coosa River at Riverside—Continued.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1900.												
1	3.50	2.70	6.90	6.65	5.00	2.75	11.60	4.70	1.85	1.55	2.30	5.75
2	3.00	2.65	7.55	6.25	5.30	2.80	10.10	3.90	2.00	1.55	2.25	4.35
3	2.50	2.60	6.90	6.00	5.30	2.90	8.90	3.00	2.20	1.50	2.50	3.75
4	2.40	2.50	6.25	5.60	4.75	2.60	8.20	2.75	2.10	1.50	2.50	3.40
5	2.15	2.60	5.40	5.10	4.30	2.70	7.50	2.55	2.00	1.50	2.50	3.30
6	2.05	2.80	5.00	4.90	4.20	3.45	6.45	2.40	1.80	1.45	2.40	4.35
7	1.95	2.95	4.90	4.75	4.00	3.90	5.50	2.25	1.70	1.40	2.40	6.05
8	1.95	3.00	6.00	4.40	3.65	4.20	4.70	2.15	1.60	1.50	2.35	5.40
9	2.00	3.75	8.75	4.35	3.40	7.05	5.00	2.10	1.50	2.20	2.30	4.80
10	2.00	4.25	10.00	4.30	3.30	8.30	4.30	2.00	1.45	2.35	2.30	4.00
11	2.10	5.80	10.55	6.50	3.15	8.00	4.20	2.00	1.35	3.85	2.15	3.60
12	3.50	6.50	10.05	12.40	2.95	7.70	4.10	1.90	1.30	3.60	2.10	3.15
13	6.00	13.30	8.75	12.90	2.70	6.70	5.65	2.25	1.25	3.80	2.10	2.95
14	7.40	15.30	7.50	11.70	2.70	4.30	4.65	2.00	1.20	2.80	2.00	2.80
15	7.00	15.20	5.60	9.50	2.65	4.50	3.75	1.90	3.35	3.00	1.90	2.70
16	6.40	14.50	6.00	7.20	2.65	4.70	3.60	1.85	6.00	2.90	1.80	2.65
17	5.10	14.00	6.30	12.40	2.60	5.00	3.50	2.00	7.00	2.80	1.75	2.60
18	4.00	13.25	6.00	18.10	2.60	4.90	3.35	2.00	7.50	2.65	1.70	2.55
19	4.25	12.80	6.50	17.55	2.60	6.90	3.10	2.20	6.00	2.50	1.80	2.55
20	8.00	12.10	10.00	15.65	2.60	6.90	3.00	2.10	4.35	2.40	2.00	3.00
21	9.70	9.00	12.20	12.95	2.65	6.45	2.90	2.20	3.20	2.30	2.50	3.30
22	10.00	7.80	12.85	13.15	3.20	6.10	2.70	2.00	2.50	2.20	4.00	5.20
23	9.40	6.80	12.60	12.65	2.90	7.00	2.45	2.00	2.00	2.15	3.80	7.00
24	8.75	7.20	11.80	12.20	3.00	11.35	2.50	1.95	1.90	3.00	3.20	7.30
25	7.75	6.90	10.60	10.80	3.25	12.50	2.60	1.90	1.85	5.25	3.10	6.90
26	6.00	6.50	10.30	9.15	3.10	14.10	2.50	2.20	1.80	7.50	3.00	6.35
27	4.10	5.25	10.20	7.90	3.20	14.42	2.60	2.10	1.80	5.00	4.35	5.90
28	3.60	5.00	9.85	6.50	3.00	14.60	3.70	2.00	1.65	3.80	6.40	4.90
29	3.30	....	9.50	5.70	2.80	13.80	5.70	1.95	1.60	3.00	9.20	4.30
30	3.00	....	8.50	5.35	2.70	12.80	5.30	1.90	1.55	2.65	8.20	4.00
31	2.70	....	7.20	....	2.60	....	5.90	1.90	....	2.50	....	6.50
1901.												
1	7.30	6.00	3.55	14.35	4.80	5.20	3.00	2.15	5.60	2.70	1.90	1.85
2	7.35	6.50	3.50	14.40	4.60	8.20	2.90	2.10	5.00	4.00	1.85	1.90
3	6.50	9.00	3.50	13.30	4.30	8.20	2.85	2.10	4.50	3.20	1.85	1.95
4	6.00	10.60	3.50	11.90	4.15	7.20	2.80	2.05	4.30	3.00	1.85	1.95
5	5.50	11.00	3.40	10.40	4.00	5.75	2.80	2.00	3.65	2.90	1.80	2.20
6	5.00	12.00	3.30	10.30	3.95	5.20	2.75	2.20	3.30	2.75	1.80	2.10
7	4.25	11.90	3.20	9.00	3.90	4.80	2.75	4.10	3.05	2.60	1.80	2.00
8	3.95	11.50	3.10	7.25	3.75	4.30	2.70	4.80	3.00	2.50	1.85	2.00
9	3.70	9.90	3.10	6.50	3.60	4.20	3.50	4.25	2.90	2.30	1.85	2.10
10	3.60	9.60	3.40	5.60	3.45	6.20	4.00	3.50	2.85	2.30	1.80	2.10
11	6.50	9.90	5.50	5.00	3.25	6.00	3.50	2.90	2.75	2.25	1.80	2.05
12	14.10	9.60	6.50	4.80	3.15	5.00	2.90	2.75	2.70	2.30	1.80	2.00
13	15.70	8.90	7.50	4.80	3.10	4.25	2.50	2.60	2.65	3.00	1.80	2.00
14	15.40	7.60	7.00	6.50	3.10	3.75	2.40	3.20	2.65	2.80	1.75	2.90
15	15.10	6.50	6.30	7.50	3.00	3.75	2.35	3.20	2.60	2.70	1.75	11.50
16	14.90	5.80	5.25	8.30	2.95	3.80	2.20	3.40	2.85	2.50	1.80	12.00
17	14.30	5.45	4.25	7.80	2.95	3.80	3.15	5.30	3.90	2.45	1.80	12.50
18	13.90	5.00	3.75	6.50	2.90	4.90	2.90	9.60	5.60	2.60	1.80	12.40
19	13.30	4.80	3.55	10.50	2.90	5.00	2.90	9.65	6.30	2.40	1.80	11.00
20	11.30	4.60	3.55	14.00	2.85	4.50	3.20	10.00	7.50	2.35	1.75	10.20
21	8.30	4.35	3.75	14.50	4.00	3.90	3.00	11.50	7.20	2.30	1.75	9.20
22	6.25	4.20	3.70	14.30	8.20	3.80	2.95	11.00	6.00	2.30	1.75	8.00
23	5.30	4.00	3.50	13.50	9.90	3.50	2.90	11.50	4.50	2.25	1.75	4.50
24	4.60	3.90	4.30	12.50	10.75	3.25	2.75	12.50	3.30	2.20	1.85	3.60
25	5.30	3.85	13.90	11.30	11.85	3.15	2.70	12.90	3.00	2.10	1.90	4.10
26	5.80	3.65	15.90	9.90	11.90	3.00	2.60	12.40	2.70	2.10	2.10	4.60
27	6.30	3.65	15.20	7.90	11.80	2.90	2.40	12.00	2.60	2.10	2.00	5.10
28	6.40	3.60	14.70	6.80	11.00	3.00	2.20	11.50	2.50	2.05	2.00	6.50
29	5.85	....	14.25	5.90	9.60	2.90	2.30	9.95	2.65	2.05	1.85	11.50
30	5.50	....	14.60	5.20	6.20	3.10	2.40	8.35	2.60	2.00	1.85	15.60
31	5.80	....	15.50	....	4.60	....	2.20	6.85	....	1.95	....	16.00

Daily gage height, in feet, of Coosa River at Riverside—Continued.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1902.												
1	15.70	10.40	15.00	15.50	3.35	2.15	1.60	1.40	2.40	2.50	1.20	2.80
2	13.30	13.35	15.40	14.80	3.25	2.10	1.50	1.60	2.00	2.25	1.20	2.40
3	15.10	14.60	15.20	14.60	3.20	2.05	1.50	2.00	1.50	2.00	1.20	4.50
4	15.30	14.40	14.90	14.40	2.00	2.00	1.45	1.60	1.40	1.90	1.15	6.00
5	15.10	14.00	15.60	12.70	3.40	2.00	1.45	1.40	2.00	1.80	1.20	7.20
6	14.50	13.40	15.00	8.90	3.20	1.90	1.40	1.45	1.80	1.75	1.60	6.80
7	13.10	13.20	14.90	6.40	3.10	1.90	1.40	1.90	1.40	1.70	1.80	5.40
8	9.30	11.25	14.10	7.20	3.00	1.85	1.40	1.85	1.50	2.00	1.90	4.80
9	6.20	9.10	13.00	7.60	2.90	1.80	1.35	1.80	1.50	1.75	1.85	4.20
10	4.80	6.00	9.90	7.70	2.75	1.80	1.35	1.80	1.40	1.60	1.70	3.90
11	4.60	5.20	8.10	7.00	2.70	1.80	1.40	2.00	1.40	2.40	1.60	3.50
12	2.90	5.00	6.90	6.20	2.65	2.20	1.40	1.80	1.45	4.00	1.50	2.90
13	2.85	4.90	6.65	5.70	2.75	2.20	1.45	1.70	1.40	3.80	1.30	2.40
14	4.50	4.50	6.40	5.30	2.80	1.95	1.45	1.60	1.40	3.25	1.25	2.45
15	5.25	5.00	6.20	4.85	2.85	1.85	1.50	1.60	1.30	2.65	1.20	2.50
16	7.20	5.80	7.20	4.70	2.65	1.80	1.60	1.35	1.25	2.50	1.20	3.60
17	6.70	5.20	9.00	4.60	2.60	1.80	1.80	2.25	1.25	2.40	1.15	5.30
18	6.20	5.00	9.90	4.90	3.30	1.85	1.85	2.85	1.20	2.10	1.20	5.60
19	2.90	4.90	10.20	1.95	2.90	2.20	2.80	1.20	1.50	1.90	1.25	5.40
20	2.85	4.85	9.40	5.35	2.60	2.00	2.20	1.20	1.20	1.75	1.40	4.90
21	4.50	4.60	8.20	5.00	2.50	1.95	1.95	1.25	1.10	1.60	1.60	5.00
22	5.25	4.90	6.90	4.90	2.45	1.90	1.90	1.25	1.15	1.65	2.00	6.90
23	7.20	4.90	5.90	4.50	2.40	1.90	1.80	1.40	1.25	1.45	1.80	7.80
24	6.70	5.00	5.40	4.30	2.40	1.85	1.75	1.60	1.25	1.35	1.40	7.40
25	6.20	5.35	5.45	3.90	2.35	1.85	1.45	1.70	1.20	1.30	1.60	6.35
26	5.20	5.75	5.30	3.70	2.30	2.00	1.40	1.70	1.35	1.30	2.20	5.10
27	4.50	6.35	6.20	3.70	2.25	1.90	1.50	1.65	2.00	1.30	2.90	4.50
28	5.10	12.50	8.90	3.60	2.25	1.85	2.30	1.65	4.00	1.25	3.45	3.50
29	6.50	......	13.30	3.50	2.20	1.80	1.60	1.60	3.50	1.25	3.90	3.40
30	7.00	......	17.30	3.40	2.20	1.75	1.50	2.20	3.40	1.25	3.50	3.35
31	7.40	......	16.50	......	2.20	......	1.40	2.40	......	1.20	......	3.25
1903.												
1	3.20	4.20	12.90	13.40	4.20	6.10	4.00	3.00	1.25	1.10	1.10	1.20
2	4.00	3.90	14.30	13.60	4.00	7.80	3.80	3.45	1.25	1.05	1.15	1.20
3	4.50	3.85	14.60	13.75	3.85	7.60	3.00	3.20	1.30	1.10	1.25	1.15
4	5.50	5.40	14.60	13.65	3.80	6.90	2.80	3.00	1.40	1.10	1.25	1.15
5	5.55	6.30	14.65	13.50	3.60	7.00	2.70	2.65	1.30	1.05	1.30	1.10
6	5.60	9.40	15.15	12.80	3.50	9.30	2.65	3.00	1.25	1.00	1.35	1.05
7	5.35	11.30	15.00	10.50	3.45	8.60	2.65	3.75	1.25	1.00	1.60	1.05
8	5.10	a15.20	14.50	7.75	3.40	10.05	2.60	4.95	1.20	1.30	1.80	1.05
9	4.50	14.80	13.40	8.90	4.00	9.00	2.60	3.50	1.20	1.10	1.90	1.10
10	3.50	14.20	9.90	9.70	4.10	7.30	2.60	2.45	1.20	1.00	1.80	1.15
11	4.20	15.10	9.30	8.80	4.00	5.60	2.55	2.20	1.15	1.20	1.60	1.20
12	5.00	16.00	9.60	7.40	3.65	4.80	2.65	2.00	1.15	1.40	1.40	1.15
13	5.90	15.75	9.70	6.60	3.35	4.40	2.70	1.80	1.10	1.50	1.35	1.15
14	6.60	14.80	11.60	8.90	3.60	5.00	3.30	1.50	1.10	1.30	1.40	1.15
15	6.30	14.10	10.55	10.10	b8.70	4.40	6.00	1.50	1.20	1.20	1.40	1.20
16	5.30	14.00	10.80	10.35	7.90	3.90	6.60	1.50	1.25	1.10	1.35	1.20
17	4.45	17.25	9.30	10.00	6.30	3.60	5.50	1.80	1.15	1.10	1.30	1.20
18	3.90	16.40	7.90	8.10	5.25	3.40	3.90	2.00	2.00	1.20	1.25	1.15
19	3.60	15.50	6.85	6.70	4.05	3.10	3.15	3.25	2.05	1.20	1.25	1.15
20	3.40	14.40	6.20	6.30	3.90	2.90	2.75	2.70	1.80	1.30	1.30	1.20
21	3.25	14.20	5.70	5.60	3.70	2.75	2.60	2.35	1.50	1.20	1.25	1.20
22	2.90	14.00	7.10	5.10	3.20	2.65	2.35	2.30	1.35	1.20	1.20	1.25
23	2.85	13.80	9.10	4.80	3.10	2.60	2.20	2.05	1.25	1.25	1.30	1.25
24	2.85	12.20	10.20	4.75	3.00	2.60	2.20	1.90	1.20	1.30	1.30	1.30
25	2.65	8.20	11.00	4.65	2.90	2.65	2.30	1.75	1.20	1.25	1.35	1.40
26	2.70	5.80	11.65	4.55	2.90	2.80	2.20	1.65	1.15	1.20	1.30	1.35
27	2.70	5.40	11.90	4.50	2.90	2.70	2.10	1.50	1.15	1.15	1.30	1.30
28	2.90	8.40	11.55	4.40	2.70	2.65	2.10	1.40	1.20	1.05	1.40	1.30
29	3.40	......	9.40	4.40	2.60	2.80	2.20	1.40	1.30	1.00	1.35	1.30
30	3.60	......	10.00	4.30	3.00	5.10	2.15	1.35	1.20	1.05	1.25	1.20
31	3.90	......	12.35	......	3.90	......	2.20	1.30	......	1.10	......	1.25

a 15.30 maximum.   *b* 9.00 maximum.

Rating table for Coosa River at Riverside for 1896.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
0.5	1,400	1.7	3,560	2.9	7,010	4.1	11,030
.6	1,500	1.8	3,820	3.0	7,320	4.2	11,390
.7	1,630	1.9	4,080	3.1	7,640	4.3	11,750
.8	1,780	2.0	4,360	3.2	7,970	4.4	12,110
.9	1,930	2.1	4,630	3.3	8,300	4.5	12,470
1.0	2,100	2.2	4,920	3.4	8,630	4.6	12,840
1.1	2,280	2.3	5,200	3.5	8,960	4.7	13,210
1.2	2,480	2.4	5,500	3.6	9,300	4.8	13,580
1.3	2,680	2.5	5,800	3.7	9,640	4.9	13,950
1.4	2,880	2.6	6,100	3.8	9,980	5.0	14,330
1.5	3,090	2.7	6,400	3.9	10,330	5.1	14,710
1.6	3,320	2.8	6,708	4.0	10,680	5.2	15,100

Rating table for Coosa River at Riverside for 1897.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet*
0.4	1,350	1.4	3,070	3.0	7,530	7.0	20,566
.5	1,400	1.6	3,540	3.2	8,178	8.0	23,826
.6	1,500	1.8	4,020	3.4	8,830	9.0	27,086
.7	1,650	2.0	4,520	3.6	9,482	10.0	30,346
.8	1,820	2.2	5,100	3.8	10,134	11.0	33,606
.9	2,010	2.4	5,700	4.0	10,786	12.0	36,866
1.0	2,210	2.6	6,300	5.0	14,046	13.0	40,126
1.2	2,630	2.8	6,910	6.0	17,306	14.0	43,386

Rating table for Coosa River at Riverside for 1898.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
0.9	2,140	4.7	12,301	8.5	25,335	12.3	46,960
1.0	2,320	4.8	12,644	8.6	25,678	12.4	47,680
1.1	2,520	4.9	12,987	8.7	26,021	12.5	48,400
1.2	2,720	5.0	13,330	8.8	26,364	12.6	49,120
1.3	2,925	5.1	13,673	8.9	26,707	12.7	49,840
1.4	3,130	5.2	14,016	9.0	27,050	12.8	50,560
1.5	3,340	5.3	14,359	9.1	27,433	12.9	51,280
1.6	3,550	5.4	14,702	9.2	27,800	13.0	52,000
1.7	3,760	5.5	15,045	9.3	28,175	13.1	52,720
1.8	3,970	5.6	15,388	9.4	28,550	13.2	53,440
1.9	4,185	5.7	15,731	9.5	28,965	13.3	54,160
2.0	4,400	5.8	16,074	9.6	29,380	13.4	54,885
2.1	4,620	5.9	16,417	9.7	29,815	13.5	55,600
2.2	4,840	6.0	16,760	9.8	30,250	13.6	56,320
2.3	5,070	6.1	17,103	9.9	30,725	13.7	57,040
2.4	5,300	6.2	17,446	10.0	31,200	13.8	57,760
2.5	5,540	6.3	17,789	10.1	31,725	13.9	58,480
2.6	5,780	6.4	18,132	10.2	32,250	14.0	59,200
2.7	6,030	6.5	18,475	10.3	32,825	14.1	59,920
2.8	6,280	6.6	18,818	10.4	33,400	14.2	60,640
2.9	6,540	6.7	19,161	10.5	34,067	14.3	61,360
3.0	6,800	6.8	19,540	10.6	34,725	14.4	62,080
3.1	7,080	6.9	19,847	10.7	35,442	14.5	62,800
3.2	7,360	7.0	20,190	10.8	36,160	14.6	63,520
3.3	7,655	7.1	20,533	10.9	36,880	14.7	64,240
3.4	7,950	7.2	20,876	11.0	37,600	14.8	64,960
3.5	8,260	7.3	21,219	11.1	38,320	14.9	65,680
3.6	8,570	7.4	21,562	11.2	39,040	15.0	66,400
3.7	8,895	7.5	21,905	11.3	39,760	15.1	67,120
3.8	9,220	7.6	22,248	11.4	40,480	15.2	67,840
3.9	9,560	7.7	22,591	11.5	41,200	15.3	68,560
4.0	9,900	7.8	22,934	11.6	41,920	15.4	69,280
4.1	12,243	7.9	23,277	11.7	42,640	15.5	70,000
4.2	10,586	8.0	23,620	11.8	43,360	15.6	70,720
4.3	10,929	8.1	23,963	11.9	44,080	15.7	71,440
4.4	11,272	8.2	24,306	12.0	44,800	15.8	72,160
4.5	11,615	8.3	24,649	12.1	45,520	15.9	72,880
4.6	11,958	8.4	24,992	12.2	46,240	16.0	73,600

Rating table for Coosa River at Riverside for 1899.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
0.9	2,330	5.2	14,740	9.5	30,650	13.8	46,560
1.0	2,460	5.3	15,110	9.6	31,020	13.9	46,930
1.1	2,600	5.4	15,480	9.7	31,390	14.0	47,300
1.2	2,760	5.5	15,850	9.8	31,760	14.1	47,670
1.3	2,920	5.6	16,220	9.9	32,130	14.2	48,040
1.4	3,100	5.7	16,590	10.0	32,500	14.3	48,410
1.5	3,300	5.8	16,960	10.1	32,870	14.4	48,780
1.6	3,500	5.9	17,330	10.2	33,240	14.5	49,150
1.7	3,720	6.0	17,700	10.3	33,610	14.6	49,520
1.8	3,940	6.1	18,070	10.4	33,980	14.7	49,890
1.9	4,160	6.2	18,440	10.5	34,350	14.8	50,260
2.0	4,400	6.3	18,810	10.6	34,720	14.9	50,630
2.1	4,600	6.4	19,180	10.7	35,090	15.0	51,000
2.2	4,900	6.5	19,550	10.8	35,460	15.1	51,370
2.3	5,160	6.6	19,920	10.9	35,830	15.2	51,740
2.4	5,430	6.7	20,290	11.0	36,200	15.3	52,110
2.5	5,700	6.8	20,660	11.1	36,570	15.4	52,480
2.6	5,970	6.9	21,030	11.2	36,940	15.5	52,850
2.7	6,250	7.0	21,400	11.3	37,310	15.6	53,220
2.8	6,530	7.1	21,770	11.4	37,680	15.7	53,590
2.9	6,810	7.2	22,140	11.5	38,050	15.8	53,960
3.0	7,100	7.3	22,510	11.6	38,420	15.9	54,330
3.1	7,400	7.4	22,880	11.7	38,790	16.0	54,700
3.2	7,700	7.5	23,250	11.8	39,160	16.1	55,070
3.3	8,010	7.6	23,620	11.9	39,530	16.2	55,440
3.4	8,330	7.7	23,990	12.0	39,900	16.3	55,810
3.5	8,650	7.8	24,360	12.1	40,270	16.4	56,280
3.6	8,970	7.9	24,730	12.2	40,640	16.5	56,650
3.7	9,290	8.0	25,100	12.3	41,010	16.6	57,020
3.8	9,620	8.1	25,470	12.4	41,380	16.7	57,390
3.9	9,950	8.2	25,840	12.5	41,750	16.8	57,760
4.0	10,300	8.3	26,210	12.6	42,120	16.9	58,130
4.1	10,670	8.4	26,580	12.7	42,490	17.0	58,400
4.2	11,040	8.5	26,950	12.8	42,860	17.1	58,770
4.3	11,410	8.6	27,320	12.9	43,230	17.2	59,140
4.4	11,780	8.7	27,690	13.0	43,600	17.3	59,510
4.5	12,150	8.8	28,060	13.1	43,970	17.4	59,880
4.6	12,520	8.9	28,430	13.2	44,340	17.5	60,250
4.7	12,890	9.0	28,800	13.3	44,710	17.6	60,620
4.8	13,260	9.1	29,170	13.4	45,080	17.7	60,990
4.9	13,630	9.2	29,540	13.5	45,450	17.8	61,360
5.0	14,000	9.3	29,910	13.6	45,720	17.9	61,730
5.1	14,370	9.4	30,280	13.7	46,190	18.0	62,100

Rating table for Coosa River at Riverside for 1900 and 1901.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
1.0	2,460	5.6	15,900	10.2	33,900	14.8	52,300
1.1	2,610	5.7	16,250	10.3	34,300	14.9	52,700
1.2	2,760	5.8	16,600	10.4	34,700	15.0	53,100
1.3	2,930	5.9	16,950	10.5	35,100	15.1	53,500
1.4	3,100	6.0	17,300	10.6	35,500	15.2	53,900
1.5	3,300	6.1	17,680	10.7	35,900	15.3	54,300
1.6	3,500	6.2	18,060	10.8	36,300	15.4	54,700
1.7	3,720	6.3	18,440	10.9	36,700	15.5	55,100
1.8	3,940	6.4	18,820	11.0	37,100	15.6	55,500
1.9	4,170	6.5	19,200	11.1	37,500	15.7	55,900
2.0	4,400	6.6	19,580	11.2	37,900	15.8	56,300
2.1	4,650	6.7	19,960	11.3	38,300	15.9	56,700
2.2	4,900	6.8	20,340	11.4	38,700	16.0	57,100
2.3	5,165	6.9	20,720	11.5	39,100	16.1	57,500
2.4	5,430	7.0	21,100	11.6	39,500	16.2	57,900
2.5	5,700	7.1	21,500	11.7	39,900	16.3	58,300
2.6	5,970	7.2	21,900	11.8	40,300	16.4	58,700
2.7	6,250	7.3	22,300	11.9	40,700	16.5	59,100
2.8	6,530	7.4	22,700	12.0	41,100	16.6	59,500
2.9	6,845	7.5	23,100	12.1	41,500	16.7	59,900
3.0	7,100	7.6	23,500	12.2	41,900	16.8	60,300
3.1	7,400	7.7	23,900	12.3	42,300	16.9	60,700
3.2	7,700	7.8	24,300	12.4	42,700	17.0	61,100
3.3	8,015	7.9	24,700	12.5	43,100	17.1	61,500
3.4	8,330	8.0	25,100	12.6	43,500	17.2	61,900
3.5	8,650	8.1	25,500	12.7	43,900	17.3	62,300
3.6	8,970	8.2	25,900	12.8	44,300	17.4	62,700
3.7	9,295	8.3	26,300	12.9	44,700	17.5	63,100
3.8	9,620	8.4	26,700	13.0	45,100	17.6	63,500
3.9	9,960	8.5	27,100	13.1	45,500	17.7	63,900
4.0	10,300	8.6	27,500	13.2	45,900	17.8	64,300
4.1	10,650	8.7	27,900	13.3	46,300	17.9	64,700
4.2	11,000	8.8	28,300	13.4	46,700	18.0	65,100
4.3	11,350	8.9	28,700	13.5	47,100	18.1	65,500
4.4	11,700	9.0	29,100	13.6	47,500	18.2	65,900
4.5	12,050	9.1	29,500	13.7	47,900	18.3	66,300
4.6	12,400	9.2	29,900	13.8	48,300	18.4	66,700
4.7	12,750	9.3	30,300	13.9	48,700	18.5	67,100
4.8	13,100	9.4	30,700	14.0	49,100	18.6	67,500
4.9	13,450	9.5	31,100	14.1	49,500	18.7	67,900
5.0	13,800	9.6	31,500	14.2	49,900	18.8	68,300
5.1	14,150	9.7	31,900	14.3	50,300	18.9	68,700
5.2	14,500	9.8	32,300	14.4	50,700	19.0	69,100
5.3	14,850	9.9	32,700	14.5	51,100		
5.4	15,200	10.0	33,100	14.6	51,500		
5.5	15,550	10.1	33,500	14.7	51,900		

Rating table for Coosa River at Riverside for 1902.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
1.0	2,470	4.0	10,300	7.0	21,100	13.0	45,100
1.2	2,760	4.2	11,000	7.2	21,900	13.5	47,100
1.4	3,100	4.4	11,700	7.4	22,700	14.0	49,100
1.6	3,500	4.6	12,400	7.6	23,500	14.5	51,100
1.8	3,940	4.8	13,100	7.8	24,300	15.0	53,100
2.0	4,400	5.0	13,800	8.0	25,100	15.5	55,100
2.2	4,900	5.2	14,500	8.5	27,100	16.0	57,100
2.4	5,430	5.4	15,200	9.0	29,100	16.5	59,100
2.6	5,970	5.6	15,900	9.5	31,100	17.0	61,100
2.8	6,530	5.8	16,600	10.0	33,100	17.5	63,100
3.0	7,100	6.0	17,300	10.5	35,100	18.0	65,100
3.2	7,700	6.2	18,060	11.0	37,100	18.5	67,100
3.4	8,330	6.4	18,820	11.5	39,100	19.0	69,100
3.6	8,970	6.6	19,580	12.0	41,100		
3.8	9,620	6.8	20,340	12.5	43,100		

Rating table for Coosa River at Riverside for 1903.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
1.00	2,620	4.80	14,300	8.60	30,310	12.40	46,650
1.10	2,800	4.90	14,690	8.70	30,740	12.50	47,080
1.20	2,990	5.00	15,090	8.80	31,170	12.60	47,510
1.30	3,180	5.10	15,490	8.90	31,600	12.70	47,940
1.40	3,380	5.20	15,890	9.00	32,030	12.80	48,370
1.50	3,590	5.30	16,290	9.10	32,460	12.90	48,800
1.60	3,810	5.40	16,700	9.20	32,890	13.00	49,230
1.70	4,040	5.50	17,110	9.30	33,320	13.10	49,660
1.80	4,270	5.60	17,520	9.40	33,750	13.20	50,090
1.90	4,510	5.70	17,930	9.50	34,180	13.30	50,520
2.00	4,750	5.80	18,340	9.60	34,610	13.40	50,950
2.10	5,010	5.90	18,760	9.70	35,040	13.50	51,380
2.20	5,290	6.00	19,180	9.80	35,470	13.60	51,810
2.30	5,580	6.10	19,600	9.90	35,900	13.70	52,240
2.40	5,870	6.20	20,020	10.00	36,330	13.80	52,670
2.50	6,160	6.30	20,440	10.10	36,760	13.90	53,100
2.60	6,460	6.40	20,860	10.20	37,190	14.00	53,530
2.70	6,770	6.50	21,280	10.30	37,620	14.10	53,960
2.80	7,090	6.60	21,710	10.40	38,050	14.20	54,390
2.90	7,420	6.70	22,140	10.50	38,480	14.30	54,820
3.00	7,750	6.80	22,570	10.60	38,910	14.40	55,250
3.10	8,080	6.90	23,000	10.70	39,340	14.50	55,680
3.20	8,410	7.00	23,430	10.80	39,770	14.60	56,110
3.30	8,750	7.10	23,860	10.90	40,200	14.70	56,540
3.40	9,090	7.20	24,290	11.00	40,630	14.80	56,970
3.50	9,440	7.30	24,720	11.10	41,060	14.90	57,400
3.60	9,790	7.40	25,150	11.20	41,490	15.00	57,830
3.70	10,140	7.50	25,580	11.30	41,920	15.10	58,260
3.80	10,500	7.60	26,010	11.40	42,350	15.20	58,690
3.90	10,870	7.70	26,440	11.50	42,780	15.50	59,980
4.00	11,240	7.80	26,870	11.60	43,210	15.70	60,840
4.10	11,610	7.90	27,300	11.70	43,640	15.80	61,270
4.20	11,990	8.00	27,730	11.80	44,070	16.00	62,130
4.30	12,370	8.10	28,160	11.90	44,500	16.40	63,850
4.40	12,750	8.20	28,590	12.00	44,930	17.00	66,430
4.50	13,130	8.30	29,020	12.10	45,360	17.20	67,290
4.60	13,520	8.40	29,450	12.20	45,790	17.30	67,720
4.70	13,910	8.50	29,880	12.30	46,220		

Estimated monthly discharge of Coosa River at Riverside.

[Drainage area, 6,850 square miles.]

Month.	Discharge in second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1896.					
September 27 to 30	1,400	1,350	1,363	0.20	0.03
October	7,640	1,450	2,218	.32	.37
November	15,100	2,190	4,637	.68	.75
December	12,110	2,280	4,125	.60	.69
1897.					
January	21,707	2,420	8,434	1.23	1.42
February	27,086	4,520	18,658	2.72	2.83
March	47,624	10,460	32,481	4.74	5.47
April	37,355	5,100	17,698	2.58	2.87
May	10,786	4,270	7,040	1.03	1.19
June	4,950	3,070	3,915	.57	.63
July	23,826	3,070	7,142	1.04	1.20
August	6,300	2,850	3,870	.56	.64
September	3,540	1,440	1,976	.29	.32
October	3,660	1,350	1,819	.27	.31
November	2,525	1,570	1,786	.26	.29
December	13,883	1,820	6,566	.96	1.10
The year	47,624	1,350	9,282	1.35	18.27
1898.					
January	35,084	3,550	11,572	1.69	1.95
February	16,760	3,655	5,763	.84	.87
March	15,045	3,550	5,852	.59	.68
April	36,160	8,260	18,133	2.65	2.95
May	9,560	3,028	4,684	.68	.78
June	5,540	2,320	3,281	.48	.54
July	9,900	2,140	4,289	.63	.72
August	19,161	3,970	8,758	1.28	1.48
September	41,920	3,865	13,927	2.03	2.26
October	72,160	3,760	19,936	2.91	3.36
November	20,190	5,300	8,375	1.22	1.36
December	9,900	5,070	7,376	1.08	1.25
The year	72,160	2,140	9,329	1.34	18.20

Estimated monthly discharge of Coosa River at Riverside—Continued.

Month.	Discharge in second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1899.					
January	17, 330	6, 390	10, 865	1. 54	1. 78
February	48, 410	17, 330	30, 974	4. 38	4. 56
March	60, 880	14, 740	38, 094	5. 39	6. 21
April	41, 010	11, 410	24, 915	3. 53	3. 94
May	14, 000	4, 900	7, 742	1. 10	1. 27
June	7, 700	3, 500	4, 771	. 68	. 75
July	14, 740	2, 760	5, 318	. 75	. 86
August	10, 125	2, 600	3, 806	. 54	. 62
September	6, 530	2, 330	3, 555	. 50	. 56
October	3, 100	2, 330	2, 510	. 36	. 41
November	7, 100	2, 395	3, 086	. 44	. 49
December	26, 025	2, 920	10, 631	1. 50	1. 73
The year	60, 880	2, 330	12, 189	1. 73	23. 18
1900.					
January	33, 100	4, 280	13, 344	1. 89	2. 18
February	54, 300	5, 700	23, 487	3. 32	3. 45
March	44, 500	13, 450	26, 822	3. 80	4. 38
April	65, 500	11, 350	29, 813	4. 22	4. 71
May	14, 850	5, 970	8, 198	1. 16	1. 34
June	51, 500	5, 970	22, 216	3. 14	3. 51
July	39, 500	5, 565	13, 610	1. 93	2. 23
August	12, 750	4, 050	5, 147	. 73	. 84
September	23, 100	2, 760	6, 483	. 92	1. 03
October	23, 100	3, 100	6, 910	. 98	1. 13
November	29, 900	3, 720	7, 673	1. 09	1. 22
December	22, 300	5, 835	11, 773	1. 67.	1. 93
The year	65, 500	2, 760.	14, 623	2. 07	27. 95

Estimated monthly discharge of Coosa River at Riverside—Continued.

Month.	Discharge in second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1901.					
January	55, 900	8, 970	26, 089	3. 69	4. 25
February	41, 100	8, 970	21, 784	3. 08	3. 21
March	56, 700	7, 400	20, 613	2. 92	3. 37
April	51, 100	a 14, 500	30, 616	4. 33	4. 83
May	40, 700	6, 670	16, 195	2. 29	2. 64
June	26, 100	6, 810	12, 335	1. 75	1. 95
July	10, 300	4, 900	6, 535	. 93	1. 07
August	44, 700	4, 400	20, 370	2. 88	3.·32
September	23, 100	5, 700	9, 977	1. 41	1. 57
October	10, 300	4, 280	5, 694	. 81	. 93
November	4, 650	3, 830	4, 016	. 57	. 64
December	57, 100	4, 050	18, 885	2. 67	3. 08
The year	57, 100	3, 830	16, 092	2. 28	30. 86
1902.					
January	55, 900	6, 670	23, 804	3. 37	3. 89
February	51, 500	12, 050	24, 839	3. 52	3. 67
March	62, 300	14, 850	34, 762	4. 92	5. 67
April	55, 100	8, 330	20, 872	2. 95	3. 29
May	8, 330	4, 900	6, 375	. 90	1. 04
June	4, 900	3, 830	4, 247	. 60	. 67
July	6, 670	3, 015	3, 718	. 53	. 61
August	5, 430	2, 760	3, 577	. 51	. 59
September	10, 300	2, 610	3, 938	. 56	. 62
October	10, 300	2, 760	4, 576	. 65	. 75
November	9, 950	2, 685	3, 994	. 57	. 64
December	24, 300	5, 430	12, 719	1. 80	2. 08
The year	62, 300	2, 610	12, 285	1. 74	23. 52

a Should have been 13,100.

Estimated monthly discharge of Coosa River at Riverside—Continued.

Month.	Discharge in second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1903.					
January	2, 170	6, 610	12, 066	1. 71	1. 97
February	67, 500	10, 680	43, 155	6. 11	6. 36
March	58, 470	17, 930	40, 682	5. 76	6. 64
April	52, 450	12, 370	28, 983	4. 10	4. 57
May	30, 740	6, 460	11, 294	1. 60	1. 84
June	36, 540	6, 460	15, 654	2. 22	2. 48
July	21, 710	5, 010	7, 994	1. 13	1. 30
August	14, 890	3, 180	5, 910	. 84	. 97
September	4, 880	2, 800	3, 211	. 45	. 50
October	3, 590	2, 620	2, 922	. 41	. 47
November	4, 510	2, 800	3, 334	. 47	. 52
December	3, 380	2, 710	2, 983	. 42	. 48
The year	67, 500	2, 620	14, 849	2. 10	28. 10

Net horsepower per foot of fall with a turbine efficiency of 80 per cent for the minimum monthly discharge of Coosa River at Riverside.

Month.	1899.			1900.			1901.		
	Minimum discharge.	Minimum net horse-power per foot of fall.	Dura-tion of mini-mum.	Minimum discharge.	Minimum net horse-power per foot of fall.	Dura-tion of mini-mum.	Minimum discharge.	Minimum net horse-power per foot of fall.	Dura-tion of mini-mum.
	Sec.-feet.		Days	Sec.-feet.		Days.	Sec.-feet.		Days.
January	6, 390	581	2	4, 285	390	2	8, 970	815	1
February	17, 330	1, 575	1	5, 700	518	1	8, 970	815	1
March	14, 740	1, 340	1	13, 450	1, 223	1	7, 400	673	2
April	11, 410	1, 037	1	11, 350	1, 032	1	14, 500	1, 310	2
May	4, 900	445	1	5, 970	543	5	6, 687	608	1
June	3, 500	318	3	5, 970	543	1	6, 810	619	2
July	2, 760	251	1	5, 565	506	1	4, 900	445	3
August	2, 600	236	1	4, 050	369	1	4, 400	400	1
September	2, 330	212	2	2, 760	251	1	5, 700	518	1
October	2, 330	212	11	3, 100	282	1	4, 285	390	1
November	2, 395	218	17	3, 720	338	1	3, 830	348	6
December	2, 920	265	2	5, 835	530	2	4, 050	368	1

COOSA RIVER AT ROME, GA.

The measurements at Rome are made on the Oostanaula and Etowah just above their junction. Etowah River is measured at Second Avenue Bridge and the Oostanaula at Fifth Avenue Bridge in Rome, and the result added to give the flow of Coosa River. The gage height is taken from the United States Weather Bureau gage at Fifth Avenue Bridge, on the Oostanaula. There is practically no fall on Oostanaula River from Fifth Avenue Bridge to the junction, hence the gage is used as Coosa River gage and gives the fluctuations of Coosa River. This gage is a 4 by 6 inch timber, graduated to feet and tenths and fastened to the downstream left-hand corner of the first pier from the left bank. The zero of the gage is 575.79 feet above sea level. The United States Weather Bureau has maintained the station here for many years. It is now maintained only as a half-year station, from November 1 to April 30, inclusive, but W. M. Towers, the river observer, kindly reads the gage and furnishes the Survey with monthly reports of the daily gage heights for the entire year without charge. Mr. Towers has kept the records for many years and has predicted floods with great precision. The channel of the Etowah is straight, current swift and unobstructed, but the Oostanaula is rather sluggish and somewhat obstructed by piers. The banks are high, but liable to overflow in times of high water.

The following discharge measurements were made by M. R. Hall and others:

Discharge measurements of Coosa River at Rome, Ga.

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.
1896.	*Feet.*	*Second-feet.*	1900.	*Feet.*	*Second-feet.*
September 29	0.20	1,209	September 13	0.90	1,992
1897.			December 8	3.73	6,066
May 7	2.75	4,646	1901.		
October 5	.15	990	January 23	3.60	6,454
1898.			April 5	9.90	16,692
May 11	1.90	2,946	June 22	3.70	6,030
September 17	2.60	3,913	October 15	3.15	5,388
October 11	5.05	8,324			
October 22	4.10	6,489	1902.		
November 30	3.90	6,039	June 24	1.30	2,483
1899.			October 8	.80	1,800
January 25	3.80	6,540	November 8	1.10	2,332
Do	3.60	5,932	1903.		
May 19	2.75	4,394	March 14	9.70	16,146
June 16	2.40	3,352	June 5	12.55	25,008
August 4	1.45	2,835	July 1	2.80	5,305
October 13	.60	1,769	July 3	2.70	4,653
1900.			July 18	2.85	4,403
February 21	4.80	8,115	September 4	.90	2,211
May 19	2.30	4,496	November 28	.75	1,892

Daily gage height, in feet, of Coosa River at Rome, Ga.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1897.												
1	·1.0	2.8	3.3	7.1	4.1	1.8	1.7	0.8	1.0	0.0	0.5	1.1
2	1.0	9.7	3.2	7.5	4.0	·2.3	1.9	.7	.5	.0	.9	1.0
3	1.0	11.5	3.1	8.2	3.5	2.0	1.0	1.2	.3	.0	1.0	1.2
4	1.0	9.6	3.3	9.4	3.3	3.0	.9	1.0	.5	.1	1.0	2.3
5	1.0	8.2	3.5	14.8	3.0	2.4	2.0	.8	.4	.1	1.0	3.2
6	1.3	5.2	7.6	18.9	3.0	2.0	1.9	.8	.3	.1	.8	3.7
7	1.1	5.0	19.7	17.0	3.0	2.0	1.9	1.9	.3	.1	.8	3.2
8	1.1	4.3	18.9	14.7	2.8	2.0	3.0	2.0	.2	.1	.8	2.2
9	1.0	5.0	15.4	12.1	2.6	2.0	2.1	2.0	.1	.1	.8	1.9
10	1.0	4.4	13.5	9.6	2.6	1.9	1.9	1.6	.0	.1	.7	1.7
11	.9	4.5	12.0	7.2	2.6	1.9	2.5	2.4	.0	.1	.7	1.5
12	.9	7.4	11.5	6.2	3.0	1.9	2.8	1.8	.0	1.1	.7	1.4
13	.9	8.7	18.6	5.8	3.4	1.8	2.0	1.3	.0	1.6	.7	1.3
14	2.8	7.2	21.3	5.0	4.0	1.7	1.6	.8	.0	1.3	.6	2.2
15	6.2	5.5	23.8	6.0	5.0	1.7	1.3	.6	.0	1.0	.6	4.0
16	5.0	4.5	23.4	·7.4	4.0	2.0	1.0	.6	.0	.8	.6	3.5
17	3.5	4.0	22.6	7.0	3.3	2.8	5.2	2.1	.0	.7	.6	2.5
18	3.9	3.7	21.4	5.0	2.8	2.3	4.2	3.2	.1	.6	.6	2.2
19	5.0	3.4	19.7	4.5	2.7	2.0	4.8	2.4	.2	.6	.6	1.8
20	3.5	3.0	18.9	4.0	2.6	1.8	8.8	1.4	.2	.6	.6	1.7
21	8.7	4.0	17.7	3.8	2.5	1.6	12.8	1.3	.2	1.5	.6	3.2
22	9.5	3.9	15.3	3.7	2.4	1.5	7.3	1.5	.2	1.3	.5	4.1
23	5.7	5.6	13.7	3.5	2.4	1.5	4.4	1.5	.2	1.0	.5	5.8
24	4.0	11.7	12.9	3.5	2.4	1.4	3.9	1.5	.2	.8	.5	5.3
25	3.5	8.6	9.1	3.5	2.3	1.3	2.6	1.1	.3	.8	.5	3.7
26	3.0	6.7	6.0	3.5	2.2	1.2	2.6	.8	.3	.7	.5	2.8
27	2.5	4.7	5.2	3.4	2.1	1.2	3.8	.5	.4	.7	.5	3.0
28	2.5	3.5	4.8	3.4	2.0	1.0	3.0	.4	.4	.7	.9	2.8
29	2.5	....	4.5	3.4	2.0	1.1	2.4	.4	.4	.6	1.1	2.3
30	2.3	....	4.2	3.2	1.9	2.0	1.4	.4	.4	.5	1.1	2.0
31	2.2	....	4.0	....	1.9	....	1.2	.5	....	.5	....	2.0
1898.												
1	1.8	3.6	1.2	9.0	2.8	1.4	1.2	4.8	2.0	2.0	2.2	4.2
2	1.8	3.1	1.2	6.1	2.6	1.4	1.0	4.4	7.8	2.0	2.2	4.0
3	1.7	2.8	1.2	4.2	2.4	1.4	1.0	3.2	21.7	2.0	2.2	3.8
4	1.7	2.6	1.2	3.6	2.3	1.4	1.0	4.4	24.3	4.9	2.2	3.8
5	1.6	2.4	1.2	9.9	2.2	1.3	1.0	8.0	22.2	22.0	2.0	4.3
6	1.6	2.2	1.2	17.2	2.1	1.3	1.3	5.6	20.0	23.8	2.2	5.0
7	1.3	2.0	1.2	14.5	2.0	1.3	2.0	4.4	17.6	19.0	2.6	4.3
8	1.3	1.8	1.2	10.9	2.0	1.3	2.8	4.4	16.4	18.4	2.4	·4.0
9	1.3	1.8	1.2	7.0	2.0	1.3	3.2	3.4	9.7	16.6	2.3	3.7
10	1.3	1.7	1.2	4.1	2.0	1.3	1.7	3.0	5.0	14.0	2.1	3.4
11	1.4	1.5	1.2	4.0	2.0	1.3	2.8	9.9	5.4	5.6	2.0	3.3
12	2.0	1.5	1.2	3.8	1.9	1.2	2.0	7.2	4.6	4.2	2.0	3.3
13	4.0	1.3	1.2	3.6	1.8	1.4	1.8	4.2	3.8	3.8	2.0	3.2
14	4.0	1.3	1.3	3.5	1.8	1.8	1.6	3.4	3.2	3.7	2.3	3.0
15	3.8	1.3	1.6	3.5	1.7	1.8	3.7	3.0	3.0	3.5	2.3	3.0
16	3.6	1.3	3.7	3.4	1.6	1.7	3.7	2.5	2.9	3.2	2.9	2.8
17	3.6	1.2	7.3	3.0	1.5	1.8	2.2	2.0	2.7	3.1	2.9	2.7
18	3.2	1.2	5.8	3.0	1.5	1.8	1.9	2.2	2.5	6.5	4.0	2.6
19	2.8	1.2	3.7	3.0	1.5	2.2	1.7	2.2	2.3	9.0	5.0	2.6
20	4.4	1.2	3.0	3.6	1.4	3.6	1.6	3.2	2.2	6.0	4.5	2.6
21	6.5	1.2	2.5	3.6	1.4	3.2	1.5	2.8	2.2	4.2	5.0	2.8
22	6.4	1.2	2.5	3.2	1.4	3.0	1.4	3.9	2.3	3.9	4.0	2.9
23	5.0	1.2	2.3	3.0	1.4	2.8	1.3	2.2	2.6	4.0	5.0	3.2
24	4.5	1.2	2.2	7.2	1.4	2.6	1.8	2.2	4.1	3.9	7.0	3.6
25	7.0	1.2	2.1	8.2	1.4	2.0	3.7	1.9	3.1	3.5	4.7	3.0
26	14.0	1.2	2.0	6.0	1.4	1.8	3.8	2.7	3.0	3.3	3.9	2.9
27	14.6	1.2	1.9	4.6	1.4	1.8	2.9	4.0	2.7	3.1	4.5	2.7
28	11.6	1.2	1.8	4.0	1.4	1.8	3.7	4.4	2.5	3.0	4.3	2.6
29	8.6	....	2.0	3.7	1.4	1.6	3.4	3.4	2.3	2.8	4.3	2.5
30	4.6	....	8.5	3.2	1.4	1.4	4.1	2.0	2.1	2.6	3.9	2.4
31	3.9	....	11.4	....	1.4	....	4.2	2.3	....	2.4	....	2.4

Daily gage height, in feet, of Coosa River at Rome, Ga.—Continued.

Day.	Jan.	Feb.	Mar.	Apr.	May	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1899.												
1	3.0	6.9	19.7	13.2	4.0	3.0	1.7	2.2	3.4	.4	.7	1.1
2	3.4	7.8	15.0	10.6	3.7	2.6	1.5	1.9	2.0	.3	.6	1.1
3	3.0	6.0	8.6	7.9	3.7	2.6	1.0	1.7	1.6	.3	.5	1.5
4	2.7	9.2	6.6	7.2	3.5	2.0	.9	1.5	1.4	.3	.5	1.3
5	2.6	15.3	7.8	9.5	3.5	2.0	2.0	1.4	1.3	.3	.4	1.1
6	2.6	18.2	9.0	8.2	3.5	2.0	1.9	1.5	1.3	.5	.4	1.0
7	3.6	27.8	8.0	8.2	3.7	2.0	1.9	1.6	1.2	.7	.3	.~
8	5.9	24.0	6.8	15.0	3.7	1.9	3.0	1.5	1.0	.7	.3	.8
9	5.9	22.4	5.7	13.4	3.6	1.8	2.1	1.8	1.0	.8	.3	.8
10	4.9	21.0	5.4	11.2	3.5	1.8	1.9	1.6	1.0	.6	.3	.8
11	4.0	19.0	5.2	9.5	3.3	1.8	2.5	1.4	2.9	1.0	.3	.8
12	4.5	16.5	4.9	7.0	3.1	2.2	2.8	1.4	2.3	.9	.3	2.8
13	4.0	7.0	4.5	6.4	3.1	3.8	2.0	1.2	1.5	.7	.3	6.1
14	3.8	5.0	6.0	5.9	3.0	4.0	1.6	1.1	1.0	.7	.4	5.0
15	3.6	5.0	16.6	5.6	3.0	3.5	1.3	1.3	.9	.6	.4	3.2
16	3.6	5.5	27.7	5.4	2.9	2.5	1.8	1.9	.8	.6	.5	2.0
17	4.0	8.9	29.2	5.2	2.8	2.1	5.2	1.6	.6	.6	.9	1.8
18	4.2	9.5	25.8	4.8	2.8	2.0	4.2	1.4	.6	.6	.7	1.7
19	4.0	8.5	24.9	4.7	2.8	2.0	4.8	1.1	.6	.6	.5	1.3
20	3.7	7.7	26.2	4.6	2.8	2.0	8.8	.9	.7	.6	.5	1.6
21	3.3	6.8	24.6	4.3	2.6	1.8	12.8	.9	.7	.7	.5	2.0
22	3.2	6.9	23.0	4.1	2.6	2.2	7.9	.8	.6	.7	.4	2.0
23	3.1	7.3	22.6	4.0	2.4	1.7	4.8	.8	.6	.6	1.0	1.8
24	3.5	6.6	21.9	5.4	2.6	1.7	3.9	.7	.5	.5	2.1	7.2
25	3.8	5.8	18.0	7.4	2.5	1.7	2.6	.7	.5	.4	1.5	7.5
26	3.8	5.5	10.5	9.1	2.4	1.7	2.6	.7	.5	.4	2.5	5.0
27	3.3	19.1	7.7	6.7	2.2	2.1	3.8	2.5	.5	.4	3.0	3.5
28	3.0	23.4	6.8	5.5	2.2	1.9	3.0	2.5	.6	.4	2.2	3.0
29	3.0	....	8.8	4.8	2.0	1.9	2.4	2.5	.5	.4	1.9	3.0
30	2.9	....	9.3	4.2	2.0	1.8	1.4	2.0	.4	.5	1.4	3.4
31	4.4	....	10.2	....	3.3	....	1.2	2.5	....	.8	....	2.0
1900.												
1	2.0	2.0	4.2	4.4	6.2	2.4	10.5	3.4	1.5	1.2	2.1	3.2
2	1.6	1.8	5.8	4.2	4.8	2.5	8.0	3.2	1.5	1.2	2.2	2.8
3	1.5	1.6	5.6	4.0	4.0	2.8	8.0	3.0	1.7	1.0	2.0	2.6
4	1.5	2.0	4.4	4.0	4.0	4.2	7.0	2.8	1.7	1.0	2.3	3.5
5	1.5	3.0	4.1	4.0	3.8	4.2	5.5	2.6	1.5	.9	2.3	7.4
6	1.5	3.8	3.8	4.0	3.7	4.2	4.2	2.5	1.5	.9	2.1	6.8
7	1.5	2.8	5.0	3.8	3.6	4.8	3.8	2.2	1.4	.9	2.1	5.2
8	1.5	2.4	8.2	3.8	3.4	13.0	3.8	2.2	1.0	3.8	2.0	3.8
9	1.5	4.0	15.0	3.6	3.0	12.6	4.0	2.0	1.0	5.9	1.9	3.6
10	1.5	6.9	13.4	3.5	3.0	8.0	4.9	2.0	.8	2.6	1.8	3.2
11	2.0	7.0	10.3	6.0	3.0	5.9	3.8	1.8	.8	2.0	1.8	2.8
12	7.0	6.4	7.5	11.0	3.0	5.0	3.4	1.8	.8	1.8	1.6	2.6
13	9.0	22.6	5.5	7.4	2.5	5.2	3.8	1.8	.8	2.5	1.5	2.6
14	7.2	27.2	4.8	5.5	2.4	5.3	3.4	1.7	.8	3.2	1.5	2.4
15	5.5	25.3	4.2	4.5	2.4	4.2	3.4	2.0	6.5	3.0	1.5	2.2
16	3.5	21.2	5.3	5.6	2.4	3.8	3.3	1.7	11.1	2.0	1.5	2.2
17	3.0	18.0	5.6	6.2	2.4	4.8	3.1	1.6	7.0	1.6	1.5	2.2
18	2.9	10.7	4.5	11.0	2.4	6.0	3.0	1.8	3.2	1.5	1.4	2.0
19	5.0	5.0	5.2	11.1	2.9	6.5	2.8	2.2	2.3	1.5	1.4	2.0
20	11.3	4.0	15.9	11.4	3.0	7.2	2.6	2.0	2.0	1.4	1.6	2.8
21	10.6	4.1	17.5	13.6	2.6	4.2	2.5	1.6	1.8	1.8	1.8	6.7
22	8.5	6.8	14.6	12.7	2.5	3.6	2.4	1.6	1.8	1.8	2.1	8.0
23	5.8	7.6	10.4	10.5	2.3	5.5	2.4	1.6	1.6	1.6	2.1	7.0
24	4.0	6.0	7.2	8.6	2.9	14.2	2.4	1.9	1.6	1.6	2.0	6.6
25	3.4	5.8	8.8	8.5	3.2	18.2	3.6	2.4	1.5	1.5	5.0	6.6
26	3.1	5.2	13.0	6.5	2.7	17.0	2.8	2.0	1.5	1.5	11.0	5.6
27	2.8	4.6	12.1	5.3	2.6	15.5	6.2	1.8	1.4	1.4	11.5	4.0
28	2.6	4.0	8.9	4.8	2.5	15.6	6.8	1.6	1.4	2.2	8.6	3.8
29	2.4	....	5.8	4.3	2.4	14.2	6.2	1.5	1.3	2.2	7.0	3.6
30	2.1	....	5.7	6.0	2.9	10.0	4.5	1.5	1.3	2.1	4.0	3.5
31	2.0	....	5.3	....	3.0	....	4.0	1.5	....	2.1	....	5.6

Daily gage height, in feet, of Coosa River at Rome, Ga.—Continued.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1901.												
1	7.4	6.4	3.0	8.8	4.0	10.6	3.6	1.8	6.4	2.6	1.2	1.3
2	6.4	5.8	8.0	8.6	3.8	7.6	3.0	1.8	5.8	2.6	1.2	1.3
3	5.2	5.5	3.0	13.0	3.8	5.6	3.0	1.8	3.7	3.2	1.2	1.3
4	4.2	15.8	3.0	13.0	3.8	6.4	2.6	1.6	3.4	3.0	1.2	1.5
5	4.0	18.5	3.0	10.0	3.6	5.0	2.4	1.6	3.0	2.8	1.2	2.0
6	3.8	13.8	3.0	7.9	3.5	4.0	2.2	2.6	2.9	2.2	1.2	1.8
7	3.5	9.5	3.0	6.4	3.5	7.0	5.2	5.3	2.6	2.0	1.2	1.8
8	3.2	6.5	3.0	5.6	8.4	7.6	4.8	5.9	2.2	1.9	1.1	1.8
9	3.0	9.6	2.8	5.2	8.3	5.4	3.3	3.0	2.0	1.9	1.1	1.8
10	2.8	12.5	5.5	4.5	3.1	4.3	2.6	2.6	2.0	1.8	1.1	1.8
11	8.8	10.5	7.8	4.3	3.0	4.0	2.4	2.5	2.0	1.7	1.0	2.6
12	23.5	7.6	8.0	4.2	2.9	3.8	2.3	3.4	2.0	1.6	1.0	2.6
13	27.0	6.5	6.7	4.3	2.8	3.8	2.0	3.0	1.8	1.8	1.0	2.1
14	23.8	5.6	4.8	10.4	2.8	4.0	2.0	2.3	2.0	2.0	1.0	2.2
15	21.4	5.0	4.0	10.1	2.7	4.3	2.0	4.5	3.0	3.2	1.0	16.4
16	19.8	4.8	3.6	7.7	2.6	6.9	1.9	7.2	2.4	2.6	1.0	17.6
17	17.4	4.2	3.2	5.8	2.6	6.0	1.7	10.5	6.0	2.4	1.0	14.7
18	8.9	4.2	3.0	5.2	2.5	5.0	5.5	9.8	11.2	2.4	1.0	14.0
19	5.0	4.2	3.0	9.0	2.5	4.8	3.0	10.8	11.1	2.0	1.0	13.0
20	4.0	4.0	3.0	18.6	3.0	4.0	3.0	12.5	7.0	1.8	1.0	5.6
21	3.8	3.8	3.0	17.2	10.0	3.8	2.4	10.8	3.9	1.8	1.6	3.0
22	3.8	3.7	3.0	15.5	23.6	3.6	2.4	14.5	3.7	1.6	1.2	2.0
23	3.8	3.6	3.0	14.6	26.4	3.6	2.4*	20.8	3.3	1.6	1.4	2.0
24	3.8	3.6	3.6	12.7	21.8	3.6	2.0	23.2	2.8	1.6	1.4	3.6
25	6.7	3.5	3.6	6.8	18.9	2.7	2.0	18.3	2.6	1.6	1.3	4.0
26	6.6	3.2	22.0	5.6	16.5	2.7	1.9	13.1	2.5	1.4	1.3	3.7
27	5.4	3.2	27.0	4.8	11.1	3.2	1.7	6.6	2.3	1.3	1.3	5.7
28	5.2	3.0	24.5	4.4	5.5	3.0	2.8	8.8	2.0	1.3	1.3	6.0
29	5.0	......	21.3	4.2	4.9	3.6	1.9	7.5	2.0	1.3	1.3	21.5
30	4.6	......	19.2	4.1	4.7	3.6	1.9	6.2	2.5	1.3	1.3	29.8
31	6.3	......	16.1	......	5.4	......	1.6	5.6	......	1.2	......	32.6
1902.												
1	28.00	11.80	28.50	21.30	2.90	1.80	1.00	1.20	1.00	1.60	.20	1.90
2	24.60	22.00	27.60	14.80	2.90	1.70	1.00	1.00	.80	1.60	.20	2.00
3	21.90	24.00	24.10	7.20	3.70	1.70	1.10	.80	1.20	1.60	.20	6.20
4	17.60	20.00	21.60	5.80	3.40	1.70	1.00	.80	1.00	1.50	.20	6.80
5	6.60	15.60	19.20	5.70	3.20	1.70	.90	1.50	1.20	1.00	.20	5.80
6	5.60	9.80	14.00	5.20	3.00	1.70	.90	1.40	1.00	2.00	.40	5.00
7	4.60	6.30	10.10	6.70	2.90	1.70	1.00	1.20	.80	1.40	2.00	4.00
8	4.20	5.70	8.70	6.70	2.80	1.70	.90	1.20	.60	.90	1.60	2.70
9	4.00	5.00	7.20	7.70	2.60	2.00	.90	.60	.90	.80	1.00	2.50
10	3.90	4.60	7.00	6.60	2.60	1.90	.90	.40	1.00	.70	.80	1.90
11	3.60	4.40	6.60	5.60	2.50	1.90	.90	.30	.90	2.30	.80	1.60
12	3.50	4.00	6.00	5.00	2.40	1.80	1.40	.30	.70	2.20	.70	1.40
13	3.40	3.90	5.60	4.70	2.30	1.70	1.50	1.00	.60	2.20	.60	1.20
14	3.20	3.80	5.50	4.50	2.30	1.70	1.80	.60	2.50	2.00	.60	1.20
15	3.00	3.80	5.00	4.40	2.30	1.60	1.40	.60	1.90	1.80	.60	1.10
16	2.80	4.00	7.00	4.30	2.40	1.60	2.00	.80	1.00	1.60	.60	2.40
17	2.70	4.50	14.00	4.50	2.50	1.60	1.40	.60	.70	1.50	.60	4.30
18	2.70	4.70	11.60	5.70	2.30	1.50	1.20	.50	.40	1.30	.90	4.50
19	3.00	4.50	8.60	5.00	2.30	1.50	1.00	.40	.40	1.10	1.50	3.80
20	3.20	4.00	6.20	4.00	2.40	1.90	1.00	1.00	.40	.90	1.30	3.00
21	3.60	4.00	5.60	3.90	2.40	1.60	.90	1.30	1.00	.80	1.10	4.90
22	4.20	5.00	5.10	3.80	2.30	1.80	.80	1.00	.80	.70	1.10	5.80
23	5.00	5.60	5.00	3.70	2.30	1.50	.80	.90	.60	.60	1.00	5.80
24	4.00	5.30	4.70	3.50	2.10	1.30	.70	.70	.30	.50	.90	5.20
25	3.90	5.00	4.70	3.30	2.00	1.30	.60	.50	2.20	.40	1.60	3.80
26	3.60	5.50	4.60	3.20	2.00	1.20	.50	.50	4.00	.30	3.10	3.00
27	3.60	5.50	4.20	3.20	2.00	1.20	.50	.60	3.30	.20	4.80	2.60
28	4.20	22.70	5.00	3.00	1.80	1.10	.50	1.20	2.00	.40	3.80	2.20
29	6.50	......	20.60	3.00	1.80	1.00	.70	1.70	2.00	.40	2.40	2.20
30	5.80	......	28.90	2.90	1.80	1.00	2.00	1.00	1.80	.30	2.20	2.60
31	5.40	......	26.80	......	1.80	......	1.60	1.00	......	.30	......	4.00

Daily gage height, in feet, of Coosa River at Rome, Ga.—Continued.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1903												
1	3.0	2.8	28.6	24.9	3.6	6.0	3.0	2.8	1.0	.4	.7	.9
2	3.9	2.8	27.1	22.0	3.6	7.7	3.2	2.6	.9	.4	.7	.9
3	3.9	4.2	24.0	19.5	3.6	9.0	2.9	3.0	.9	.4	.8	.8
4	5.0	8.4	22.3	14.6	3.5	7.5	2.7	3.3	.9	.3	1.5	.7
5	4.3	13.2	20.5	8.0	3.5	11.7	2.6	3.2	.8	.3	1.5	.7
6	4.0	13.4	15.4	7.0	3.3	17.1	2.6	6.2	.7	.3	2.0	.7
7	3.7	9.7	9.9	6.4	3.4	11.7	2.6	4.6	.7	.2	2.0	.7
8	3.0	18.7	7.7	7.7	3.5	6.9	2.4	3.6	.6	.5	1.6	.7
9	2.8	21.6	6.6	10.5	3.5	5.3	2.6	3.4	.6	1.4	1.4	.7
10	2.4	16.5	10.5	8.4	3.4	4.4	2.6	3.0	.6	1.6	1.3	.7
11	3.0	15.1	11.6	6.7	3.3	4.3	2.5	2.6	.6	1.5	1.2	.7
12	5.0	21.8	16.0	6.3	3.3	6.0	2.9	2.2	.6	1.4	1.2	.6
13	5.0	19.6	14.0	5.6	3.0	4.6	5.9	2.0	.6	1.3	1.2	.6
14	4.8	14.5	10.1	14.3	3.0	4.2	11.1	2.0	.6	1.1	1.2	.6
15	3.9	11.1	9.4	13.0	3.1	4.0	6.7	1.6	.6	.9	1.0	.6
16	2.5	8.7	7.8	9.5	3.3	3.8	3.7	4.3	.9	.8	1.0	.6
17	2.4	24.7	6.8	7.4	3.0	3.4	3.5	3.2	1.7	1.2	1.0	.6
18	2.4	28.7	6.3	6.2	3.0	3.0	3.3	2.8	2.0	1.3	1.0	.6
19	2.4	25.5	5.7	5.3	2.8	2.4	3.0	2.2	1.5	1.2	1.5	.6
20	2.4	21.0	5.3	5.7	2.5	2.7	2.9	2.1	1.2	1.0	1.4	.6
21	2.2	15.2	11.0	5.8	2.5	2.5	2.5	2.0	.9	.8	1.3	.7
22	2.0	7.1	11.6	5.5	2.6	2.4	2.4	2.0	.8	.8	1.2	1.3
23	2.0	5.8	16.9	4.9	2.6	2.2	3.0	1.9	.7	.7	1.1	1.3
24	2.0	5.1	22.6	4.7	2.5	2.2	3.0	1.8	.5	.7	1.0	1.0
25	2.0	4.8	20.6	4.4	2.5	2.2	2.6	1.6	.5	.7	1.0	.9
26	2.0	4.5	16.0	4.9	2.3	2.2	2.4	1.5	.5	.6	1.0	.9
27	2.0	4.0	9.7	4.7	2.1	2.4	2.1	1.4	.5	.6	1.0	.9
28	2.4	23.1	6.9	4.0	2.0	6.8	2.0	1.4	.5	.5	.9	.9
29	3.2	....	7.8	3.9	2.0	6.8	1.8	1.3	.4	.4	.9	.9
30	4.2	....	22.5	3.7	2.4	4.0	2.3	1.3	.4	.4	.9	.9
31	3.8	....	27.6	....	6.7	....	2.6	1.2	....	.7	....	.9

Rating table for Coosa River at Rome, Ga., for 1897 and 1898.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
—0.15	990	2.5	3,760	5.1	8,445	7.7	13,515
.0	1,070	2.6	3,910	5.2	8,640	7.8	13,710
.1	1,140	2.7	4,060	5.3	8,835	7.9	13,905
.2	1,210	2.8	4,220	5.4	9,030	8.0	14,100
.3	1,280	2.9	4,380	5.5	9,225	8.1	14,295
.4	1,360	3.0	4,540	5.6	9,420	8.2	14,490
.5	1,440	3.1	4,700	5.7	9,615	8.3	14,685
.6	1,520	3.2	4,860	5.8	9,810	8.4	14,880
.7	1,610	3.3	5,020	5.9	10,005	8.5	15,075
.8	1,700	3.4	5,180	6.0	10,200	8.6	15,270
.9	1,800	3.5	5,340	6.1	10,395	8.7	15,465
1.0	1,900	3.6	5,520	6.2	10,590	8.8	15,660
1.1	2,000	3.7	5,715	6.3	10,785	8.9	15,855
1.2	2,110	3.8	5,910	6.4	10,980	9.0	16,050
1.3	2,220	3.9	6,105	6.5	11,175	10.0	18,000
1.4	2,330	4.0	6,300	6.6	11,370	11.0	19,950
1.5	2,450	4.1	6,495	6.7	11,565	12.0	21,900
1.6	2,570	4.2	6,690	6.8	11,760	13.0	23,850
1.7	2,690	4.3	6,885	6.9	11,955	14.0	25,800
1.8	2,810	4.4	7,080	7.0	12,150	15.0	27,750
1.9	2,930	4.5	7,275	7.1	12,345	16.0	29,700
2.0	3,060	4.6	7,470	7.2	12,540	17.0	31,650
2.1	3,190	4.7	7,665	7.3	12,735	18.0	33,600
2.2	3,320	4.8	7,860	7.4	12,930	20.0	37,500
2.3	3,460	4.9	8,055	7.5	13,125	22.0	41,400
2.4	3,610	5.0	8,250	7.6	13,320	24.0	45,300

Rating table for Coosa River at Rome, Ga., for 1899.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
1.0	2,030	5.0	8,710	9.7	18,157	13.7	26,197
1.1	2,124	5.1	8,911	9.8	18,358	13.8	26,398
1.2	2,218	5.2	9,112	9.9	18,559	13.9	26,599
1.3	2,312	5.3	9,313	10.0	18,760	14.0	26,800
1.4	2,406	5.4	9,514	10.1	18,961	14.1	27,001
1.5	2,500	5.5	9,715	10.2	19,162	14.2	27,202
1.6	2,620	5.6	9,916	10.3	19,363	14.3	27,403
1.7	2,740	5.7	10,117	10.4	19,564	14.4	27,604
1.8	2,860	5.8	10,318	10.5	19,765	14.5	27,805
1.9	2,980	5.9	10,519	10.6	19,966	14.6	28,006
2.0	3,100	6.0	10,720	10.7	20,167	14.7	28,207
2.1	3,260	6.1	10,921	10.8	20,368	14.8	28,408
2.2	3,420	6.2	11,122	10.9	20,569	14.9	28,609
2.3	3,580	6.3	11,323	11.0	20,770	15.0	28,810
2.4	3,740	6.4	11,524	11.1	20,971	15.1	29,011
2.5	3,900	6.5	11,725	11.2	21,172	15.2	29,212
2.6	4,060	6.6	11,926	11.3	21,373	15.3	29,413
2.7	4,220	6.7	12,127	11.4	21,574	15.4	29,614
2.8	4,380	6.8	12,328	11.5	21,775	15.5	29,815
2.9	4,540	6.9	12,529	11.6	21,976	15.6	30,016
3.0	4,700	7.0	12,730	11.7	22,177	15.7	30,217
3.1	4,900	7.1	12,931	11.8	22,378	15.8	30,418
3.2	5,100	7.2	13,132	11.9	22,579	15.9	30,619
3.3	5,300	7.3	13,333	12.0	22,780	16.0	30,820
3.4	5,500	7.4	13,534	12.1	22,981	16.1	31,021
3.5	5,700	7.5	13,735	12.2	23,182	16.2	31,222
3.6	5,900	7.6	13,936	12.3	23,383	16.3	31,423
3.7	6,100	7.7	14,137	12.4	23,584	16.4	31,624
3.8	6,300	7.8	14,338	12.5	23,785	16.5	31,825
3.9	6,500	7.9	14,539	12.6	23,986	16.6	32,026
4.0	6,700	8.0	14,740	12.7	24,187	16.7	32,227
4.1	6,901	8.1	14,941	12.8	24,388	16.8	32,428
4.2	7,102	8.2	15,142	12.9	24,589	16.9	32,629
4.3	7,303	9.0	16,750	13.0	24,790	17.0	32,830
4.4	7,504	9.1	16,951	13.1	24,991	17.1	33,031
4.5	7,705	9.2	17,152	13.2	25,192	17.2	33,232
4.6	7,906	9.3	17,353	13.3	25,393	17.3	33,433
4.7	8,107	9.4	17,554	13.4	25,594	17.4	33,634
4.8	8,308	9.5	17,755	13.5	25,795	17.5	33,835
4.9	8,509	9.6	17,956	13.6	25,996	17.6	34,036

Rating table for Coosa River at Rome, Ga., for 1899—Continued.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
17.7	34,237	20.8	40,468	23.9	46,699	27.0	52,930
17.8	34,438	20.9	40,669	24.0	46,900	27.1	53,131
17.9	34,639	21.0	40,870	24.1	47,101	27.2	53,332
18.0	34,840	21.1	41,071	24.2	47,302	27.3	53,533
18.1	35,041	21.2	41,272	24.3	47,503	27.4	53,734
18.2	35,242	21.3	41,473	24.4	47,704	27.5	53,935
18.3	35,443	21.4	41,674	24.5	47,905	27.6	54,136
18.4	35,644	21.5	41,875	24.6	48,106	27.7	54,337
18.5	35,845	21.6	42,076	24.7	48,307	27.8	54,538
18.6	36,046	21.7	42,277	24.8	48,508	27.9	54,739
18.7	36,247	21.8	42,478	24.9	48,709	28.0	54,940
18.8	36,448	21.9	42,679	25.0	48,910	28.1	55,141
18.9	36,649	22.0	42,880	25.1	49,111	28.2	55,342
19.0	36,850	22.1	43,081	25.2	49,312	28.3	55,543
19.1	37,051	22.2	43,282	25.3	49,513	28.4	55,744
19.2	37,252	22.3	43,483	25.4	49,714	28.5	55,945
19.3	37,453	22.4	43,684	25.5	49,915	28.6	56,146
19.4	37,654	22.5	43,885	25.6	50,116	28.7	56,347
19.5	37,855	22.6	44,086	25.7	50,317	28.8	56,548
19.6	38,056	22.7	44,287	25.8	50,518	28.9	56,749
19.7	38,257	22.8	44,488	25.9	50,719	29.0	56,950
19.8	38,458	22.9	44,689	26.0	50,920	29.1	57,151
19.9	38,659	23.0	44,890	26.1	51,121	29.2	57,352
20.0	38,860	23.1	45,091	26.2	51,322	29.3	57,553
20.1	39,061	23.2	45,292	26.3	51,523	29.4	57,754
20.2	39,262	23.3	45,493	26.4	51,724	29.5	57,955
20.3	39,463	23.4	45,694	26.5	51,925	29.6	58,156
20.4	39,664	23.5	45,895	26.6	52,126	29.7	58,357
20.5	39,865	23.6	46,096	26.7	52,327	29.8	58,558
20.6	40,066	23.7	46,297	26.8	52,528	29.9	58,759
20.7	40,267	23.8	46,498	26.9	52,729	30.0	58,960

Rating table for Coosa River at Rome, Ga., for 1900 and 1901.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
0. 8	1, 930	1. 6	2, 850	2. 4	4, 000	3. 2	5, 230
. 9	2, 020	1. 7	2, 985	2. 5	4, 150	3. 3	5, 405
1. 0	2, 110	1. 8	3, 120	2. 6	4, 300	3. 4	5, 580
1. 1	2, 230	1. 9	3, 260	2. 7	4, 450	3. 5	5, 755
1. 2	2, 350	2. 0	3, 400	2. 8	4, 600	*a* 3. 6	5, 930
1. 3	2, 475	2. 1	3, 550	2. 9	4, 750		
1. 4	2, 600	2. 2	3, 700	3. 0	4, 900		
1. 5	2, 725	2. 3	3, 850	3. 1	5, 065		

a Above 3.6 feet gage height the rating for 1900–1901 is the same as for 1899.

Rating table for Coosa River at Rome, Ga., for 1902.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
0. 2	1, 410	4. 2	7, 102	8. 2	15, 142	15. 5	29, 815
. 4	1, 555	4. 4	7, 504	8. 4	15, 544	16. 0	30, 820
. 6	1, 720	4. 6	7, 906	8. 6	15, 946	17. 0	32, 830
. 8	1, 905	4. 8	8, 308	8. 8	16, 348	18. 0	34, 840
1. 0	2, 110	5. 0	8, 710	9. 0	16, 750	19. 0	36, 850
1. 2	2, 350	5. 2	9, 112	9. 2	17, 152	20. 0	38, 860
1. 4	2, 600	5. 4	9, 514	9. 4	17, 554	21. 0	40, 870
1. 6	2, 850	5. 6	9, 916	9. 6	17, 956	22. 0	42, 880
1. 8	3, 120	5. 8	10, 318	9. 8	18, 358	23. 0	44, 890
2. 0	3, 400	6. 0	10, 720	10. 0	18, 760	24. 0	46, 900
2. 2	3, 700	6. 2	11, 122	10. 5	19, 765	25. 0	48, 910
2. 4	4, 000	6. 4	11, 524	11. 0	20, 770	26. 0	50, 920
2. 6	4, 300	6. 6	11, 926	11. 5	21, 775	27. 0	52, 930
2. 8	4, 600	6. 8	12, 328	12. 0	22, 780	28. 0	54, 940
3. 0	4, 900	7. 0	12, 730	12. 5	23, 785	29. 0	56, 950
3. 2	5, 230	7. 2	13, 132	13. 0	24, 790	30. 0	58, 960
3. 4	5, 580	7. 4	13, 534	13. 5	25, 795	31. 0	60, 970
3. 6	5, 930	7. 6	13, 936	14. 0	26, 800	32. 0	62, 980
3. 8	6, 300	7. 8	14, 338	14. 5	27, 805	33. 0	64, 990
4. 0	6, 700	8. 0	14, 740	15. 0	28, 810	34. 0	67, 000

Rating table for Coosa River at Rome, Ga., for 1903.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
0.20	1,280	1.50	2,920	2.80	4,795	4.10	6,950
.30	1,390	1.60	3,060	2.90	4,945	4.20	7,140
.40	1,510	1.70	3,200	3.00	5,095	4.30	7,330
.50	1,630	1.80	3,340	3.10	5,250	4.40	7,520
.60	1,750	1.90	3,480	3.20	5,405	4.50	7,710
.70	1,880	2.00	3,620	3.30	5,565	4.60	7,910
.80	2,010	2.10	3,765	3.40	5,725	4.70	8,110
.90	2,140	2.20	3,910	3.50	5,890	4.80	8,310
1.00	2,270	2.30	4,055	3.60	6,055	4.90	8,510
1.10	2,400	2.40	4,200	3.70	6,225	[a]5.00	8,710
1.20	2,530	2.50	4,345	3.80	6,400		
1.30	2,660	2.60	4,495	3.90	6,580		
1.40	2,790	2.70	4,645	4.00	6,760		

[a] Use 1902 table above 5 feet.

Estimated monthly discharge of Coosa River at Rome, Ga.

[Drainage area, 4,006 square miles.]

Month.	Discharge in second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1897.					
January	17,025	1,800	4,820	1.20	1.38
February	20,925	4,220	10,100	2.52	2.62
March	44,910	4,700	22,537	5.63	6.49
April	35,150	4,860	12,304	3.07	3.43
May	8,250	2,930	4,421	1.10	1.27
June	4,540	1,900	2,884	.72	.80
July	23,460	1,800	5,184	1.30	1.50
August	4,860	1,360	2,256	.56	.64
September	1,900	900	1,106	.28	.31
October	2,570	1,010	1,518	.38	.44
November	2,000	1,440	1,626	.41	.46
December	9,810	1,900	4,806	1.02	1.18
The year	44,910	900	6,070	1.52	20.52

Estimated monthly discharge of Coosa River at Rome, Ga.—Continued.

Month.	Discharge in second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1898.					
January	26, 970	2, 220	7, 272	1. 82	2. 10
February	5, 520	2, 110	2, 705	. 68	. 71
March	20, 730	2, 110	4, 384	1. 10	1. 27
April	32, 040	4, 540	9, 430	2. 36	2. 63
May	4, 220	2, 330	2, 778	. 69	. 79
June	5, 520	2, 110	2, 866	. 72	. 80
July	6, 690	1, 900	3, 670	9. 17	10. 59
August	17, 805	2, 930	6, 079	1. 52	1. 75
September	45, 885	3, 060	12, 114	3. 03	2. 26
October	44, 910	3, 060	11, 830	2. 96	3. 41
November	12, 150	3, 060	5, 213	1. 30	1. 45
December	8, 250	3, 610	4, 996	1. 25	1. 44
The year	45, 885	1, 900	6, 111	2. 22	29. 20
'1899.					
January	10, 519	4, 060	6, 092	1. 52	1. 75
February	54, 538	8, 710	22, 536	5. 62	5. 85
March	57, 352	7, 705	26, 314	6. 57	7. 57
April	28, 810	6, 700	13, 333	3. 33	3. 72
May	6, 700	3, 100	4, 783	1. 19	1. 37
June	6, 700	-2, 740	3, 489	. 87	. 97
July	24, 388	1, 950	5, 499	1. 37	1. 58
August	3, 900	1, 790	2, 595	. 65	. 75
September	5, 500	1, 550	2, 219	. 55	. 61
October	2, 030	1, 470	1, 684	. 42	. 48
November	4, 700	1, 470	2, 009	. 50	. 56
December	13, 735	1, 870	4, 314	1. 08	1. 25
The year	57, 352	1, 470	7, 906	1. 97	26. 46

Estimated monthly discharge of Coosa River at Rome, Ga.—Continued.

Month.	Discharge in second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1900.					
January	21, 373	2, 725	6, 854	1. 71	1. 97
February	53, 332	2, 850	14, 736	3. 68	3. 83
March	33, 835	6, 300	14, 714	3. 67	4. 33
April	25, 996	5, 755	12, 050	3. 01	3. 36
May	11, 122	3, 850	5, 129	1. 28	1. 48
June	35, 242	4, 000	14, 154	3. 53	3. 94
July	19, 765	4, 000	7, 589	1. 89	2. 18
August	5, 580	2, 725	3, 488	. 87	1. 00
September	20, 971	1, 930	3, 960	. 99	1. 10
October	10, 519	2, 010	3, 408	. 85	.98
November	21, 775	2, 600	5, 438	1. 36	1. 52
December	14, 740	3, 400	7, 096	1. 77	2. 04
The year	53, 332	1, 930	8, 218	2. 05	27. 73
1901.					
January	52, 930	4, 600	15, 450	3. 86	4. 45
February	35, 845	4, 900	12, 186	3. 04	3. 17
March	52, 930	4, 600	13, 406	3. 34	3. 85
April	36, 046	6, 901	15, 578	3. 88	4. 33
May	51, 724	4, 150	12, 533	3. 12	3. 60
June	19, 966	4, 450	8, 316	2. 08	2. 32
July	9, 715	2, 850	4, 441	1. 10	1. 27
August	45, 292	2, 850	13, 780	3. 44	3. 97
September	21, 172	3, 120	6, 389	1. 59	1. 77
October	5, 230	2, 350	3, 414	. 85	. 98
November	2, 850	2, 110	2, 316	. 58	. 65
December	64, 186	2, 475	13, 428	3. 35	3. 86
The year	64, 186	2, 110	10, 103	2. 52	34. 22

Estimated monthly discharge of Coosa River at Rome, Ga.—Continued.

Month.	Discharge in second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1902.					
January	54,940	4,450	11,816	2.95	3.40
February	46,900	6,300	14,812	3.70	3.85
March	56,749	7,102	21,944	5.48	6.32
April	41,473	4,750	10,015	2.50	2.79
May	6,115	3,120	4,089	1.02	1.18
June	3,400	2,110	2,836	.71	.79
July	3,400	1,635	2,214	.55	.63
August	2,985	1,480	1,998	.50	.58
September	6,700	1,480	2,505	.63	.70
October	3,850	1,410	2,346	.59	.68
November	8,308	1,410	2,572	.64	.71
December	12,328	2,225	5,885	1.47	1.69
The year	56,749	1,410	6,920	1.73	23.32
1903.					
January	8,710	3,620	5,442	1.36	1.57
February	56,347	4,795	25,376	6.34	6.60
March	56,146	9,313	27,111	6.78	7.82
April	48,709	6,225	15,788	3.95	4.41
May	12,127	3,620	5,278	1.32	1.52
June	33,031	3,910	9,594	2.40	2.68
July	20,971	3,340	5,616	1.40	1.61
August	11,122	2,530	4,472	1.12	1.29
September	3,620	1,510	2,002	.50	.56
October	3,060	1,280	2,002	.50	.58
November	3,620	1,880	2,512	.63	.70
December	2,660	1,750	1,985	.50	.58
The year	56,347	1,280	8,932	2.23	29.92

Net horsepower per foot of fall with a turbine efficiency of 80 per cent for the minimum monthly discharge of Coosa River at Rome, Ga.

Month.	1899.			1900.			1901.		
	Minimum discharge.	Minimum net horse-power per foot of fall.	Dura-tion of mini-mum.	Minimum discharge.	Minimum net horse-power per foot of fall.	Dura-tion of mini-mum.	Minimum discharge.	Minimum net horse-power per foot of fall.	Dura-tion of mini-mum.
	Sec.-ft.		*Days.*	*Sec.-ft.*		*Days.*	*Sec.-ft.*		*Days.*
January	4,060	369	2	2,725	248	8	4,600	418	1
February	8,710	792	2	2,850	259	1	4,900	445	1
March	7,705	700	1	6,300	573	1	4,600	418	1
April	6,700	609	1	5,755	523	1	6,901	627	1
May	3,100	282	2	3,850	350	1	4,150	377	2
June	2,740	249	4	4,000	364	1	4,450	405	2
July	1,950	177	1	4,000	364	3	2,850	259	1
August	1,790	163	3	2,725	248	3	2,850	259	2
September	1,550	141	1	1,930	175	5	3,120	284	1
October	1,470	134	4	2,010	183	3	2,350	214	1
November	1,470	134	7	2,600	236	2	2,110	192	10
December	1,870	170	4	3,400	309	2	2,475	225	3

SURVEY OF COOSA RIVER.

Coosa River has its beginning at the junction of Etowah and Oostanaula rivers, at Rome, Ga., a short distance east of the Alabama line.

From Rome down to Greensport, Ala., a distance of about 180 miles by river, navigation has been carried on for many years. The total fall in this section is only about 55 feet, and is so well distributed that it has not been necessary to construct locks at any point, though improvements have been made by the United States Government in the way of deepening channels, blasting out reefs, building wing dams, etc.

This part of the river will therefore not be considered as having any water-power value.

Below Greensport, Ala., the river has a large amount of fall, and although it is proposed to make the whole distance navigable by the construction of locks, there are many fine water powers which can be developed in connection with the river improvements without interfering with navigation.

A complete survey has been made of this portion of the river by the United States engineers, and a system of locks planned.

The level notes herein presented are reproduced from that survey, and show the river profile and the location of the shoals.

The total distance between Greensport and Wetumka, Ala., is 142 miles, and the number of locks proposed is 31, varying in lift from 5.83 feet to 15 feet. Of these, only three have been completed— Nos. 1, 2, and 3. No. 4 is in process of construction.
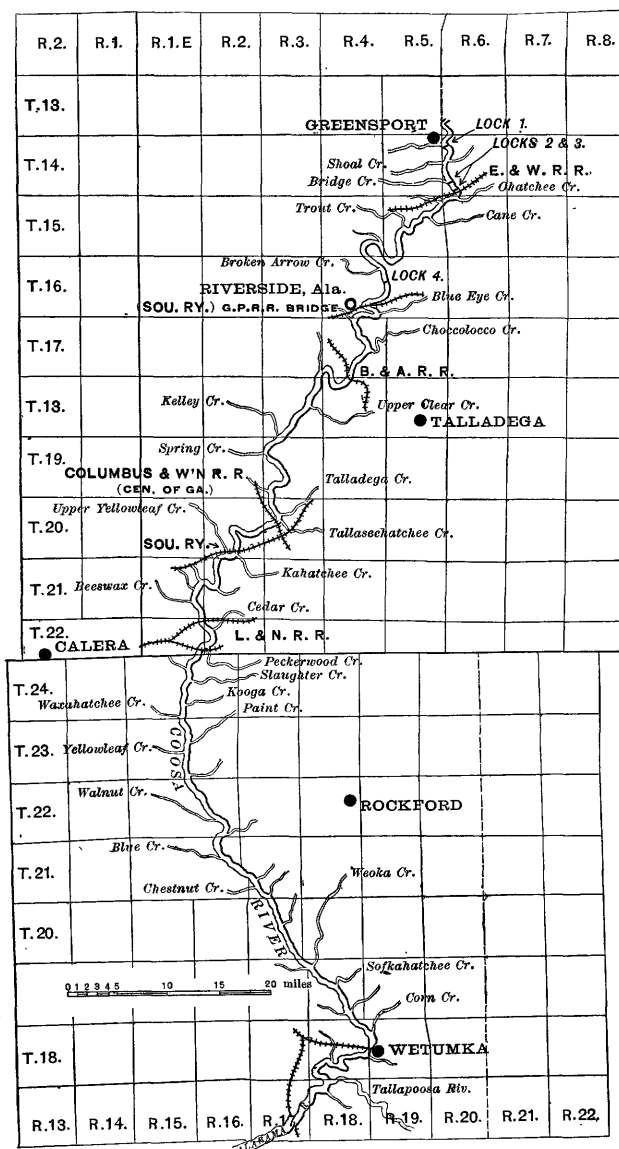

Fig. 6.—Map of Coosa River from Greensport to Wetumka.

The following table shows the lift or fall at each lock, the discharge of the river in second-feet for the minimum low stages of water in 1897 and in 1900, and the equivalent net horsepower for the fall shown.

The minimum low water is based on the exceptionally low stages of 1896 and 1897, the lowest of which there is any record; the minimum for the year 1900 represents lowest water for average years.

In estimating the amount of horsepower that will be available it will be necessary to deduct the amount of water which will be necessary for lockage. This will depend upon the amount of traffic on the river, but will probably in no case amount to more than 10 per cent of the discharge.

At most of these locks and proposed locks, reservations have been made by the original owners of the river front of the privilege of utilizing for power the water not needed for lockage. By constructing a plant at the opposite end of the Government dam from the lock, the surplus water can be used for power without interfering with navigation.

Discharge and net horsepower at proposed locks on Coosa River at lowest water of 1897 and 1900.

[80 per cent of theoretical horsepower.]

Distance from Wetumka.	Lock No.	Elevation of top of lock.	Lift or fall at lock.	1897.		1900.	
				Discharge.	Net horsepower.	Discharge.	Net horsepower.
Miles.		Feet.	Feet.	Sec.-ft.		Sec.-ft.	
141.5	1	521.30	5.33	1,320	640	2,700	1,308
138.5	2	515.97	5.57	1,320	668	2,700	1,367
137.0	3	510.40	12.00	1,320	1,440	2,700	2,945
116.2	4	492.30	10.00	1,350	1,227	2,760	2,510
105.8	5	482.30	12.00	1,350	1,472	2,760	3,012
92.0	6	455.32	10.00	1,440	1,310	2,940	2,673
88.3	7	445.32	10.00	1,450	1,317	2,960	2,690
81.3	8	435.32	12.00	1,490	1,625	3,040	3,317
56.2	9	420.00	8.00	1,580	1,149	3,220	2,342
53.5	10	412.00	12.00	1,585	1,728	3,230	3,523
46.7	11	399.64	10.00	1,585	1,440	3,230	2,936
44.9	12	389.64	10.00	1,600	1,454	3,260	2,964
43.0	13	379.64	12.00	1,600	1,745	3,260	3,557
41.9	14	367.64	12.00	1,600	1,745	3,260	3,557
40.2	15	355.64	10.00	1,605	1,460	3,270	2,973
37.5	16	345.64	14.00	1,605	2,044	3,270	4,162
36.1	17	331.64	15.00	1,605	2,190	3,270	4,460
34.8	18	316.64	13.00	1,610	1,903	3,280	3,877
33.8	19	303.64	12.00	1,610	1,757	3,280	3,578
31.5	20	291.64	10.00	1,610	1,464	3,280	2,982
25.5	21	281.33	10.00	1,700	1,545	3,460	3,145
21.4	22	270.80	12.00	1,700	1,854	3,460	3,774

A. LOCK NO. 4 ON COOSA RIVER, NEAR LINCOLN, ALA., DURING CONSTRUCTION.

B. PRATT COTTON GIN MANUFACTURING COMPANY'S PLANT, ON AUGUSTA CREEK AT PRATTVILLE, ALA.

Showing dam with flash boards to raise as flood gate.

Discharge and net horsepower at proposed locks on Coosa River at lowest water of 1897 and 1900—Continued.

Distance from Wetumka.	Lock No.	Elevation of top of lock.	Lift or fall at lock.	1897.		1900.	
				Dis-charge.	Net horse-power.	Dis-charge.	Net horse-power.
Miles.		*Feet.*	*Feet.*	*Sec.-feet.*		*Sec.-feet.*	
18. 5	23	258. 80	14. 00	1, 710	2, 175	3, 480	4, 430
16. 3	24	244. 80	10. 00	1, 710	1, 554	3, 480	3, 164
12. 9	25	234. 80	10. 00	1, 710	1, 554	3, 480	3, 164
11. 7	26	224. 80	12. 00	1, 720	1, 877	3, 500	3, 818
8. 8	27	212. 80	14. 00	1, 720	2, 190	3, 500	4, 455
7. 4	28	198. 80	12. 00	1, 720	1, 877	3, 500	3, 818
4. 6	29	186. 37	8. 00	1, 740	1, 266	3, 540	2, 574
2. 0	30	178. 37	10. 00	1, 740	1, 582	3, 540	3, 218
0. 0	31	168. 37	14. 00	1, 740	2, 215	3, 540	4, 505

Total net horsepower, 1897, 49,467; 1900, 100,798.

Locks and proposed locks on Coosa River are located as follows:

Lock No. 1 is 1 mile south of Greensport and 5 miles north of Singleton, a station on the East and West Railroad of Alabama. Lock No. 1 is 3 miles above lock No. 2.

Lock No. 2 is 1½ miles above lock No. 3 at the head of Ten Island Shoal canal. It is located at the head of Woods Island, and is 2 miles northeast of Singleton, a station on the East and West Railroad.

Lock No. 3 is 1½ miles below lock No. 2, near the foot of Woods Island, and on Ten Island Shoal canal. It is 1 mile east of Singleton and 20.8 miles above lock No. 4.

Lock No. 4 is 3½ miles above the United States Geological Survey gage at Riverside and 3 miles northwest of Lincoln. Lincoln and Riverside are on the Georgia Pacific division of the Southern Railway. Lock No. 4 has a lift of 12 feet, and is three-fourths of a mile below Densons Island, and 10 miles above proposed lock No. 5.

Proposed lock No. 5 is to be at the head of Ogletree Island, 1 mile above the mouth of Choccolocco Creek, and 5 miles northeast of Hamilton, on the Talladega and Coosa Valley Railroad. It has a lift of 10 feet.

Proposed lock No. 6 is to be located one-fourth of a mile above the mouth of Upper Clear Creek, 1½ miles above Grissom Ferry, and 9 miles northeast of Vincent, a station on the Columbus and Western division of the Central of Georgia Railroad.

Proposed lock No. 7 is to be located 2 miles above Kelly Creek, and 5½ miles northeast of Vincent.

Proposed lock No. 8 is to be located at Myers Ferry, at the mouth of Clear Creek, 6 miles east of Harpersville, and 3 miles north-

east of Creswell, a station on the Columbus and Western division of the Central of Georgia Railroad.

Proposed lock No. 9 is to be located at the mouth of Kelly Branch, at Fort Williams Shoals. It is to be $13\frac{1}{2}$ miles east of Columbiana, and 8 miles east of Shelby.

Lock No. 10 is to be located one-half mile above Peckerwood Creek, at the foot of Peckerwood Shoals, and is 8 miles east of Shelby, and 2 miles west of Talladega Springs.

Lock No. 11 is to be located at the foot of Weduska Shoals, immediately above the narrows, 2 miles above Waxahatchee Creek, and 6 miles southeast of Shelby, a station on the Shelby Iron Works Railroad, which connects with the Southern Railway at Columbiana.

Lock No. 12 is to be located 1.8 miles below lock No. 11, immediately below the mouth of Waxahatchee Creek, and 8 miles southeast of Shelby.

Lock No. 13 is to be located 1.9 miles below lock No. 12, at a place known as Devils Race, 3 miles above the mouth of Yellowleaf Creek, and 16 miles northeast of Clanton, on the Louisville and Nashville Railroad.

Lock No. 14 is to be located 1 mile below lock No. 13, 2 miles above Yellowleaf Creek, and 14 miles northeast of Clanton.

Lock No. 15 is to be located 1.7 miles below lock No. 14, three-tenths of a mile above Yellowleaf Creek, and 12 miles northeast of Clanton, on the Louisville and Nashville Railroad.

Lock No. 16 is to be located 2.7 miles below lock No. 15, at Butting Ram Shoals, which is 11 miles northeast of Clanton.

Lock No. 17 is to be located 1.4 miles below lock No. 16, and is $10\frac{1}{2}$ miles northeast of Clanton.

Lock No. 18 is to be located 1.3 miles below lock No. 17, and 11 miles east of Clanton.

Lock No. 19 is to be located 1 mile below lock No. 18, about 11 miles east of Clanton.

Lock No. 20 is to be 31.5 miles above Wetumka, one-fourth mile above Zimmermans Ferry, 1.2 miles above the mouth of Hatchet Creek.

Lock No. 21 is to be 25.5 miles above Wetumka, 1.6 miles below mouth of Blue Creek, 7 miles east of Cooper, on the Louisville and Nashville Railroad.

Lock No. 22 is to be 21.4 miles above Wetumka, three-fourths of a mile below the mouth of Proctor Creek, and 1.1 miles above the month of Pinchoulee Creek, and 7 miles east of Verbena, on the Louisville and Nashville Railroad.

Lock No. 23 is to be 18.5 miles from Wetumka, 1.5 miles below the mouth of Pinchoulee Creek.

Lock No. 24 is to be 16 miles above Wetumka, 0.4 mile below the mouth of Welcree Creek, and 7½ miles east of Mountain Creek station, on the Louisville and Nashville Railroad.

Lock No. 25 is to be 12.9 miles above Wetumka, 0.1 mile above the mouth of Shoal Creek, and about 8 miles east of Wadsworth, on the Louisville and Nashville Railroad.

Lock No. 26 is to be 11.7 miles above Wetumka, at Staircase Falls, just above the mouth of Wewoka Creek.

Lock No. 27 is to be 8.8 miles above Wetumka, 0.6 mile above the mouth of Sofkahatchee Creek, and about 9 miles east of Deatsville, on the Louisville and Nashville Railroad.

Lock No. 28 is to be 7.4 miles above Wetumka.

Lock No. 29 is to be 4.6 miles above Wetumka.

Lock No. 30 is to be 2 miles above Wetumka.

Lock No. 31 is to be at Wetumka.

Elevations of water surface on Coosa River between Wetumka and Greensport.

[Determined in 1889 by Charles Firth, assistant engineer under Capt. Philip M. Price, Corps of Engineers, U. S. Army.]

Distance from Wetumka.	Location.	Elevation above sea level.
Miles.		*Feet.*
0. 0	Wetumka Bridge	154. 37
0. 4	Mouth of Valley Brook	164. 37
2. 0	Mouth of Corn Creek	168. 37
4. 0	Mouth of creek, top of Moccasin Reef	177. 00
4. 7	Foot of Grays Island Shoals	178. 37
6. 0	Big Eddy, top of Grays Island Shoals	186. 37
8. 3	Mouth of Sofkahatchee Creek	190. 80
8. 8	Top of Gunns Island Shoals	196. 80
11. 7	Mouth of Weoka, or Wenone, Creek, at Staircase Falls	212. 80
12. 9	Mouth of Shoal, or Mill, Creek	225. 00
15. 3	Greys Ferry	234. 00
15. 8	Mouth of Town Creek	234. 80
16. 8	Welona Reef, mouth of Welona Creek	241. 00
20. 3	Mouth of Pinchoulee Creek	254. 00
21. 4	Foot of Hells Gap Shoal	256. 00
22. 0	Mouth of Proctor Creek	265. 00
22. 6	Mouth of Chestnut Creek	267. 00
24. 0	Knights Ferry	270. 80
25. 6	Foot of Duncans Riffle	270. 80
27. 2	Mouth of Blue Creek	279. 30
28. 7	Mouth of Cargal Creek, Smiths Ferry	280. 00
30, 3	Mouth of Hatchet Creek	281. 90

Elevations of water surface on Coosa River between Wetumka and Greensport—Continued.

Distance from Wetumka	Location.	Elevation above sea level.
Miles.		*Feet.*
31.3	Zimmermans Ferry	281.33
34.0	Foot of Tuckaleague Shoal	292.00
37.0	Head of Tuckaleague Shoal	331.64
40.0	Mouth of Yellowleaf Creek, at Adam Ferry	343.64
41.3	Lower mouth of Paint Creek	360.00
45.0	Mouth of Waxahatchee Creek	380.00
46.0	Mouth of Kooga Creek	388.00
47.5	Spring Branch, head of Weduska Shoal	399.64
48.6	Mouth of Slaughter Creek	399.64
52.0	Merrills Ferry	399.64
53.0	Mouth of Peckerwood Creek, at foot of Peckerwood Shoal	399.64
54.3	Mouth of Sulphur Branch from Talladega Springs	402.80
55.0	Mouth of Cedar Creek, near Fort William Ferry	403.C0
56.2	Mouth of Kelly Branch, foot of Fort William Shoals	407.80
56.9	Mouth of Flat Branch	413.C0
59.0	Mouth of Sally Branch	413.C0
60.2	Mouth of Beeswax Creek	413.C0
60.8	McRaes Ferry	413.00
63.9	Mouth of Hay's spring branch	415.C0
65.7	McGowans Ferry	421.C0
66.6	Mouth of Upper Yellowleaf Creek	421.00
68.0	Southern Railway bridge, at mouth of Kahatchee Creek	421.00
74.1	Chancellors Ferry	421.00
75.2	Columbus and Western Railway bridge (Central of Georgia Railway)	422.C0
75.7	Mouth of Tallaseehatchee Creek	422.00
76.7	Mouth of Talladega Creek	422.00
81.1	Mouth of Clear Creek, at Meyers Ferry	423.00
84.7	Mouth of Spring Creek, at Glovers Ferry	429.00
86.2	Mouth of Kelly Creek	431.00
90.4	Grissom Ferry	439.00
91.8	Mouth of Upper Clear Creek, at Howell's mill shoals	444.00
95.9	Griffiths Ferry, head of Drake's mill shoals	456.00
101.2	Collin Ferry and bridge of the Birmingham and Atlantic Railroad	461.00
102.0	Foot of Choccolocco Shoals	461.00
105.0	Mouth of Choccolocco Creek	469.00
106.8	Head of Choccolocco Shoals	475.00
108.0	Truss Ferry	475.00
115.3	Mouth of Blue Eye Creek	476.00

*Elevations of water surface on Coosa River between Wetumka and Greensport—*Continued.

Distance from Wetumka.	Location.	Elevation above sea level.
Miles.		*Feet.*
112. 6	Bridge of Southern Railway, Riverside	476. 00
114. 8	Mouth of Blue Spring Branch	477. 00
116. 2	Foot of Lock 4	477. 30
116. 2	Zero of gage below Lock 4 _____ 477. 30	
116. 2	Zero of gage above Lock 4 _____ 489. 30	
117. 7	Mouth of Broken Arrow Creek	483. 00
125. 5	Wood Ferry	492. 30
127. 8	Mouth of Alligator Creek	493. 00
129. 0	Mouth of Trout Creek	493. 00
130. 0	Mouth of Bruner Creek, at Mays Ferry	494. 00
131. 4	Mouth of Cane Creek	495. 00
136. 0	Mouth of Ohatchee Creek, at Harts Ferry	496. 00
136. 4	Below East and West Railroad bridge	496. 00
136. 4	Above East and West Railroad bridge	498. 00
137. 0	Below Lock 3	498. 40
137. 0	Zero of gage below Lock 3 (U. S. A. Engineers) _____ 494. 40	
137. 0	Zero of gage above Lock 3 (U. S. A. Engineers) _____ 505. 25	
137. 0	Present (1903) water level above Lock 3 _____ 510. 40	
138. 4	Present (1903) water level below Lock 2 _____ 510. 40	
138. 4	Present (1903) water level above Lock 2 _____ 515. 97	
138. 4	Zero of gage below Lock 2 _____ 505. 20	
138. 4	Zero of gage above Lock 2 _____ 510. 57	
141. 7	Present (1903) water level below Lock 1 _____ 515. 97	
141. 7	Present (1903) water level above Lock 1 _____ 521. 30	
141. 7	Zero of gage below Lock 1 _____ 512. 72	
141. 7	Zero of gage above Lock 1 _____ 517. 89	

TALLADEGA CREEK AT NOTTINGHAM.

This station is located on the Southern Railroad bridge, a fourth of a mile from the station at Nottingham and 1 mile north of Alpine. The gage, which is graduated to feet and tenths and is 20 feet long, is fastened vertically to a tree on right bank about 50 feet above the bridge. The initial point of sounding is the end of the iron bridge, right bank, upstream. The bench mark is the top rail on the upstream side of the bridge, and is 24.13 feet above gage datum. The station is a good one, and is free from piers. The observer is R. M. McClatchy, station agent at Nottingham. The following measurements were made by James R. Hall, M. R. Hall, and others:

Discharge measurements of Talladega Creek at Nottingham.

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.
1900.	*Feet.*	*Second-feet.*	1902.	*Feet.*	*Second-feet.*
August 16	1.10	102	October 18	0.80	78
November 29	1.70	240	November 13	.70	63
1901.			1903.		
April 5	3.00	526	May 25	2.05	243
October 22	1.00	90	July 27	1.37	111
1902.			August 20	1.30	116
January 16	1.30	155	October 2	1.00	57
July 17	.90	97	November 14	1.21	80

Daily gage height, in feet, of Talladega Creek at Nottingham.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1900.												
1									1.2	1.0	1.3	1.6
2									2.0	1.0	1.3	1.4
3									1.3	1.0	2.3	1.4
4									1.1	1.0	2.1	1.8
5									1.0	1.2	1.7	1.7
6									1.0	1.3	1.5	1.6
7									1.0	1.3	1.4	1.5
8									.9	1.4	1.4	1.5
9									11.0	1.3	1.3	1.4
10									8.0	1.3	1.3	1.3
11									10.3	1.3	1.3	1.3
12									8.0	1.5	1.3	1.3
13									8.3	1.4	1.2	1.6
14									9.3	1.3	1.2	1.8
15									9.3	1.2	1.2	1.7
16								1.1	3.9	1.2	1.2	1.6
17								1.2	2.3	1.1	1.2	1.5
18								1.2	1.7	1.1	1.2	1.5
19								1.1	1.6	1.1	1.2	1.4
20								1.1	1.5	1.0	1.5	2.7
21								1.1	1.3	1.2	2.2	3.0
22								1.1	1.2	1.4	1.9	2.6
23								1.1	1.2	1.6	1.8	4.0
24								1.0	1.2	2.9	1.6	2.5
25								.9	1.2	3.5	3.9	2.1
26								1.0	1.2	3.0	3.8	2.0
27								1.1	1.2	2.6	3.4	1.8
28								1.2	1.2	1.4	2.0	1.7
29								1.0	1.1	1.3	1.8	1.6
30								1.0	1.1	1.3	1.7	1.9
31								1.6		1.3		5.1

Daily gage height, in feet, of Talladega Creek at Nottingham—Continued.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1901.												
1	3.2	2.3	2.0	3.4	2.2	2.0	1.5	1.1	1.2	1.1	1.0	1.0
2	2.8	2.1	2.0	5.9	2.2	2.0	1.4	1.0	1.2	2.8	1.0	1.4
3	3.2	3.8	2.0	4.5	2.1	2.0	1.3	1.0	1.2	2.5	1.0	1.3
4	2.7	8.0	2.0	3.4	2.0	1.8	1.3	1.0	1.1	1.5	1.0	1.2
5	2.4	3.9	1.8	3.0	2.0	1.7	1.3	1.0	1.1	1.3	1.0	1.2
6	2.2	3.2	1.8	2.9	1.9	1.7	1.4	1.0	1.1	1.2	1.0	1.3
7	2.1	2.8	1.8	2.6	1.9	3.0	1.4	1.0	1.1	1.1	1.0	1.1
8	2.1	2.8	1.8	2.5	1.9	1.9	1.3	1.0	1.1	1.1	1.0	1.0
9	2.0	3.3	1.8	2.3	1.9	1.7	1.3	1.0	1.0	1.1	1.0	1.0
10	1.9	2.8	2.0	2.2	1.9	1.6	1.2	1.0	1.0	1.0	1.0	1.1
11	5.8	2.6	1.9	2.1	1.9	1.5	1.2	1.0	1.0	1.0	1.0	1.1
12	8.8	2.7	1.8	2.1	1.9	1.5	1.2	1.1	1.0	1.0	1.0	1.0
13	4.7	2.5	1.8	2.7	2.0	1.6	1.2	1.0	1.0	1.1	1.0	1.0
14	3.4	2.3	1.8	3.7	1.9	1.8	1.2	1.0	1.0	1.0	1.0	2.4
15	2.9	2.2	1.8	2.7	1.9	1.7	1.2	1.0	1.0	1.0	1.0	3.5
16	2.6	2.2	1.7	2.5	1.9	1.6	1.2	2.3	1.0	1.0	1.0	1.7
17	2.7	2.2	1.7	2.3	1.8	1.5	1.2	2.2	3.4	1.0	1.0	1.5
18	2.4	2.1	1.7	2.4	1.7	1.4	2.0	1.9	2.8	1.0	1.0	1.3
19	2.2	2.1	1.7	11.2	1.9	1.4	1.5	1.7	1.6	1.0	1.0	1.2
20	2.2	2.0	1.8	6.3	2.5	1.4	1.3	1.5	1.5	1.0	1.0	1.1
21	2.1	2.0	2.1	4.1	3.9	1.4	1.3	1.4	1.4	1.0	1.0	1.1
22	2.2	2.0	2.0	3.4	2.5	1.3	1.2	1.3	1.3	1.0	1.1	1.1
23	2.2	2.0	1.8	3.1	2.0	1.3	1.2	1.2	1.3	1.0	1.2	1.1
24	2.2	2.1	2.6	2.8	1.8	1.3	1.2	1.2	1.2	1.0	1.3	1.1
25	2.2	2.1	2.8	2.7	1.7	1.3	1.2	1.5	1.2	1.0	1.2	1.3
26	2.3	2.1	8.9	2.6	1.7	1.3	1.2	1.3	1.1	1.0	1.1	1.2
27	2.2	2.0	4.6	2.5	1.7	1.3	1.2	1.4	1.1	1.0	1.1	1.1
28	2.2	2.0	3.3	2.4	1.7	1.3	1.2	1.5	1.1	1.0	1.0	1.2
29	2.2	......	2.8	2.3	1.7	1.3	1.2	1.4	1.1	1.0	1.0	8.4
30	2.6	......	2.9	2.2	1.7	1.4	1.2	1.3	1.1	1.0	1.0	7.5
31	2.5	......	5.5	......	2.2	......	1.2	1.2	......	1.0	......	3.5
1902.												
1	2.40	5.60	5.00	3.50	1.80	2.60	.90	.90	1.00	1.40	.70	.80
2	2.20	8.90	3.70	3.10	1.70	1.50	.90	.80	.90	1.10	.70	2.40
3	2.00	4.40	3.10	2.90	1.60	1.30	.90	.80	.70	.90	.70	2.70
4	1.80	3.30	2.90	2.90	1.50	1.30	.90	.80	.70	.80	.70	1.60
5	1.70	2.70	4.60	2.70	1.50	1.20	1.00	.80	.70	.70	.70	1.40
6	1.60	2.50	3.30	2.50	1.50	1.10	1.00	.80	.70	.70	1.90	1.20
7	1.50	2.30	2.90	3.60	1.60	1.10	1.00	.80	.70	.70	1.10	1.30
8	1.50	2.10	2.60	3.20	1.90	1.10	.90	.80	.70	.70	.90	1.20
9	1.50	2.10	2.50	3.00	1.70	1.10	1.00	.80	.70	.70	.80	1.10
10	1.50	2.00	2.40	2.70	1.60	1.10	1.50	1.00	.70	.70	.80	1.00
11	1.40	1.90	2.30	2.50	1.60	1.10	2.00	1.20	.70	4.10	.70	.90
12	1.40	1.90	2.20	2.30	1.50	1.10	1.50	1.50	.70	1.90	.70	.80
13	1.30	1.90	2.20	2.30	1.40	1.10	1.20	1.10	.70	1.30	.70	.80
14	1.30	1.90	2.10	2.30	1.40	1.10	1.00	1.00	.70	1.00	.70	.80
15	1.30	2.30	2.60	2.20	1.40	1.10	1.00	.90	.70	.80	.70	.80
16	1.30	2.10	7.60	2.10	1.40	1.10	1.00	.80	.70	.80	.70	6.30
17	1.30	1.90	3.80	2.50	1.50	1.10	.90	.80	.70	.80	.70	2.50
18	1.30	1.80	2.70	2.30	1.60	1.00	.90	.80	.70	.70	1.20	1.80
19	1.40	1.80	2.60	2.20	1.50	1.00	.90	.80	.70	.80	1.00	1.40
20	1.90	1.90	2.40	2.10	1.40	1.00	.90	.80	.70	.80	.90	1.20
21	2.10	1.80	2.40	2.00	1.30	1.00	1.50	.80	.60	.80	.80	2.30
22	1.70	2.00	2.30	1.90	1.30	1.10	1.10	.70	.60	.80	.80	2.60
23	1.60	1.90	2.20	1.90	1.30	1.10	1.00	.70	.60	.80	.80	2.20
24	1.50	1.80	3.20	1.90	1.30	.90	1.00	.70	.60	.80	.80	1.50
25	1.80	1.90	3.20	1.80	1.20	.90	1.00	.70	.70	.80	1.90	1.30
26	1.60	1.80	2.50	1.80	1.20	.90	1.00	.70	.70	.80	1.40	1.10
27	1.80	3.60	2.50	1.80	1.20	.90	1.00	.70	.80	.80	1.10	1.10
28	3.30	12.20	12.50	1.80	1.10	.90	1.00	1.50	1.10	.80	.90	1.10
29	4.10	......	10.70	1.80	1.10	.90	1.00	5.10	1.10	.70	.80	1.30
30	2.80	......	5.20	1.80	1.10	.90	1.00	3.10	1.70	.70	.70	2.40
31	3.50	......	3.90	......	1.10	......	1.00	1.00	......	.70	......	1.80

Daily gage height, in feet, of Talladega Creek at Nottingham—Continued.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1903.												
1	1.7	1.3	6.4	3.8	2.0	2.5	1.9	1.7	1.0	1.0	1.0	1.1
2	2.1	1.3	4.2	3.4	1.9	2.3	1.8	1.8	1.0	1.0	1.0	1.1
3	2.2	1.3	4.0	3.2	1.8	2.0	1.7	1.6	.9	1.0	1.0	1.1
4	•2.1	2.3	3.8	3.0	1.8	1.9	2.0	1.6	.9	1.0	1.0	1.1
5	•1.9	2.1	3.5	2.8	1.8	1.8	2.5	1.4	.9	1.0	1.0	1.1
6	1.8	1.7	4.2	2.6	1.8	2.2	2.0	1.5	.9	1.0	1.0	1.2
7	1.6	6.8	3.4	2.5	2.8	2.0	1.8	1.5	.9	1.0	1.0	1.1
8	1.5	13.0	3.2	2.4	2.3	1.8	1.7	1.4	.9	1.6	1.1	1.1
9	1.3	5.5	3.2	2.2	2.0	1.8	2.0	1.4	.9	1.5	1.1	1.1
10	1.2	3.6	3.5	2.0	1.9	1.7	1.8	1.3	.9	1.3	1.1	1.1
11	1.5	a9.2	3.6	2.2	1.8	3.6	1.8	1.3	.9	1.1	1.1	1.1
12	2.7	6.5	3.5	3.0	1.8	2.2	1.8	1.3	.9	1.0	1.5	1.1
13	1.8	3.8	3.3	3.2	2.8	2.0	1.7	1.3	.9	1.0	1.5	1.1
14	1.6	3.2	3.6	3.0	4.1	1.8	1.6	1.3	.9	1.0	1.2	1.1
15	1.5	2.8	3.3	2.8	10.8	1.8	1.5	1.8	.9	1.1	1.2	1.1
16	1.4	b7.5	3.4	2.6	5.2	1.8	1.5	1.5	1.0	1.1	1.2	1.1
17	1.4	10.0	3.2	2.5	3.5	1.8	1.5	1.3	1.5	1.2	1.2	1.1
18	1.5	4.4	2.9	2.5	2.9	1.7	1.5	1.3	1.2	1.2	1.2	1.1
19	1.3	3.5	2.8	2.4	2.7	1.6	1.5	1.4	1.2	1.2	1.2	1.1
20	1.3	3.1	2.7	4.7	2.6	1.5	1.8	1.4	1.2	1.2·	1.2	1.1
21	1.2	2.8	3.0	3.0	2.4	1.5	1.4	1.3	1.1	1.2	1.2	1.1
22	1.2	2.6	3.5	2.5	2.2	2.5	1.4	1.2	1.1	1.2	1.2	1.1
23	1.2	2.3	5.5	2.4	2.0	1.8	1.4	1.2	1.1	1.2	1.1	1.1
24	1.2	2.2	4.0	2.3	2.0	1.6	1.4	1.1	1.1	1.2	1.1	1.1
25	1.2	2.2	3.5	2.2	2.0	1.5	1.4	1.1	1.0	1.1	1.1	1.1
26	1.2	2.2	3.1	2.2	2.0	1.7	1.2	1.0	1.0	1.1	1.1	1.1
27	1.2	2.3	2.9	2.1	2.0	2.5	1.3	1.0	1.0	1.1	1.1	1.1
28	1.6	16.0	2.7	2.0	1.9	6.0	1.5	1.0	1.0	1.0	1.1	1.1
29	1.5	....	2.9	2.0	1.9	2.5	1.4	1.0	1.0	1.0	1.1	1.1
30	1.4	....	8.7	2.0	2.8	2.0	1.4	1.0	1.0	1.1	1.1	1.1
31	1.3	....	4.8	....	2.3	....	1.6	1.0	....	1.1	....	1.1

a Maximum, 10.2.   b Maximum, 9.8.

Rating table for Talladega Creek at Nottingham for 1900 and 1901.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
1.0	90	2.1	328	3.2	570	4.3	812
1.1	109	2.2	350	3.3	592	4.4	834
1.2	130	2.3	372	3.4	614	4.5	856
1.3	152	2.4	394	3.5	636	4.6	878
1.4	174	2.5	416	3.6	658	4.7	900
·1.5	196	2.6	438	3.7	680	4.8	922
1.6	218	2.7	460	3.8	702	4.9	944
1.7	240	2.8	482	3.9	724	5.0	966
1.8	262	2.9	504	4.0	746		
1.9	284	3.0	526	4.1	768		
2.0	306	3.1	548	4.2	790		

Rating table for Talladega Creek at Nottingham for 1902.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
0. 6	51	2. 8	482	5. 0	966	7. 2	1, 450
. 8	78	3. 0	526	5. 2	1, 010	7. 4	1, 494
1. 0	109	3. 2	570	5. 4	1, 054	7. 6	1, 538
1. 2	143	3. 4	614	5. 6	1, 098	7. 8	1, 582
1. 4	179	3. 6	658	5. 8	1, 142	8. 0	1, 626
1. 6	219	3. 8	702	6. 0	1, 186	8. 5	1, 736
1. 8	262	4. 0	746	6. 2	1, 230	9. 0	1, 846
2. 0	306	4. 2	790	6. 4	1, 274	9. 5	1, 956
2. 2	350	4. 4	834	6. 6	1, 318	10. 0	2, 066
2. 4	394	4. 6	878	6. 8	1, 362	10. 5	2, 176
2. 6	438	4. 8	922	7. 0	1, 406	11. 0	2, 286

Rating table for Talladega Creek at Nottingham for 1903.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
0. 90	46	2. 70	400	4. 50	832	6. 30	1, 264
1. 00	57	2. 80	424	4. 60	856	6. 40	1, 288
1. 10	69	2. 90	448	4. 70	880	6. 50	1, 312
1. 20	83	3. 00	472	4. 80	904	6. 60	1, 336
1. 30	99	3. 10	496	4. 90	928	6. 70	1, 360
1. 40	116	3. 20	520	5. 00	952	6. 80	1, 384
1. 50	133	3. 30	544	5. 10	976	6. 90	1, 408
1. 60	151	3. 40	568	5. 20	1, 000	7. 00	1, 432
1. 70	170	3. 50	592	5. 30	1, 024	7. 50	1, 552
1. 80	190	3. 60	616	5. 40	1, 048	8. 00	1, 672
1. 90	211	3. 70	640	5. 50	1, 072	8. 70	1, 840
2. 00	233	3. 80	664	5. 60	1, 096	8. 80	1, 864
2. 10	256	3. 90	688	5. 70	1, 120	9. 00	1, 912
2. 20	280	4. 00	712	5. 80	1, 144	9. 20	1, 960
2. 30	304	4. 10	736	5. 90	1, 168	10. 00	2, 152
2. 40	328	4. 20	760	6. 00	1, 192	13. 00	2, 872
2. 50	352	4. 30	784	6. 10	1, 216	16. 00	3, 592
2. 60	376	4. 40	808	6. 20	1, 240		

Estimated monthly discharge of Talladega Creek at Nottingham.

Month.	Discharge in second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1900.					
August 16–31			113	0. 72	0. 43
September	2, 286	74	575	3. 69	4. 12
October	636	90	190	1. 22	1. 41
November	724	130	249	1. 60	1. 79
December	746	152	291	1. 87	2. 16
1901.					
January	1, 802	284	485	3. 11	3. 59
February	1, 626	306	449	2. 88	3. 00
March	1, 824	240	405	2. 60	3. 00
April	2, 330	328	591	3. 79	4. 23
May	724	240	306	1. 96	2. 26
June	526	152	218	1. 40	. 1. 56
July	196	130	149	. 96	1. 11
August	372	90	148	. 95	1. 10
September	614	90	148	. 95	1. 06
October	482	90	123	. 79	. 91
November	152	90	97	. 62	. 69
December	1, 714	90	264	1. 69	1. 95
The year	2, 330	90	282	1. 81	24. 46
1902.					
January	768	161	276	1. 77	2. 04
February	2, 550	262	513	3. 29	3. 43
March	2, 616	328	676	4. 33	4. 99
April	658	262	390	2. 50	2. 79
May	284	126	187	1. 20	1. 38
June	438	93	128	. 82	. 91
July	306	93	121	. 78	. 90
August	988	64	135	. 87	1. 00
September	240	51	74	. 47	. 52
October	768	64	111	. 71	. 82
November	284	64	97	. 62	. 69
December	1, 252	78	238	1. 53	1. 76
The year	2, 616	51	246	1. 57	21. 23

Estimated monthly discharge of Talladega Creek at Nottingham—Continued.

Month.	Discharge in second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1903.					
January	400	83	144	.92	1.06
February	3,592	99	832	5.33	5.55
March........................	1,840	400	637	4.08	4.70
April..... ....:....	880	233	388	2.49	2.78
May	2,344	190	387	2.48	2.86
June	1,192	133	265	1.70	1.90
July	352	83	161	1.03	1.19
August	190	57	105	.67	.77
September....................	133	46	59	.38	.42
October	151	57	74	.47	.54
November	133	57	75	.48	.54
December	83	69	68	.44	.51
The year	3,592	46	266	1.71	22.82

Net horsepower per foot of fall with a turbine efficiency of 80 per cent for the minimum monthly discharge of Talladega Creek at Nottingham.

Month.	1901.			1902.			1903.		
	Minimum discharge.	Minimum net horsepower per foot of fall.	Duration of minimum.	Minimum discharge.	Minimum net horsepower per foot of fall.	Duration of minimum.	Minimum discharge.	Minimum net horsepower per foot of fall.	Duration of minimum.
	Sec.-feet.		Days.	Sec.-feet.		Days.	Sec.-feet.		Days.
January	284	26.0	1	161	15.0	6	83	7.5	8
February	306	28.0	6	262	24.0	5	99	9.0	3
March	240	22.0	4	328	30.0	1	400	36.0	2
April	328	30.0	·2	262	24.0	6	233	21.0	4
May	240	22.0	7	126	11.0	4	190	17.0	6
June...........	152	14.0	8	93	8.0	7	133	12.0	3
July	130	12.0	18	93	8.0	9	83	7.5	1
August.........	90	8.0	13	64	6.0	6	57	5.0	7
September	90	8.0	8	51	4.6	5	46	4.0	13
October.........	90	8.0	21	64	6.0	10	57	5.0	12
November	90	8.0	24	64	6.0	13	57	5.0	7
December	90	8.0	5	78	7.0	4	69	6.0	31

CHOCCOLOCCO CREEK AT JENIFER.

Choccolocco Creek rises in Calhoun and Cleburne counties in a mountainous crystalline region and flows in a southwesterly course past Anniston, Oxford, and Jenifer, and enters Coosa River near Eureka. The Choccolocco is a very rapid stream and drains a mountainous, well-wooded country.

The gaging station is located at the Louisville and Nashville Railroad bridge, 1¼ miles north of Jenifer. Discharge measurements were made at this point April, 1901, October, 1902, and July, 1903, but the gage was not put in until August 20, 1903.

The bridge is a single-span iron through bridge, 150 feet long, having a trestle approach of 428 feet at the right bank. Measurements are made from the upstream side. The initial point is the end of the bridge, left bank. Distances are marked with white paint on the upstream guard rail. The channel is straight for a quarter of a mile above and a quarter of a mile below, and the current is swift, as there are shoals both above and below the bridge. The bed of the stream is rocky and unchangeable and presents a fair section for accurate measurements. The gage is a 1 by 4 inch rod painted white and graded to feet and tenths. It is nailed to a 3 by 8 inch pine timber, which is spiked to a birch tree on the left bank, 20 feet above the bridge.

Bench mark No. 1: Top of cross beam at 50 feet from initial point, 23 feet above zero of gage. Bench mark No. 2: Copper plug in upstream wing of abutment, 14.19 feet above zero of gage.

The observer is Mr. W. J. Tolbert, a farmer, living one-fourth of a mile from the gage.

The drainage area above this station is 280 square miles.

The following discharge measurements were made by M. R. Hall and others:

Discharge measurements of Choccolocco Creek at Jenifer.

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.
1901.	*Feet.*	*Second-feet.*	**1903.**	*Feet.*	*Second-feet.*
April 5.............	4.00	1,170	August 20...........	2.26	183
1902.			August 25..........	2.12	146
October 18	1.90	220	October 2	1.82	90
1903.			November 14........	2.08	130
July 23	2.25	186			

Daily gage height of Choccolocco Creek at Jenifer.

Day.	Aug.	Sept.	Oct.	Nov.	Dec.	Day.	Aug.	Sept.	Oct.	Nov.	Dec.
1903.						1903.					
1........	....	2.0	1.8	1.8	1.9	17........	....	2.1	1.8	1.9	1.9
2........	....	2.0	1.8	1.8	1.8	18........	....	2.1	1.9	1.9	1.9
3........	....	2.0	1.8	1.8	1.8	19........	....	2.0	1.9	1.9	1.9
4........	....	2.0	1.8	1.8	1.8	20........	2.2	2.0	1.9	1.9	1.9
5........	....	2.0	1.8	1.9	1.9	21........	2.2	1.9	1.9	1.9	1.9
6........	....	2.0	1.8	2.1	1.9	22........	2.1	1.9	1.9	1.9	1.9
7........	....	2.0	1.8	2.0	1.9	23........	2.1	1.9	1.8	1.9	2.1
8........	....	2.0	2.6	1.9	1.9	24........	2.1	1.9	1.8	1.9	2.0
9........	....	1.9	2.1	1.9	1.9	25........	2.1	1.9	1.8	1.9	1.9
10........	....	1.9	2.0	1.9	1.9	26........	2.1	1.9	1.8	1.9	2.0
11........	....	1.9	2.0	1.8	1.9	27........	2.1	1.9	1.8	1.9	2.0
12........	....	1.9	1.9	2.0	1.9	28........	2.0	1.9	1.8	1.9	1.9
13........	....	1.9	1.9	2.0	1.9	29........	2.1	1.8	1.8	1.9	1.9
14........	....	1.9	1.8	2.0	1.9	30........	2.0	1.8	1.8	1.9	1.9
15........	....	1.9	1.8	2.0	1.9	31........	2.0	....	1.8	....	1.9
16........	....	2.0	1.8	1.9	1.9						

Rating table for Choccolocco Creek at Jenifer for 1903.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
1.80	88	2.10	138	2.40	249	2.70	400
1.85	94	2.15	150	2.45	273	3.00	580
1.90	101	2.20	164	2.50	297	3.50	880
1.95	109	2.25	181	2.55	321	4.00	1,180
2.00	117	2.30	202	2.60	345		
2.05	127	2.35	225	2.65	372		

Estimated monthly discharge of Choccolocco Creek at Jenifer for 1903.

Room.	Discharge in second-feet.		
	Maximum.	Minimum.	Mean.
August 20 to 31 [a]	164	117	[b] 137
September..	138	88	108
October	345	88	103
November..	138	88	103
December	138	88	102

         [a] 12 days.   [b] Mean for 12 days.

TRIBUTARIES OF COOSA RIVER.

Miscellaneous discharge measurements of tributaries of Coosa River were made by B. M. Hall, M. R. Hall, and assistants, as follows:

Miscellaneous discharge measurements of tributaries of Coosa River.

Date.	Stream.	Location.	Discharge.	Remarks.
1898.			*Sec.-ft.*	
May 26	Choccolocco Creek	Eureka	171	Low water.
1900.				
Aug. 16	Talladega Creek.........	Kymulga post-office.....	107	Medium.
15	Tallaseehatchee Creek..	Childersburg	102	
17	Hatchet Creek	Goodwater	84	
1901.				
Oct. 16	Wills Creek.............	Wesson's mill, 2 miles north of Attalla.	107	Low water.
1903.				
July 2	Little River.............	Cedar Bluff.............	123	
2	Chattooga River........	Gaylesville	325	

Tributaries of Coosa River above Wetumka.

Side.	Stream.	Point.	Drainage area.	Estimated discharge low water 1900–1901.	Net horsepower per foot of fall on 80 percent turbine.
			Sq. miles.	*Sec.-feet.*	
Left....	Sofkahatchee Creek....	Mouth of creek........	40	12	1. 1
	Weoka Creek...........	.....do	85	28	2. 5
Right ..	Chestnut Creek........	.....do	90	30	2. 7
Left....	Hatchet Creek.........	.....do	500	165	15. 0
	.....do	Goodwater	105	40	3. 6
	Pinthlocco Creek	Mouth of creek.......	60	24	2. 2
Right ..	Weogufka Creek.......	.....do	120	48	4. 3
	Waxahatchee Creek ...	.....do	196	75	6. 8
	Yellowleaf Creek	.....do	192	75	6. 8
Left....	Tallaseehatchee Creek..	.....do	172	70	6. 3
	Talladega Creek	.....do	188	75	6. 8
	.....do	Nottingham	156	66	6. 0
Right ..	Kelly Creek	Mouth of creek.......	218	88	8. 0
Left. ..	Choccolocco Creek.....	.....do	510	153	13. 9
	.....do	Jenifer	273	95	8. 6
	Blue Eye Creek........	Mouth of creek.......	26	7	. 6

Tributaries of Coosa River above Wetumka—Continued.

Side.	Stream.	Point.	Drainage area.	Esti-mated dis-charge low water 1900–1901.	Net horse-power per foot of fall on 80 per cent turbine.
			Sq. miles.	*Sec.-feet.*	
Right ..	Broken Arrow Creek...	Mouth of creek.......	49	18	1.6
	Trout Creek	.....do	23	10	.9
Left....	Cane Creek...........	.....do	94	35	3.2
	Ohatchee Creek	.....do	217	85	7.7
	.....do................	Above Tallasee-hatchee Creek.	86	35	3.2
	Tallaseehatchee Creek..	Mouth of creek.......	125	50	4.5
Right ..	Shoal Creek	.....do	31	12	1.1
	Beaver Creek..........	.....do	33	12	1.1
	Big Canoe Creek.......	.....do	248	90	8.2
	.....do................	Above Little Canoe Creek.	165	65	5.9
	Little Canoe Creek.....	Mouth of creek.......	34	14	1.3
	Wills Creek	.....do	354	160	14.4
	.....do................	Above Little Wills Creek.	249	115	10.4
	.....do................	Above Wesson's mill .	200	107	9.7
Left....	Black Creek...........	Mouth of creek.......	59	25	2.3
Right ..	Little Wills Creek	.....do	30	14	1.3
Left....	Ballplay Creek	.....do	33	15	1.4
	Terrapin Creek	.....do	282	130	11.8
Right ..	Chattooga River.......	Above Little River ...	384	170	15.4
	.....do................	Alabama-Georgia State line.	246	121	11.0
	Little River	Mouth of river.......	280	130	11.8
	Coosa River	Alabama-Georgia State line.	4,340	2,000	181.8

On the above-named tributaries there are many important water powers, very few of which have been surveyed. The above list, giving the drainage area, the discharge for low season, 1900–1901, and the corresponding net horsepower per foot fall for each of the streams will be very useful in estimating the horsepower available on any shoal, the fall of which may hereafter be surveyed by the owners or by parties contemplating development.

Talladega Creek, in the vicinity of Taylor's mill, has a fall of 73 feet in 1 mile. During the low water of 1900 and 1901 this 73 feet of fall would have produced 438 feet net horsepower without storage. This 73 feet is probably the most precipitous shoal on the large creek,

but above it for 4 or 5 miles the creek has a number of rapids and shoals that will admit of good development.

The headwaters of this stream in the neighborhood of the pyrites mines in Clay County have high falls on them.

Choccolocco Creek is a very large and constant stream, and has many rapids where good power could be developed by dams. During a season such as low water of 1900 or 1901 a 10-foot dam near Jenifer would develop 86 net horsepower. A 10-foot dam at any point near the mouth of the creek would develop 140 net horsepower during the given season.

Wills Creek, at the old Wesson mill, two miles north of Attalla, offers a good site for a 25-foot dam. The flow at this point on October 16, 1901, was 107 second-feet, which, with a fall of 25 feet, will give 242 net horsepower. The fall on other tributaries named has not been ascertained.

ALABAMA RIVER AND TRIBUTARIES.

ALABAMA RIVER AT SELMA.

This station was originally established by the United States Engineer Corps; readings are now taken by the United States Weather Bureau. The gage, which is attached to the iron highway bridge, the floor of which is about 60 feet above low water, is in two sections. The lower section, which reads from −0.3 feet to +2.30 feet, is secured to the pile on the lower side of the cofferdam on the draw pier; the upper section, which reads from 2.30 feet to 48 feet, is spiked to the highway bridge. The bench mark, which is an iron bolt driven into the face of a rock bluff 182.3 feet from the first bridge pier, on the road ascending to the city, is 26 feet above the zero of the gage and 87.30 feet above mean sea level. The top of the coping stone of the pivot pier at the highway bridge to which the gage is attached is 56 feet above the zero of the gage, and 117.30 feet above mean sea level. Graduations extend from −3.0 feet to +48 feet. No measurements of discharge were made here during 1899.

The following measurements were made by M. R. Hall and others:

Discharge measurements of Alabama River at Selma.

	Gage height.	Discharge.		Gage height.	Discharge.
	Feet.	*Second-feet.*		*Feet.*	*Second-feet.*
1900.			1901.		
April 14	23. 60	66, 607	August 9.............	4. 35	12, 519
May 26	6. 10	17, 049	October 30	1. 10	7, 710
August 24............	3. 10	9, 879	1903.		
1901.			April 10	22. 35	59, 101
March 14	14. 20	35, 518	June 19..............	6. 45	18, 815
April 25	34. 00	90, 332	November 11........	1. 00	8, 290

Daily gage height, in feet, of Alabama River at Selma.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1899.												
1	6.2	10.8	35.8	23.8	13.9	4.5	2.5	11.1	3.7	−1.2	−0.2	4.8
2	6.2	17.0	36.8	24.3	11.5	4.0	2.5	9.9	4.3	−1.3	− .3	3.7
3	6.5	20.2	38.8	24.9	9.9	4.0	2.6	9.0	4.6	−1.3	− .5	3.0
4	6.2	24.0	37.7	24.1	9.8	4.0	2.6	6.7	4.8	−1.3	− .6	3.0
5	6.2	26.8	35.3	22.3	8.5	3.8	2.1	6.5	4.4	−1.1	− .7	2.8
6	5.8	27.2	32.6	20.9	8.1	3.9	1.6	5.8	4.4	−1.0	− .7	2.8
7	6.6	27.2	30.5	20.0	7.5	3.8	1.6	5.3	4.1	−1.6	− .8	1.7
8	8.3	29.8	27.5	19.8	7.4	3.7	1.5	4.7	3.9	− .5	− .8	1.7
9	9.7	32.2	23.4	23.3	7.3	3.3	1.4	4.5	3.6	− .4	− .8	1.3
10	11.6	33.9	19.7	25.6	7.3	3.1	1.3	3.7	.6	− .4	− .9	1.3
11	13.9	34.4	16.9	26.9	7.5	2.8	1.3	3.5	.4	− .5	− .9	1.4
12	14.8	33.9	15.0	26.6	7.2	2.3	1.2	3.0	.3	− .6	−1.0	4.0
13	21.2	32.0	13.9	25.1	6.8	2.6	1.5	2.9	.3	− .6	−1.1	10.4
14	21.9	30.0	16.2	22.6	6.5	2.4	1.2	2.7	.2	− .2	−1.2	16.6
15	19.8	28.0	16.8	19.5	6.3	2.4	1.1	2.6	.2	− .2	−1.2	17.8
16	18.0	26.5	19.4	16.3	6.2	2.3	1.0	2.6	.1	− .2	−1.3	16.3
17	17.5	26.8	21.4	14.0	6.1	2.8	1.0	2.6	.6	− .3	−1.3	13.4
18	17.2	24.0	27.7	13.0	5.6	3.4	⸴.7	3.6	1.3	− .5	−1.3	9.9
19	17.0	22.3	31.6	12.0	5.4	3.9	.6	4.1	1.0	− .7	−1.2	8.4
20	15.8	19.9	33.5	11.2	5.0	3.9	.6	4.3	.9	− .6	−1.0	3.8
21	14.2	19.9	34.7	10.5	4.8	3.1	1.0	3.6	.6	− .7	−1.0	3.8
22	12.6	19.5	34.8	10.4	4.5	2.8	1.6	3.5	− .6	− .8	− .6	3.4
23	10.2	18.8	34.2	10.2	4.4	1.6	5.5	3.4	− .7	− .2	− .6	3.4
24	10.3	17.8	33.4	10.1	4.8	1.4	10.7	3.1	− .8	.0	− .3	3.8
25	9.4	17.3	31.1	12.4	5.0	1.4	14.8	3.6	−1.0	.0	.1	7.6
26	9.0	16.4	32.6	13.5	6.0	1.6	17.0	4.2	−1.0	− .5	.2	12.2
27	8.9	20.3	31.8	16.3	6.1	1.7	17.0	3.9	−1.0	− .5	.9	13.5
28	8.6	31.2	30.5	17.9	5.2	2.0	14.9	3.6	−1.0	− .6	3.2	13.7
29	8.6	....	29.3	17.7	4.5	2.2	13.1	4.3	−1.1	− .6	4.6	12.3
30	9.0	....	27.8	16.1	4.3	2.4	12.8	4.6	−1.1	− .6	4.8	11.4
31	9.6	....	26.3	....	4.2	......	11.9	3.8	....	− .4	....	8.3

Daily gage height, in feet, of Alabama River at Selma—Continued.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1900.												
1	7.2	4.8	17.2	19.8	15.4	4.8	34.8	14.0	3.9	.8	2.0	16.0
2	6.6	3.6	19.7	16.8	13.9	4.6	33.0	13.0	3.9	.7	2.0	14.0
3	4.3	3.5	22.2	14.0	13.0	4.4	29.8	11.0	5.8	.6	4.0	11.0
4	3.3	3.9	22.0	12.0	12.0	4.2	26.5	9.0	4.5	.6	9.0	9.0
5	3.0	4.7	20.6	10.9	11.8	5.6	23.5	7.0	5.4	.5	14.0	8.0
6	3.0	6.2	17.8	8.0	10.2	5.1	20.2	6.0	5.0	1.0	13.5	7.5
7	3.0	8.2	15.0	7.8	9.6	4.6	17.0	5.5	4.5	1.8	9.4	7.0
8	3.0	8.4	13.9	8.9	8.8	4.2	14.0	5.0	4.1	2.5	6.3	7.0
9	2.7	8.5	14.9	9.6	8.0	6.8	11.5	4.8	3.3	4.0	4.0	9.0
10	2.7	10.7	18.8	9.5	7.8	11.6	10.0	4.5	1.8	4.2	2.0	9.4
11	3.3	16.0	20.9	9.8	7.5	13.5	9.8	3 2	1.0	2.0	2.0	6.0
12	7.7	22.2	22.2	12.0	7.3	14.0	10.2	3.0	.7	2.0	1.9	5.0
13	12.4	29.9	22.0	17.7	7.0	13.9	10.0	2.8	.6	2.5	1.6	2.0
14	13.5	38.6	19.9	23.4	6.6	12.8	9.9	2.5	1.0	4.3	1.6	3.2
15	14.7	44.0	19.0	25.5	6.4	11.0	9.9	2.5	1.6	6.7	1.0	9.0
16	14.0	47.0	16.9	25.0	6.0	9.0	10.0	2.4	11.0	6.0	1.0	11.0
17	13.2	48.0	15.3	22.5	5.7	8.9	9.9	2.8	18.0	5.2	1.0	11.0
18	12.0	47.9	13.9	23.5	5.5	8.8	9.0	2.7	19.0	2.5	1.0	10.0
19	11.1	47.0	14.3	29.0	5.2	8.6	7.0	2.7	19.4	1.0	1.0	6.0
20	11.1	44.1	14.6	34.8	5.1	10.0	7.0	2.5	16.0	1.0	1.0	5.1
21	13.4	41.6	18.8	39.0	5.0	10.9	6.5	2.3	12.5	.9	1.0	9.0
22	16.9	36.9	23.0	39.8	5.0	12.0	6.5	2.6	10.0	1.0	1.6	14.5
23	18.5	33.2	25.5	41.0	4.8	12.9	6.3	3.6	6.0	1.5	6.0	17.0
24	18.3	22.6	29.0	40.0	5.5	14.0	6.0	3.8	3.0	6.0	9.0	17.2
25	17.0	22.6	30.2	38.5	6.1	17.6	5.8	4.0	1.9	11.5	9.8	17.6
26	14.7	21.1	32.7	35.8	6.2	24.5	5.0	3.5	1.6	12.0	9.9	18.0
27	13.0	19.0	33.3	32.7	6.6	29.0	4.5	3.5	1.0	11.5	13.0	17.0
28	11.2	16.9	32.5	28.5	6.8	32.0	4.4	3.4	1.0	12.3	16.0	14.5
29	8.4	....	30.5	23.0	6.0	33.5	7.5	3.5	.9	13.0	16.8	12.9
30	6.5	....	27.7	18.0	5.5	35.0	8.0	4.0	.8	11.0	17.0	11.2
31	4.8	....	24.4	....	5.0	....	11.8	4.2	....	5.0	....	11.0
1901												
1	16.0	13.0	11.3	35.6	12.0	19.0	1.0	2.8	17.0	4.3	1.4	1.8
2	21.0	13.0	9.8	36.5	10.4	17.0	2.0	2.6	13.8	4.3	1.4	1.8
3	24.0	13.6	9.5	37.4	10.0	16.5	2.4	2.6	10.6	5.0	1.4	1.9
4	24.6	17.0	9.3	38.5	9.6	18.5	6.6	2.8	8.8	7.4	1.5	2.2
5	24.0	24.9	9.6	38.4	8.2	19.0	6.0	3.0	8.0	7.9	1.5	2.3
6	23.0	30.1	9.6	37.2	7.0	19.8	5.6	2.8	7.4	6.4	1.4	2.3
7	18.0	33.0	9.4	35.5	7.0	18.5	5.6	6.6	6.0	5.8	1.6	2.4
8	15.0	35.1	8.0	33.0	6.8	17.4	5.5	4.6	5.2	5.0	1.6	2.1
9	13.3	35.6	7.7	28.0	6.4	16.1	5.5	4.2	4.4	4.3	1.5	2.0
10	10.0	35.7	7.9	22.6	6.0	14.8	5.5	3.4	4.4	3.4	1.5	2.2
11	8.1	33.0	9.0	17.4	5.0	12.0	5.2	4.0	3.6	2.9	1.5	2.4
12	16.5	31.4	10.2	14.0	5.0	11.0	5.2	5.3	3.4	2.8	1.5	2.4
13	28.0	31.2	12.0	12.0	4.8	9.5	5.1	6.2	3.2	2.6	1.4	2.4
14	34.0	27.0	14.1	11.8	4.5	8.0	4.4	4.4	3.7	2.5	1.4	2.6
15	38.0	26.0	15.4	12.0	4.0	7.6	3.7	3.8	4.3	2.2	1.4	5.0
16	39.5	20.6	15.0	15.0	3.8	7.0	3.7	6.0	4.0	2.5	1.3	10.0
17	40.0	16.9	14.8	16.5	3.4	6.1	3.5	7.4	5.0	2.5	1.3	18.0
18	39.0	14.6	12.0	17.3	3.2	6.0	4.3	11.0	5.0	2.4	1.3	21.6
19	37.5	13.1	11.1	22.0	3.0	5.0	6.3	12.0	5.5	2.0	1.4	22.0
20	35.0	12.6	10.5	28.6	3.0	4.1	7.3	16.0	9.5	2.3	1.6	21.5
21	32.4	12.0	11.0	35.0	3.5	3.4	6.0	17.6	11.4	2.5	1.8	18.7
22	29.0	11.8	11.9	38.0	4.7	3.0	5.5	18.8	11.5	2.5	1.8	15.0
23	24.0	11.7	12.2	39.0	9.4	3.0	5.4	20.0	11.2	2.2	1.8	14.2
24	22.0	11.6	13.0	38.0	17.0	2.6	5.4	20.9	10.0	2.0	1.8	12.0
25	14.0	11.2	14.7	35.8	19.0	2.2	4.4	22.8	7.5	2.0	1.9	11.0
26	12.8	11.5	17.0	31.9	20.0	2.0	4.0	24.6	6.0	2.0	1.9	7.1
27	12.8	11.4	22.5	28.0	20.9	1.5	4.0	24.8	4.4	1.8	2.0	6.2
28	12.7	11.3	27.6	24.2	22.0	1.3	3.6	22.9	4.0	1.6	2.0	6.0
29	12.7	....	31.0	19.5	21.8	1.2	2.9	21.0	4.0	1.5	2.0	11.0
30	13.0	....	33.0	15.0	20.7	1.2	2.9	20.6	4.2	1.3	1.8	23.0
31	13.0	....	34.5	....	19.5	....	2.8	19.5	....	1.3	....	35.0

Daily gage height, in feet, of Alabama River at Selma—Continued.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1902.												
1	41.0	16.8	34.3	50.1	8.4	3.6	1.5	.4	3.5	3.7	1.4	6.0
2	45.0	23.0	41.5	50.7	8.7	3.5	1.2	.4	3.7	5.2	.8	6.3
3	46.6	29.8	45.2	50.0	8.4	3.5	1.0	.7	3.0	5.0	.7	8.8
4	46.3	35.0	47.1	48.6	7.8	4.0	1.0	.8	3.8	4.0	.5	10.5
5	41.4	37.5	47.1	46.0	7.4	4.0	.9	.9	3.0	3.6	.2	13.6
6	37.0	37.9	46.2	42.4	7.0	3.8	.8	1.1	3.0	3.0	.4	14.0
7	35.0	37.9	44.4	39.0	7.0	3.5	.7	1.4	2.5	2.8	.8	14.2
8	33.0	37.0	43.0	35.6	7.0	3.2	.6	1.3	2.2	2.5	3.9	13.7
9	30.0	34.0	41.8	32.0	6.9	2.9	.6	1.1	2.0	2.5	4.8	12.0
10	25.4	30.0	39.0	28.9	6.8	2.9	.6	1.1	1.2	1.0	4.0	9.8
11	17.0	24.0	35.1	25.6	6.7	2.9	1.0	1.5	.9	2.0	2.8	7.8
12	14.9	17.6	30.0	22.0	6.5	2.8	1.1	1.5	.8	2.0	1.9	7.2
13	10.1	14.0	25.5	19.0	6.3	2.6	1.1	1.1	.7	4.0	1.5	5.3
14	9.0	11.7	21.0	16.2	6.0	2.5	1.8	.9	.6	6.0	1.4	4.2
15	8.1	11.6	19.2	14.6	5.8	2.5	1.9	.8	.2	5.8	.9	3.8
16	7.5	12.0	19.8	14.2	6.0	2.8	1.9	.8	.0	5.0	.7	7.6
17	7.0	12.3	23.0	13.0	7.4	2.6	1.9	.7	—.1	4.6	.5	13.8
18	6.5	13.0	28.0	12.2	8.7	2.4	1.9	.6	—.2	4.5	.5	21.5
19	6.5	12.0	32.0	12.8	9.5	2.3	1.9	.1	—.3	4.0	.7	25.5
20	6.5	11.8	33.6	13.2	9.0	2.2	2.0	.0	—.3	2.0	.9	25.6
21	8.0	11.8	33.8	13.0	8.6	2.1	2.1	—.1	.0	1.8	1.4	22.0
22	8.1	11.9	29.8	13.0	7.8	2.0	2.5	—.2	.0	1.4	1.5	17.0
23	9.0	12.0	26.0	11.4	6.6	2.0	2.4	—.3	—.1	1.0	1.5	15.0
24	12.0	12.2	23.0	10.6	5.9	2.0	1.8	—.2	—.2	1.0	1.3	15.0
25	13.8	12.0	22.8	10.0	5.4	1.9	1.0	—.4	—.2	.9	1.7	15.0
26	13.0	12.0	24.0	9.8	5.4	1.9	.8	—.3	—.2	.6	2.6	14.0
27	11.5	14.0	24.9	9.4	5.0	1.8	.6	—.4	.2	.2	4.8	12.8
28	11.4	23.6	30.0	9.0	4.8	1.8	.5	—.2	.2	.0	7.6	10.9
29	12.0	....	38.0	8.6	4.4	1.8	.4	.1	.5	—.1	6.9	9.0
30	14.6	....	45.1	8.5	4.0	1.7	.5	.2	.9	1.2	5.8	7.0
31	16.0	....	48.9	....	3.8	....	.5	.4	....	1.8	....	6.4
1903.												
1	6.8	7.0	33.5	28.0	9.6	7.0	10.0	3.5	1.5	.1	— .2	.4
2	8.0	6.9	38.0	30.2	9.4	8.0	9.8	4.8	1.6	.0	— .2	.5
3	8.9	6.8	41.0	31.4	8.8	9.6	9.0	6.8	1.6	.0	— .1	.5
4	11.0	7.0	42.6	31.4	8.7	12.7	8.0	6.8	1.4	— .2	.0	.4
5	11.9	7.0	42.8	30.2	8.7	13.5	7.0	6.1	1.4	— .2	.1	.5
6	13.0	9.6	42.0	29.0	8.4	13.2	6.8	5.0	1.2	— .2	.1	.3
7	11.0	14.0	40.2	27.8	7.8	14.5	6.4	5.5	1.0	— .3	.3	.4
8	10.0	23.5	38.5	26.3	7.8	16.0	6.4	5.0	.7	— .3	.2	.4
9	9.5	23.0	36.7	24.5	8.0	17.0	7.6	5.0	.5	— .3	.5	.5
10	8.2	39.0	35.0	22.4	10.0	17.0	8.8	5.4	.4	.0	.9	.5
11	7.0	44.3	34.0	22.2	9.8	17.0	9.0	6.6	.4	.4	1.0	.5
12	7.9	48.0	31.3	20.7	9.0	16.0	8.0	6.1	.3	.5	1.1	.6
13	10.6	49.5	29.8	21.5	11.2	14.0	6.8	5.0	.2	.6	1.0	.8
14	12.8	50.2	27.5	20.8	16.0	11.0	6.6	4.6	.1	.4	1.0	.9
15	13.0	50.6	27.0	20.0	21.0	9.5	6.4	3.3	.1	.2	1.0	.9
16	12.0	49.9	27.0	20.3	25.0	8.6	5.8	3.0	.0	.4	.9	.9
17	11.8	49.0	27.0	20.8	30.0	8.0	6.5	2.8	.6	.4	.9	.9
18	10.0	47.7	26.3	20.9	31.2	7.4	8.8	4.0	1.3	.6	.8	.8
19	9.0	47.3	24.0	19.0	29.7	6.8	8.6	5.0	2.2	.6	.7	.6
20	7.9	47.8	21.3	17.6	24.0	6.5	7.0	6.7	2.5	.5	.7	.6
21	7.0	47.9	18.0	15.4	16.5	5.9	6.0	7.7	1.7	.5	.8	.5
22	6.4	47.0	16.0	17.2	11.8	5.9	5.0	7.4	1.5	.4	.8	.6
23	6.0	45.0	16.0	17.5	9.8	6.4	4.5	5.0	1.5	.4	.8	1.0
24	5.8	42.0	19.0	14.8	8.7	7.4	3.8	4.0	1.3	.4	.7	1.0
25	5.4	38.0	23.0	12.8	7.9	7.5	3.6	3.1	.8	.5	.8	1.0
26	5.2	33.8	25.1	11.7	7.6	7.5	3.5	3.0	.6	.6	.9	1.1
27	5.2	28.0	26.3	11.0	7.0	7.0	3.7	2.6	.6	.5	1.0	2.0
28	5.8	28.9	26.7	10.8	6.8	6.8	4.0	2.0	.6	.2	.8	3.0
29	6.0	....	25.4	10.0	6.4	9.5	4.0	1.7	.6	.0	.5	3.1
30	7.0	....	25.2	9.8	6.7	11.4	3.5	1.6	.5	.0	.5	2.6
31	7.2	....	26.2	....	6.5	....	3.5	1.5	....	.0	....	1.8

Rating table for Alabama River at Selma for 1900 and 1901.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second feet.*	*Feet.*	*Second feet.*	*Feet.*	*Second feet.*	*Feet.*	*Second feet.*
0. 0	6, 700	4. 0	11, 820	8. 0	22, 180	12. 0	32, 820
. 1	6, 770	4. 1	12, 015	8. 1	22, 446	12. 1	33, 086
. 2	6, 845	4. 2	12, 220	8. 2	22, 712	12. 2	33, 352
. 3	6, 925	4. 3	12, 435	8. 3	22, 978	12. 3	33, 618
. 4	7, 010	4. 4	12, 660	8. 4	23, 244	12. 4	33, 884
. 5	7, 100	4. 5	12, 900	8. 5	23, 510	12. 5	34; 150
. 6	7, 184	4. 6	13, 150	8. 6	23, 776	12. 6	34, 416
. 7	7, 282	4. 7	13, 405	8. 7	24, 042	12. 7	34, 682
. 8	7, 384	4. 8	13, 668	8. 8	24, 308	12. 8	34, 948
. 9	7, 488	4. 9	13, 934	8. 9	24, 574	12. 9	35, 214
1. 0	7, 596	5. 0	14, 200	9. 0	24, 840	13. 0	35, 480
1. 1	7, 706	5. 1	14, 466	9. 1	25, 106	13. 1	35, 746
1. 2	7, 818	5. 2	14, 732	9. 2	25, 372	13. 2	36, 012
1. 3	7, 931	5. 3	14, 998	9. 3	25, 638	13. 3	36, 278
1. 4	8, 045	5. 4	15, 264	9. 4	25, 904	13. 4	36, 544
1. 5	8, 160	5. 5	15, 530	9. 5	26, 170	13. 5	36, 810
1. 6	8, 270	5. 6	15, 796	9. 6	26, 436	13. 6	37, 076
1. 7	8, 393	5. 7	16, 062	9. 7	26, 702	13. 7	37, 342
1. 8	8, 511	5. 8	16, 328	9. 8	26, 968	13. 8	37, 608
1. 9	8, 630	5. 9	16, 594	9. 9	27, 234	13. 9	37, 874
2. 0	8, 750	6. 0	16, 860	10. 0	27, 500	14. 0	38, 140
2. 1	8, 872	6. 1	17, 126	10. 1	27, 760	14. 1	38, 406
2. 2	8, 996	6. 2	17, 392	10. 2	28, 032	14. 2	38, 672
2. 3	9, 124	6. 3	17, 658	10. 3	28, 290	14. 3	38, 838
2. 4	9, 256	6. 4	17, 924	10. 4	28, 564	14. 4	39, 104
2. 5	9, 392	6. 5	18, 190	10. 5	28, 830	14. 5	39, 370
2. 6	9, 532	6. 6	18, 456	10. 6	29, 096	14. 6	39, 676
2. 7	9, 676	6. 7	18, 722	10. 7	29, 362	14. 7	40, 002
2. 8	9, 822	6. 8	18, 988	10. 8	29, 628	14. 8	40, 268
2. 9	9, 970	6. 9	19, 254	10. 9	29, 894	14. 9	40, 534
3. 0	10, 120	7. 0	19, 520	11. 0	30, 160	15. 0	40, 800
3. 1	10, 272	7. 1	19, 786	11. 1	30, 426	15. 1	41, 066
3. 2	10, 428	7. 2	20, 052	11. 2	30, 692	15. 2	41, 332
3. 3	10, 588	7. 3	20, 318	11. 3	30, 958	15. 3	41, 598
3. 4	10, 752	7. 4	20, 584	11. 4	31, 224	15. 4	41, 864
3. 5	10, 920	7. 5	20, 850	11. 5	31, 490	15. 5	42, 130
3. 6	11, 092	7. 6	21, 116	11. 6	31, 756	15. 6	42, 396
3. 7	11, 268	7. 7	21, 382	11. 7	32, 022	15. 7	42, 662
3. 8	11, 448	7. 8	21, 648	11. 8	32, 228	15. 8	42, 928
3. 9	11, 632	7. 9	21, 914	11. 9	32, 556	15. 9	43, 194

Rating table for Alabama River at Selma for 1900 and 1901—Continued.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
16.0	43,460	19.6	53,036	23.2	62,612	26.8	72,188
16.1	43,726	19.7	53,302	23.3	62,878	26.9	72,454
16.2	43,992	19.8	53,568	23.4	63,144	27.0	72,720
16.3	44,258	19.9	53,884	23.5	63,410	27.1	72,986
16.4	44,524	20.0	54,100	23.6	63,676	27.2	73,252
16.5	44,790	20.1	54,366	23.7	63,942	27.3	73,518
16.6	45,056	20.2	54,632	23.8	64,208	27.4	73,784
16.7	45,322	20.3	54,898	23.9	64,474	27.5	74,050
16.8	45,588	20.4	55,164	24.0	64,740	27.6	74,316
16.9	45,854	20.5	55,430	24.1	65,006	27.7	74,582
17.0	46,120	20.6	55,696	24.2	65,272	27.8	74,848
17.1	46,386	20.7	55,962	24.3	65,538	27.9	75,114
17.2	46,652	20.8	56,228	24.4	65,804	28.0	75,380
17.3	46,918	20.9	56,494	24.5	66,070	28.1	75,646
17.4	47,184	21.0	56,760	24.6	66,336	28.2	75,912
17.5	47,450	21.1	57,026	24.7	66,602	28.3	76,178
17.6	47,716	21.2	57,292	24.8	66,868	28.4	76,444
17.7	47,982	21.3	57,558	24.9	67,134	28.5	76,710
17.8	48,248	21.4	57,824	25.0	67,400	28.6	76,976
17.9	48,514	21.5	58,090	25.1	67,666	28.7	77,242
18.0	48,780	21.6	58,356	25.2	67,932	28.8	77,508
18.1	49,046	21.7	58,622	25.3	68,198	28.9	77,744
18.2	49,312	21.8	58,888	25.4	68,464	29.0	78,040
18.3	49,578	21.9	59,154	25.5	68,730	29.1	78,306
18.4	49,844	22.0	59,420	25.6	68,996	29.2	78,572
18.5	50,110	22.1	59,686	25.7	69,262	29.3	78,838
18.6	50,376	22.2	59,952	25.8	69,528	29.4	79,104
18.7	50,642	22.3	60,218	25.9	69,794	29.5	79,370
18.8	50,908	22.4	60,484	26.0	70,060	29.6	79,636
18.9	51,174	22.5	60,750	26.1	70,326	29.7	79,902
19.0	51,440	22.6	61,016	26.2	70,592	29.8	80,168
19.1	51,706	22.7	61,282	26.3	70,858	29.9	80,434
19.2	51,972	22.8	61,548	26.4	71,124	30.0	80,700
19.3	52,238	22.9	61,814	26.5	71,390		
19.4	52,504	23.0	62,080	26.6	71,656		
19.5	52,770	23.1	62,346	26.7	71,922		

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Rating table for Alabama River at Selma for 1902.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
−0.4	6,470	3.6	11,092	11.5	31,490	28.0	75,380
− .2	6,575	3.8	11,448	12.0	32,820	29.0	78,040
.0	6,700	4.0	11,820	12.5	34,150	30.0	80,700
.2	6,845	4.2	12,220	13.0	35,480	31.0	83,360
.4	7,009	4.4	12,660	13.5	36,810	32.0	86,020
.6	7,189	4.6	13,150	14.0	38,140	33.0	88,680
.8	7,384	4.8	13,668	14.5	39,370	34.0	91,340
1.0	7,596	5.0	14,200	15.0	40,800	35.0	94,000
1.2	7,818	5.5	15,530	16.0	43,460	36.0	96,660
1.4	8,045	6.0	16,860	17.0	46,120	37.0	99,320
1.6	8,276	6.5	18,190	18.0	48,780	38.0	101,980
1.8	8,511	7.0	19,520	19.0	51,440	39.0	104,640
2.0	8,750	7.5	20,850	20.0	54,100	40.0	107,300
2.2	8,996	8.0	22,180	21.0	56,760	41.0	109,960
2.4	9,256	8.5	23,510	22.0	59,420	42.0	112,620
2.6	9,532	9.0	24,840	23.0	62,080	43.0	115,280
2.8	9,822	9.5	26,170	24.0	64,740	44.0	117,940
3.0	10,120	10.0	27,500	25.0	67,400	45.0	120,600
3.2	10,428	10.5	28,830	26.0	70,060	46.0	123,260
3.4	10,752	11.0	30,160	27.0	72,720	47.0	125,920

Rating table for Alabama River at Selma for 1903.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
−0.30	6,262	4.30	13,570	8.90	23,540	13.50	34,410
− .20	6,364	4.40	13,770	9.00	23,760	13.60	34,670
− .10	6,470	4.50	13,980	9.10	23,990	13.70	34,940
.00	6,580	4.60	14,190	9.20	24,220	13.80	35,210
.10	6,692	4.70	14,400	9.30	24,450	13.90	35,480
.20	6,806	4.80	14,610	9.40	24,680	14.00	35,750
.30	6,922	4.90	14,820	9.50	24,910	15.00	38,450
.40	7,040	5.00	15,030	9.60	25,140	16.00	41,200
.50	7,160	5.10	15,240	9.70	25,370	17.00	43,950
.60	7,282	5.20	15,450	9.80	25,600	18.00	46,700
.70	7,406	5.30	15,660	9.90	25,830	19.00	49,450
.80	7,532	5.40	15,870	10.00	26,060	20.00	52,200
.90	7,660	5.50	16,080	10.10	26,290	21.00	54,950
1.00	7,790	5.60	16,290	10.20	26,520	22.00	57,700
1.10	7,920	5.70	16,500	10.30	26,750	23.00	60,450
1.20	8,060	5.80	16,720	10.40	26,980	24.00	63,200
1.30	8,200	5.90	16,940	10.50	27,210	25.00	65,950
1.40	8,340	6.00	17,160	10.60	27,440	26.00	68,700
1.50	8,480	6.10	17,380	10.70	27,670	27.00	71,450
1.60	8,620	6.20	17,600	10.80	27,900	28.00	74,200
1.70	8,770	6.30	17,820	10.90	28,130	29.00	76,950
1.80	8,920	6.40	18,040	11.00	28,360	30.00	79,700
1.90	9,070	6.50	18,260	11.10	28,590	31.00	82,450
2.00	9,230	6.60	18,480	11.20	28,820	32.00	85,200
2.10	9,390	6.70	18,700	11.30	29,050	33.00	87,950
2.20	9,550	6.80	18,920	11.40	29,280	34.00	90,700
2.30	9,710	6.90	19,140	11.50	29,510	35.00	93,450
2.40	9,880	7.00	19,360	11.60	29,740	36.00	96,200
2.50	10,050	7.10	19,580	11.70	29,970	37.00	98,950
2.60	10,220	7.20	19,800	11.80	30,200	38.00	101,700
2.70	10,400	7.30	20,020	11.90	30,430	39.00	104,450
2.80	10,590	7.40	20,240	12.00	30,660	40.00	107,200
2.90	10,780	7.50	20,460	12.10	30,900	41.00	109,950
3.00	10,970	7.60	20,680	12.20	31,140	42.00	112,700
3.10	11,170	7.70	20,900	12.30	31,380	43.00	115,450
3.20	11,370	7.80	21,120	12.40	31,620	44.00	118,200
3.30	11,570	7.90	21,340	12.50	31,860	45.00	120,950
3.40	11,770	8.00	21,560	12.60	32,110	46.00	123,700
3.50	11,970	8.10	21,780	12.70	32,360	47.00	126,450
3.60	12,170	8.20	22,000	12.80	32,610	48.00	129,200
3.70	12,360	8.30	22,220	12.90	32,860	49.00	131,950
3.80	12,570	8.40	22,440	13.00	33,110	50.00	134,700
3.90	12,770	8.50	22,660	13.10	33,370	51.00	137,450
4.00	12,970	8.60	22,880	13.20	33,630		
4.10	13,170	8.70	23,100	13.30	33,890		
4.20	13,370	8.80	23,320	13.40	34,150		

Estimated monthly discharge of Alabama River at Selma.

[Drainage area, 13,500 square miles.]

Month.	Discharge in second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1900.					
January	50,110	9,676	26,495	1.96	2.26
February	128,540	10,920	63,763	4.72	4.91
March	89,478	37,874	58,272	4.32	4.98
April	109,960	21,648	60,909	4.51	5.03
May	41,864	13,668	21,090	1.56	1.80
June	94,000	12,220	35,288	2.61	2.91
July	93,468	12,660	33,964	2.52	2.90
August	38,140	9,124	14,156	1.05	1.21
September	52,504	7,189	17,366	1.29	1.44
October	35,480	7,097	14,492	1.07	1.23
November	46,120	7,596	18,506	1.37	1.53
December	48,780	8,750	28,989	2.15	2.48
The year	128,540	7,097	33,772	2.34	32.68
1901.					
January	107,300	22,446	61,213	4.53	5.22
February	95,862	30,692	55,037	4.08	4.25
March	92,670	21,382	39,017	2.89	3.33
April	104,640	32,288	73,048	5.41	6.04
May	59,420	10,120	26,966	2.00	2.31
June	53,568	7,818	26,030	1.93	2.15
July	21,318	7,596	13,536	1.00	1.15
August	66,868	9,532	30,853	2.29	2.64
September	46,120	10,428	19,394	1.44	1.61
October	21,914	7,931	11,022	.82	.95
November	8,750	7,931	8,266	.61	.68
December	94,000	8,511	26,638	1.97	2.27
The year	107,300	7,596	32,585	2.47	32.60

Estimated monthly discharge of Alabama River at Selma—Continued.

Month.	Discharge in second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1902.					
January	124, 856	18, 190	52, 655	3. 42	3. 94
February	101, 714	31, 756	54, 898	3. 56	3. 71
March	130, 974	51, 972	90, 404	5. 87	6. 77
April	135, 762	23, 510	62, 017	4. 03	4. 49
May	26, 170	11, 448	18, 859	1. 22	1. 41
June	11, 820	8, 393	9, 682	. 63	. 70
July	9, 392	7, 009	7, 897	. 51	. 59
August	8, 160	6, 470	7, 176	. 47	. 54
September	11, 448	6, 520	7, 871	. 51	. 57
October	16, 860	6, 635	10, 184	. 66	. 76
November	21, 116	6, 845	9, 557	. 62	. 69
December	68, 996	11, 448	33, 122	2. 15	2. 48
The year	135, 762	6, 470	30, 360	1. 97	26. 65
1903.					
January	33, 100	15, 450	23, 039	1. 50	1. 73
February	136, 350	18, 920	90, 958	5. 91	6. 15
March	114, 900	41, 200	78, 139	5. 07	5. 85
April	83, 560	25, 600	53, 852	3. 50	3. 90
May	83, 000	18, 040	33, 338	2. 16	2. 49
June	43, 950	16, 950	27, 142	1. 76	1. 96
July	26, 060	11, 970	18, 122	1. 18	1. 36
August	20, 900	8, 480	14, 205	. 92	1. 06
September	10, 050	6, 580	7, 781	. 51	. 57
October	7, 282	6, 262	6, 835	. 44	. 51
November	7, 920	6, 364	7, 310	. 47	. 52
December	11, 170	6, 922	7, 801	. 51	. 59
The year	136, 350	6, 262	30, 710	1. 99	26. 69

Net horsepower per foot of fall with a turbine efficiency of 80 per cent for the minimum monthly discharge of Alabama River at Selma.

Month.	1899.			1900.			1901.		
	Mini-mum dis-charge.	Mini-mum net horse-power per foot of fall.	Dura-tion of mini-mum.	Mini-mum dis-charge.	Mini-mum net horse-power per foot of fall.	Dura-tion of mini-mum.	Mini-mum dis-charge.	Mini-mum net horse-power per foot of fall.	Dura-tion of mini-mum.
	Sec.-ft.		*Days.*	*Sec.-ft.*		*Days.*	*Sec.-ft.*		*Days.*
January	16,328	1,484	1	9,676	880	2	22,446	2,041	1
February	29,628	2,693	1	10,920	993	1	30,692	2,790	1
March	37,874	3,443	1	37,874	3,443	2	21,382	1,944	1
April	27,760	2,524	1	21,648	1,968	1	32,288	2,935	1
May	12,220	1,111	1	13,668	1,243	1	10,120	920	2
June...........	8,045	731	2	12,220	1,111	2	7,818	711	2
July	7,184	653	2	12,660	1,151	1	7,596	691	1
August.........	9,532	867	3	9,124	829	1	9,532	867	2
September	5,800	527	2	7,189	653	1	10,428	948	1
October........	5,400	491	1	7,100	645	1	7,931	721	2
November	5,700	518	3	7,596	691	7	7,931	721	3
December......	7,931	721	2	8,750	795	1	8,511	774	2

CAHABA RIVER AND TRIBUTARIES.

CAHABA RIVER AT CENTERVILLE.

This station is at the Bibb County highway bridge, one-fourth of a mile west of the court-house at Centerville. The bridge is a single-span iron through bridge. The length of the span is about 175 feet. The floor of the bridge is 41½ feet above low water, and the stream is 130 feet wide at low water.

The initial point of sounding is at the end of the iron bridge, left bank, downstream. The gage is of wire, with rod fastened to the outside of the downstream guard rail, and graded to feet and tenths. The gage pulley is at station 100. Bench mark No. 1, at the downstream end of the top of the iron crossbeam under the bridge floor at station 100 from initial point, is 42.85 above gage datum. Bench mark No. 2, at the top of the bottom flange of the same crossbeam, directly under bench mark No. 1, is 41.40 above datum of gage. The banks are high but overflow at time of high water. The section is swift and tolerably uniform, and the bottom appears to be rock.

The river observer is Mr. Clyde Lowrey, who lives about a third of a mile from the gage.

The following discharge measurements have been made on Cahaba River at Centerville by M. R. Hall and others:

Discharge measurements of Cahaba River at Centerville.

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.
1901.	*Feet.*	*Second-feet.*	**1903.**	*Feet.*	*Second-feet.*
April 25	5.50	1,925	June 17.............	2.05	416
August 7.............	1.30	399	June 18.............	2.00	394
1902.			July 20	3.23	757
January 25..........	5.15	1,707	July 21	2.36	516
April 7	8.60	2,823	September 28	1.31	212
July 9	2.40	251	September 29	1.30	218
1903.			November 9........	1.32	203
April 8	5.15	1,637	November 10.......	1.40	223
April 9	6.65	2,225			

Daily gage height, in feet, of Cahaba River at Centerville.

Day.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1901.												
1									2.2	2.1	1.2	1.4
2									2.0	2.0	1.2	1.3
3									1.9	1.8	1.2	1.6
4									1.8	1.4	1.2	1.9
5									1.6	2.3	1.2	1.8
6									1.5	4.6	1.1	1.6
7								1.3	1.4	3.1	1.1	1.7
8								1.3	1.4	2.6	1.1	1.6
9								1.2	1.4	2.3	1.2	1.7
10								1.2	1.4	1.9	1.2	2.1
11								1.2	1.3	1.6	1.2	2.0
12								1.2	1.3	1.4	1.3	1.8
13								1.3	1.3	1.4	1.4	1.9
14								1.5	2.6	1.4	1.3	2.9
15								2.1	2.4	1.3	1.3	19.0
16								7.9	2.0	1.3	1.3	15.0
17								7.7	2.1	1.3	1.3	12.3
18								8.1	2.6	1.3	1.3	4.4
19								9.1	3.9	1.3	1.7	3.6
20								10.6	4.1	1.3	1.6	3.1
21								14.7	2.0	1.3	1.6	2.9
22								10.3	1.9	1.3	1.5	2.6
23								7.9	1.8	1.3	1.6	2.5
24								5.6	1.6	1.2	1.6	2.6
25								4.8	1.5	1.2	1.5	2.7
26								4.1	1.4	1.2	1.5	2.7
27								3.9	1.4	1.2	1.5	2.7
28								3.4	1.4	1.2	1.4	6.0
29								3.0	2.6	1.3	1.4	24.0
30								2.8	2.2	1.3	1.4	24.0
31								2.5	....	1.3	....	21.0

Daily gage height, in feet, of Cahaba River at Centerville—Continued.

Day.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1902.												
1	13.6	16.8	24.0	15.4	4.9	2.8	2.3	2.2	2.3	2.4	2.0	3.0
2	9.0	24.6	18.2	12.1	4.5	2.8	2.3	2.8	2.3	2.6	2.0	2.5
3	6.9	21.2	13.3	11.4	4.0	2.7	2.2	2.5	3.3	2.6	2.0	2.9
4	5.7	16.6	9.8	10.9	3.7	2.6	2.2	2.5	3.2	2.5	2.0	3.1
5	4.9	10.6	12.0	10.4	3.6	2.6	2.2	2.4	2.9	2.4	2.0	5.6
6	4.5	8.3	12.1	8.6	3.5	2.5	2.2	2.4	2.4	2.2	2.0	5.1
7	4.1	7.3	8.7	8.2	3.6	2.5	2.2	2.3	2.3	2.2	2.9	4.9
8	3.9	6.7	8.3	13.6	3.5	2.4	2.2	2.3	2.3	2.2	2.4	4.2
9	3.7	5.8	7.9	12.2	3.4	2.3	2.3	2.3	2.2	2.7	2.4	3.9
10	3.4	5.4	7.6	9.6	3.4	2.3	2.5	2.3	2.2	2.8	2.3	3.6
11	3.2	5.1	6.3	8.0	3.3	2.4	2.9	2.3	2.2	10.8	2.3	3.2
12	3.0	4.8	6.1	7.2	3.3	2.4	3.5	2.2	2.1	7.1	2.2	3.0
13	2.9	4.3	5.9	6.9	3.4	2.3	3.3	2.1	2.1	5.4	2.2	3.0
14	.2.7	5.7	5.2	6.5	3.5	2.3	3.2	2.1	2.0	3.4	2.2	3.0
15	2.6	5.9	6.2	6.1	4.1	2.3	2.6	2.1	2.0	3.2	2.1	3.9
16	2.4	6.3	22.3	5.6	8.4	2.3	2.4	2.1	2.0	3.0	2.2	15.3
17	2.3	5.6	22.2	5.9	8.4	2.3	2.2	2.1	2.0	2.9	2.2	13.5
18	3.1	5.3	17.3	5.7	5.3	2.2	2.2	2.1	2.0	2.9	2.3	12.7
19	3.6	4.9	11.1	5.6	4.3	2.3	2.2	2.1	2.0	2.6	2.4	9.9
20	3.9	4.8	8.6	5.2	4.2	2.5	2.3	2.1	2.1	2.5	2.2	7.5
21	4.6	5.1	8.9	4.9	4.2	2.4	2.4	2.1	2.1	2.5	2.2	6.3
22	6.9	5.1	9.1	4.6	3.9	2.6	2.3	2.1	2.0	2.4	2.2	7.8
23	5.8	5.0	7.3	4.5	3.6	2.5	2.2	2.1	2.0	2.3	2.2	8.2
24	5.1	5.1	7.8	4.5	3.5	2.4	2.2	2.1	2.0	2.2	2.2	10.3
25	5.0	5.9	13.6	4.4	3.3	2.4	2.2	2.1	2.0	2.2	2.2	7.3
26	4.9	6.5	11.9	4.3	3.2	2.4	2.1	2.1	2.0	2.1	2.9	6.5
27	6.2	8.1	28.8	4.2	3.0	2.4	2.1	2.2	2.1	2.1	3.4	5.1
28	7.0	27.6	35.0	4.1	2.9	2.3	2.1	2.3	2.3	2.0	4.2	4.9
29	8.3	......	29.2	4.3	2.8	2.3	2.1	2.5	2.2	2.0	3.5	4.5
30	8.1	......	25.2	4.9	2.8	2.3	2.2	2.6	3.0	2.0	3.2	4.1
31	11.6	......	24.0	......	2.9	......	2.2	2.5	......	2.0	......	4.9
1903.												
1	5.9	5.8	23.8	8.2	3.0	2.8	2.4	4.8	1.5	1.3	1.6	1.4
2	6.4	4.9	18.1	7.0	3.1	2.7	2.2	6.1	1.5	1.2	1.6	1.4
3	7.7	6.4	12.6	6.3	3.0	2.7	2.1	4.6	1.5	1.2	1.5	1.4
4	7.4	8.8	12.0	5.8	2.9	2.8	2.1	3.0	1.5	1.3	1.5	1.4
5	6.1	12.9	13.3	5.1	2.8	2.9	2.0	2.9	1.5	1.3	1.5	1.4
6	5.6	12.0	11.1	4.9	2.7	2.9	1.9	2.4	1.5	1.3	1.5	1.5
7	4.9	20.6	9.8	4.7	2.8	3.1	3.6	2.8	1.5	1.3	1.4	1.6
8	4.5	31.6	12.3	4.7	3.1	3.2	3.4	2.9	1.4	2.8	1.4	1.6
9	4.3	26.8	15.1	6.6	3.0	3.4	2.8	2.8	1.4	2.1	1.3	1.5
10	4.1	20.5	12.4	6.3	2.8	2.8	2.9	3.7	1.4	1.8	1.3	1.5
11	10.6	22.0	16.3	5.6	2.7	2.9	2.8	2.1	1.4	1.6	1.4	1.5
12	14.7	20.5	15.8	5.2	3.3	2.8	2.9	1.9	1.4	1.5	1.6	1.5
13	11.3	16.9	15.2	4.6	5.0	2.5	2.8	1.9	1.4	1.5	1.7	1.5
14	7.9	11.7	14.6	5.8	12.9	2.4	2.8	1.8	1.6	1.5	1.6	1.6
15	6.5	9.6	13.9	5.7	17.8	2.3	2.3	2.7	1.7	1.4	1.5	1.6
16	5.8	22.9	12.2	4.8	17.7	2.2	2.1	3.5	1.7	1.4	1.3	1.6
17	5.3	26.4	10.9	4.4	9.4	2.1	2.0	5.1	1.6	1.4	1.3	1.6
18	4.9	24.5	8.2	4.2	7.2	2.0	2.0	4.7	1.6	1.4	1.3	1.5
19	4.6	16.6	7.3	4.0	5.8	2.0	2.8	3.8	1.5	1.3	1.4	1.5
20	4.3	12.4	6.8	3.9	4.9	1.9	3.8	3.4	1.5	1.3	1.4	1.5
21	4.2	9.9	6.3	5.5	4.4	1.9	2.3	2.7	1.6	1.3	1.4	1.5
22	4.0	8.1	7.0	5.1	4.0	2.7	1.9	2.4	1.6	1.3	1.3	1.6
23	3.9	7.3	6.8	4.3	3.7	3.4	1.7	2.2	1.5	1.3	1.3	1.6
24	3.8	6.7	6.3	3.9	3.5	2.6	1.6	2.1	1.5	1.3	1.4	1.6
25	4.0	5.8	5.9	3.7	3.2	2.8	2.4	2.0	1.5	1.3	1.4	1.7
26	3.8	5.2	5.4	3.6	3.1	2.9	1.7	1.9	1.5	1.3	1.4	2.0
27	3.8	5.9	5.1	3.5	3.0	3.4	1.7	1.8	1.5	1.3	1.4	1.9
28	6.0	27.2	5.1	3.3	2.9	3.3	1.6	1.8	1.4	1.3	1.4	1.7
29	6.4	......	6.3	3.2	2.8	3.1	1.6	1.6	1.3	1.3	1.4	1.5
30	6.2	......	7.7	3.0	2.7	2.6	1.5	1.5	1.3	1.3	1.4	1.5
31	5.9	......	9.2	......	2.9	......	5.7	1.5	......	1.5	......	1.5

Rating table for Cahaba River at Centerville for 1901.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
1.1	326	4.9	1,694	8.7	3,062	12.5	4,430
1.2	362	5.0	1,730	8.8	3,098	12.6	4,466
1.3	398	5.1	1,766	8.9	3,134	12.7	4,502
1.4	434	5.2	1,802	9.0	3,170	12.8	4,538
1.5	470	5.3	1,838	9.1	3,206	12.9	4,574
1.6	506	5.4	1,874	9.2	3,242	13.0	4,610
1.7	542	5.5	1,910	9.3	3,278	13.1	4,646
1.8	578	5.6	1,946	9.4	3,314	13.2	4,682
1.9	614	5.7	1,982	9.5	3,350	13.3	4,718
2.0	650	5.8	2,018	9.6	3,386	13.4	4,754
2.1	686	5.9	2,054	9.7	3,422	13.5	4,790
2.2	722	6.0	2,090	9.8	3,458	13.6	4,826
2.3	758	6.1	2,126	9.9	3,494	13.7	4,862
2.4	794	6.2	2,162	10.0	3,530	13.8	4,898
2.5	830	6.3	2,198	10.1	3,566	13.9	4,934
2.6	866	6.4	2,234	10.2	3,602	14.0	4,970
2.7	902	6.5	2,270	10.3	3,638	14.1	5,006
2.8	938	6.6	2,306	10.4	3,674	14.2	5,042
2.9	974	6.7	2,342	10.5	3,710	14.3	5,078
3.0	1,010	6.8	2,378	10.6	3,746	14.4	5,114
3.1	1,046	6.9	2,414	10.7	3,782	14.5	5,150
3.2	1,082	7.0	2,450	10.8	3,818	14.6	5,186
3.3	1,118	7.1	2,486	10.9	3,856	14.7	5,222
3.4	1,154	7.2	2,522	11.0	3,890	14.8	5,258
3.5	1,190	7.3	2,558	11.1	3,926	14.9	5,294
3.6	1,226	7.4	2,594	11.2	3,962	15.0	5,330
3.7	1,262	7.5	2,630	11.3	3,998	15.1	5,366
3.8	1,298	7.6	3,666	11.4	4,034	15.2	5,402
3.9	1,334	7.7	2,702	11.5	4,070	15.3	5,438
4.0	1,370	7.8	2,738	11.6	4,106	15.4	5,474
4.1	1,406	7.9	2,774	11.7	4,142	15.5	5,510
4.2	1,442	8.0	2,810	11.8	4,178	15.6	5,546
4.3	1,478	8.1	2,846	11.9	4,214	15.7	5,582
4.4	1,514	8.2	2,882	12.0	4,250	15.8	5,618
4.5	1,550	8.3	2,918	12.1	4,286	15.9	5,654
4.6	1,586	8.4	2,954	12.2	4,322	16.0	5,690
4.7	1,622	8.5	2,996	12.3	4,358		

Rating table for Cahaba River at Centerville for 1902.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
1.0	245	4.6	1,510	11.5	3,925	20.5	7,075
1.2	320	4.8	1,580	12.0	4,100	21.0	7,250
1.4	390	5.0	1,650	12.5	4,275	22.0	7,600
1.6	460	5.2	1,720	13.0	4,450	23.0	7,950
1.8	530	5.4	1,790	13.5	4,625	24.0	8,300
2.0	600	5.6	1,860	14.0	4,800	25.0	8,650
2.2	670	5.8	1,930	14.5	4,975	26.0	9,000
2.4	740	6.0	2,000	15.0	5,150	27.0	9,350
2.6	810	6.5	2,175	15.5	5,325	28.0	9,700
2.8	880	7.0	2,350	16.0	5,500	29.0	10,050
3.0	950	7.5	2,525	16.5	5,675	30.0	10,400
3.2	1,020	8.0	2,700	17.0	5,850	31.0	10,750
3.4	1,090	8.5	2,875	17.5	6,025	32.0	11,100
3.6	1,160	9.0	3,050	18.0	6,200	33.0	11,450
3.8	1,230	9.5	3,225	18.5	6,375	34.0	11,800
4.0	1,300	10.0	3,400	19.0	6,550	35.0	12,150
4.2	1,370	10.5	3,575	19.5	6,725		
4.4	1,440	11.0	3,750	20.0	6,900		

Rating table for Cahaba River at Centerville for 1903.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
1.00	143	4.10	1,195	7.20	2,435	13.00	4,755
1.10	163	4.20	1,235	7.30	2,475	13.30	4,875
1.20	184	4.30	1,275	7.40	2,515	13.90	5,115
1.30	206	4.40	1,315	7.50	2,555	14.00	5,155
1.40	229	4.50	1,355	7.60	2,595	14.60	5,295
1.50	253	4.60	1,395	7.70	2,635	14.70	5,435
1.60	279	4.70	1,435	7.80	2,675	15.00	5,555
1.70	306	4.80	1,475	7.90	2,715	15.10	5,595
1.80	335	4.90	1,515	8.00	2,755	15.20	5,635
1.90	365	5.00	1,555	8.10	2,795	15.80	5,875
2.00	397	5.10	1,595	8.20	2,835	16.00	5,959
2.10	430	5.20	1,635	8.30	2,875	16.30	6,075
2.20	463	5.30	1,675	8.80	3,075	16.60	6,195
2.30	497	5.40	1,715	9.00	3,155	16.90	6,315
2.40	532	5.50	1,755	9.20	3,235	18.00	6,755
2.50	568	5.60	1,795	9.60	3,395	18.10	6,795
2.60	604	5.70	1,835	9.80	3,475	20.00	7,555
2.70	640	5.80	1,875	9.90	3,515	20.50	7,755
2.80	676	5.90	1,915	10.00	3,555	20.60	7,795
2.90	715	6.00	1,955	10.60	3,795	22.00	8,355
3.00	755	6.10	1,995	10.90	3,915	22.90	8,715
3.10	795	6.20	2,035	11.00	3,955	23.00	8,755
3.20	835	6.30	2,075	11.10	3,995	23.80	9,075
3.30	875	6.40	2,115	11.30	4,075	24.00	9,155
3.40	915	6.50	2,155	11.70	4,235	24.50	9,355
3.50	955	6.60	2,195	12.00	4,355	26.00	9,955
3.60	995	6.70	2,235	12.20	4,435	26.40	10,155
3.70	1,035	6.80	2,275	12.30	4,475	26.80	10,275
3.80	1,075	6.90	2,315	12.40	4,515	31.00	11,955
3.90	1,115	7.00	2,355	12.60	4,595	31.60	12,195
4.00	1,155	7.10	2,395	12.90	4,715		

Estimated monthly discharge of Cahaba River at Centerville.

[Drainage area, 1,040 square miles.]

Month.	Discharge in second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1902.					
January	4,660	705	1,739	1.67	1.93
February	9,560	1,405	2,955	2.84	2.96
March	12,150	1,720	4,799	4.61	5.31
April	5,290	1,335	2,464	2.37	2.64
May	2,840	880	1,282	1.23	1.42
June	880	670	749	.72	.80
July	1,125	635	730	.70	.81
August	880	635	690	.66	.76
September	1,055	600	689	.66	.74
October	3,680	600	939	.90	1.04
November	1,370	600	746	.72	.80
December	5,255	775	1,974	1.90	2.19
The year	12,150	600	1,646	1.58	21.40
1903.					
January	5,435	1,075	1,940	1.87	2.16
February	12,195	1,515	5,412	5.20	5.41
March	9,075	1,595	3,849	3.70	4.27
April	2,835	755	1,514	1.46	1.63
May	6,675	640	1,518	1.44	1.68
June	915	365	648	.62	.69
July	1,835	253	560	.54	.62
August	1,995	253	721	.69	.80
September	306	206	252	.24	.27
October	676	184	243	.23	.27
November	306	206	237	.23	.26
December	397	229	268	.26	.30
The year	12,195	184	1,430	1.38	18.36

Net horsepower per foot of fall with a turbine efficiency of 80 per cent for the minimum monthly discharge of Cahaba River at Centerville.

Month.	1901.			1902.			1903.		
	Minimum discharge.	Minimum net horsepower per foot of fall.	Duration of minimum.	Minimum discharge.	Minimum net horsepower per foot of fall.	Duration of minimum.	Minimum discharge.	Minimum net horsepower per foot of fall.	Duration of minimum.
	Sec.-ft.		*Days.*	*Sec.-ft.*		*Days.*	*Sec.-ft.*		*Days.*
January				705	64	1	1,075	98	3
February				1,405	128	1	1,515	138	1
March				1,720	156	1	1,595	145	2
April				1,335	121	1	755	69	1
May				880	80	2	640	58	2
June				670	61	1	365	33	2
July				635	58	4	253	23	1
August	362	33	4	635	58	14	253	23	2
September	398	36	3	600	55	11	206	19	3
October	362	33	5	600	55	4	184	17	2
November	326	30	3	600	55	6	206	19	7
December	398	36	1	775	70	1	229	21	5

WATER POWERS ON CAHABA RIVER.

Cahaba River rises near Birmingham, and, flowing in a southerly direction, enters Alabama River just below Selma.

The Corps of Engineers, United States Army, made a survey of this stream, beginning at the southwestern boundary of Shelby County,
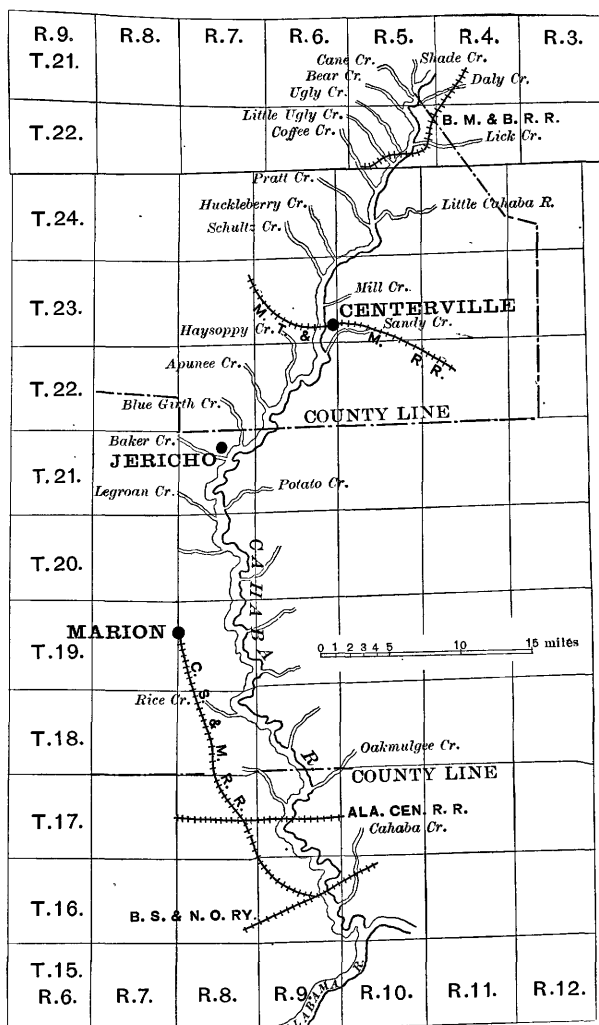
FIG. 7.—Map of portion of Cahaba River surveyed by Corps of Engineers, United States Army.

and running down the river 110 miles to its mouth, in which distance there is a fall of 256 feet. The level notes of this survey are given on the following pages. The map (fig. 7) shows the location of points referred to.

Elevations of water surface of Cahaba River in Alabama from its mouth up to the line of Shelby County.

[Survey by United States Engineer Corps in 1874.]

Distance above mouth.	Location.	Elevation above mean low water of Alabama River at mouth.
Miles.		*Feet.*
0. 0	Alabama River at mouth of Cahaba	0. 00
13. 2	Below Tallys Defeat Island	22. 40
13. 3	Above Tallys Defeat Island	23. 66
16. 0	Foot of Log Creek Shoals	25. 45
20. 0	Head of Log Creek Shoals	31. 85
24. 6	Line between Dallas and Perry counties	37. 50
25. 2	Mouth of Oakmulgee Creek	38. 00
41. 8	Fikes Ferry	62. 47
42. 0	Mouth of Waters Creek	64. 15
44. 0	Shoal	67. 50
44. 3	.....do	69. 00
46. 7	.....do	73. 62
49. 0	Foot of Burras Island Shoal	77. 50
49. 5	On Burras Island Shoal	80. 92
50. 0	Head of Burras Island Shoal	90. 11
53. 0	Shoal	92. 14
53. 8	.....do	95. 08
55. 1	Blocks Cut-off	97. 90
55. 3	.....do	98. 50
55. 7	.....do	99. 70
56. 8	Shoals	100. 39
57. 0	Below Potato Creek Shoals	101. 82
58. 1	Above Potato Creek Shoals	107. 00
61. 6	Below Jericho Island	109. 30
63. 2	Above Jericho Island	111. 20
65. 3	Cluster of islands, mouth of Blue Girth Creek	113. 55
65. 7	Cluster of islands above mouth of Blue Girth Creek	114. 65
67. 6	Below small shoal	115. 50
67. 7	Above small shoal	116. 30
69. 2	Small shoal	116. 50
70. 2	Line between Perry and Bibb counties	118. 00
74. 8	Foot of shoal	123. 40
75. 5	Head of shoal	125. 30
81. 6	Foot of shoal	131. 80
82. 6	Head of shoal	132. 80

Elevations of water surface of Cahaba River in Alabama from its mouth up to the line of Shelby County—Continued.

Distance above mouth.	Location.	Elevation above mean low water of Alabama River at mouth.
Miles.		*Feet.*
85.7	Maberrys Island	133.70
86.7	Ferry, Centerville, Ala., below shoal	134.40
86.7	Ferry, Centerville, Ala., above shoal	136.40
87.5	Mouth of Mill Creek	139.60
88.4	Top of Centerville Shoal (in township 23)	148.00
90.0	Logans Ferry, mouth of Schultz Creek	148.00
91.0	Crossing of range lines 9 and 10	149.00
92.0	East and west line townships 23 and 24	149.00
92.5	Small shoal	149.88
93.0	Mouth of Buckhalter or Huckleberry Creek	151.00
93.2	Jones Ferry	151.00
94.0	Point Lookout	151.90
94.2	Mouth of Rocky Creek	152.00
94.5	Mouth of Palmetto Creek	152.40
94.8	Pratts Ferry, in township 24 N., R. 10 E	152.61
96.0	Below Little Cahaba Shoals	155.00
97.1	Mouth of Little Cahaba River	158.00
97.2	Below small shoal	158.00
97.3	Above small shoal	159.40
97.8	Mouth of Pratts Creek	161.50
98.1	Mouth of Lewis Branch	163.00
98.5	Mouth of Coalbed Branch	172.00
99.1	Opposite Lyman coal shaft at Lick Branch	184.26
99.5	Below small shoal	185.20
99.6	Above small shoal	189.60
99.7	Mouth of Coffee Creek	189.60
100.1	Foot of Bailey Reach Rapids	192.00
100.6	Head of Bailey Reach Rapids	204.80
101.4	Mouth of Little Ugly Creek	205.00
102.1	Mouth of Ugly Creek, in township 22 S., R. 5 W	205.00
102.7	Below small shoal	205.00
102.8	Above small shoal	208.50
103.6	Foot of Lily Shoals	213.00
103.7	Lily Shoals Ford	216.60
104.4	Mouth of Lick Creek	220.00
104.6	Mouth of Bear Branch	220.00
105.7	Mouth of Daly Creek, east and west line sections 11 and 14	221.80

Elevations of water surface of Cahaba River in Alabama from its mouth up to the line of Shelby County—Continued.

Distance above mouth.	Location.	Elevation above mean low water of Alabama River at mouth.
Miles.		*Feet.*
105. 8	Above small shoal	224. 50
106. 3	Small shoal	226. 60
106. 5	....do	228. 40
107. 0	Foot of Long Island Shoal	231. 30
107. 4	Mouth of Cane Creek	243. 50
107. 9	Head of Halfmile Rapids	252. 00
109. 2	Locke Ford	254. 00
110. 3	Mouth of Shades Creek, Shelby County line	255. 88

Miscellaneous discharge measurements of Cahaba River and tributaries.

Date.	Stream.	Location.	Discharge.
1901.			*Second-feet.*
Jan. 28	Hawkins Spring	Birmingham	15. 8
29	Cahaba River	Sydenton	549
Mar. 28	Valley Creek	Adgers Station	378
28	Blocton Creek	Blocton	107
29	Cahaba River	Sydenton	1, 117
Apr. 25	....do	Harrall	6, 560
1903.			
Sept. 30	East Cahaba River	Near Bridgeton, below Dishazo's mill.	30
30	....do	....do	29
Nov. 12	....do	Bridgeton	28
12	....do	Bridgeton, above Dishazo's mill.	21
12	....do	Near Pledger's mill, Shelby County.	13
12	....do	Near Leeds	7

The foregoing measurements give a fair idea of the river flow at all seasons. It may be safely assumed that the flow at different points will bear the same proportion to drainage area as that at Centerville.

In the foregoing level notes the stations are 1 mile apart, and are numbered from zero, at the mouth of the river, up to 110, at the Shelby County line. In the following description of powers that can be developed these mile stations will be referred to as stations:.

Power No. 1.—From the head of "Halfmile Rapids," at station 108, there is a succession of shoals, known as Halfmile, Long Island, Fishtrap, Ford, Reach, and Dry Creek shoals, in which the aggregate fall is 30 feet in 2¼ miles. There is also a fall of about 4 feet from the Shelby County line down to the head of Halfmile Shoal, making a total fall of 34 feet in 4 miles. This can be developed either by building a dam 34 feet high at the mouth of Dry Creek and backing the water to the Shelby County line, or by building a low dam near the head of the shoals and a canal from it to a point opposite the mouth of Dry Creek. Such a development will give about 500 net horsepower, with an 80 per cent turbine at ordinary low season. This power would be near Blocton.

Power No. 2.—By building a 15-foot dam at the head of "Bailey Reach Rapids," near station 101 and near the mouth of Ugly Creek, to back the water to the mouth of Persimmon Branch, near station 104, and constructing from this point a canal along the river bank about 4 miles long, to a point opposite station 97, at the mouth of Little Cahaba River, a practical head of 54 feet can be developed. This allows 8 feet for storage and grade, as the total fall is 62 feet. A 54-foot fall would produce about 800 net horsepower.

The same power can be developed by building a high dam lower down the river and having the canal shorter; or the power can be divided into two separate powers. This power site is between River Bend and Cadle, in Bibb County.

Power No. 3.—From the mouth of Little Cahaba down to station 88½, at the top of Centerville Shoals, there is a fall of 10 feet in 8½ miles, and from the top of Centerville Shoals down to the foot of Centerville Shoals, at Centerville, there is a fall of 13.6 feet in about 1¾ miles. This power can be developed by a 10-foot dam at top of Centerville Shoals and a canal from there to Centerville, 1½ miles long. Allowing 2.6 feet for storage and canal grade, a head of 21 feet can be obtained, which will give 650 net horsepower.

It is probable that a much better method of development will be to erect a dam at Centerville 23.6 feet high to back the water to the mouth of the Little Cahaba. This will produce 732 net horsepower, with storage. The incidental storage of such a dam would add largely to the amount and efficiency of the power. A plant running only twelve hours a day and storing the water at night could utilize 1,440 net horsepower.

This power site is at Centerville, on the Mobile and Ohio Railroad.

Power No. 4.—A 16-foot dam can be built at shoal No. 9, station 69½, in Perry County, just below the Bibb County line. This dam would back the water for 12 miles to shoal No. 2, 4½ miles below Centerville. A 16-foot head will produce 670 horsepower without storage, or 1,340 horsepower by storing the water at night and run-

ning only twelve hours a day. This dam site is about 17 miles below Centerville by river.

Power No. 5.—A 15-foot dam at "Blocks Cut-off," near station 55, will back the water 10 miles to the mouth of Taylors Creek, and will produce 750 continuous, or 1,500 twelve-hour horsepower.

Power No. 6.—At shoal No. 24, station 50, there is a fall of 9 feet in less than half a mile. A 14-foot dam at foot of this shoal, or a 5-foot dam at its head, and a short canal will develop a head of 14 feet and realize 720 continuous, or 1,400 twelve-hour horsepower.

This site is just above Burras Island, 8 or 10 miles northeast of Marion, Ala.

Power No. 7.—From Burras Island to Fikes Ferry there is a fall of 22 feet in a distance of 7 miles, 20 feet of which could probably be utilized by a dam at Fikes Ferry, producing 1,100 continuous, or 2,200 twelve-hour horsepower. Fikes Ferry is near Marion, Ala.

In making the above statement of powers that can be developed, it has been assumed that there are suitable banks for dam sites. The system proposed, or some other system approximating to it, would not interfere with navigation improvements, as locks could be constructed at the dams.

BLACK WARRIOR RIVER AND TRIBUTARIES.

Black Warrior River is formed by the junction of the Mulberry and Sipsey forks of Black Warrior at old Warriortown in Walker County, and runs in a southwesterly direction past Tuscaloosa to Demopolis, Ala., at which point it enters Tombigbee River. Above Tuscaloosa it is known as Black Warrior River and below Tuscaloosa as Warrior River.

BLACK WARRIOR RIVER AT TUSCALOOSA.

A gage at Tuscaloosa was placed in position by the United States Corps of Engineers in 1888. It is about three-fourths of a mile from the business center of Tuscaloosa, and is reached by passing down Bridge street to the river, thence down the east bank 1,800 feet to the gage. It consists of an inclined timber 2 by 6 inches, supported on posts and graduated by means of notches placed 1 foot vertically apart. The observer is W. S. Wyman, jr., Tuscaloosa. Observations are taken daily at 7 a. m. The drainage area draining at this point is 4,900 square miles.

The bench marks are fixed, one on a willow 10 feet west of gage, 97.84 feet above Mobile datum, the other on a small hackberry 30 feet south of the upper end of the gage and 139.36 feet above Mobile datum. The current here is rather sluggish, being almost imperceptible at low stages. Both banks are of earth and subject to overflow. Observations of gage heights have been obtained through the courtesy of Mr. R. C. McCalla, jr., of the United States engineers in

charge of Black Warrior River, from the time the gage was established until December 31, 1896. A measurement made by Mr. McCalla September 14, 1896, showed a gage height of −0.60 foot area, 1,022 square feet; mean velocity, 0.16; discharge, 164 second-feet.

Measurements at the same place have been furnished by Mr. Horace Harding, United States assistant engineer. Velocities were obtained by means of rod floats reaching from the water surface to near the bottom. The highest flood occurred on April 8, 1892. The gage height was 62.5, the sectional area 33,600 square feet, and the estimated mean velocity 4.5 feet per second. This gave a discharge of 151,200 second-feet. From this estimate and the following list of measurements a curve has been platted and a rating table constructed, and this rating table applied to all gage heights observed. The estimates of discharge thus obtained are shown in diagrammatic form in Pl. V. The highest discharges are merely approximations, but the discharges shown by the diagrams serve as a basis for comparison of the state of the river during the various years.

Discharge measurements have been made as follows:

Discharge measurements of Black Warrior River at Tuscaloosa.

Date.	Gage height.	Discharge.	Remarks.
1895.	*Feet.*	*Second-feet.*	
December 17	1.10	617	Stationary.
December 21	2.61	1,344	Do.
December 24	3.60	1,733	Rising slowly.
1896.			
January 30	9.99	5,073	Falling 0.05 per hour.
January 31	8.65	4,363	Do.
February 26	8.25	4,360	Falling 0.01 per hour.
February 28	7.27	3,657	Falling 0.02 per hour.
February 29	6.92	3,522	Stationary.
March 2	7.67	4,211	Do.
March 3	7.28	3,632	Falling 0.03 per hour.
March 6	6.94	4,558	Rising 0.15 per hour.
March 24	24.85	13,550	Falling 0.12 per hour.
April 10	9.71	5,331	Falling.
April 11	8.89	4,755	Do.
April 14	8.25	4,675	Rising.
April 20	7.55	3,862	Falling.
April 21	6.65	3,388	Do.
April 22	5.96	2,940	Do.
April 23	5.46	2,704	Do.
April 24	5.88	3,158	Rising.
April 27	5.68	3,049	Do.
1897.			
January 12	1.70	829	

Discharge measurements of Black Warrior River at Tuscaloosa—Continued.

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.
1899.	*Feet.*	*Second-feet.*	**1899.**	*Feet.*	*Second-feet.*
February 21...........	19.36	12,855	March 18	56.40	86,410
Do	19.25	12,640	March 23	40.30	23,911
February 24.........	22.85	16,216	**1901.**		
February 28.........	39.47	48,010	February 1.........	15.10	9,300
March 1	35.50	24,988	March 15	18.72	9,461
March 2	30.35	18,052	June 27..............	1.77	828
March 4	23.70	12,609			
March 14	31.18	36,653	**1903.**		
Do	34.37	40,331	July 20	5.45	862
March 17	59.50	119,533	July 21	5.44	719

Daily gage height, in feet, of Black Warrior River at Tuscaloosa.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1889.												
1	15.00	23.50	18.80	8.50	8.80	2.30	2.40	3.70	0.75	2.40	0.90	6.00
2	19.50	20.50	16.50	9.80	14.50	2.90	3.10	3.60	7.30	1.95	1.05	5.65
3	18.00	17.50	25.00	10.30	13.20	2.75	4.40	3.00	6.40	1.55	1.85	5.30
4	16.00	14.80	31.50	11.60	11.00	2.50	5.10	2.95	5.30	1.30	1.90	4.80
5	25.00	13.00	29.40	10.50	8.50	2.30	6.25	2.90	6.20	1.15	3.85	4.50
6	33.00	11.50	26.50	9.50	7.00	2.10	6.85	3.70	9.30	1.05	3.65	4.20
7	33.50	10.40	23.00	8.40	5.80	1.90	6.45	3.45	14.90	.90	3.30	4.00
8	29.50	9.30	20.10	7.30	4.60	1.70	5.70	2.95	19.00	.70	3.00	3.80
9	26.80	8.30	17.50	6.80	4.30	2.00	4.75	2.60	14.00	.50	2.75	3.60
10	28.40	8.00	15.00	6.40	4.00	2.60	3.85	2.00	9.90	.40	2.55	3.40
11	29.00	7.80	12.80	6.30	3.80	2.85	3.05	1.75	5.50	.30	3.65	3.20
12	25.50	7.60	11.00	6.00	3.20	4.20	2.85	1.55	5.25	.30	4.30	2.95
13	22.50	7.30	10.00	5.60	3.00	3.40	2.45	3.85	4.15	.20	4.15	2.75
14	19.00	7.00	9.20	5.50	3.10	4.00	2.15	3.60	3.30	.15	3.75	2.70
15	16.00	7.30	8.80	8.00	3.20	3.45	1.95	3.35	2.70	.15	3.50	2.65
16	13.60	27.50	8.10	16.80	3.00	3.25	4.20	3.15	2.25	.15	4.20	2.50
17	29.00	49.00	7.20	16.70	2.80	3.05	7.35	3.80	2.00	.10	5.20	2.30
18	40.50	56.40	7.10	14.00	2.50	2.85	11.35	3.50	1.55	.10	12.45	2.20
19	38.50	56.60	11.00	12.00	2.35	2.65	11.50	3.20	1.40	.05	18.90	2.10
20	34.00	53.00	12.50	10.00	2.25	2.45	8.40	2.90	1.30	.05	16.90	2.05
21	30.30	47.00	12.30	8.90	2.05	2.25	4.60	2.40	1.20	.05	14.10	2.00
22	28.10	41.50	11.80	8.00	1.85	3.25	4.55	1.90	1.10	.00	11.70	2.00
23	26.00	36.50	10.80	7.00	1.65	3.45	4.50	1.50	1.00	— .10	9.70	2.00
24	23.10	32.50	10.00	6.40	1.50	3.20	3.70	1.20	1.00	— .30	7.90	2.00
25	21.00	28.50	9.80	6.30	1.30	3.00	3.15	.90	.95	— .15	6.60	1.95
26	20.40	26.50	11.20	6.80	1.25	2.40	3.10	.75	2.25	+ .10	6.30	1.95
27	28.00	23.50	11.80	6.50	1.15	1.95	4.55	1.00	3.70	.35	6.10	1.95
28	33.50	21.40	12.30	6.20	1.05	1.55	4.05	.95	3.50	.35	5.90	1.90
29	33.80	....	11.00	5.80	.95	1.25	4.00	.90	3.25	.40	5.80	1.90
30	30.00	....	10.50	5.50	1.15	1.10	4.00	1.10	2.60	.90	6.30	3.00
31	27.00	....	9.80	....	1.10	....	3.80	1.05	....	1.00	....	4.85

Daily gage height, in feet, of Black Warrior River at Tuscaloosa—Continued.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1890.												
1	7.70	30.20	58.90	24.50	16.70	7.75	1.80	5.00	8.00	9.30	3.75	1.00
2	7.20	26.20	57.40	34.50	13.70	6.50	1.65	4.05	5.80	7.40	3.35	1.00
3	6.20	22.50	52.40	34.10	11.95	5.65	1.45	3.25	4.35	6.10	3.10	1.00
4	5.20	19.05	45.80	43.60	12.75	5.00	1.25	2.85	3.40	5.10	2.85	1.00
5	5.20	16.40	40.85	45.90	14.65	4.40	1.10	3.15	3.10	4.40	2.55	1.00
6	4.80	13.90	37.15	44.50	16.50	4.00	.80	3.35	3.85	3.80	2.40	1.00
7	4.50	12.10	35.40	38.70	15.00	5.20	.60	3.75	4.35	3.50	2.25	1.20
8	4.55	44.30	32.60	34.00	13.50	5.60	.50-	4.55	4.80	3.45	2.15	10.05
9	5.10	53.95	30.50	29.95	11.95	5.40	.45	4.30	2.85	4.50	2.05	10.10
10	5.30	52.90	27.50	26.70	10.10	5.25	.30	4.30	3.20	4.45	2.00	8.95
11	5.60	47.50	25.00	23.45	9.30	5.00	.20	6.10	2.90	4.10	1.95	7.10
12	5.45	42.20	23.00	20.45	8.35	6.00	.15	6.40	3.45	3.80	1.75	5.80
13	5.30	37.20	20.75	17.45	8.35	6.20	.05	5.30	3.95	3.50	1.65	4.60
14	5.20	32.65	22.50	14.50	9.00	6.20	1.05	4.50	5.80	3.20	1.60	3.70
15	5.60	29.45	38.20	12.15	8.75	5.60	2.55	3.20	5.55	2.80	1.60	3.30
16	11.20	26.95	38.00	10.65	8.65	5.05	3.10	2.80	4.50	2.70	1.55	2.95
17	19.30	23.95	35.80	10.35	9.50	4.35	3.55	2.50	3.55	2.60	1.65	2.80
18	21.00	21.45	32.30	12.95	8.90	4.30	3.65	2.70	2.90	2.40	1.60	2.75
19	18.40	18.45	29.00	13.20	8.15	4.20	4.15	2.55	2.45	2.30	1.55	2.20
20	15.40	15.65	27.20	13.95	7.95	3.70	4.75	2.40	2.10	2.10	1.50	2.00
21	13.30	13.45	32.40	12.15	7.95	3.20	4.20	2.20	1.75	2.00	1.50	2.00
22	11.60	12.00	34.45	10.45	9.00	2.80	3.00	1.80	1.70	2.45	1.45	1.90
23	10.10	10.40	41.25	9.30	8.40	2.50	2.10	1.40	3.05	4.90	1.35	1.90
24	10.70	9.40	40.25	10.65	7.65	2.25	1.75	1.10	3.10	8.45	1.30	1.80
25	12.50	9.50	36.75	15.45	6.95	2.25	2.75	1.00	13.05	10.55	1.25	1.80
26	13.50	13.50	33.35	26.50	6.85	2.15	12.65	.95	23.90	9.60	1.20	2.30
27	12.80	35.20	29.70	28.45	9.60	2.55	13.40	.95	22.65	8.05	1.15	6.80
28	11.80	53.10	27.45	26.20	13.20	2.25	10.50	5.10	18.00	6.45	1.10	9.70
29	10.60	......	24.55	23.35	13.55	2.05	9.30	9.55	14.70	5.30	1.05	10.20
30	17.60	......	21.95	19.80	11.95	1.90	7.45	9.15	11.90	4.90	1.00	9.10
31	31.70	......	18.80	......	9.25	......	6.50	10.45	......	4.15	......	7.30
1891.												
1	6.10	33.20	24.00	34.00	5.70	1.80	2.10	6.50	1.00	−0.40	−0.80	3.40
2	8.60	39.60	23.50	39.40	5.50	1.90	2.00	13.00	1.00	− .30	− .80	3.00
3	14.30	40.90	20.50	36.80	5.30	1.80	1.90	14.80	1.00	− .20	− .80	2.40
4	17.90	40.20	19.60	32.50	4.90	1.70	1.80	16.00	.80	− .20	− .80	6.20
5	15.20	39.30	17.20	28.50	4.50	1.50	1.50	13.00	.70	− .20	− .80	6.80
6	13.10	36.30	29.00	25.00	4.50	1.40	1.30	9.50	.60	− .20	− .80	21.50
7	11.10	37.00	53.00	22.20	4.20	1.40	1.40	7.40	.60	− .40	− .80	19.50
8	10.00	51.50	58.00	19.00	4.00	1.50	2.10	5.80	.60	− .50	− .80	20.00
9	9.50	51.50	60.40	16.00	3.90	2.10	7.00	5.40	.60	− .60	− .80	20.50
10	17.50	52.20	58.00	14.20	3.50	2.80	10.40	3.70	.60	− .70	+ .70	17.00
11	20.90	53.50	54.00	17.20	3.20	3.50	8.20	3.10	.70	− .80	2.10	14.00
12	26.30	50.50	48.00	27.00	3.20	10.20	6.00	2.70	1.00	− .80	2.80	11.50
13	30.10	47.60	43.00	26.00	3.10	10.50	4.30	2.50	1.20	− .80	4.40	9.00
14	25.50	51.40	40.00	22.50	3.00	9.80	3.20	3.00	1.20	− .80	3.80	6.20
15	21.00	49.50	36.50	19.50	2.80	8.00	2.30	3.40	1.00	− .60	2.50	7.00
16	18.50	46.50	33.20	17.20	2.60	6.50	2.60	4.00	1.00	− .70	2.00	9.00
17	17.10	44.30	30.00	15.60	2.50	5.60	2.60	3.00	.60	− .70	1.80	11.00
18	17.70	41.00	28.00	16.40	2.50	6.30	2.90	2.60	.20	− .70	1.80	11.20
19	17.10	37.50	26.40	14.50	2.50	7.20	2.50	2.20	.10	− .60	1.50	10.00
20	15.60	35.00	24.00	13.40	2.50	7.00	2.20	2.00	.10	− .70	1.30	8.50
21	12.60	33.50	21.00	12.00	2.50	6.00	1.80	1.50	.10	− .70	1.40	7.00
22	20.20	39.50	19.90	11.00	2.70	5.50	1.60	1.50	.10	− .60	3.00	6.00
23	31.60	41.00	17.50	10.00	3.00	5.20	1.40	1.40	.10	− .60	8.00	6.00
24	31.80	39.00	15.00	9.00	3.00	4.80	1.30	1.30	.10	− .50	12.30	6.20
25	30.10	36.50	12.50	8.20	2.80	4.50	1.40	1.20	.00	− .50	13.30	7.50
26	30.70	33.00	12.10	7.60	2.60	4.20	2.60	1.10	.00	− .50	10.80	13.20
27	29.00	29.00	15.00	8.40	2.50	4.10	2.00	1.10	− .20	− .70	7.20	31.00
28	26.80	26.50	18.20	8.00	2.40	3.70	2.20	1.00	− .20	− .80	5.80	38.90
29	23.70	......	19.40	7.30	2.30	2.90	2.00	1.00	− .40	− .80	4.20	31.20
30	32.70	......	18.00	6.50	2.10	2.50	2.10	1.10	− .50	− .80	3.80	27.00
31	33.00	......	17.00	......	2.00	......	2.40	1.00	......	− .80	......	22.10

Daily gage height, in feet, of Black Warrior River at Tuscaloosa—Continued.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1892.												
1	17.90	21.20	10.70	21.80	12.00	3.40	4.60	4.80	9.30	3.90	0.40	5.90
2	15.90	10.50	10.30	18.30	11.20	3.20	3.90	3.20	7.60	3.50	.40	5.60
3	18.50	9.40	9.70	15.50	9.90	3.50	3.40	7.00	6.50	3.30	1.20	5.30
4	18.70	·8.50	8.80	15.20	8.80	3.70	3.00	7.40	5.60	3.10	1.60	4.90
5	16.40	7.80	8.00	12.00	7.20	3.50	2.90	6.60	4.90	2.80	1.60	6.30
6	14.60	7.40	7.80	11.60	6.50	4.70	3.50	5.40	4.90	2.50	1.60	7.50
7	13.00	7.80	8.00	56.30	5.90	5.00	5.20	4.80	4.80	2.40	2.00	7.50
8	11.60	7.50	16.50	63.20	5.30	4.90	11.00	3.90	6.40	2.20	3.90	12.20
7	10.80	9.00	26.80	62.20	5.20	4.10	26.70	3.60	6.20	2.10	4.60	15.00
10	10.50	16.00	28.50	58.00	4.90	4.00	43.50	3.50	5.40	2.00	8.90	13.20
11	25.70	13.00	26.70	52.30	4.90	3.80	46.20	3.00	5.10	2.00	10.90	11.00
12	34.80	11.30	22.00	45.40	4.80	3.50	41.40	3.00	3.90	2.00	8.30	9.40
13	53.00	10.80	18.00	40.70	4.70	3.30	38.30	3.30	3.40	2.00	7.60	8.00
14	57.40	9.50	15.80	36.50	4.60	2.80	37.50	3.10	3.30	1.90	5.80	7.40
15	55.90	9.00	13.80	32.80	4.50	2.50	34.80	3.90	4.00	1.90	5.00	8.60
16	51.70	10.00	13.30	29.50	4.00	2.40	32.80	3.50	5.10	1.90	4.50	10.30
17	45.00	11.80	11.20	27.00	3.70	2.00	41.40	3.50	4.90	1.80	4.00	13.10
18	40.10	11.00	12.90	24.50	3.60	1.80	38.00	6.00	4.30	1.70	4.20	26.70
19	36.60	9.90	24.00	22.40	4.30	2.10	33.00	9.50	6.00	1.00	4.40	28.40
20	41.50	10.50	25.50	20.20	4.60	3.90	29.00	11.50	18.30	1.00	4.70	28.40
21	41.00	13.50	22.90	18.10	6.50	7.40	28.30	9.50	23.90	.90	5.00	36.50
22	36.80	18.00	20.00	15.90	6.30	10.80	29.30	7.40	20.90	.90	4.80	35.80
23	34.40	23.90	18.30	13.80	6.00	10.70	25.10	10.20	17.00	.90	4.50	31.50
24	31.00	21.20	22.00	12.30	6.00	8.40	21.50	12.30	13.30	1.00	4.20	27.00
25	28.50	18.50	29.00	11.30	4.80	7.80	18.80	14.00	10.50	1.00	3.80	23.00
26	26.00	16.00	32.00	10.50	3.50	7.90	15.80	14.20	8.00	.90	3.50	19.50
27	23.80	14.00	35.80	8.80	4.70	7.20	13.00	13.20	6.10	.80	3.30	16.00
28	21.50	12.50	34.00	7.90	4.00	6.10	10.50	11.50	5.00	.70	3.20	13.60
29	19.00	11.50	30.50	7.70	3.80	5.20	7.80	12.00	4.90	.70	3.90	11.40
30	16.80	......	26.80	10.50	3.50	5.40	6.20	11.50	4.30	.50	5.90	9.80
31	14.00	......	23.90	......	3.50	......	5.50	10.50	......	.50	......	8.50
1893												
1	8.20	18.10	23.00	9.40	24.50	12.50	2.50	0.60	0.30	1.10	0.40	1.50
2	8.60	15.90	21.70	9.30	21.20	33.50	2.30	.70	.20	1.00	.40	1.50
3	9.80	14.00	19.70	9.00	30.00	49.60	2.80	1.00	.10	1.20	.40	1.80
4	10.70	12.80	20.50	8.70	51.20	46.00	3.60	1.20	.00	1.40	.40	2.80
5	10.10	12.50	23.00	8.00	52.20	39.00	3.60	1.30	— .10	1.30	.40	3.50
6	9.00	11.80	24.00	8.70	48.00	37.70	3.20	1.20	— .10	1.20	.40	4.20
7	8.40	11.20	22.60	9.30	42.90	39.90	2.70	1.30	.00	1.20	.40	4.10
8	7.90	10.80	20.10	9.00	40.40	39.30	2.40	1.20	+ .20	1.20	.40	3.50
9	7.00	10.60	20.00	8.30	37.40	34.00	2.10	1.00	1.40	1.00	.40	3.00
1●	6.70	10.20	22.00	7.60	34.30	29.20	1.80	.90	2.00	.90	.60	2.80
11	6.20	12.00	21.80	7.00	30.80	25.10	1.60	.90	2.10	.80	.60	2.30
12	6.50	23.90	20.50	6.40	27.50	21.20	1.60	.80	2.20	.80	.50	1.90
13	7.80	28.30	19.30	6.10	24.40	17.40	2.20	.90	3.20	.80	.50	1.70
14	9.00	27.00	18.10	5.80	21.90	14.70	2.60	3.60	4.30	.70	.60	1.60
15	9.60	25.90	16.30	23.00	19.10	11.60	2.40	4.90	4.30	.60	.60	1.50
16	11.40	52.20	14.70	27.10	16.20	9.60	2.00	5.10	3.90	.50	.60	1.70
17	12.20	55.60	13.20	24.00	14.00	7.60	1.70	4.70	3.30	.50	.60	2.30
18	11.80	54.70	12.20	20.00	11.90	6.70	1.40	3.70	2.50	.50	.60	2.40
19	12.00	51.40	11.30	16.40	11.00	6.50	1.30	2.80	2.10	.50	.60	2.30
20	12.40	46.50	10.70	13.90	8.40	6.90	1.20	2.20	1.80	.50	.60	2.10
21	11.80	41.80	9.90	12.00	6.90	6.90	1.20	1.70	1.40	.50	.70	2.50
22	10.90	37.90	9.30	11.20	6.20	6.60	1.30	1.50	1.30	.50	1.00	2.40
23	11.20	34.50	8.80	10.70	5.60	6.40	1.60	1.30	1.20	.40	1.00	2.30
24	12.90	31.30	12.30	9.90	5.10	5.70	1.70	1.10	1.00	.40	1.10	2.10
25	15.90	28.40	22.20	8.90	4.80	4.90	1.50	1.00	1.30	.40	1.00	1.90
26	19.20	25.90	22.50	7.00	4.50	4.40	1.30	.90	1.20	.40	.90	1.70
27	22.00	23.80	20.00	10.50	4.30	4.00	1.20	.80	1.20	.40	1.00	1.60
28	23.30	23.00	17.00	32.50	5.10	3.50	.90	.80	1.10	.40	1.70	1.50
29	23.10	......	14.40	33.90	6.10	3.10	.90	.60	1.10	.40	1.70	1.40
30	22.10	......	12.40	29.00	12.90	2.80	.80	.50	1.10	.40	1.50	3.70
31	20.40	......	10.90	......	14.10	......	.80	.20	......	.40	......	7.60

Daily gage height, in feet, of Black Warrior River at Tuscaloosa—Continued.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1894												
1	10.30	8.50	27.00	11.40	6.50	1.70	2.50	1.20	5.80	0.55	−0.05	−0.05
2	9.60	7.80	25.60	14.10	5.90	1.60	1.80	1.30	4.60	.45	− .10	− .05
3	7.90	7.30	23.60	23.50	5.90	1.50	1.35	1.40	3.60	.40	− .20	.00
4	6.20	7.90	21.00	24.00	5.80	1.35	1.10	1.95	2.95	.32	− .25	.00
5	5.40	16.90	18.20	22.20	5.50	1.33	.80	2.30	2.45	.25	− .30	.00
6	6.40	22.60	15.90	20.60	5.20	1.20	.60	2.40	2.05	.20	− .30	.00
7	16.80	20.40	14.80	18.90	5.10	1.20	1.00	2.00	1.85	.15	− .30	.00
8	22.60	17.80	14.40	16.30	4.90	1.10	1.30	1.60	1.75	.00	− .30	+ .05
9	19.70	17.30	13.80	14.70	4.50	.95	.70	1.30	1.65	− .10	− .30	.05
10	26.90	26.00	12.60	15.70	4.10	.90	.70	1.10	1.60	− .20	− .30	.50
11	34.50	27.80	11.60	25.00	3.70	.80	.60	.80	1.85	− .25	− .30	2.10
12	35.80	25.40	11.50	25.60	3.90	.80	.60	.70	3.40	− .30	− .30	5.70
13	30.90	29.90	16.50	22.70	4.30	.70	.50	.60	5.60	− .30	− .30	10.40
14	25.80	32.10	17.30	19.50	7.00	.60	.50	.50	7.50	− .30	− .15	11.20
15	22.20	29.70	15.80	16.30	6.20	.60	.60	.35	5.70	− .30	.00	8.90
16	23.60	26.00	15.50	15.50	5.70	.60	.70	.60	4.20	− .30	+ .05	6.40
17	24.80	22.30	33.10	16.00	5.10	.55	.75	.55	3.25	− .30	.05	4.90
18	22.40	19.10	36.70	17.00	5.00	.50	.70	.45	3.50	− .30	.05	3.90
19	19.30	16.80	33.70	25.30	4.70	.60	.70	.40	3.25	− .30	− .10	3.20
20	15.90	16.00	29.50	24.80	4.20	.70	.60	.55	3.25	− .30	− .10	2.90
21	14.10	16.90	27.80	24.00	3.60	.85	.50	1.00	4.10	− .30	− .10	2.60
22	18.60	17.90	29.30	20.40	3.10	.80	.90	1.35	3.60	− .30	− .10	2.20
23	21.30	17.00	29.60	17.30	2.80	.95	1.30	3.80	2.90	− .30	− .10	2.00
24	19.90	16.10	28.00	14.20	2.60	1.10	1.35	5.30	2.20	− .35	.00	1.80
25	17.60	17.30	27.80	12.20	2.40	1.00	1.60	9.20	1.75	− .40	.00	1.70
26	15.50	29.30	25.30	10.50	2.30	1.05	1.50	16.00	1.45	− .40	.00	2.00
27	14.00	31.00	22.10	9.80	2.10	1.40	1.40	20.40	1.20	− .45	− .05	7.70
28	12.40	28.80	19.00	8.70	2.10	1.70	1.30	16.00	1.05	− .45	− .05	9.70
29	11.10	....	16.10	7.90	2.00	2.35	.20	11.80	.90	− .45	− .05	8.40
30	10.00	....	14.30	7.00	1.90	2.60	1.10	8.30	.70	− .20	− .05	7.20
31	9.10	....	12.70	....	1.90	....	1.20	6.80	....	− .05	− .05	6.50
1895												
1	6.10	24.10	8.60	16.20	15.20	7.00	4.80	1.80	1.90	0.10	−0.04	0.75
2	5.40	21.50	13.20	14.50	13.00	5.90	4.50	1.50	1.80	.00	+ .07	.95
3	6.80	21.40	35.30	12.60	11.00	5.10	5.40	1.30	1.80	− .07	.12	1.05
4	9.00	21.40	36.70	11.00	9.40	4.60	7.60	1.20	1.70	− .10	.09	1.00
5	8.80	19.90	32.40	10.20	8.30	4.20	17.40	1.20	1.90	− .10	.11	.90
6	8.00	17.90	27.80	8.40	7.40	6.70	17.70	1.20	2.60	− .10	.25	1.30
7	7.40	16.50	23.80	7.90	7.00	5.70	18.40	1.10	3.05	− .10	.31	1.50
8	35.00	16.80	20.60	20.50	8.20	5.10	15.70	1.00	3.70	.00	.30	1.45
9	50.60	16.90	20.10	24.00	13.50	4.30	18.10	.90	3.40	− .03	.28	1.90
10	49.30	15.80	19.30	21.20	19.70	3.80	11.10	.97	2.90	− .07	.70	1.80
11	45.10	14.60	17.50	18.00	23.30	3.10	9.80	1.40	2.40	− .10	1.20	1.45
12	40.10	14.10	17.20	15.10	22.00	2.70	7.90	1.50	2.20	− .14	1.10	1.40
13	35.00	13.90	18.40	12.60	18.50	2.40	6.50	1.40	2.10	− .14	1.18	1.40
14	29.80	12.80	24.90	11.00	15.20	2.20	5.30	1.30	2.00	+ .06	1.35	1.37
15	25.70	11.60	37.50	9.50	12.20	2.00	5.40	1.10	1.80	.04	1.35	1.33
16	23.40	10.50	47.40	8.60	9.70	2.00	5.60	1.30	1.60	− .08	1.28	1.23
17	31.20	9.40	52.00	10.00	8.00	2.70	5.90	1.40	1.40	− .18	1.20	1.12
18	32.90	9.00	47.30	15.90	6.90	3.30	5.80	2.00	1.40	− .27	1.05	1.05
19	29.20	9.00	42.10	15.80	6.30	4.20	5.10	4.00	1.30	− .31	.88	1.02
20	25.80	9.50	38.80	14.00	5.90	4.90	4.60	4.30	1.00	− .37	.82	1.57
21	23.10	10.20	48.70	12.00	5.30	4.70	4.00	3.60	1.20	− .42	.70	2.55
22	21.60	10.90	51.30	10.40	4.80	4.30	3.60	2.80	1.50	− .45	.60	2.60
23	21.60	11.40	47.60	8.90	4.30	4.10	3.40	2.40	1.30	− .50	.50	3.03
24	19.80	11.30	42.10	8.00	4.10	3.70	3.30	4.30	1.10	− .35	.75	3.65
25	17.40	10.90	37.30	7.20	4.00	3.40	3.60	4.90	.80	− .33	.60	3.31
26	16.70	10.30	32.80	7.00	4.30	3.00	3.70	4.00	.60	− .53	.38	4.50
27	20.00	9.70	29.10	7.10	5.60	4.40	3.30	3.20	.35	− .70	.64	10.40
28	21.20	9.00	26.10	12.50	11.00	4.30	2.90	2.40	.10	− .68	.65	21.02
29	22.00	....	23.60	15.00	13.30	6.00	2.40	2.30	.50	− .67	.65	16.88
30	27.40	....	21.10	16.40	11.20	5.40	2.00	2.10	.30	− .52	.60	13.10
31	27.10	....	18.60	....	8.90	....	2.10	2.00	....	− .32	....	11.67

Daily gage height, in feet, of Black Warrior River at Tuscaloosa—Continued.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1896												
1	11.41	7.92	6.91	10.61	18.24	4.92	1.94	0.53	0.38	−0.52	−0.78	7.70
2	10.26	8.51	7.66	14.78	33.30	4.28	1.71	.80	.25	− .62	− .77	6.32
3	8.90	21.98	7.41	23.00	37.18	3.50	1.44	1.34	.15	− .66	− .42	4.63
4	7.60	33.12	6.74	23.50	30.88	5.44	1.48	.89	.05	− .20	− .39	3.40
5	6.55	30.02	6.14	19.85	26.40	5.24	1.30	.54	− .06	+ .78	− .33	2.60
6	5.74	30.75	6.64	16.70	21.93	4.30	1.15	.42	− .15	.74	− .19	2.05
7	5.09	35.92	10.18	14.26	17.88	3.62	1.32	.50	− .23	.68	− .19	1.70
8	5.24	35.08	12.04	12.55	13.95	3.27	2.20	.60	− .30	.40	− .17	1.47
9	5.76	36.21	14.89	11.20	10.80	6.60	8.40	.68	− .37	.09	− .18	1.21
10	6.46	36.52	13.69	10.02	8.60	8.18	6.98	.64	− .44	− .15	− .21	1.10
11	6.58	33.65	12.45	9.04	7.11	18.39	5.37	.55	− .44	− .28	− .30	.89
12	6.25	29.45	13.97	8.33	6.09	15.13	3.95	.45	− .46	− .28	− .20	.84
13	5.79	25.97	16.15	7.62	5.34	10.77	2.99	.38	− .50	− .48	− .22	.80
14	5.26	27.41	15.35	7.86	4.77	7.66	2.45	.35	− .60	− .49	− .11	.75
15	4.82	33.25	13.56	11.65	6.13	5.60	2.16	.31	− .59	− .46	− .10	1.20
16	4.87	31.02	13.86	13.90	5.45	4.33	2.13	.26	− .59	− .43	− .01	1.25
17	6.03	27.30	22.30	12.36	4.65	4.74	2.15	.13	− .60	− .60	+ .26	1.25
18	8.61	23.65	27.75	10.57	3.94	4.20	2.42	.40	− .60	− .63	.46	1.60
19	9.14	20.09	29.70	9.03	3.44	6.18	2.46	.50	− .60	− .78	.52	1.90
20	8.53	17.00	37.68	7.81	3.05	6.00	2.24	.40	− .61	− .82	.45	1.70
21	7.87	14.45	37.92	6.88	2.91	5.32	2.16	.34	− .64	− .82	.39	1.50
22	8.85	12.20	33.55	6.15	2.77	4.91	1.90	.29	− .64	− .84	.38	1.33
23	22.47	10.32	29.12	5.56	2.87	4.46	1.71	.22	− .36	− .84	.38	1.20
24	29.26	9.13	25.85	5.67	2.90	4.19	2.06	1.06	− .45	− .78	.37	.98
25	26.52	8.60	23.54	5.76	2.87	4.04	2.53	.95	− .61	− .80	.37	.92
26	22.44	8.35	21.28	5.30	2.97	3.37	2.17	.79	− .64	− .82	.37	.77
27	18.55	7.90	18.72	5.26	3.66	2.85	1.70	.77	− .71	− .82	.98	.71
28	14.92	7.40	16.35	10.47	3.59	2.69	1.28	1.35	− .76	− .78	.09	.59
29	12.14	7.00	14.30	16.06	6.52	2.54	.94	1.30	− .67	− .80	.33	.52
30	10.18	....	12.69	14.18	6.50	2.21	.76	.95	− .55	− .80	1.00	.48
31	8.88	....	11.40	....	5.78	....	.64	.60	....	− .78	....	.48
1897.												
1	0.34	3.90	11.14	13.90	9.51	1.83	−0.15	1.36	0.60	−1.65	−1.39	−1.28
2	.47	6.00	9.57	15.28	9.95	1.75	− .18	1.08	.96	−1.71	−1.30	−1.12
3	.40	11.50	8.58	22.20	9.22	1.70	− .20	.87	1.02	−1.72	−1.29	− .48
4	.90	12.60	8.72	21.11	7.66	2.01	− .18	.62	.92	−1.75	−1.31	+1.29
5	1.24	11.70	10.14	22.00	6.23	1.98	− .05	.50	.76	−1.79	−1.33	13.10
6	1.11	12.37	16.33	26.95	5.36	2.65	1.63	.40	.62	−1.86	−1.28	14.24
7	1.40	16.24	51.42	25.32	4.67	3.44	3.40	.25	.51	−1.79	−1.27	10.72
8	2.60	18.70	54.77	22.10	4.20	2.87	3.90	.24	.47	−1.85	−1.27	7.39
9	2.66	21.04	51.59	21.30	3.87	2.25	3.71	1.10	.42	−1.88	−1.17	5.12
10	2.30	19.80	44.69	29.27	3.50	1.85	3.05	2.10	.36	−1.90	−1.13	3.72
11	2.03	17.90	40.54	29.57	3.20	1.60	2.53	3.26	.29	−1.90	−1.10	3.05
12	1.76	23.42	42.58	25.48	3.64	1.39	2.42	3.22	.23	−1.88	−1.14	2.70
13	1.52	25.90	48.70	21.60	11.40	1.24	2.16	2.73	.14	−1.89	−1.17	2.56
14	1.33	23.84	50.96	18.10	20.36	1.11	1.86	2.27	.11	−1.92	−1.25	3.05
15	1.23	20.30	48.57	16.32	20.46	.95	1.46	1.63	.10	−1.92	−1.25	3.54
16	8.23	16.96	45.20	18.43	16.59	.85	1.16	1.28	.06	−1.92	−1.27	4.12
17	9.70	14.04	47.21	18.33	12.68	.75	.97	1.00	.01	−1.90	−1.33	4.10
18	13.10	11.72	46.72	15.92	9.77	.63	1.50	.73	− .05	−1.90	−1.35	3.78
19	19.35	9.97	42.90	13.66	7.73	1.30	3.50	.52	− .36	−1.90	−1.36	3.50
20	18.70	8.77	42.57	11.86	6.35	1.45	12.50	1.53	− .75	−1.88	−1.36	3.82
21	17.43	8.08	44.54	10.45	5.37	1.11	14.50	1.78	− .95	−1.88	−1.36	6.70
22	18.64	8.32	41.50	9.24	4.66	.80	11.30	1.58	−1.07	−1.77	−1.37	19.58
23	16.52	11.00	37.70	8.15	4.15	.55	8.42	1.33	−1.17	−1.64	−1.42	31.00
24	13.30	20.20	35.66	7.37	3.70	.33	6.64	1.08	−1.26	−1.58	−1.44	29.96
25	10.60	21.24	32.40	6.80	3.45	.23	4.77	1.27	−1.24	−1.63	−1.40	24.08
26	8.60	18.97	28.86	6.37	3.13	.16	3.46	.97	−1.36	−1.63	−1.36	18.97
27	7.20	16.18	25.60	5.90	2.90	.12	2.72	.80	−1.41	−1.61	−1.36	15.67
28	6.00	13.31	23.15	5.49	2.60	.03	2.92	.61	−1.44	−1.64	−1.28	13.10
29	5.10	....	20.33	5.10	2.28	.00	2.15	.54	−1.50	−1.61	−1.22	11.00
30	4.42	....	17.52	5.90	2.09	− .08	1.80	.46	−1.55	−1.63	−1.24	9.38
31	3.80	....	14.98	....	2.00	....	1.62	.31	....	−1.63	....	8.00

Daily gage height, in feet, of Black Warrior River at Tuscaloosa—Continued.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1898.												
1	7.10	21.68	3.67	25.50	11.34	0.23	0.66	2.45	1.20	−0.60	0.90	5.40
2	6.28	18.30	3.78	22.40	9.82	.08	.43	1.95	.82	− .70	.70	5.50
3	5.52	14.90	4.03	18.50	8.67	.23	.30	2.45	.70	− .80	.60	5.40
4	4.96	12.12	4.05	15.31	7.68	.27	.53	2.80	.30	− .90	.40	5.00
5	4.41	10.15	3.98	20.82	6.88	.27	.16	2.96	.00	−1.00	.00	4.70
6	4.17	9.42	3.90	38.70	6.20	.15	.10	3.90	− .10	− .90	.30	4.50
7	4.13	8.90	3.57	38.55	5.59	.02	− .18	3.40	− .30	− .90	.50	5.00
8	4.18	8.43	3.33	32.83	5.00	− .10	− .04	3.10	− .20	− .70	.40	5.00
9	4.17	7.84	3.12	27.70	4.50	− .29	− .04	3.98	.00	− .30	.40	4.70
10	3.97	7.30	3.00	23.04	4.20	− .41	+ .10	6.20	.20	+2.00	.50	4.20
11	4.00	6.68	2.90	19.50	3.91	− .54	.08	12.20	.40	3.30	.50	3.70
12	4.18	6.30	2.83	17.03	3.50	− .62	.07	14.10	.20	2.60	.40	3.30
13	6.70	6.20	2.80	15.01	3.21	− .71	− .10	10.60	.00	2.00	.50	3.00
14	9.70	6.08	3.00	12.93	2.88	− .62	− .07	7.30	− .30	1.40	.80	2.80
15	11.97	5.86	4.80	11.65	2.58	− .53	− .11	5.00	− .30	1.00	1.10	2.60
16	11.71	5.40	8.00	10.78	2.30	− .38	− .07	3.50	− .40	.80	1.30	2.50
.17	15.00	5.00	15.40	9.60	2.08	− .48	− .14	2.62	− .60	.40	1.50	2.40
18	15.53	4.90	14.10	8.63	1.97	− .56	.00	1.91	− .70	.80	1.60	2.10
19	14.32	4.83	11.92	8.15	1.64	− .30	1.24	1.50	− .70	.80	1.90	4.40
20	24.50	4.84	10.08	27.80	1.43	− .21	1.30	1.46	− .80	1.20	2.20	18.80
21	33.54	4.70	8.82	33.11	1.23	.00	1.12	1.12	− .90	3.10	2.50	23.90
22	31.42	4.48	7.80	28.45	1.07	.07	.88	1.26	− .50	3.80	4.00	21.30
23	28.50	4.30	6.96	23.77	1.00	.18	.47	1.20	− .60	4.10	8.60	17.40
24	30.38	4.00	6.30	22.72	.93	.30	1.08	.90	− .70	4.80	11.70	13.30
25	30.12	3.83	6.00	24.04	.78	.17	1.95	.50	− .80	4.30	11.60	10.50
26	42.50	3.64	5.90	22.62	.57	.06	2.50	1.10	− .90	3.90	9.50	8.60
27	43.48	3.56	5.53	19.67	.43	1.30	2.00	1.02	− .90	2.90	7.40	7.30
28	39.41	3.72	5.12	17.12	.43	1.10	1.80	.98	− .80	2.30	5.90	6.20
29	33.80	......	5.23	15.05	.52	.46	2.03	1.30	− .80	2.00	5.50	5.60
30	28.50	......	13.40	13.03	.44	.68	2.55	1.52	− .60	1.40	5.30	5.00
31	24.90	......	25.68	......	.30	......	2.86	1.56	......	1.10	......	4.70
1899.												
1	4.40	26.10	37.70	30.30	7.90	2.00	.10	6.50	1.20	−1.50	−1.03	4.83
2	4.50	29.50	32.00	29.20	7.00	1.50	.80	4.90	.70	−1.61	−1.02	3.50
3	4.60	27.00	27.70	24.80	6.30	1.20	.30	3.40	.62	−1.80	−1.03	2.77
4	4.70	29.00	24.10	22.00	5.80	1.00	− .70	2.70	.23	−1.79	− .99	2.03
5	4.70	45.50	21.00	28.20	5.30	1.00	− .10	2.00	− .02	−1.51	−1.00	1.50
6	11.20	50.60	20.80	22.60	4.80	.90	− .30	1.90	− .17	−1.48	−1.02	1.22
7	42.50	51.40	19.50	23.30	4.40	1.00	− .20	1.80	− .38	−1.46	−1.03	.98
8	49.30	51.70	16.90	33.90	4.40	.80	− .30	1.30	− .40	−1.34	−1.03	.88
9	46.60	48.60	14.40	34.00	7.60	.40	− .40	1.20	− .46	−1.30	−1.03	.58
10	40.40	43.10	12.90	30.80	6.50	.40	− .40	1.10	− .68	− .96	−1.01	.60
11	33.70	37.80	11.90	27.00	5.10	.50	− .40	2.00	− .73	− .78	−1.01	2.20
12	31.90	32.80	11.30	23.60	4.30	.50	− .50	1.70	− .79	− .72	− .98	23.50
13	28.00	28.80	10.00	20.10	4.20	.50	− .60	1.30	− .71	− .70	− .96	39.53
14	25.00	25.70	28.80	17.20	4.30	.50	− .60	.90	− .73	− .88	− .98	35.71
15	22.20	22.90	44.50	14.90	4.70	.50	− .70	.60	− .78	− .94	− .99	26.50
16	20.00	21.60	59.30	13.00	4.30	.70	− .70	.40	− .83	−1.03	−1.00	20.63
17	19.60	19.90	60.30	11.60	3.70	.60	− .70	.30	− .86	−1.07	− .97	15.21
18	20.10	20.10	57.70	10.50	3.30	.40	− .70	.30	− .88	−1.12	− .97	10.83
19	18.60	20.80	52.40	9.80	2.80	.30	− .70	.60	− .90	−1.16	− .95	8.02
20	16.10	20.60	49.30	9.60	2.70	.20	− .70	.60	− .92	−1.12	− .95	8.09
21	14.00	19.60	46.80	9.50	3.70	.10	− .60	.70	− .94	−1.10	− .92	9.63
22	12.20	18.50	41.60	8.70	3.80	.40	− .50	1.50	− .99	− .84	− .89	10.80
23	11.00	22.70	36.80	8.60	3.30	− .10	− .20	2.60	−1.03	− .73	− .33	10.63
24	11.00	23.10	33.00	11.30	3.10	− .10	+ .60	2.50	−1.05	− .71	+ .17	22.01
25	20.30	20.90	29.50	13.60	2.70	− .60	4.90	2.60	−1.04	− .88	.88	29.04
26	29.30	18.50	26.50	13.20	2.30	+ .20	7.60	2.30	−1.05	− .94	2.60	25.91
27	26.20	23.50	24.20	12.60	2.00	.20	7.40	2.10	−1.04	−1.02	4.50	20.98
28	22.50	39.00	22.30	11.40	1.75	.20	7.90	1.90	−1.18	− .60	10.48	17.09
29	18.60	......	21.10	10.00	1.50	.20	9.50	1.60	−1.28	− .73	9.49	15.80
30	15.70	......	19.30	8.90	1.60	.10	9.30	1.50	−1.38	− .96	6.67	14.62
31	14.80	......	18.10	......	2.50	......	8.50	1.10	......	−1.03	......	12.51

Daily gage height, in feet, of Black Warrior River at Tuscaloosa—Continued.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1900.												
1	10.90	6.92	18.14	21.55	21.23	4.24	41.00	9.85	5.50	0.75	4.20	12.50
2	9.48	6.40	25.44	18.60	18.95	5.30	33.88	8.00	5.00	.80	5.10	9.65
3	8.32	5.00	26.00	15.80	16.33	13.95	32.27	6.50	4.07	.60	5.40	8.50
4	7.10	5.71	23.30	13.60	13.82	15.16	32.13	5.15	4.30	.25	5.55	7.90
5	6.18	6.40	20.29	12.27	11.60	20.98	30.96	4.40	3.58	.40	5.05	8.20
6	5.53	9.58	17.43	12.17	9.60	21.50	27.31	3.80	2.80	.40	4.45	10.20
7	5.12	11.50	15.34	11.44	8.20	20.92	23.70	3.35	2.30	.80	3.90	10.65
8	4.84	10.53	27.58	10.29	7.28	21.75	20.80	3.00	1.90	1.80	3.50	9.65
9	4.60	12.23	39.00	9.97	6.80	38.52	18.45	2.50	1.50	3.90	3.10	8.75
10	4.50	20.60	36.03	10.58	6.50	31.70	15.96	2.30	1.40	6.05	2.90	8.15
11	7.12	23.00	31.63	26.35	6.12	24.73	12.96	2.10	1.10	6.10	2.70	7.50
12	31.63	20.64	27.34	52.79	5.90	19.60	11.05	2.00	.90	14.30	2.50	6.90
13	31.80	41.37	23.78	53.40	5.48	15.95	10.60	1.75	.80	22.50	2.40	6.45
14	28.18	47.96	20.43	48.69	4.98	15.60	12.90	1.50	1.40	21.85	2.25	6.40
15	24.09	45.73	17.40	42.30	4.50	19.23	10.35	1.40	5.45	16.40	2.20	6.65
16	20.12	40.23	16.63	37.10	3.85	29.15	8.50	1.50	10.65	11.60	2.10	6.45
17	16.50	34.74	21.18	63.00	3.65	28.89	7.00	1.48	8.95	8.20	2.05	6.10
18	14.28	29.75	20.28	64.05	3.50	25.33	6.00	1.40	6.34	6.13	2.00	5.75
19	15.80	25.88	18.80	62.17	3.52	24.51	5.60	4.00	4.44	5.10	1.95	5.30
20	25.00	22.43	45.10	59.35	3.39	30.10	6.35	4.40	3.35	4.30	3.90	5.45
21	32.60	19.90	51.00	56.10	3.65	27.80	8.50	3.75	2.60	3.60	8.40	6.30
22	29.44	23.58	47.98	51.71	3.50	25.38	8.00	3.00	2.20	3.15	10.25	8.35
23	24.54	26.50	42.40	46.20	3.35	24.55	8.10	2.50	1.87	4.60	12.50	11.90
24	20.43	24.20	38.24	41.88	4.40	50.00	8.70	2.55	1.65	7.30	11.00	17.00
25	17.12	22.38	35.41	37.94	7.55	58.35	7.40	2.10	1.60	10.40	9.45	18.70
26	14.12	21.00	36.78	33.94	7.68	56.35	6.80	4.48	1.45	8.55	15.90	17.00
27	12.14	18.63	35.33	30.89	6.70	52.90	9.20	4.30	1.30	6.75	22.20	14.60
28	10.47	16.52	31.80	28.15	5.30	49.05	16.20	3.25	1.05	5.40	21.00	12.50
29	9.10	......	28.85	25.73	4.25	48.35	13.50	2.40	.90	4.70	17.35	10.95
30	8.27	......	26.25	23.50	3.60	46.35	11.83	2.10	.75	4.10	14.00	10.15
31	7.60	......	24.20	......	3.62	......	11.05	2.50	......	8.70	......	14.20
1901.												
1	19.50	15.10	7.50	28.00	9.40	6.50	1.70	0.70	6.11	5.40	0.85	1.60
2	19.00	14.80	7.30	26.50	8.50	12.25	1.73	.60	5.10	6.91	.80	1.50
3	17.90	15.00	8.40	32.60	7.90	16.65	2.00	.85	4.05	9.00	.75	1.40
4	14.70	35.20	9.65	35.10	7.30	14.80	2.30	1.00	3.60	6.72	1.00	1.40
5	13.00	42.00	9.70	31.50	7.00	12.00	2.50	.80	3.05	5.30	1.10	1.31
6	11.50	38.35	9.50	27.50	6.35	11.20	2.30	.75	2.81	4.50	1.10	1.95
7	10.25	32.15	9.00	24.30	6.15	11.10	2.50	.60	2.35	3.45	1.05	1.90
8	9.50	29.15	8.50	20.90	6.00	11.50	2.40	.50	2.04	3.02	1.00	2.58
9	8.75	28.05	8.05	17.90	5.70	9.40	2.25	.35	1.90	2.50	.95	2.60
10	8.30	30.97	8.70	14.50	5.60	7.60	2.10	.25	1.70	2.31	.90	3.80
11	17.40	29.75	29.50	12.50	5.00	6.50	2.00	.20	1.50	2.10	.90	5.00
12	52.70	27.45	34.00	11.00	4.60	6.20	1.70	.65	1.41	1.95	.85	5.80
13	56.50	25.15	28.50	10.00	5.00	6.40	1.30	.65	1.30	3.41	1.00	5.70
14	53.25	22.50	23.50	11.35	6.60	5.50	.90	.80	2.52	3.30	1.05	7.40
15	47.25	19.60	19.70	12.80	8.70	5.05	.70	1.20	6.70	3.97	1.00	31.00
16	41.45	17.45	16.00	13.00	8.30	4.80	.60	5.70	8.00	3.80	.98	40.75
17	36.30	15.70	13.00	11.70	6.80	4.50	.43	17.00	6.10	3.51	.90	35.00
18	31.85	13.70	11.05	12.80	5.50	4.10	2.60	26.30	12.21	3.00	.93	27.00
19	28.15	12.50	10.00	25.70	4.70	3.80	4.00	22.70	16.00	2.70	1.10	21.50
20	25.15	11.90	9.60	39.80	4.90	3.35	5.70	25.70	14.50	2.30	1.30	16.41
21	22.50	10.90	13.00	42.60	8.30	3.00	7.33	32.10	10.60	2.00	1.40	12.10
22	19.85	9.95	16.50	38.00	17.30	2.75	6.00	32.50	7.50	1.81	1.70	9.95
23	17.55	9.20	15.70	32.80	19.80	2.30	4.50	31.97	5.70	1.61	2.00	7.00
24	15.35	8.75	14.00	28.41	17.50	2.20	3.20	26.80	4.51	1.45	2.05	6.80
25	14.60	8.65	13.80	24.40	14.10	2.00	2.50	22.40	3.90	1.31	2.00	7.30
26	18.00	8.50	28.50	21.00	11.30	1.97	2.00	18.30	3.40	1.20	1.95	8.34
27	17.20	8.20	37.25	17.90	9.30	1.85	1.50	14.10	2.91	1.05	1.95	9.00
28	15.50	7.90	34.50	14.90	8.15	1.70	1.05	9.85	2.60	.81	2.00	10.96
29	14.80	......	29.00	12.50	7.00	1.65	.90	7.90	2.91	.55	1.95	36.30
30	15.10	......	24.30	10.90	6.90	1.65	.80	7.41	4.80	.90	1.91	49.00
31	14.60	......	24.85	......	6.35	......	.60	7.10	......	.90	......	49.00

Daily gage height, in feet, of Black Warrior River at Tuscaloosa—Continued.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1902.												
1	44.00	37.80	49.87	52.88	10.85	1.52	0.35	0.04	2.52	5.61	4.90	8.50
2	38.80	47.50	48.10	45.50	9.90	1.48	.30	.05	2.20	5.50	4.89	9.50
3	34.10	48.40	44.00	39.70	8.32	1.40	.15	.08	2.85	5.00	4.89	13.55
4	28.50	45.00	37.50	35.00	6.51	1.52	.00	.15	4.87	5.50	4.90	17.10
5	24.80	40.00	33.50	32.00	5.50	1.40	.00	1.80	4.65	5.52	4.91	17.92
6	21.15	36.00	35.78	29.00	5.00	1.30	.03	2.30	3.50	5.31	4.94	15.65
7	15.50	31.00	35.00	26.91	4.75	1.25	.05	1.90	2.52	5.15	5.00	14.90
8	14.00	28.15	31.61	32.70	5.11	1.15	.05	1.35	2.00	5.00	4.94	13.40
9	12.50	24.38	28.50	35.75	5.15	1.10	.15	.81	1.60	4.95	4.94	11.75
10	11.00	21.50	25.51	32.81	4.75	1.05	.20	.69	1.32	4.90	4.89	10.25
11	9.30	18.00	23.10	29.05	4.35	1.00	.25	.49	1.12	9.65	4.89	9.10
12	8.50	15.40	20.40	26.00	4.05	.91	.25	.48	.85	15.40	4.90	8.50
13	8.00	13.00	17.70	23.32	3.75	.80	.15	.39	.71	14.90	4.90	8.05
14	7.30	11.00	15.52	20.61	3.52	.72	.15	.25	.50	11.75	4.91	7.85
15	6.70	11.50	15.00	18.00	3.15	.70	.10	.18	.40	8.98	4.90	7.45
16	6.11	19.85	17.50	15.82	3.50	.65	.10	.15	.25	7.45	4.89	15.00
17	5.65	21.81	31.80	14.41	6.01	.53	.05	.14	.15	6.40	4.90	29.65
18	5.00	19.70	29.60	12.93	6.52	.50	.05	.10	.12	6.00	5.25	28.85
19	6.05	17.55	25.00	11.85	6.10	.80	.04	.08	.75	5.83	5.50	23.90
20	7.81	16.00	21.30	10.57	5.31	1.00	.03	.05	2.21	5.75	5.54	19.15
21	11.00	14.51	18.50	9.61	4.55	1.60	.03	.04	3.51	5.60	5.50	16.30
22	16.15	14.00	17.65	8.80	3.90	1.70	.04	.10	3.92	5.60	5.50	18.00
23	20.81	13.60	15.21	8.05	3.50	1.72	.04	.12	4.30	5.52	5.45	20.30
24	20.81	13.05	13.80	7.72	3.05	1.80	.10	.15	4.50	5.45	5.42	18.10
25	18.50	12.50	18.30	7.30	2.82	1.85	.11	.10	4.75	5.35	5.69	15.41
26	16.85	13.00	19.00	7.05	2.75	1.50	.10	.08	4.83	5.29	6.75	13.50
27	15.50	14.00	35.50	6.72	2.35	1.10	.11	.15	4.90	5.00	13.90	12.00
28	20.00	41.61	60.35	6.41	2.03	.65	.07	.61	5.20	4.90	13.40	10.95
29	28.00	......	60.60	5.90	1.95	.40	.05	1.45	5.08	4.91	10.42	10.00
30	27.87	......	58.30	5.75	1.81	.40	.05	1.68	5.65	4.90	9.65	11.10
31	28.50	......	57.40	......	1.65	......	.04	1.98	......	4.92	......	12.51
1903.												
1	13.20	13.35	54.30	16.70	8.50	9.60	6.43	6.95	5.10	3.98	5.03	4.71
2	13.75	12.55	52.41	16.65	8.15	12.50	5.90	7.40	5.15	3.95	5.17	4.72
3	16.53	13.75	47.25	15.30	7.90	14.21	5.65	8.55	5.00	3.80	5.68	4.78
4	23.50	18.55	41.42	14.12	7.75	12.35	5.44	7.65	4.91	3.75	5.55	4.84
5	22.52	35.00	36.90	13.10	7.45	12.40	5.80	6.95	4.80	3.65	5.21	4.85
6	19.81	37.85	33.11	12.30	7.15	13.35	6.35	6.50	4.73	3.98	5.04	4.87
7	17.10	36.00	37.82	11.50	6.92	16.83	6.15	6.80	4.55	4.20	4.98	4.88
8	15.11	56.35	36.50	11.15	6.89	16.50	5.90	6.72	4.45	4.70	4.90	4.86
9	13.31	55.85	39.15	12.30	7.00	12.20	5.75	6.55	4.40	4.75	4.88	4.88
10	12.10	51.50	39.20	22.35	6.90	10.50	6.50	6.10	4.42	4.90	4.84	4.89
11	12.53	52.00	37.75	20.10	6.75	10.85	6.25	6.35	4.31	4.97	4.80	4.90
12	23.95	53.75	35.12	16.50	7.05	11.00	6.35	6.15	4.25	5.10	4.87	4.92
13	28.41	51.10	33.80	14.35	8.65	10.35	6.52	6.10	4.21	5.15	4.91	4.87
14	25.75	46.15	36.15	21.20	14.35	9.45	6.70	6.00	4.19	4.95	4.87	4.85
15	21.90	41.11	36.00	32.12	36.85	8.30	6.55	5.95	4.13	4.96	4.92	4.87
16	19.01	40.50	33.84	28.20	48.40	7.65	6.25	6.25	4.10	4.93	4.97	4.86
17	16.11	56.65	31.12	23.40	43.10	7.08	5.90	6.60	4.00	4.98	4.98	4.86
18	14.50	a56.75	28.65	18.35	37.10	6.70	5.81	6.85	4.03	5.01	4.91	4.84
19	12.51	52.95	26.15	16.00	30.65	6.45	5.70	7.82	4.08	4.99	4.90	4.80
20	11.85	46.75	23.50	14.50	25.80	6.20	5.45	7.60	4.03	4.98	4.88	4.92
21	11.05	41.35	20.85	14.90	21.55	6.23	5.10	6.91	3.98	4.90	4.86	5.05
22	10.84	36.50	18.80	17.95	17.60	7.20	5.05	6.55	3.94	4.85	4.80	5.28
23	9.98	32.30	17.55	15.90	18.85	6.95	4.75	6.10	3.90	4.76	4.78	5.15
24	9.51	28.85	16.15	13.81	11.10	6.75	4.70	5.65	3.89	4.65	4.75	5.48
25	8.65	26.10	14.80	12.30	9.80	6.83	4.83	5.45	3.86	4.60	4.73	5.60
26	8.25	23.95	13.48	11.30	9.00	7.80	4.90	5.25	3.80	4.50	4.75	5.51
27	8.05	22.00	12.40	10.50	8.35	7.52	4.80	5.15	3.75	4.50	4.74	5.39
28	9.85	45.42	11.85	10.00	7.80	7.15	4.65	5.05	3.70	4.60	4.75	5.15
29	12.35	......	11.62	9.45	7.45	6.91	7.85	4.95	3.81	4.68	4.73	5.12
30	14.72	......	11.78	8.95	7.15	6.55	4.75	5.35	3.95	4.76	4.70	5.09
31	14.55	......	13.50	......	7.32	......	6.50	5.15	......	4.81	......	5.07

a Maximum 57.10.

Rating table for Black Warrior River at Tuscaloosa from 1895 to 1901.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
−2.0	88	3.0	1,470	7.0	3,665	11.0	5,885
−1.8	92	3.1	1,520	7.1	3,715	11.1	5,935
−1.6	100	3.2	1,570	7.2	3,765	11.2	5,985
−1.4	110	3.3	1,620	7.3	3,815	11.3	6,035
−1.2	120	3.4	1,670	7.4	3,865	11.4	6,085
−1.0	130	3.5	1,725	7.5	3,925	11.5	6,145
− .8	150	3.6	1,780	7.6	3,985	11.6	6,205
− .6	175	3.7	1,835	7.7	4,045	11.7	6,265
− .4	205	3.8	1,890	7.8	4,105	11.8	6,325
− .2	240	3.9	1,945	7.9	4,165	11.9	6,385
.0	280	4.0	2,000	8.0	4,220	12.0	6,440
.1	310	4.1	2,055	8.1	4,270	12.1	6,490
.2	340	4.2	2,111	8.2	4,320	12.2	6,540
.3	370	4.3	2,166	8.3	4,370	12.3	6,590
.4	400	4.4	2,222	8.4	4,420	12.4	6,640
.5	430	4.5	2,277	8.5	4,480	12.5	6,700
.6	460	4.6	2,333	8.6	4,540	12.6	6,760
.7	490	4.7	2,388	8.7	4,600	12.7	6,820
.8	530	4.8	2,444	8.8	4,660	12.8	6,880
.9	565	4.9	2,500	8.9	4,720	12.9	6,940
1.0	600	5.0	2,555	9.0	4,775	13.0	6,995
1.1	635	5.1	2,610	9.1	4,825	13.1	7,045
1.2	670	5.2	2,666	9.2	4,875	13.2	7,095
1.3	710	5.3	2,721	9.3	4,925	13.3	7,145
1.4	750	5.4	2,777	9.4	4,975	13.4	7,195
1.5	790	5.5	2,832	9.5	5,035	13.5	7,255
1.6	830	5.6	2,888	9.6	5,095	13.6	7,315
1.7	870	5.7	2,943	9.7	5,155	13.7	7,375
1.8	910	5.8	3,000	9.8	5,215	13.8	7,435
1.9	955	5.9	3,054	9.9	5,275	13.9	7,495
2.0	1,000	6.0	3,110	10.0	5,330	14.0	7,550
2.1	1,045	6.1	3,160	10.1	5,380	14.1	7,600
2.2	1,090	6.2	3,210	10.2	5,430	14.2	7,650
2.3	1,135	6.3	3,260	10.3	5,480	14.3	7,700
2.4	1,180	6.4	3,310	10.4	5,530	14.4	7,750
2.5	1,225	6.5	3,370	10.5	5,590	14.5	7,810
2.6	1,270	6.6	3,430	10.6	5,650	14.6	7,870
2.7	1,320	6.5	3,490	10.7	5,710	14.7	7,930
2.8	1,370	6.8	3,550	10.8	5,770	14.8	7,990
2.9	1,420	6.9	3,610	10.9	5,830	14.9	8,050

Rating table for Black Warrior River at Tuscaloosa from 1895 to 1901—Continued.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Second-feet.	Feet.	Second-feet.	Feet.	Second-feet.	Feet.	Second-feet.
15.0	8,105	18.0	9,770	21.0	11,600	24.0	14,700
15.1	8,155	18.1	9,820	21.1	11,690	24.1	14,830
15.2	8,205	18.2	9,870	21.2	11,780	24.2	14,960
15.3	8,255	18.3	9,920	21.3	11,870	24.3	15,090
15.4	8,305	18.4	9,970	21.4	11,960	24.4	15,200
15.5	8,365	18.5	10,030	21.5	12,050	24.5	15,350
15.6	8,425	18.6	10,090	21.6	12,140	24.6	15,480
15.7	8,485	18.7	10,150	21.7	12,230	24.7	15,610
15.8	8,545	18.8	10,210	21.8	12,320	24.8	15,740
15.9	8,605	18.9	10,270	21.9	12,410	24.9	15,870
16.0	8,660	19.0	10,325	22.0	12,500	25.0	16,000
16.1	8,710	19.1	10,375	22.1	12,600	26.0	17,600
16.2	8,760	19.2	10,425	22.2	12,700	28.0	21,500
16.3	8,810	19.3	10,475	22.3	12,800	30.0	26,500
16.4	8,860	19.4	10,525	22.4	12,900	32.0	31,700
16.5	8,920	19.5	10,585	22.5	13,000	34.0	38,000
16.6	8,980	19.6	10,645	22.6	13,100	36.0	45,000
16.7	9,040	19.7	10,705	22.7	13,200	38.0	53,000
16.8	9,100	19.8	10,765	22.8	13,300	40.0	61,000
16.9	9,160	19.9	10,825	22.9	13,400	42.0	69,000
17.0	9,215	20.0	10,880	23.0	13,500	44.0	77,000
17.1	9,265	20.1	10,950	23.1	13,620	46.0	85,000
17.2	9,315	20.2	11,020	23.2	13,740	48.0	93,000
17.3	9,365	20.3	11,090	23.3	13,860	50.0	101,000
17.4	9,415	20.4	11,160	23.4	13,980	52.0	109,000
17.5	9,475	20.5	11,230	23.5	14,100	54.0	117,000
17.6	9,535	20.6	11,305	23.6	14,220	55.0	121,000
17.7	9,595	20.7	11,380	23.7	14,340		
17.8	9,655	20.8	11,455	23.8	14,460		
17.9	9,715	20.9	11,530	23.9	14,580		

Estimated monthly discharge of Black Warrior River at Tuscaloosa.

[Drainage area, 4,900 square miles.]

Month.	Discharge in second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1895.					
January	103,400	2,777	25,464	5.20	6.00
February	14,830	4,775	7,603	1.55	1.61
March	109,000	4,540	39,977	8.16	9.42
April	14,700	3,665	6,895	1.41	1.57
May	13,860	2,000	5,511	1.12	1.29
June	3,665	1,000	2,133	.44	.49
July	9,970	1,000	3,581	.73	.84
August	2,500	565	1,098	.22	.25
September	1,835	310	883	.18	.20
October	310	140	233	.05	.06
November	750	280	488	.10	.11
December	11,600	530	2,021	.41	.47
The year	109,000	140	7,991	1.63	22.31
1896.					
January	24,610	2,444	5,981	1.22	1.41
February	47,000	3,665	19,161	3.91	4.22
March	52,600	3,160	12,996	2.65	3.06
April	14,100	2,721	6,072	1.24	1.38
May	49,800	1,370	7,420	1.51	1.74
June	9,970	1,090	2,910	.59	.65
July	4,420	460	1,232	.25	.29
August	750	310	478	.10	.12
September	400	120	201	.04	.04
October	260	120	157	.03	.03
November	600	120	307	.06	.07
December	4,045	430	955	.19	.22
The year	52,600	120	4,822	.98	13.23

Estimated monthly discharge of Black Warrior River at Tuscaloosa—Continued.

Month.	Discharge in second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1897.					
January	10,500	385	3,493	0.71	0.82
February	17,440	1,945	8,409	1.72	1.79
March	120,080	4,540	52,883	10.79	12.44
April	25,285	2,610	9,657	1.97	2.20
May	11,195	1,000	3,600	.73	.84
June	1,697	260	715	.15	.17
July	7,810	240	1,809	.37	.43
August	1,595	355	701	.14	.16
September	600	102	295	.06	.07
October	102	90	93	.02	.02
November	125	107	115	.02	.03
December	29,000	115	5,549	1.13	1.30
The year	120,080	90	7,277	1.48	20.27
1898.					
January	75,000	1,972	16,577	3.38	3.90
February	12,230	1,752	3,902	.80	.83
March	17,120	1,370	3,626	.74	.85
April	55,800	4,295	15,620	3.19	3.56
May	6,060	370	1,766	.36	.41
June	710	160	303	.06	.07
July	1,395	250	549	.11	.13
August	7,600	430	1,785	.36	.41
September	670	140	252	.05	.06
October	2,444	130	880	.18	.21
November	6,265	280	1,626	.33	.37
December	14,580	1,045	3,763	.77	.89
The year	75,000	130	4,221	.86	11.69

Estimated monthly discharge of Black Warrior River at Tuscaloosa—Continued.

Month.	Discharge in second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1899.					
January	81,375	2,222	18,118	3.70	4.27
February	90,375	10,030	30,923	6.31	6.57
March	122,625	5,330	35,308	7.21	8.31
April	32,800	4,540	11,901	2.43	2.71
May	4,165	790	2,092	.43	.49
June	1,000	175	448	.09	.10
July	5,035	160	1,111	.23	.26
August	3,370	370	963	.20	.23
September	670	110	200	.04	.04
October	175	92	130	.03	.03
November	5,590	127	721	.15	.17
December	47,650	460	8,880	1.81	2.09
The year	122,625	92	9,233	1.89	25.27
1900.					
January	29,760	2,277	9,857	2.01	2.32
February	76,312	2,555	18,356	3.75	3.90
March	87,750	8,280	27,105	5.53	6.37
April	136,687	5,302	48,426	9.88	11.02
May	11,825	1,645	3,702	.76	.88
June	115,312	2,138	32,614	6.66	7.43
July	52,000	2,888	10,952	2.24	2.59
August	5,245	750	1,674	.34	.39
September	5,680	512	1,580	.32	.36
October	13,000	355	3,382	.69	.80
November	12,700	977	3,701	.76	.85
December	10,150	2,721	5,119	1.05	1.21
The year	136,687	355	13,872	2.83	38.12

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Estimated monthly discharge of Black Warrior River at Tuscaloosa—Continued.

Month.	Discharge in second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1901.					
January	108, 375	4, 370	22, 938	4. 68	5. 39
February	55, 100	4, 165	15, 094	3. 08	3. 21
March	40, 900	3, 815	11, 947	2. 44	2. 81
April	57, 020	5, 330	17, 370	3. 55	3. 96
May	10, 765	2, 333	4, 355	. 89	1. 03
June	9, 010	850	3, 217	. 66	. 74
July	3, 815	415	1, 210	. 25	. 29
August	29, 550	340	7, 117	1. 45	1. 67
September	8, 660	710	2, 626	. 54	. 60
October	4, 775	445	1, 536	. 31	. 36
November	1, 022	512	712	. 15	. 17
December	80, 250	710	13, 293	2. 71	3. 12
The year	108, 375	340	8, 454	1. 73	23. 35

Net horsepower per foot of fall with a turbine efficiency of 80 per cent for the minimum monthly discharge of Black Warrior River at Tuscaloosa.

Month.	1899.			190 .			1901.		
	Minimum discharge.	Minimum net horse-power per foot of fall.	Duration of minimum.	Minimum discharge.	Minimum net horse-power per foot of fall.	Duration of minimum.	Minimum discharge.	Minimum net horse-power per foot of fall.	Duration of minimum.
	Sec.-feet.		Days.	Sec.-feet.		Days.	Sec.-feet.		Days.
January	2, 222	202	1	2, 277	207	· 1	4, 370	398	1
February	10, 030	912	2	2, 555	232	1	4, 165	378	1
March	5, 330	485	1	8, 282	753	1	3, 815	347	1
April	4, 539	413	1	5, 302	483	1	5, 330	485	1
May	790	72	1	1, 645	150	1	2, 333	212	1
June	175	16	1	2, 138	194	1	850	77	2
July	160	15	7	2, 888	262	1	415	38	1
August	370	34	2	750·	68	2	340	31	1
September	110	10	1	512	47	1	710	65	1
October	92	9	1	355	32	1	445	40	1
November	127	12	5	977	89	1	512	47	1
December	460	42	1	2, 721	247	1	710	65	1

BLACK WARRIOR RIVER NEAR CORDOVA.

This station is located at the Kansas City, Memphis and Birmingham Railroad bridge, three-fourths of a mile from Cordova. The gage was established by the United States Weather Bureau, but the records were discontinued by that bureau some time ago. From 12 to 55 feet the gage was a vertical timber bolted to the inside of the bridge pier on the left bank of the river. Below 12 feet the gage was sloping, but it was out of position, and could not be used when the station was established by the Geological Survey on May 21, 1900, so a short new section was put in at that time. This section is a 2-inch by 10-inch plank, graduated to feet and tenths, marked with nails from −1.5 feet to +12.5 feet, and spiked to a willow tree on the right bank of the river about 200 feet below the bridge. The bench mark is the top of the stone pier on the left bank, and is 54.95 feet above the zero of the gage. Measurements are made from the railroad bridge, which is a single-span, iron through bridge 300 feet long. The section is a good one. The observer is A. B. Logan, who lives on the right bank of the river only a few hundred feet from the end of the bridge.

The following measurements were made by M. R. Hall, K. T. Thomas, and others:

Discharge measurements of Black Warrior River near Cordova.

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.
1900.	*Feet.*	*Second-feet.*	1902—Continued.	*Feet.*	*Second-feet.*
May 21.............	0.10	747	September 22	−1.10	a 74
			October 14.........	.60	834
1901.					
January 8	1.30	1,781	1903.		
February 18	2.40	2,863	March 6............	13.90	19,252
March 12............	9.45	13,279	March 13...........	6.90	9,486
April 17	1.70	2,024	May 19.............	4.34	5,159
June 20.............	.00	644	June 15.............	0.50	1,036
October 26..........	− .40	385	July 17.............	− .30	306
1902.			August 27	− .48	208
January 17	.80	1,384	August 29	− .65	142
April 4.............	5.80	7,162	September 25	− .90	78

a Estimated from float measurement.

Daily gage height, in feet, of Black Warrior River near Cordova.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1900.												
1						0.6	8.1	0.9	0.5	−0.8	−0.1	1.4
2						2.8	5.2	.5	.2	− .8	+ .5	1.0
3						5.3	7.1	.4	.1	− .9	.8	.8
4						7.1	6.5	.2	.0	− .9	.4	1.0
5						7.5	5.3	.1	− .1	−1.0	.3	1.9
6						7.6	4.6	.0	− .2	−1.0	.3	1.8
7						6.5	3.5	.1	− .3	−1.1	.2	1.4
8						7.3	2.1	.2	− .4	+ .2	.2	1.2
9						6.5	2.5	.3	− .5	.9	.1	1.0
10						4.5	2.7	.3	− .5	.9	.0	.8
11						3.2	1.0	.4	− .6	.1	− .1	.7
12						3.0	.8	.5	− .6	9.4	− .2	.7
13						4.6	1.0	.5	− .7	9.2	− .2	.8
14						8.6	.8	.5	− .6	3.2	− .3	.8
15						9.8	.5	.6	1.5	2.3	− .3	.8
16						8.0	.4	.6	.9	1.7	− .3	.6
17						8.2	.4	.6	.5	1.0	− .4	.5
18						7.2	.3	.6	.1	.6	+ .3	.4
19						13.4	.3	.1	.0	.3	.2	.4
20						10.0	.2	.0	− .1	.2	.1	.5
21					0.1	6.1	.7	.2	− .2	.1	.3	1.5
22					.1	6.5	1.0	.3	− .3	.0	1.1	3.0
23					.1	15.2	.8	.4	− .3	1.0	.8	2.9
24					1.5	32.9	.5	.8	− .4	.7	.8	5.0
25					1.5	33.8	.9	1.7	− .4	.5	.9	4.0
26					1.0	31.3	.8	.5	− .5	.3	5.1	3.1
27					.6	22.1	1.6	.2	− .5	.2	4.9	2.5
28					.7	23.9	2.4	.0	− .6	.1	3.6	2.1
29					.8	22.4	1.3	.1	− .7	.0	2.8	1.8
30					.9	16.5	1.2	.9	− .7	− .1	1.9	1.7
31					.9		1.5	1.0		− .1		2.8
1901.												
1	3.7	4.0	1.0	5.4	1.7	1.6	+ .1	− .6	.7	1.2	− .4	− .2
2	3.1	3.6	1.6	9.2	1.5	4.5	.3	− .6	.5	.8	− .5	− .2
3	2.8	4.5	2.3	14.5	1.3	2.8	.1	− .65	.4	.5	− .5	− .1
4	2.5	17.6	1.9	10.9	1.1	2.1	.0	− .65	.2	.4	− .4	.0
5	2.3	18.0	1.6	7.0	1.0	2.0	− .2	− .7	.1	.3	− .4	.1
6	2.0	9.1	1.8	5.8	.8	2.6	− .2	− .7	.0	.2	− .4	.1
7	1.7	5.6	1.5	4.9	.7	2.7	− .3	− .7	.1	.1	− .3	.1
8	1.5	5.2	1.3	4.2	.6	2.0	− .3	− .65	− .2	.0	− .3	.1
9	1.3	7.1	1.5	3.5	.5	1.5	− .4	− .6	− .3	− .1	− .4	.1
10	2.6	8.1	17.5	2.8	.4	1.1	− .5	− .6	− .4	− .2	− .4	.7
11	19.9	6.2	20.5	2.3	.3	2.2	− .6	− .6	− .5	− .2	− .4	1.2
12	32.5	5.4	10.8	2.1	.4	1.5	− .6	− .3	− .3	− .2	− .3	1.0
13	29.85	4.8	6.2	1.8	.6	1.1	− .6	+ .4	− .3	.0	− .3	.8
14	17.85	4.2	5.3	2.5	3.1	1.0	− .7	.1	+ .5	+1.1	− .3	6.2
15	9.25	3.8	4.2	2.8	1.8	.9	− .7	.2	.7	.6	− .3	2.4
16	6.8	3.3	3.5	2.3	1.3	.7	− .7	5.0	.5	.3	− .4	1.52
17	5.5	2.9	2.8	1.8	.9	.6	− .6	12.1	3.8	.1	− .4	8.1
18	4.3	2.6	2.2	2.2	.7	.5	.0	6.8	5.0	.0	− .4	5.3
19	3.8	2.2	1.9	9.4	.9	.3	+1.1	10.8	3.5	− .1	− .2	3.5
20	3.1	2.0	2.4	16.1	1.8	.2	2.8	8.7	1.8	− .2	.0	2.6
21	2.8	1.8	5.0	11.5	5.8	.0	1.6	8.5	1.1	− .2	− .1	2.0
22	2.6	1.6	4.2	6.8	7.3	− .1	.5	11.2	.8	− .3	− .1	1.5
23	2.4	1.3	3.5	5.4	5.5	− .2	.0	7.3	.5	− .3	.0	1.5
24	2.6	1.4	3.5	4.5	3.6	− .3	− .2	5.2	.4	− .4	− .1	2.0
25	5.4	1.2	4.95	3.6	2.8	− .3	− .3	4.0	.3	− .4	− .2	2.5
26	5.0	1.2	11.2	3.0	2.1	− .3	− .4	2.8	.2	− .4	− .2	2.1
27	3.8	1.1	6.9	2.6	1.6	− .4	− .5	2.0	.1	− .4	− .1	2.6
28	4.2	1.0	5.3	2.2	1.3	− .4	− .5	1.5	.1	− .4	− .1	5.0
29	3.8		4.6	2.0	1.1	− .4	− .5	1.4	1.0	− .5	− .2	18.5
30	3.6		4.0	1.9	1.0	− .5	− .55	1.2	2.3	− .5	− .2	22.0
31	4.2		6.2		1.0		− .6	1.0		− .5		13.5

Daily gage height, in feet, of Black Warrior River near Cordova—Continued.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1902.												
1	8.8	14.6	22.6	18.1	0.8	−0.6	−0.9	−1.0	−0.8	−0.4	−0.8	0.7
2	6.5	18.1	15.0	9.2	.6	− .7	− .9	−1.0	− .8	− .2	− .8	2.8
3	5.0	15.4	8.6	6.5	.5	− .7	− .9	.0	− .7	− .1	− .8	7.2
4	4.2	10.5	6.5	5.7	.3	− .7	− .9	− .1	− .6	− .4	− .8	7.0
5	3.7	8.0	8.8	5.4	.2	− .7	− .9	− .1	− .7	− .6	− .8	3.6
6	3.0	6.2	11.5	4.3	.1	− .7	− .9	− .3	− .8	− .6	− .7	3.8
7	2.6	5.2	8.4	5.75	.0	− .7	−1.0	− .5	− .9	− .7	− .6	3.2
8	2.4	4.4	6.7	8.9	.0	− .8	−1:0	− .8	−1.0	− .7	− .4	2.4
9	2.2	3.8	6.1	8.1	− .1	− .8	−1.0	−1.0	−1.0	− .7	− .4	1.8
10	2.0	3.3	5.7	6.4	.1	− .8	−1.0	−1.0	−1.1	− .7	− .5	1.3
11	1.8	2.8	4.9	5.0	.0	− .8	−1.0	−1.1	−1.1	+ .6	− .6	1.0
12	1.6	2.5	4.3	4.2	− .1	− .8	−1.1	−1.1	−1.1	2.9	− .7	.8
13	1.4	2.3	4.1	3.8	− .2	− .8	−1.1	−1.1	−1.1	1.4	− .7	.7
14	1.2	2.2	3.8	3.5	− .2	− .8	−1.1	−1.1	−1.1	.6	− .7	.6
15	1.1	5.3	3.5	3.2	− .2	− .9	−1.1	−1.1	−1.1	.6	− .7	.5
16	1.0	7.5	3.8	2.8	.1	− .9	−1.1	−1.1	−1.1	.2	− .7	6.5
17	1.0	5.5	7.1	2.3	.2	− .9	−1.1	−1.1	−1.1	− .2	− .7	11.3
18	.9	4.7	5.3	2.0	.5	− .9	−1.1	−1.1	−1.1	− .3	− .5	6.3
19	1.7	4.2	4.1	1.7	.3	− .9	−1.1	−1.1	−1.1	− .4	− .5	4.4
20	3.0	3.7	3.8	1.6	.2	− .9	−1.0	−1.1	−1.1	− .5	− .5	3.2
21	3.5	3.4	3.6	1.4	.0	− .4	−1.0	−1.1	−1.1	− .6	− .5	3.7
22	6.7	3.3	3.6	1.2	− .2	− .2	− .9	−1.0	−1.1	− .6	− .5	5.8
23	6.0	3.0	3.1	1.1	− .3	− .6	− .9	−1.0	−1.1	− .6	− .5	4.4
24	4.8	2.7	2.7	1.0	− .4	− .7	− .9	−1.0	−1.1	− .7	− .5	3.5
25	4.3	3.2	3.5	.9	− .5	− .7	− .9	−1.0	−1.1	− .8	− .2	2.7
26	3.9	4.0	3.3	.8	− .5	− .7	−1.0	−1.1	−1.0	− .8	8.0	2.4
27	5.0	4.0	8.1	.7	− .5	− .8	−1.0	−1.1	−1.0	− .8	3.4	1.8
28	12.0	22.7	25.0	.6	− .5	− .8	−1.0	− .9	−1.1	− .8	1.5	1.6
29	10.3	......	35.5	.5	− .6	− .8	−1.0	− .7	−1.1	− .8	.8	2.4
30	8.3	......	39.0	1.0	− .6	− .8	−1.0	− .6	− .8	− .8	.6	2.5
31	11.0	......	31.8	......	− .7	......	−1.0	− .7	......	− .8	......	2.7
1903.												
1	2.3	2.3	27.6	3.7	.8	2.8	− .1	.0	− .7	− .9	− .4	− .5
2	2.4	3.4	21.6	3.3	.7	3.8	− .2	.0	− .7	− .9	− .4	− .5
3	7.8	3.3	13.5	2.7	.7	2.5	− .2	.5	− .7	− .9	− .4	− .6
4	8.2	9.0	7.2	2.3	.7	1.6	− .3	.3	− .7	− .9	− .4	− .6
5	6.0	15.8	6.2	2.3	.7	1.8	.0	.1	− .7	− .9	− .4	− .6
6	4.9	10.0	13.7	2.3	.6	4.7	− .1	.1	− .7	− .9	− .5	− .6
7	3.8	8.7	11.4	1.9	.6	3.8	− .2	− .2	− .7	− .9	− .5	− .6
8	3.0	26.1	10.1	2.0	.5	2.6	.0	− .2	− .7	− .5	− .6	− .6
9	2.6	25.4	15.7	10.0	.5	2.0	− .1	− .2	− .8	− .4	− .6	− .6
10	2.4	16.1	11.9	5.4	.5	2.4	− .2	− .3	− .8	− .3	− .6	− .6
11	3.9	21.2	10.2	4.0	.5	2.0	.0	− .3	− .8	− .3	− .6	− .6
12	10.0	25.3	8.2	3.4	.5	2.0	− .1	− .3	− .8	− .3	− .4	− .6
13	7.8	18.0	6.7	5.5	.8	1.4	− .1	− .3	− .8	− .4	− .4	− .6
14	5.6	9.0	8.6	12.2	6.6	.9	− .2	− .4	− .8	− .5	− .5	− .6
15	4.5	11.1	8.6	8.0	20.1	.6	− .3	− .4	− .8	− .6	− .6	− .5
16	3.6	14.3	6.9	5.8	19.4	.5	− .3	− .3	− .8	− .6	− .6	− .5
17	2.5	29.5	5.9	4.6	11.2	.3	− .3	− .3	− .8	− .7	− .6	− .5
18	2.8	27.3	5.3	3.9	6.8	.2	− .4	− .4	− .9	− .7	− .6	− .5
19	2.4	17.8	4.5	2.9	4.9	.1	− .4	− .4	− .9	− .7	− .6	− .5
20	1.8	10.5	4.0	3.2	3.8	.0	− .4	− .5	−.9	− .7	− .5	− .5
21	1.7	7.9	3.4	6.8	2.8	.0	− .4	− .5	− .9	− .7	− .5	− .2
22	1.8	5.4	3.0	4.5	2.4	.0	− .5	− .6	− .9	− .7	− .5	− .5
23	1.6	5.0	3.0	3.4	1.8	.2	− .5	− .6	− .9	− .7	− .5	.1
24	1.4	4.5	2.9	3.0	1.5	.7	− .5	− .6	− .9	− .7	− .5	.1
25	1.4	3.7	2.7	2.6	1.3	.5	− .5	− .6	− .9	− .7	− .5	− .3
26	1.4	3.3	2.3	2.0	1.0	.4	− .5	− .6	− .9	− .7	− .5	− .4
27	1.3	3.0	2.0	1.7	.8	.3	− .6	− .6	− .9	− .7	− .5	− .3
28	1.9	21.9	1.8	1.5	.6	.2	− .6	− .6	− .9	− .7	− .5	− .3
29	3.5	......	1.7	1.4	.5	.2	− .6	− .7	− .9	− .8	− .5	− .4
30	3.4	......	2.3	1.0	.4	.1	− .6	− .7	− .9	− .8	− .5	− .4
31	2.8	......	2.9	......	.8	......	.2	− .7	......	− .5	......	− .4

Rating table for Black Warrior River near Cordova for 1900 and 1901.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
−0.7	205	3.3	4,144	7.3	10,064	11.3	15,984
− .6	260	3.4	4,292	7.4	10,212	11.4	16,132
− .5	320	3.5	4,440	7.5	10,360	11.5	16,280
− .4	384	3.6	4,588	7.6	10,508	11.6	16,428
− .3	450	3.7	4,736	7.7	10,656	11.7	16,576
− .2	518	3.8	4,884	7.8	10,804	11.8	16,724
− .1	588	3.9	5,032	7.9	10,952	11.9	16,872
.0	660	4.0	5,180	8.0	11,100	12.0	17,020
.1	734	4.1	5,328	8.1	11,248	12.1	17,168
.2	810	4.2	5,476	8.2	11,396	12.2	17,316
.3	888	4.3	5,624	8.3	11,544	12.3	17,464
.4	968	4.4	5,772	8.4	11,692	12.4	17,612
.5	1,050	4.5	5,920	8.5	11,840	12.5	17,760
.6	1,134	4.6	6,068	8.6	11,988	12.6	17,908
.7	1,220	4.7	6,216	8.7	12,136	12.7	18,056
.8	1,307	4.8	6,364	8.8	12,284	12.8	18,204
.9	1,396	4.9	6,512	8.9	12,432	12.9	18,352
1.0	1,486	5.0	6,660	9.0	12,580	13.0	18,500
1.1	1,577	5.1	6,808	9.1	12,728	13.1	18,648
1.2	1,669	5.2	6,956	9.2	12,876	13.2	18,796
1.3	1,762	5.3	7,104	9.3	13,024	13.3	18,944
1.4	1,856	5.4	7,252	9.4	13,172	13.4	19,092
1.5	1,951	5.5	7,400	9.5	13,320	13.5	19,240
1.6	2,047	5.6	7,548	9.6	13,468	13.6	19,388
1.7	2,144	5.7	7,696	9.7	13,616	13.7	19,536
1.8	2,242	5.8	7,844	9.8	13,764	13.8	19,684
1.9	2,342	5.9	7,992	9.9	13,912	13.9	19,832
2.0	2,444	6.0	8,140	10.0	14,060	14.0	19,980
2.1	2,547	6.1	8,288	10.1	14,208	14.1	20,128
2.2	2,652	6.2	8,436	10.2	14,356	14.2	20,276
2.3	2,758	6.3	8,584	10.3	14,504	14.3	20,424
2.4	2,868	6.4	8,732	10.4	14,652	14.4	20,572
2.5	2,988	6.5	8,880	10.5	14,800	14.5	29,720
2.6	3,118	6.6	9,028	10.6	14,948	14.6	20,868
2.7	3,258	6.7	9,176	10.7	15,096	14.7	21,016
2.8	3,404	6.8	9,324	10.8	15,244	14.8	21,164
2.9	3,552	6.9	9,472	10.9	15,392	14.9	21,312
3.0	3,700	7.0	9,620	11.0	15,540	15.0	21,460
3.1	3,848	7.1	9,768	11.1	15,688		
3.2	3,996	7.2	9,916	11.2	15,836		

Rating table for Black Warrior River near Cordova for 1902.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
—1.0	95	2.8	3,404	7.5	10,360	17.0	24,420
— .8	160	3.0	3,700	8.0	11,100	17.5	25,160
— .6	260	3.2	3,996	8.5	11,840	18.0	25,900
— .4	384	3.4	4,292	9.0	12,580	19.0	27,380
— .2	518	3.6	4,588	9.5	13,320	20.0	28,860
.0	660	3.8	4,884	10.0	14,060	21.0	30,340
.2	810	4.0	5,180	10.5	14,800	22.0	31,820
.4	968	4.2	5,476	11.0	15,540	23.0	33,300
.6	1,134	4.4	5,772	11.5	16,280	24.0	34,780
.8	1,307	4.6	6,068	12.0	17,020	25.0	36,260
1.0	1,486	4.8	6,364	12.5	17,760	26.0	37,740
1.2	1,669	5.0	6,660	13.0	18,500	27.0	39,220
1.4	1,856	5.2	6,956	13.5	19,240	28.0	40,700
1.6	2,047	5.4	7,252	14.0	19,980	29.0	42,180
1.8	2,242	5.6	7,548	14.5	20,720	30.0	43,660
2.0	2,444	5.8	7,844	15.0	21,460	31.0	45,140
2.2	2,652	6.0	8,140	15.5	22,200	32.0	46,620
2.4	2,868	6.5	8,880	16.0	22,940	33.0	48,100
2.6	3,118	7.0	9,620	16.5	23,680	34.0	49,580

Rating table for Black Warrior River near Cordova for 1903.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
—0. 90	78	1. 60	1,740	5. 00	6,200	12. 20	17,000
— . 85	89	1. 70	1,840	5. 10	6,350	13. 00	18,200
— . 80	100	1. 80	1,940	5. 20	6,500	13. 50	18,950
— . 75	112	1. 90	2,040	5. 30	6,650	13. 70	19,250
— . 70	126	2. 00	2,140	5. 40	6,800	14. 00	19,700
— . 65	142	2. 10	2,250	5. 50	6,950	14. 30	20,150
— . 60	159	2. 20	2,360	5. 60	7,100	15. 00	21,200
— . 55	178	2. 30	2,475	5. 70	7,250	15. 70	22,250
— . 50	198	2. 40	2,590	5. 80	7,400	16. 00	22,700
— . 45	221	2. 50	2,705	5. 90	7,550	16. 10	22,850
— . 40	247	2. 60	2,820	6. 00	7,700	17. 00	24,200
— . 35	276	2. 70	2,935	6. 20	8,000	17. 80	25,400
— . 30	307	2. 80	3,050	6. 60	8,600	18. 00	25,700
— . 25	340	2. 90	3,175	6. 70	8,750	19. 00	27,200
— . 20	374	3. 00	3,300	6. 80	8,900	19. 40	27,800
— . 15	408	3. 10	3,430	7. 00	9,200	20. 00	28,700
— . 10	442	3. 20	3,560	7. 20	9,500	20. 10	28,850
— . 05	476	3. 30	3,695	7. 80	10,400	21. 00	30,200
. 00	510	3. 40	3,830	7. 90	10,550	21. 20	30,500
. 10	580	3. 50	3,970	8. 00	10,700	21. 60	31,100
. 20	650	3. 60	4,110	8. 20	11,000	21. 90	31,550
. 30	725	3. 70	4,255	8. 60	11,600	25. 00	36,200
. 40	800	3. 80	4,400	8. 70	11,750	25. 30	36,650
. 50	875	3. 90	4,550	9. 00	12,200	25. 40	36,800
. 60	950	4. 00	4,700	10. 00	13,700	26. 00	37,700
. 70	1,025	4. 10	4,850	10. 10	13,850	26. 10	37,850
. 80	1,100	4. 20	5,000	10. 20	14,000	27. 00	39,200
. 90	1,175	4. 30	5,150	10. 50	14,450	27. 30	39,650
1. 00	1,250	4. 40	5,300	11. 00	15,200	27. 60	40,100
1. 10	1,325	4. 50	5,450	11. 10	15,350	29. 00	42,200
1. 20	1,400	4. 60	5,600	11. 20	15,500	29. 50	42,950
1. 30	1,480	4. 70	5,750	11. 40	15,800		
1. 40	1,560	4. 80	5,900	11. 90	16,550		
1. 50	1,650	4. 90	6,050	12. 00	16,700		

Estimated monthly discharge of Black Warrior River near Cordova.

[Drainage area, 237 square miles.]

Month.	Discharge in second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1900.					
June	49,284	1,134	16,185	8.52	9.51
July	11,248	810	2,975	1.57	1.81
August	2,144	660	1,016	.53	.61
September	1,951	205	556	.29	.32
October	13,098	60	1,732	.91	1.05
November	6,808	384	1,487	.78	.87
December	6,660	968	2,154	1.13	1.30
1901.					
January	51,800	1,762	8,713	4.59	5.29
February	31,820	1,486	6,616	3.48	3.62
March	29,600	1,486	6,637	3.49	4.02
April	23,088	2,242	6,967	3.67	4.10
May	10,064	968	2,539	1.34	1.54
June	5,920	320	1,582	.83	.93
July	3,404	205	631	.33	.38
August	17,168	205	4,155	2.19	2.53
September	6,660	320	1,415	.74	.83
October	1,669	320	687	.36	.42
November	660	320	468	.25	.28
December	31,820	518	4,923	2.59	2.99
The year	51,800	205	3,778	1.99	26.93

Estimated monthly discharge of Black Warrior River near Cordova—Continued.

Month.	Discharge in second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1902.					
January	17,020	1,396	5,692	3.00	3.46
February	32,856	2,652	8,599	4.53	4.72
March	56,980	3,258	13,764	7.24	8.35
April	26,048	1,050	5,366	2.82	3.15
May	1,307	205	630	.33	.38
June	518	125	193	.10	.11
July	125	74	99	.05	.06
August	660	74	170	.09	.10
September	260	74	105	.06	.07
October	3,552	160	536	.28	.32
November	11,100	160	880	.46	.51
December	15,984	1,050	4,395	2.31	2.66
The year	56,980	74	3,369	1.77	23.89
1903.					
January	13,700	1,480	4,306	2.27	2.62
February	42,950	2,475	17,941	9.44	9.83
March	40,100	1,840	10,203	5.37	6.19
April	17,000	1,250	4,773	2.51	2.80
May	28,850	800	4,176	2.20	2.54
June	5,750	510	1,661	.87	.97
July	510	159	317	.17	.20
August	875	126	306	.16	.18
September	126	78	97	.05	.06
October	307	78	148	.08	.09
November	247	159	198	.10	.11
December	875	159	252	.13	.15
The year	42,950	78	3,698	1.95	25.74

Net horsepower per foot of fall with a turbine efficiency of 80 per cent for the minimum monthly discharge of Black Warrior River near Cordova.

Month.	1901.			1902.			1903.		
	Minimum discharge.	Minimum net horse-power per foot of fall.	Duration of minimum.	Minimum discharge.	Minimum net horse-power per foot of fall.	Duration of minimum.	Minimum discharge.	Minimum net horse-power per foot of fall.	Duration of minimum.
	Sec.-feet.		Days.	Sec.-feet.		Days.	Sec.-feet.		Days.
January _____	1,762	160	1	1,396	127	1	1,480	134	1
February _____	1,486	135	1	2,652	241	1	3,300	300	1
March _____	1,486	135	1	3,258	296	1	1,840	167	1
April _____	2,242	204	2	1,050	95	1	1,250	114	1
May _____	968	88	1	205	19	1	800	73	1
June _____	320	29	1	125	11	6	510	46	3
July _____	205	19	3	74	7	8	159	14	4
August_____	205	19	3	74	7	13	126	11	3
September _____	320	29	1	74	7	18	78	7	13
October_____	320	29	3	160	14	7	78	7	7
November _____	320	29	2	160	14	6	159	14	9
December_____	518	47	2	1,050	95	1	159	14	12

LOCUST FORK OF BLACK WARRIOR RIVER AT PALOS.

Locust Fork of Black Warrior River rises in Blount County, and, flowing in a southwesterly course, enters Black Warrior River a short distance above Wilmington. Its drainage basin is hilly, and about half its area is under cultivation. Palos station was established November 26, 1901, by R. C. McCalla, United States assistant engineer, who furnishes the daily gage heights to the Geological Survey. It is maintained by the United States Engineer Corps. The gage is a 4 by 8 inch timber on the right bank of Locust Fork of Black Warrior River just below the Kansas City, Memphis and Birmingham Railroad bridge. One section follows the slope of the bank from low water to a tree on top of the bank, and from there up a vertical section is fastened to the tree. The slope is 17 feet in elevation, measured vertically, and the vertical section of the rod is 15 feet. The rod is graduated to feet and tenths, with copper figures at the 5-foot points and round-head tacks at intermediate foot marks. The total height is 32 feet. The plane of reference (about 251.71 feet above Mobile datum) is supposed to be extreme low water. High water April, 1900, was about 37 feet above the plane of reference.

Measurements are made from the Drennan bridge, which is about a quarter of a mile below the Kansas City, Memphis and Birmingham

Railroad bridge.   The Drennan bridge is the property of the Drennan
Coal Mining Company.   It is a mining railroad bridge, having width
for a double-track tramway of 3 feet gage.   One track is laid and in
operation.   The bridge has two iron spans of 100 feet each and
trestle approaches at both ends.

The initial point for measurements is the left-bank end of the iron
bridge on the downstream side.

The bench mark is the top of the iron crossbeam at station 80 from
the initial point, and is 44.3 feet above the water when the gage reads
2.50 feet.

This bridge is lower and the section is better than that at the upper
bridge, from which some of the measurements have been made; but
there is a raft against the center pier that should be removed.   At
minimum stages the water at both bridges is too sluggish for accurate
measurement.

Discharge measurements of Locust Fork of Black Warrior River at Palos.

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.
1902.	*Feet.*	*Second-feet.*	1903.	*Feet.*	*Second-feet.*
January 18	0.85	849	May 20	1.75	2,148
April 5	2.50	3,224	June 16	.62	404
Do	2.50	3,292	Do	.62	431
September 20	.00	*a* 117	July 18	.40	228
October 15	.60	473	August 28	.13	84
1903.			Do	.13	93
March 7	4.75	7,450	September 26	.02	47
March 14	3.55	5,342			

a Estimated from float measurement.

Daily gage height, in feet, of Locust Fork of Black Warrior River at Palos.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1902.												
1	5.50	8.30	13.30	4.90	0.90	0.20	0.10	0.40	0.10	0.10	0.00	1.10
2	3.40	12.80	6.70	3.50	.80	.20	.10	.30	.00	.10	.00	1.10
3	2.70	10.20	4.40	2.70	.70	.20	.10	.30	.00	.10	.00	1.90
4	2.20	5.70	3.00	2.60	.70	.20	.10	.90	.00	.10	.00	1.90
5	2.00	3.90	5.00	2.50	.60	.20	.10	.30	.00	.10	.00	1.70
6	1.70	3.00	5.30	2.30	.60	.20	.00	.20	.00	.10	.00	1.60
7	1.60	2.40	3.70	2.10	.50	.20	.00	.10	.00	.10	.00	1.50
8	1.50	2.00	3.00	5.80	.50	.20	.00	.10	.00	.00	.00	1.20
9	1.30	1.80	2.50	5.00	.50	.20	.10	.10	.00	.00	.00	1.00
10	1.30	1.70	2.10	3.40	.50	.20	.10	.00	.00	.00	.00	.90
11	1.20	1.60	1.90	2.60	.40	.10	.10	.00	.00	1.70	.00	.80
12	1.10	1.50	2.20	2.20	.40	.10	.10	.00	.00	2.00	.00	.70
13	1.10	1.40	1.60	2.00	.40	.10	.10	.00	.00	1.30	.00	.70
14	1.00	1.30	1.50	1.80	.40	.10	.10	.00	.00	.80	.00	.60
15	.90	2.20	1.50	1.70	.40	.10	.10	.00	.00	.60	.00	.60
16	.90	2.80	3.40	1.60	.30	.10	.00	.00	.00	.40	.00	3.10
17	.90	2.20	4.50	1.50	.60	.10	.00	.00	.00	.40	.00	3.30
18	.90	2.00	3.00	1.50	.50	.10	.00	.00	.00	.30	.20	2.40
19	1.00	1.80	2.30	1.40	.50	.10	.00	.00	.00	.20	.20	1.90
20	1.10	1.70	2.00	1.30	.40	.10	.00	.00	.00	.20	.20	1.50
21	1.60	1.60	1.80	1.10	.40	.10	.10	.00	.00	.10	.20	1.60
22	2.50	1.60	1.70	1.00	.40	.10	.10	.00	.00	.10	.20	2.50
23	2.40	1.50	1.60	1.00	.40	.10	.00	.00	.00	.10	.20	2.20
24	2.30	1.50	1.50	.90	.30	.10	.00	.00	.00	.00	.10	1.80
25	2.40	1.80	1.90	.90	.30	.10	.00	.00	.00	.00	.20	1.50
26	1.90	1.60	1.70	.90	.30	.10	.00	.00	.00	.00	1.10	1.30
27	1.80	2.20	6.30	.80	.30	.10	.00	.00	.00	.00	1.40	1.10
28	2.10	14.90	24.00	.80	.20	.10	.10	.00	.10	.00	1.10	1.00
29	3.10	......	27.00	.70	.20	.20	.10	.10	.00	.00	.80	1.00
30	3.30	......	25.00	1.20	.20	.20	.20	.10	.10	.00	.60	1.20
31	3.60	......	17.90	......	.20	......	.50	.10	......	.00	......	1.40
1903.												
1	1.20	1.10	17.00	2.60	.90	1.20	.4	.70	.40	.00	.20	.10
2	1.30	1.10	7.40	2.20	.90	2.10	.4	1.00	.30	.00	.20	.10
3	1.50	1.60	4.20	1.90	.80	1.40	.4	.70	.20	.00	.20	.10
4	1.50	3.30	3.20	1.70	.80	1.20	.8	.90	.10	.00	.10	.10
5	1.60	7.60	2.80	1.60	.80	1.10	.8	.80	.10	.00	.10	.10
6	1.50	4.80	4.60	1.50	.70	1.60	.7	.60	.10	.00	.10	.10
7	1.40	4.30	5.20	1.40	.70	1.40	.6	.50	.10	.00	.10	.10
8	1.30	18.10	3.80	1.50	.70	1.20	.6	.40	.10	.00	.00	.10
9	1.20	12.20	4.30	4.00	.60	1.10	.5	.40	.00	.40	.00	.10
10	1.00	16.40	3.50	3.70	.60	1.10	.5	.40	.00	.30	.00	.10
11	1.50	12.60	3.80	2.20	.60	1.50	.5	.40	.00	.20	.20	.10
12	3.20	12.50	2.80	1.80	.60	1.10	.4	.30	.00	.20	.30	.10
13	2.70	6.60	2.50	1.80	.70	1.00	.5	.30	.00	.10	.30	.10
14	2.00	4.40	3.60	10.20	1.00	.80	.8	.30	.00	.10	.30	.10
15	1.70	4.20	3.70	7.20	5.80	.70	.9	.60	.00	.00	.20	.10
16	1.60	·7.50	3.10	3.80	11.90	.60	.7	.80	.00	.00	.10	.10
17	·1.40	23.00	2.60	2.60	5.70	.60	.5	.70	.00	.00	.10	.10
18	1.40	18.10	2.30	2.10	3.00	.60	.4	.70	.00	.00	.10	.10
19	1.20	7.40	2.00	1.90	2.10	.60	.3	.70	.00	.00	.10	.10
20	1.10	4.20	1.80	1.90	1.80	.50	.3	.60	.00	.00	.10	.20
21	1.10	3.10	1.70	2.50	1.50	.50	.2	.60	.00	.00	.10	.10
22	1.00	2.60	1.70	2.00	1.30	.40	.2	.60	.00	.00	.10	.10
23	1.00	2.20	1.80	1.70	1.20	.50	.2	.40	.00	.00	.10	.10
24	.90	2.00	1.70	1.50	1.10	.40	.2	.30	.00	.00	.10	.10
25	.90	1.80	1.60	1.40	1.00	.40	.2	.30	.00	.00	.10	.10
26	.90	1.70	1.50	1.30	.90	.40	.2	.20	.00	.00	.10	.20
27	.80	1.60	1.40	1.20	.80	.50	.2	.20	.00	.00	.10	.20
28	.80	20.00	1.30	1.10	.70	.50	.1	.10	.00	.00	.10	.20
29	1.25	......	1.30	1.00	.70	.50	.1	.10	.00	.00	.10	.20
30	1.30	......	1.40	1.00	.80	.50	.1	.10	.00	.00	.10	.20
31	1.20	......	2.70	......	.90	......	.3	.10	......	.30	......	.20

Rating table for Locust Fork of Black Warrior River at Palos for 1902.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
0.0	100	0.9	900	1.8	2,250	2.7	3,600
.1	140	1.0	1,050	1.9	2,400	2.8	3,750
.2	190	1.1	1,200	2.0	2,550	2.9	3,900
.3	245	1.2	1,350	2.1	2,700	3.0	4,050
.4	310	1.3	1,500	2.2	2,850	3.1	4,200
.5	390	1.4	1,650	2.3	3,000	3.2	4,350
.6	490	1.5	1,800	2.4	3,150	3.3	4,500
.7	610	1.6	1,950	2.5	3,300	3.4	4,650
.8	750	1.7	2,100	2.6	3,450	3.5	4,800

Rating table for Locust Fork of Black Warrior River at Palos for 1903.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
0.00	46	1.50	1,590	3.70	5,550	5.90	9,510
.05	61	1.60	1,770	3.80	5,730	6.00	9,690
.10	77	1.70	1,950	3.90	5,910	6.40	10,410
.15	95	1.80	2,130	4.00	6,090	6.60	10,770
.20	115	1.90	2,310	4.10	6,270	7.00	11,490
.25	139	2.00	2,490	4.20	6,450	7.20	11,850
.30	167	2.10	2,670	4.30	6,630	7.40	12,210
.35	197	2.20	2,850	4.40	6,810	7.50	12,390
.40	230	2.30	3,030	4.50	6,990	7.60	12,570
.45	266	2.40	3,210	4.60	7,170	10.00	16,890
.50	306	2.50	3,390	4.70	7,350	10.20	17,250
.55	350	2.60	3,570	4.80	7,530	11.90	20,310
.60	398	2.70	3,750	4.90	7,710	12.00	20,490
.65	448	2.80	3,930	5.00	7,890	12.20	20,850
.70	500	2.90	4,110	5.10	8,070	12.50	21,390
.80	605	3.00	4,290	5.20	8,250	12.60	21,570
.90	720	3.10	4,470	5.30	8,430	17.00	29,490
1.00	845	3.20	4,650	5.40	8,610	18.00	31,290
1.10	980	3.30	4,830	5.50	8,790	18.10	31,470
1.20	1,120	3.40	5,010	5.60	8,970	20.00	34,890
1.30	1,265	3.50	5,190	5.70	9,150	23.00	40,290
1.40	1,420	3.60	5,370	5.80	9,330		

Estimated monthly discharge of Locust Fork of Black Warrior River at Palos.

[Drainage area, 1,020 square miles.]

Month.	Discharge in second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1902.					
January	7,800	900	2,468	2.42	2.79
February........................	21,900	1,500	4,746	4.65	4.84
March	40,050	1,800	8,400	8.24	9.50
April...........................	8,250	610	2,635	2.58	2.88
May............................	900	190	374	.37	.43
June	190	140	160	.16	.18
July...........................	390	100	133	.13	.15
August	900	100	157	.15	.17
September......................	140	100	104	.10	.11
October	2,550	100	359	.35	.40
November......................	1,650	100	282	.28	.31
December	4,500	490	1,784	1.75	2.02
The year	40,050	100	1,800	1.76	23.78
1903.					
January	4,650	605	1,428	1.40	1.61
February........................	40,290	980	11,498	11.27	11.74
March..........................	29,490	1,265	4,833	4.74	5.46
April...........................	17,250	845	3,246	3.18	3.55
May	20,310	398	2,097	2.06	2.37
June	2,670	230	758	.74	.83
July	720	77	276	.27	.31
August	845	77	326	.32	.37
September......................	230	46	64	.06	.07
October	230	46	66	.06	.07
November......................	167	46	89	.09	.10
December	115	77	86	.08	.09
The year	40,290	46	2,064	2.02	26.57

Net horsepower per foot of fall with a turbine efficiency of 80 per cent for the minimum monthly discharge of Locust Fork of Black Warrior River at Palos.

Month.	1902.			1903.		
	Minimum discharge.	Minimum net horsepower per foot of fall.	Duration of minimum.	Minimum discharge.	Minimum net horsepower per foot of fall.	Duration of minimum.
	Second-feet.		*Days.*	*Second-feet.*		*Days.*
January	900	82	4	605	55	2
February	1,650	150	1	980	89	2
March	1,800	164	2	1,265	115	2
April	610	55	1	845	77	2
May	190	17	4	398	36	4
June	140	13	18	230	21	4
July	100	9	13	77	7	3
August	100	9	19	77	7	4
September	100	9	27	46	4	22
October	100	9	11	46	4	24
November	100	9	17	46	4	3
December	490	45	2	77	7	24

SURVEY OF BLACK WARRIOR RIVER.

A great deal of work is being done by the Government on this river in order to make it navigable as an outlet to important coal fields above. In the 92 miles from old Warriortown to Tuscaloosa, there is a
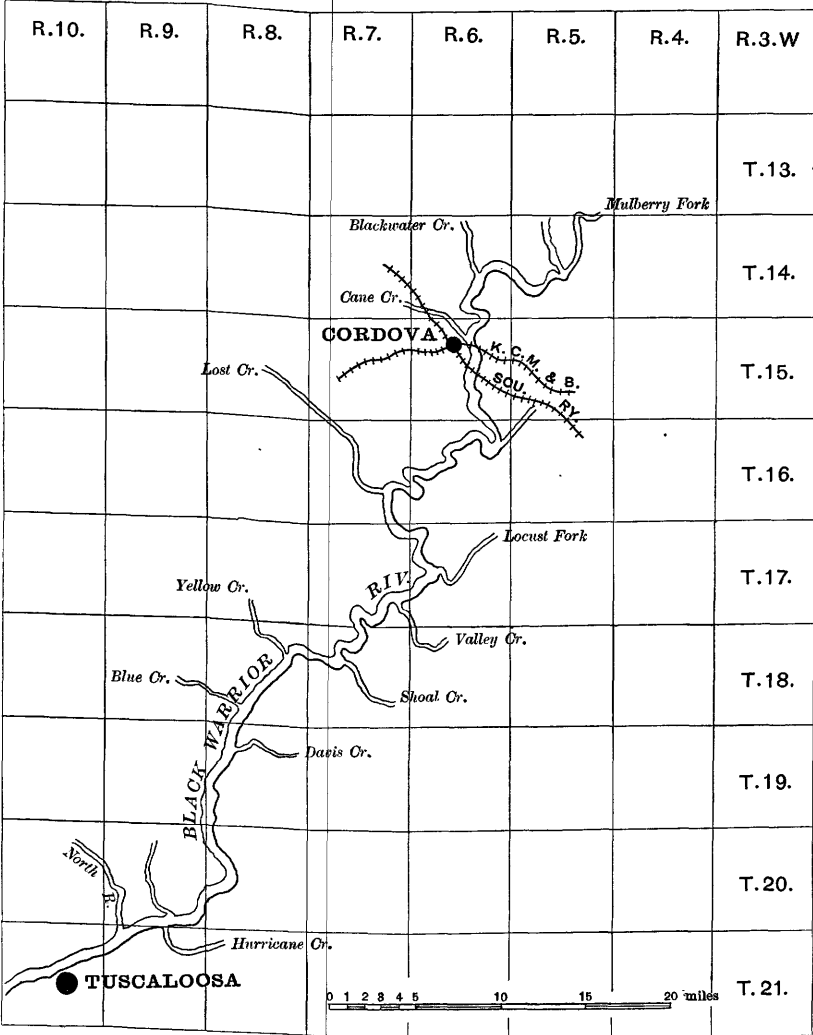
FIG. 8.—Map of part of Black Warrior River surveyed by Corps of Engineers, U. S. A.

fall of 158 feet. The distribution of this fall is shown by the following table, giving distances in miles above Tuscaloosa and elevations of water surface above sea level.

Elevations of locks and gages and water surface on Black Warrior River in Alabama from Tuscaloosa up to mouth of Mulberry Fork.

[Survey by United States Engineer Corps.]

Distance from Tuscaloosa gage.	Location.	Locks and gages.	Water surface.
Miles.		*Feet.*	*Feet.*
0.0	Zero of Tuscaloosa gage	86.86	....
.0	Water surface, mean low water, original river	....	86.86
.0	Back water from lock below Tuscaloosa	91.30	....
.9	Back water below lock No. 1	91.30	....
.9	Zero of gage at lock No. 1	84.36	....
.9	Crest of dam at lock No. 1	101.16	....
.9	Water surface original below lock No. 1	....	90.00
.9	Water surface original above lock No. 1	....	91.00
1.2	Water surface original below lock No. 2	....	91.00
1.2	Water surface original above lock No. 2	....	96.00
1.2	Zero of gage at lock No. 2	94.36	....
1.2	Crest of dam at lock No. 2	109.66	....
2.0	Zero of gage at lock No. 3	102.86	....
2.0	Water surface original below lock No. 3	....	106.00
2.0	Water surface original above lock No. 3	....	107.00
2.0	Crest of dam at lock No. 3	120.16	....
5.0	Water surface original at mouth of North River	....	111.50
7.9	Water surface original at mouth of Hurricane Creek	....	113.00
8.5	Water surface original at mouth of Yellow Creek	....	113.50
8.8	Back water from lock No. 3 at foot of lock No. 4	120.16	....
8.8	Water surface original below lock No. 4	....	113.50
8.8	Water surface original above lock No. 4	....	114.00
8.8	Zero of gage at lock No. 4	113.36	....
8.8	Crest of dam at lock No. 4	132.30	....
16.0	Water surface original at head of Mossy Shoal	....	131.30
19.2	Water surface original at foot of Rose Shoals	....	132.30
19.7	Water surface at head of Rose Shoals	....	136.50
21.8	Water surface at foot of Fair Shoals	....	139.80
24.2	Water surface at head of Crowder Shoals	....	151.20
25.6	Water surface at mouth of Blue Creek	....	151.30
25.8	Water surface at foot of Squaw Shoals	....	151.30
26.0	Water surface on Squaw Shoals	....	158.00
26.8	.....do	....	169.20
27.4	.....do	....	169.20
28.1	.....do	....	183.80
28.6	.....do	....	184.30
28.8	.....do	....	187.20

Elevations of locks and gages and water surface on Black Warrior River in Alabama from Tuscaloosa up to mouth of Mulberry Fork—Continued.

Distance from Tus-caloosa gage.	Location.	Locks and gages.	Water surface.
Miles.		*Feet.*	*Feet.*
29.4	Water surface at head of Squaw Shoals	....	192.80
37.8	Water surface below Black Rock	....	193.10
38.0	Water surface above Black Rock	....	202.20
43.3	Water surface below Knight's mill dam	....	202.50
43.3	Water surface above Knight's mill dam	....	206.10
44.7	Water surface at mouth of Valley Creek	....	206.10
47.5	Water surface at foot of Fork Shoals	....	206.10
47.9	Water surface at mouth of Locust Fork	....	215.10
48.2	Water surface at head of Fork Shoals	....	215.50
44.8	Water surface at mouth of Lost Creek	....	216.60
56.9	Water surface at foot of Franklins Shoals	....	216.70
59.0	Water surface at head of Franklins Shoals	....	219.10
63.0	Water surface at foot of Copelands Shoals	....	220.00
65.4	Water surface at foot of Lanes Shoals	....	223.50
68.0	Water surface at foot of Tuggle Shoals	....	225.60
69.0	Water surface at head of Tuggle Shoals	....	230.00
74.4	Water surface at foot of Bee Shoals	....	231.80
75.5	Water surface at head of Bee Shoals	....	236.90
76.1	Water surface below Payne's mill dam	....	237.10
76.1	Water surface above Payne's mill dam	....	240.80
79.6	Water surface at mouth of Cane Creek, at Cordova, Ala..	....	242.10
84.6	Water surface at foot of Sanders Shoals	....	242.30
85.3	Water surface at head of Sanders Shoals, mouth of Black-water Creek	....	248.80
92.4	Water surface at mouth of Mulberry Fork	....	249.75

Systematic discharge measurements have been made at Tuscaloosa and Cordova, the results of which are given in the foregoing pages. Comparative measurements at the two stations at the same stage in November, 1901, shows a discharge of 825 second-feet at Tuscaloosa and 285 second-feet at Cordova. At minimum stage of dry years the water gets considerably lower, as is shown by the records referred to, but the figures named are safe for low season in all ordinary years, and will be used in this discussion for determining the power available at different sites along the river.

The locks and proposed locks on this section of the river begin with No. 1, at Tuscaloosa, and are numbered up the river. Locks 1, 2, 3, and 4 are about completed, and others are projected, but the locations

of the latter in the following list are approximated. However, the exact location of each is immaterial in showing the power available. The following is a table showing positions of locks and lock sites in miles above Tuscaloosa, the sea-level elevation of water below each, the lift at each, and the net horsepower that can be developed at each day on an 80 per cent turbine during the dry season in ordinary years, like 1900, after deducting 100 second-feet for lockage:

Powers on Black Warrior River.

No. of lock or site.	Distance from Tuscaloosa.	Elevation of water below lock.	Lift.	Discharge after deducting lockage.	Net horsepower on 80 per cent turbine without storage.	Location.
	Miles.	*Feet.*	*Feet.*	*Sec.-ft.*		
1	0. 7	91. 30	9. 86	725	650	Bottom University Shoal, Tuscaloosa.
2	1. 3	101. 16	8. 50	725	560	On University Shoal, Tuscaloosa.
3	2. 0	109. 66	10. 50	725	690	Do.
4	8. 7	120. 16	12. 14	704	777	Near mouth of Yellow Creek.
5	19. 3	132. 30	10. 00	660	600	Foot of Rose Shoals.
6	21. 7	142. 30	9. 00	660	540	Foot of Fair Shoals.
7	25. 8	151. 30	14. 00	660	840	Foot of Squaw Shoals.
8	26. 3	165. 30	14. 00	660	840	On Squaw Shoals.
9	27. 8	179. 30	14. 00	660	840	Do.
10	37. 7	193. 3	14. 00	550	700	Below Black Rock.
11	47. 6	207. 3	14. 00	550	700	Mouth of Little Warrior River, or Locust Fork.
12	63. 4	221. 3	14. 00	374	476	
13	75. 0	235. 3	14. 00	285	364	

The best power on the river is at Squaw Shoals, 26 miles above Tuscaloosa, covered on the above table by locks Nos. 7, 8, and 9, each having a lift of 14 feet, and making a total fall on Squaw Shoals of 42 feet. This can be developed to best advantage by constructing a canal from the top of proposed dam at lock No. 9, along the river bank, 2 miles in length, to a point opposite the foot of Squaw Shoals, below lock No. 7. This canal, taking the river water not needed for lockage and allowing 2 feet for grade and storage, will utilize a net head of 40 feet, and produce 2,400 net horsepower continuously, or 4,800 net horsepower for a twelve-hour run per day, storing the water above lock No. 9 during the twelve idle hours.

It is to be remembered that the above estimates of power are for low season during ordinary years. There will be exceptional periods

A. DAM AND LOCK NO. 1 ON BLACK WARRIOR RIVER AT TUSCALOOSA, ALA.

View from east bank.

B. DAM AND LOCK NO. 2 ON BLACK WARRIOR RIVER AT TUSCALOOSA, ALA.

View from west bank.

of minimum water in extremely dry years in which the entire flow of the river will be as low as 100 second-feet, and will, therefore, barely suffice for lockage during a busy season of boating on the river. (See Nineteenth Annual Report, United States Geological Survey, Part IV, p. 251.) But such seasons are rare, and the facilities for water transportation should compensate for them to a great extent. It is admitted that the cheapness of coal along this river would naturally make the water powers less valuable, but the cheapness of development in connection with Government dams would partly offset the cheapness of coal. It is believed that the proposed development at Squaw Shoals could be made at a very moderate cost, and that such an investment would pay handsomely.

The following additional information concerning the Warrior and Black Warrior River is from Mr. R. C. McCalla, United States assistant engineer, Tuscaloosa, Ala., who is in charge of the improvements on that river:

Tuscaloosa is 361 miles by river above Mobile. Above Tuscaloosa the river is called the Black Warrior, and below it is called the Warrior. The locks on the two parts of the stream are numbered as two separate systems, the lowest lock in each system being No. 1, and the numbers running upstream. The following table gives the lift and location of the locks in both systems:

No. of lock.	Lift in feet.	Miles above Mobile.	
1 *a*	10.00	230.5	0.5 miles below mouth of Warrior; located but not begun.
2 *a*	10.00	246.2	Located but not begun.
3 *a*	10.00	266.7	Do.
4 *a*	10.00	282.3	Under construction.
5 *a*	10.00	298.3	Do.
6 *a*	10.00	315.2	Do.
1 *b*	9.86	361.9	In operation.
2 *b*	˙8.50	362.3	Do.
3 *b*	10.50	363.1	Do.
4 *b*	12.14	370.1	Under construction.

a Below Tuscaloosa.   *b* Above Tuscaloosa.

Between lock No. 4 and the junction of Mulberry and Locust forks, 407.8 miles above Mobile, there are projected seven locks at 14 feet lift each, but none of these are yet located. The following table gives the location, etc., of gages now established and read daily at 7 a. m.:

Name of gage.	Number of gages.	Miles above Mobile.	Elevation of zero above mean low tide, Mobile.	Remarks.
Demopolis a	1	229. 7	28. 07	Zero about 1½ feet above mean low water.
Millwood a	1	259. 8	45. 97	Zero about mean low water.
Lock 4 a	1	282. 3	54. 50	Zero top of lower miter sill.
A. G. S. bridge a	1	288. 0	61. 26	Zero about mean low water.
Lock 5 a	1	298. 3	64. 50	Zero top of lower miter sill.
Lock 6 a	1	315. 2	74. 50	Do.
Grays Landing a	1	319. 5	80. 41	Zero about mean low water.
Tuscaloosa	1	361. 1	86. 86	Zero about 1 foot above mean low water.
Lock 1 b	2	361. 9	84. 36	Zero top of lower miter sill.
Lock 2 b	2	362. 3	94. 36	Do.
Lock 3 b	2	363. 1	102. 86	Do.
Lock 4 b	1	370. 1	113. 36	Do.
Cordova b	1	445. 0	237. 85	Zero about mean low water.

a Below Tuscaloosa.   b Above Tuscaloosa.

TRIBUTARIES OF BLACK WARRIOR RIVER.

At Clear Creek Falls, in Winston County, within a distance of half a mile, there is a fall of over 100 feet, distributed as follows:

Fall on Clear Creek, Winston County.

Feet.
Rapids above Upper Falls in 100 yards 6
Upper Falls, about 45
Still pool for 275 yards.. 00
Lower Falls.. 27
Rapids below Lower Falls 30

No discharge measurements have ever been made on this stream. It is thought best not to attempt to approximate its flow, as the stream originates from big springs.

TOMBIGBEE RIVER AND TRIBUTARIES.

TOMBIGBEE RIVER AT COLUMBUS, MISS.

This stream enters Alabama a short distance below Columbus.

The station is located about 1,000 feet below the highway bridge, 1½ miles from the Southern Railway station at Columbus. The rod, which is in three sections, is fastened vertically to the rock bluff on the left bank. It is a 3 by 10 inch pine timber 45 feet long, marked with brass figures and copper nails, the graduation extending from −5 feet to +40 feet. The initial point of sounding is the end of the iron bridge, right bank, downstream side. Bench mark No. 1 is 250 feet from the initial point of sounding. The bridge floor is 40.85 feet above the zero of the rod, and the top of the iron girder under the floor timbers is 39.85 feet above the zero. Bench mark No. 2 is the top of the rail at the station of the Southern Railway, and is 55.2 feet above gage datum and 190.9 feet above mean sea level. The width of the river at low water is 160 feet. The maximum record height of the river was, on April 8, 1892, when the gage registered, 42 feet. The lowest recorded height was on October 26, 1893, when the gage reading was −3.9 feet. The danger line is at 33 feet. No measurements of discharge were made during 1900.

The following discharge measurements were made by K. T. Thomas, M. R. Hall, and others.

Discharge measurements of Tombigbee River at Columbus, Miss.

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.
1901.	*Feet.*	*Second-feet.*	*1903.*	*Feet.*	*Second-feet.*
March 11	12.33	19,425	March 9	15.50	26,452
April 16	1.10	3,926	March 12	17.30	29,015
June 25...............	− 2.50	698	May 18	12.50	17,804
October 30	− 3.00	657	July 16...............	− 1.70	1,340
1902.			July 17	− 1.80	1,278
April 3	27.60	45,214	September 22	− 3.70	252
July 11	− 3.40	697	September 25........	− 3.70	263
July 15	− 2.70	1,058			
September 23........	− 3.25	545			
September 26........	− 3.30	493			

Daily gage height, in feet, of Tombigbee River at Columbus, Miss.

Day.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1900.												
1	3.5	0.4	7.1	4.5	8.0	· 1.0	19.7	5.8	−1.2	−2.7	+2.6	+ 3.4
2	2.2	.3	6.8	3.8	6.5	8.0	18.3	4.0	−1.0	−2.8	+4.9	+ 2.5
3	1.8	.2	5.6	2.7	5.9	10.0	17.6	2.8	−1.0	−3.0	+5.5	+ 1.9
4	1.6	.4	4.4	1.9	4.5	13.4	16.2	1.9	− .7	−3.1	+5.1	+ 1.0
5	1.4	1.8	3.8	1.5	2.8	15.3	15.9	1.0	− .6	−3.3	+4.4	+ .1
6	1.2	3.5	3.4	1.3	1.5	17.0	15.4	.0	− .9	−3.5	+3.1	+ .2
7	1.1	3.5	7.6	1.3	.8	20.7	14.5	− .5	−1.3	−3.5	+1.9	+ .3
8	1.0	3.3	14.4	1.1	.5	23.6	13.5	− .9	−1.9	−2.2	+ .9	+ .3
9	.9	4.2	15.1	.7	1.4	25.5	10.0	− 1.4	−2.1	−1.0	− .1	.0
10	.9	8.4	13.8	.5	2.3	25.0	6.8	− 1.8	−2.3	− .6	− .5	.3
11	2.0	7.8	11.3	11.7	2.3	23.6	5.5	− 2.2	−2.4	− .4	− .9	+ .5
12	6.6	7.6	9.9	16.2	3.6	21.6	4.0	− 2.6	−2.5	+2.6	−1.1	− .6
13	8.3	10.2	6.7	17.4	2.8	20.0	3.5	− 2.6	−2.6	+4.8	−1.3	+ .9
14	7.1	9.8	4.3	19.3	2.2	18.5	2.0	− 2.7	−2.7	+5.2	−1.3	+ .9
15	5.6	8.1	4.8	20.8	1.6	17.8	1.9	− 2.2	−2.7	+5.6	−1.4	+ .9
16	4.6	5.8	5.6	20.9	+ .7	17.1	1.5	− 2.2	−2.8	+5.4	−1.5	+ .9
17	2.8	4.6	5.2	22.9	.9	17.3	1.0	− 2.3	−2.9	+2.4	−1.5	+ .9
18	2.4	3.8	4.6	26.9	− .4	17.8	.5	− 2.3	−3.0	+ .4	−1.6	− 1.0
19	2.2	3.2	9.4	27.6	−1.0	18.0	.0	− 1.8	−3.0	− .4	−1.6	− 1.0
20	2.1	2.8	15.6	27.5	− .8	16.8	.4	− 1.4	−3.1	− .9	−1.6	− 1.0
21	1.9	3.5	18.2	27.1	− .5	15.2	1.3	− 1.1	−3.0	−1.1	−1.6	− 1.0
22	1.8	5.6	19.0	25.5	− .5	13.5	2.0	− 1.6	−2.9	−1.3	+1.2	+ 3.0
23	1.6	5.4	19.2	23.3	+ .1	13.8	1.9	− 1.9	−2.7	−1.0	.0	− 5.8
24	1.4	4.5	18.1	21.3	.2	18.5	1.4	− 2.0	−1.3	− .2	+1.7	+ 6.0
25	1.2	5.0	15.2	19.4	.3	21.5	.7	− .1	−1.7	+ .8	+2.3	+ 6.0
26	1.1	5.0	11.4	17.3	2.3	24.1	.1	+ 1.2	−2.0	+1.0	+2.8	+ 6.8
27	.9	3.9	7.8	14.8	2.4	25.0	1.8	+ .6	−2.2	+5.1	+3.3	+ 6.1
28	.7	4.2	4.6	11.8	2.2	24.8	5.0	− .3	−2.4	+5.6	+3.8	+ 5.0
29	.6	....	3.9	9.5	1.6	23.5	7.2	− 1.1	....	+3.0	..... .	+ 4.0
30	.5	....	3.1	9.4	1.0	21.7	5.9	− 1.0	−2.5	+4.6	+3.9	+ 4.2
31	.4	....	3.3	....	.8	....	6.7	− 1.4	....	+4.0	....	+ 4.8
1901.												
1	4.0	6.0	0.9	2.6	0.9	1.3	− 1.6	− 3.2	−0.4	−2.3	−3.0	2.2
2	3.7	5.9	.8	6.4	.5	3.1	− 2.4	− 3.4	− .9	−2.0	−3.0	2.2
3	3.2	6.8	2.2	8.0	.2	3.8	− 2.4	− 3.5	−1.3	−2.2	−3.0	2.3
4	2.6	12.3	2.4	7.1	.0	3.9	− 2.1	− 3.4	−1.6	−2.2	−2.9	2.3
5	1.8	13.2	2.1	6.8	− .3	3.5	− 2.4	− 3.3	−1.6	−2.5	−2.9	2.2
6	1.0	13.9	1.8	6.2	− .5	3.1	− 1.6	− 3.2	−1.9	−2.5	−2.9	2.2
7	.7	15.1	1.4	5.3	− .6	2.8	− 2.6	− 3.0	−2.0	−2.6	−3.0	2.2
8	.1	15.9	1.2	4.0	− .9	1.9	− 2.6	− 2.8	−2.2	−2.7	−2.8	2.1
9	.0	15.6	1.0	2.9	−1.0	1.4	− 2.7	− 2.8	−2.3	−2.7	−2.8	2.0
10	.3	14.5	8.8	2.0	−1.1	1.0	− 2.8	− 2.9	−2.4	−2.8	−2.8	1.8
11	10.9	13.0	12.1	1.4	−1.2	− .1	− 2.8	− 2.9	−2.5	−2.8	−2.7	1.1
12	16.9	12.5	14.0	.9	−1.2	− .7	− 2.9	− 3.1	−2.5	−2.8	−2.8	.5
13	19.4	12.4	17.8	.7	− .4	− 1.0	− 3.0	− 3.0	−2.4	−2.6	−2.8	+ .1
14	21.7	11.0	19.4	.7	+3.3	.9	− 3.1	− 3.2	−2.1	−2.5	−2.8	4.5
15	22.7	8.9	19.0	.9	4.4	.8	− 3.1	− 1.5	−1.8	−2.2	−2.8	9.5
16	22.3	6.0	17.1	1.2	4.4	.8	− 3.2	+ 4.0	−1.0	−2.0	−2.7	9.8
17	20.9	4.4	13.8	1.5	3.6	.8	− 3.2	11.5	− .2	−2.0	−2.7	9.2
18	18.8	3.3	10.8	6.0	2.7	− 1.0	− 3.0	12.4	+2.5	−2.2	−2.7	9.8
19	16.0	2.7	8.0	11.8	2.1	− 1.2	− 3.0	12.4	3.4	−2.3	−2.6	10.0
20	13.6	2.2	6.3	12.4	2.1	− 1.7	− 3.0	14.0	3.5	−2.4	−2.5	8.8
21	9.4	1.8	4.6	12.7	6.3	− 2.0	− 2.0	15.6	2.6	−2.5	−2.4	5.9
22	6.2	1.5	3.5	13.5	6.7	− 2.2	− 1.9	15.9	1.4	−2.6	−2.2	4.8
23	3.8	1.2	3.2	13.5	6.3	− 2.4	− 2.3	14.8	.4	−2.7	−2.3	2.4
24	3.0	1.0	3.1	11.8	5.3	− 2.5	− 2.5	12.1	− .6	−2.8	−2.1	1.4
25	5.9	1.0	2.8	8.2	4.0	− 2.5	− 2.6	8.9	−1.2	−2.9	−2.0	.8
26	6.5	1.1	2.5	5.1	2.2	− 2.6	− 2.9	6.5	−1.6	−2.9	−1.9	.7
27	6.3	1.2	2.2	3.4	1.5	− 2.6	− 3.0	4.1	−1.9	−2.9	−1.8	1.1
28	6.0	1.0	1.9	2.5	1.8	− 2.6	− 3.1	2.0	−2.1	−2.9	−1.8	1.0
29	5.8	....	1.6	1.8	1.7	− 2.7	− 3.2	1.6	−2.2	−3.0	−2.0	9.0
30	5.7	....	1.4	1.3	1.2	− 2.6	− 3.3	1.1	−2.3	−3.0	−2.1	11.0
31	5.5	....	2.3	....	.9	....	− 3.4	.3	....	−3.0	....	9.6

Daily gage height, in feet, of Tombigbee River at Columbus, Miss.—Continued.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1902.												
1	9.20	14.50	9.50	30.30	0.00	−2.60	−3.20	−2.60	−2.40	−2.20	−3.30	3.80
2	8.90	16.80	9.30	29.40	−.50	−2.50	−3.20	−1.30	−2.70	−1.80	−3.30	3.90
3	7.70	17.90	9.30	28.20	−1.50	−2.50	−3.20	−.50	−2.40	−.90	−3.30	4.90
4	5.80	18.50	9.20	26.30	−.90	−2.60	−3.20	−.20	−2.20	−.60	−3.30	5.10
5	4.00	19.00	9.80	23.70	−.20	−2.60	−3.20	−.10	−2.50	−1.00	−3.30	5.70
6	2.50	17.60	9.20	20.50	−.10	−2.70	−3.30	.40	−2.20	−1.30	−3.20	5.70
7	1.50	16.00	8.20	18.20	−.40	−2.70	−3.30	−1.00	−2.20	−1.60	−3.10	4.90
8	.90	13.60	7.80	18.90	−.60	−2.80	−3.30	−1.60	−2.10	−2.00	−3.10	4.60
9	.50	10.70	7.00	18.30	−.40	−2.80	−3.40	−2.00	−2.20	−2.30	−3.00	3.90
10	.10	7.60	6.00	17.80	−.20	−2.90	−3.40	−2.30	−2.40	−2.50	−2.90	3.00
11	−.20	5.60	6.00	17.40	−.50	−2.80	−3.20	−2.70	−2.70	−2.90	−3.00	2.20
12	−.20	3.00	4.20	16.00	−.80	−2.90	−3.40	−2.90	−3.00	−2.60	−3.00	1.50
13	−.50	2.10	4.30	13.00	−1.00	−2.80	−3.00	−3.00	−3.20	−2.70	−3.10	.80
14	−.60	1.40	4.30	9.00	−1.30	−2.90	−2.50	−3.10	−3.30	−2.50	−3.10	.60
15	−.90	4.00	4.80	5.60	−1.50	−3.00	−2.70	−3.20	−3.40	−2.20	−3.10	.60
16	−1.00	5.40	6.00	4.20	−1.60	−3.10	−3.00	−3.30	−3.50	−2.20	−3.00	1.20
17	−1.00	5.60	7.40	3.50	−1.10	−3.20	−3.10	−3.30	−3.50	−2.00	−3.00	1.90
18	−1.00	5.90	7.60	3.00	−1.30	−3.20	−3.20	−3.30	−3.50	−2.50	−3.00	11.10
19	−.60	5.60	7.50	2.70	−1.10	−3.20	−3.30	−3.40	−3.50	−2.50	−3.00	11.80
20	+.50	4.60	6.79	2.20	−1.10	−3.20	−3.30	−3.40	−3.50	−2.60	−3.00	13.00
21	3.10	4.40	5.70	2.00	−1.00	−3.10	−2.70	−3.40	−3.40	−2.90	−2.90	13.20
22	5.20	5.30	4.70	1.80	−1.20	−3.00	−3.00	−3.50	−3.30	−3.00	−2.90	14.80
23	5.60	5.60	3.50	1.60	−1.50	−2.90	−3.00	−3.50	−3.30	−3.00	−2.90	13.80
24	5.80	5.30	4.00	1.10	−1.70	−2.80	−2.90	−3.50	−3.30	−3.00	−2.90	12.10
25	5.50	6.40	6.40	.90	−1.90	−3.00	−2.90	−3.60	−3.40	−3.10	−1.40	10.00
26	4.60	5.80	6.10	.70	−2.10	−3.00	−2.80	−3.60	−3.40	−3.10	.30	10.40
27	4.00	5.70	13.40	.60	−2.20	−3.00	−2.90	−3.60	−3.30	−3.10	1.20	10.60
28	6.10	8.10	21.00	.40	−2.30	−3.00	−2.90	−3.10	−3.20	−3.20	2.50	10.80
29	7.40	....	28.00	.30	−2.40	−3.10	−2.60	−3.00	−3.00	−3.30	2.90	11.30
30	10.00	....	30.50	.30	2.50	−3.20	−3.00	−2.50	−2.90	−3.30	3.50	10.40
31	12.40	....	30.60	....	−2.50	....	−3.00	−2.40	....	−3.30	....	9.50
1903.												
1	3.8	9.0	10.4	3.5	−0.4	3.1	0.0	−2.2	−3.4	−3.7	3.2	−3.0
2	8.4	8.2	10.8	3.4	−.6	2.9	−.8	−2.1	−3.4	−3.7	2.8	−2.6
3	11.8	7.7	11.5	3.0	−.9	3.0	−1.3	−2.2	−3.5	−3.7	2.0	−2.6
4	12.2	8.5	11.7	2.5	−1.1	3.0	−1.4	−2.4	−3.5	−3.7	1.8	−2.8
5	11.8	8.8	11.4	2.0	1.1	2.9	−1.6	−1.6	−3.5	−3.7	1.7	−3.0
6	12.2	9.0	11.5	1.7	−1.2	2.3	−1.7	−2.8	−3.6	−3.7	1.6	−3.0
7	12.0	12.0	12.4	1.3	−1.3	2.3	−2.0	−2.9	−3.6	−3.7	1.4	−3.0
8	11.0	18.6	13.6	1.0	−1.4	2.3	−1.8	−3.0	−3.6	−3.6	1.4	−3.0
9	8.8	19.8	15.3	.8	−1.4	2.1	−2.0	−2.4	−3.6	−3.7	1.5	−3.0
10	8.5	20.5	16.0	1.6	−1.4	1.9	−2.0	−2.3	−3.6	−3.7	1.5	−3.0
11	8.9	22.3	17.0	2.6	−1.4	1.3	−2.0	−1.5	−3.6	−3.7	1.5	−3.0
12	9.5	23.9	17.3	2.4	−1.1	1.2	−2.0	−1.0	−3.7	−3.6	1.5	−2.9
13	9.8	23.8	17.5	2.2	1.0	.8	−2.1	−1.0	−3.7	−3.6	1.4	−2.8
14	9.9	22.7	18.5	1.9	8.0	.1	−1.7	−.8	−3.7	−3.6	2.3	−2.6
15	10.4	21.5	19.8	2.7	10.6	.4	−1.8	−1.2	−3.7	−3.6	2.6	−2.6
16	10.4	20.9	20.0	3.6	12.0	−.8	−1.9	−1.2	−3.7	−3.6	3.0	−2.9
17	9.4	22.5	19.8	3.6	12.0	−1.0	−1.9	−1.5	−3.7	−3.5	3.0	−3.0
18	7.6	23.0.	19.2	3.3	12.5	−1.6	−2.1	−1.7	−3.5	−3.5	3.2	−3.0
19	5.6	23.1	18.3	2.8	11.9	−1.8	−2.3	−1.9	−3.7	−3.6	2.7	−2.8
20	4.6	23.6	16.7	2.2	10.1	−1.9	−2.4	−1.0	−3.7	−3.6	2.7	−2.6
21	5.5	23.3	14.0	1.5	7.6	−1.9	−2.5	−1.7	−3.7	−3.5	2.7	−2.5
22	3.2	21.7	12.1	1.0	5.7	−2.0	−2.6	−1.4	−3.7	−3.5	2.7	−2.5
23	2.7	19.8	10.8	1.6	3.0	−2.0	−2.6	−2.0	−3.8	−3.5	2.8	−2.6
24	2.3	17.0	9.8	2.0	1.2	−1.7	−3.0	−2.5	−3.8	−3.6	2.8	−2.9
25	2.0	15.8	9.5	2.0	.4	−1.3	−3.0	−2.5	−3.7	−3.6	2.6	−2.9
26	1.9	14.6	8.8	1.6	−.2	−1.6	−3.0	−2.6	−3.7	3.5	2.7	−2.7
27	1.9	8.7	6.9	1.4	−.6	.8	−3.0	−2.9	−3.7	3.5	2.7	−2.1
28	5.6	9.2	5.1	.6	−1.0	1.9	−3.0	−2.9	−3.7	3.5	2.8	−1.7
29	7.6	....	4.0	.1	−1.0	1.5	−3.1	−3.0	−3.7	3.5	....	−1.6
30	8.0	....	3.4	−.2	−1.1	.8	−3.1	−3.1	−3.7	3.6	....	−1.6
31	8.8	....	3.5	....	.1	....	−3.1	−3.3	....	3.5	....	−1.8

Rating table for Tombigbee River at Columbus, Miss., for 1900 and 1901.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Second-feet.	Feet.	Second-feet.	Feet.	Second-feet.	Feet.	Second-feet.
—3.0	650	1.0	3,790	5.0	9,310	9.0	14,830
—2.9	668	1.1	3,928	5.1	9,448	9.1	14,968
—2.8	688	1.2	4,066	5.2	9,586	9.2	15,106
—2.7	712	1.3	4,204	5.3	9,724	9.3	15,244
—2.6	736	1.4	4,342	5.4	9,862	9.4	15,382
—2.5	752	1.5	4,480	5.5	10,000	9.5	15,520
—2.4	780	1.6	4,618	5.6	10,138	9.6	15,658
—2.3	810	1.7	4,756	5.7	10,276	9.7	15,796
—2.2	842	1.8	4,894	5.8	10,414	9.8	15,934
—2.1	877	1.9	5,032	5.9	10,552	9.9	16,072
—2.0	915	2.0	5,170	6.0	10,690	10.0	16,210
—1.9	956	2.1	5,308	6.1	10,828	10.1	16,348
—1.8	1,000	2.2	5,446	6.2	10,966	10.2	16,486
—1.7	1,047	2.3	5,584	6.3	11,104	10.3	16,624
—1.6	1,097	2.4	5,722	6.4	11,242	10.4	16,762
—1.5	1,150	2.5	5,860	6.5	11,380	10.5	16,900
—1.4	1,206	2.6	5,998	6.6	11,518	10.6	17,038
—1.3	1,265	2.7	6,136	6.7	11,656	10.7	17,176
—1.2	1,328	2.8	6,274	6.8	11,794	10.8	17,314
—1.1	1,394	2.9	6,412	6.9	11,932	10.9	17,452
—1.0	1,464	3.0	6,550	7.0	12,070	11.0	17,590
— .9	1,537	3.1	6,688	7.1	12,208	11.5	18,280
— .8	1,613	3.2	6,826	7.2	12,346	12.0	18,970
— .7	1,692	3.3	6,964	7.3	12,484	12.5	19,660
— .6	1,775	3.4	7,102	7.4	12,622	13.0	20,350
— .5	1,863	3.5	7,240	7.5	12,760	13.5	21,040
— .4	1,957	3.6	7,378	7.6	12,898	14.0	21,730
— .3	2,057	3.7	7,516	7.7	13,036	14.5	22,420
— .2	2,165	3.8	7,654	7.8	13,174	15.0	23,110
— .1	2,283	3.9	7,792	7.9	13,312	15.5	23,800
.0	2,410	4.0	7,930	8.0	13,450	16.0	24,490
.1	2,548	4.1	8,068	8.1	13,588	16.5	25,180
.2	2,686	4.2	8,206	8.2	13,726	17.0	25,870
.3	2,824	4.3	8,344	8.3	13,864	17.5	26,560
.4	2,962	4.4	8,482	8.4	14,002	18.0	27,250
.5	3,100	4.5	8,620	8.5	14,140	18.5	27,940
.6	3,238	4.6	8,758	8.6	14,278	19.0	28,630
.7	3,376	4.7	8,896	8.7	14,416	19.5	29,320
.8	3,514	4.8	9,034	8.8	14,554	20.0	30,010
.9	3,652	4.9	9,172	8.9	14,692		

Rating table for Tombigbee River at Columbus, Miss., for 1902.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
−3.4	500	0.2	3,230	6.5	10,400	15.5	24,750
−3.2	630	.4	3,410	7.0	11,100	16.0	25,600
−3.0	760	.6	3,590	7.5	11,815	17.0	27,300
−2.8	890	.8	3,780	8.0	12,540	18.0	29,000
−2.6	1,030	1.0	3,970	8.5	13,290	19.0	30,700
−2.4	1,170	1.2	4,160	9.0	14,040	20.0	32,400
−2.2	1,310	1.4	4,350	9.5	14,815	21.0	34,100
−2.0	1,450	1.6	4,550	10.0	15,590	22.0	35,800
−1.8	1,590	1.8	4,750	10.5	16,370	23.0	37,500
−1.6	1,740	2.0	4,950	11.0	17,170	24.0	39,200
−1.4	1,890	2.5	5,475	11.5	17,975	25.0	40,900
−1.2	2,040	3.0	6,020	12.0	18,800	26.0	42,600
−1.0	2,190	3.5	6,585	12.5	19,650	27.0	44,300
− .8	2,350	4.0	7,170	13.0	20,500	28.0	46,000
− .6	2,520	4.5	7,775	13.5	21,350	29.0	47,700
− .4	2,690	5.0	8,400	14.0	22,200	30.0	49,400
− .2	2,870	5.5	9,050	14.5	23,050		
.0	3,050	6.0	9,720	15.0	23,900		

Rating table for Tombigbee River at Columbus, Miss., for 1903.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
—3.80	220	—1.30	1,660	1.20	3,940	3.70	6,740
—3.70	260	—1.20	1,740	1.30	4,050	3.80	6,860
—3.60	340	—1.10	1,820	1.40	4,160	3.90	6,985
—3.50	340	—1.00	1,900	1.50	4,270	4.00	7,110
—3.40	380	— .90	1,980	1.60	4,380	4.10	7,235
—3.30	425	— .80	2,060	1.70	4,490	4.20	7,360
—3.20	470	— .70	2,150	1.80	4,600	4.30	7,485
—3.10	520	— .60	2,220	1.90	4,710	4.40	7,610
—3.00	570	— .50	2,310	2.00	4,820	4.50	7,735
—2.90	620	— .40	2,400	2.10	4,930	4.60	7,860
—2.80	675	— .30	2,490	2.20	5,040	4.70	7,990
—2.70	730	— .20	2,580	2.30	5,150	4.80	8,120
—2.60	785	— .10	2,670	2.40	5,260	4.90	8,250
—2.50	840	.00	2,760	2.50	5,370	5.00	8,380
—2.40	895	.10	2,850	2.60	5,480	5.10	8,510
—2.30	950	.20	2,940	2.70	5,590	5.20	8,640
—2.20	1,010	.30	3,040	2.80	5,700	5.30	8,775
—2.10	1,070	.40	3,140	2.90	5,810	5.40	8,910
—2.00	1,135	.50	3,240	3.00	5,920	5.50	9,045
—1.90	1,205	.60	3,340	3.10	6,030	5.60	9,180
—1.80	1,275	.70	3,440	3.20	6,140	5.70	9,315
—1.70	1,345	.80	3,540	3.30	6,260	5.80	9,450
—1.60	1,420	.90	3,640	3.40	6,380	5.90	9,585
—1.50	1,500	1.00	3,740	3.50	6,500	*a* 6.00	9,720
—1.40	1,580	1.10	3,840	3.60	6,620		

a Above 6 feet use 1902 table.

Estimated monthly discharge of Tombigbee River at Columbus, Miss.

[Drainage area, 4,440 square miles.]

Month.	Discharge in second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1900.					
January	13,864	2,962	5,588	1.26	1.45
February	16,486	2,686	8,659	1.95	2.03
March	23,938	6,688	15,285	3.42	3.85
April	40,498	3,100	21,265	4.79	5.34
May	13,450	1,464	4,944	1.11	1.28
June	37,600	3,790	27,692	6.24	6.96
July	29,596	2,410	11,411	2.57	2.97
August	10,414	707	2,257	.51	.59
September	1,775	632	950	.21	.23
October	10,138	566	3,989	.90	1.04
November	10,000	1,097	4,304	.97	1.08
December	11,794	1,464	5,239	1.18	1.36
The year	40,498	566	9,299	2.09	28.18
1901.					
January	33,736	2,410	14,193	3.20	3.69
February	24,352	3,790	12,533	2.83	2.95
March	29,182	3,514	10,884	2.45	2.33
April	21,040	3,376	9,890	2.23	2.49
May	11,656	1,328	4,949	1.11	1.28
June	7,792	707	2,767	.62	.69
July	1,097	582	730	.16	.18
August	24,352	582	7,673	1.73	1.99
September	7,240	753	2,008	.45	.50
October	915	650	748	.17	.20
November	1,000	650	756	.17	.19
December	17,590	810	6,730	1.52	1.75
The year	33,736	582	6,155	1.39	18.74

Estimated monthly discharge of Tombigbee River at Columbus, Miss.—Continued.

Month.	Discharge in second-feet.			Run-off.	
	Maximum.	Mimimum.	Mean.	Second-feet per square mile.	Depth in inches.
1902.					
January	19,480	2,190	7,009	1.58	1.82
February	30,700	4,350	14,148	3.19	3.32
March	50,420	6,585	15,583	3.51	4.05
April	49,910	3,320	18,180	4.09	4.56
May	3,050	1,100	2,060	.46	.53
June	1,100	630	825	.19	.21
July	1,100	500	717	.16	.18
August	2,960	370	1,095	.25	.29
September	1,380	435	790	.18	.20
October	2,520	565	1,165	.26	.30
November	6,585	565	1,482	.33	.37
December	23,560	3,590	11,730	2.64	3.04
The year	50,420	370	6,232	1.40	18.87
1903.					
January	19,140	4,710	12,300	2.77	3.19
February	39,030	12,105	27,631	6.22	6.48
March	32,400	6,380	20,465	4.61	5.32
April	6,620	2,580	4,828	1.09	1.22
May	19,650	1,580	6,250	1.41	1.63
June	6,030	1,135	3,439	.77	.86
July	2,760	520	1,084	.24	.28
August	2,060	425	1,139	.26	.30
September	380	220	281	.06	.07
October	340	260	300	.07	.08
November	1,580	470	961	.22	.25
December	1,420	570	770	.17	.20
The year	39,030	220	6,621	1.49	19.88

Net horsepower per foot of fall with a turbine efficiency of 80 per cent for the minimum monthly discharge of Tombigbee River at Columbus, Miss.

Month.	1900.			1901.			1902.		
	Minimum discharge.	Minimum net horsepower per foot of fall.	Duration of minimum.	Minimum discharge.	Minimum net horsepower per foot of fall.	Duration of minimum.	Minimum discharge.	Minimum net horsepower per foot of fall.	Duration of minimum.
	Sec.-ft.		*Days.*	*Sec.-ft.*		*Days.*	*Sec.-ft.*		*Days.*
January	2,962	269	1	2,410	219	1	2,190	191	3
February	2,686	244	1	3,790	345	3	4,350	395	1
March	6,688	608	1	3,514	319	1	6,585	599	1
April	3,100	282	1	3,376	307	2	3,320	302	1
May	1,464	133	1	1,328	121	2	1,100	100	2
June	3,790	345	1	707	65	1	630	57	5
July	2,410	219	1	582	53	1	500	45	2
August	707	65	1	582	53	1	370	34	3
September	632	57	1	753	68	2	435	40	5
October........	566	51	2	650	59	3	565	51	3
November	1,097	100	4	650	59	4	565	51	5
December......	1,464	133	4	810	74	2	3,590	326	2

TOMBIGBEE RIVER NEAR EPES.

A record of gage heights has been kept at this station for the last ten years by the Alabama Great Southern Railway Company. The gage is painted on the center brick pier of the railway bridge of that company across the Tombigbee, a half mile east of Epes, and is referred to two bench marks. The first, the top of the iron girder at the third crossbeam at the station, 80 feet from the right-bank end of the iron bridge, is 64.70 feet above datum of gage; the second, the top of the cross-tie or the base of the rail at the station, 80 feet from the right-bank end of the iron bridge, is 65.50 feet above datum of gage. The west bank of the river is a solid wall of limestone; the east bank is flat and is subject to overflow. The trestle at the east end of the bridge is seven-eighths of a mile long. The section is good, though the water is very deep and rather swift.

The following discharge measurements were made during 1901 by K. T. Thomas:

> January 31: Gage height, 12.70 feet; discharge, 13,738 second-feet.
> March 14: Gage height, 21.10 feet; discharge, 23,824 second-feet.
> June 28: Gage height, 1 foot; discharge, 1,496 second-feet.
> November 13: Gage height, 0.70 foot; discharge, 1,290 second-feet.

Daily gage height, in feet, of Tombigbee River near Epes.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1900.												
1	8.5	3.0	18.0	24.5	43.0	6.0	44.5	14.5	2.0	0.5	7.0	8.0
2	7.5	3.0	19.0	19.5	41.0	8.0	44.5	12.0	2.5	.5	8.0	7.5
3	6.5	3.0	18.0	16.0	39.0	15.0	44.5	10.5	2.0	.5	9.0	7.0
4	6.0	3.0	17.0	12.0	33.5	21.0	44.0	8.0	2.0	.5	8.5	6.0
5	5.5	5.0	15.0	10.0	28.0	24.5	42.5	6.0	2.0	.5	8.5	5.0
6	5.0	6.0	14.0	8.0	20.5	27.0	42.0	5.0	2.0	.5	7.5	4.5
7	4.5	7.0	13.0	7.5	16.0	29.5	41.0	5.0	2.0	.5	7.0	4.0
8	4.0	7.5	18.0	7.5	10.0	32.0	40.0	4.0	2.0	.5	5.5	4.0
9	3.5	11.5	21.0	7.0	7.0	34.5	39.0	3.0	2.0	.5	4.5	4.0
10	3.5	13.5	23.0	6.5	7.0	37.0	38.0	2.0	2.0	2 0	4.0	3.5
11	13.0	15.0	24.0	20.5	7.0	38.5	34.0	2.0	1.5	4.0	4.0	3.0
12	20.0	20.5	24.0	26.0	8.0	39.5	26.0	2.0	1.5	6.0	3.0	3.0
13	23.0	26.0	23.0	29.0	8.0	40.5	23.0	2.0	1.5	7.5	3.0	3.5
14	23.5	28.0	20.0	30.0	7.0	41.0	15.5	2.0	2.0	8.5	2.5	3.5
15	22.0	28.0	17.5	31.0	6.0	41.5	13.0	2.0	1.5	10.0	2.0	3.5
16	21.0	26.0	17.0	38.0	6.0	42.0	8.0	1.5	1.0	10.5	2.0	3.0
17	18.5	24.0	18.0	46.0	5.0	42.0	7.0	1.5	1.0	10.0	2.0	3.0
18	15.0	22.0	18.0	48.5	4.0	42.0	6.0	1.5	1.0	7.5	2.0	3.0
19	11.5	18.5	18.5	51.0	3.5	41.5	5.0	1.5	1.0	5.0	2.5	3.0
20	10.0	16.0	26.0	51.5	3.5	41.5	6.5	1.5	.5	4.0	2.5	6.0
21	8.5	14.0	30.0	52.0	3.5	41.5	7.0	1.0	.5	3.5	3.0	5.0
22	8.0	15.0	32.0	52.0	3.5	41.0	8.0	1.0	.5	3.0	3.5	5.0
23	8.0	17.5	34.0	51.5	3.5	41.0	9.0	2.0	.5	2.0	3.5	8.5
24	7.0	18.0	35.5	51.0	4.0	42.5	8.0	1.5	.5	2.0	3.5	10.0
25	6.5	17.5	37.5	49.5	4.5	42.5	6.0	1.5	.5	3.0	6.5	11.5
26	6.0	17.0	38.0	47.5	5.0	43.5	5.5	1.5	.5	4.0	8.5	11.5
27	5.0	16.0	39.0	47.0	6.0	43.5	5.0	5.0	.5	4.5	7.5	12.5
28	3.0	17.0	38.5	46.5	6.0	43.5	5.5	4.5	.5	7.5	7.5	12.0
29	3.0	....	35.0	46.0	7.0	44.0	14.0	4.0	.5	9.0	8.0	10.0
30	3.0	....	33.0	44.5	6.0	44.5	14.5	3.0	.5	8.0	8.5	10.0
31	3.0	....	30.0	....	5.0	....	14.5	2.0	....	7.5	....	10.5
1901.												
1	10.0	12.0	6.5	13.0	7.5	.5.5	1.0	....	5.5	1.5	0.7	1.7
2	10.0	10.5	6.5	13.5	7.0	6.0	1.0	....	4.0	6.0	.7	1.7
3	9.0	16.8	9.0	15.5	6.0	7.0	1.0	....	3.5	2.5	.7	1.7
4	8.0	21.5	9.0	18.0	5.0	9.0	1.0	....	2.5	1.5	.0	3.5
5	7.0	25.5	8.5	17.0	4.5	9.0	1.0	....	2.0	1.5	.0	2.0
6	6.0	26.5	7.0	16.0	5.0	11.0	1.0	....	2.0	1.5	.0	2.0
7	5.5	27.5	6.5	15.0	4.0	12.0	1.0	....	1.5	1.5	.0	2.0
8	5.0	29.0	6.5	14.0	3.5	10.0	1.0	....	1.5	1.0	.0	3.5
9	4.5	30.5	6.5	11.0	3.5	8.0	1.0	....	1.5	1.0	.7	5.9
10	4.0	31.0	13.0	9.5	3.0	6.5	1.0	....	1.5	1.0	.7	6.5
11	18.0	31.0	18.0	8.0	3.0	5.5	.5	....	1.5	1.0	.7	5.5
12	29.5	31.0	19.5	7.5	3.5	4.5	.5	....	1.5	1.0	.7	4.7
13	33.0	30.0	20.0	9.0	4.0	4.0	.5	....	1.0	1.0	.7	4.2
14	35.0	29.5	24.5	8.0	7.0	3.5	.5	....	1.0	1.0	.7	13.0
15	36.0	28.5	25.5	7.0	8.0	3.5	.5	....	1.0	1.0	.7	19.5
16	38.0	26.0	26.5	7.0	8.5	3.5	.5	8.5	1.5	1.0	.7	22.0
17	39.0	23.0	26.5	6.5	8.0	3.0	.5	15.0	2.0	1.0	1.0	23.0
18	39.5	16.0	26.0	20.0	7.0	3.0	.5	20.0	2.5	1.0	1.0	22.5
19	40.0	12.0	25.0	28.0	6.5	2.5	.5	22.5	6.0	1.0	1.7	22.0
20	40.5	10.0	23.0	29.5	9.0	2.0	1.0	23.0	....	1.0	1.5	20.0
21	39.0	8.5	20.0	30.0	12.0	2.0	1.0	24.0	7.5	1.0	1.5	18.0
22	38.0	8.0	17.0	29.5	12.0	2.0	1.0	24.5	7.5	1.0	1.7	14.0
23	34.5	7.5	12.5	28.5	11.5	1.5	1.0	26.0	7.0	1.0	1.7	12.0
24	29.0	7.0	11.0	28.0	11.0	1.2	1.0	26.5	5.5	.5	1.8	9.0
25	24.5	6.5	12.0	27.0	10.0	1.0	1.0	26.0	4.0	.5	1.8	8.0
26	20.0	6.5	13.5	24.0	8.0	1.0	1.0	25.0	3.0	.5	2.0	7.0
27	16.0	6.5	13.5	18.0	6.5	1.0	.5	23.0	2.0	.5	2.0	7.0
28	15.0	6.5	11.5	13.0	6.5	1.0	.5	19.0	1.5	.5	2.0	12.0
29	14.0	....	10.0	11.0	6.5	1.0	— .2	12.0	1.5	.5	1.9	20.0
30	13.0	....	9.0	8.0	6.5	1.0	— .2	6.5	1.5	.5	1.8	26.0
31	12.7	....	13.5	....	7.0	....	— .2	5.5	....	.5	..... .	27.0

Rating table for Tombigbee River near Epes for 1900 and 1901.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
−0.2	810	3.8	3,698	7.8	7,806	11.8	12,660
− .1	840	3.9	3,788	7.9	7,980	11.9	12,780
.0	880	4.0	3,878	8.0	8,100	12.0	12,900
.1	830	4.1	3,969	8.1	8,220	12.1	13,020
.2	985	4.2	4,060	8.2	8,340	12.2	13,140
.3	1,043	4.3	4,152	8.3	8,460	12.3	13,260
.4	1,103	4.4	4,245	8.4	8,580	12.4	13,380
.5	1,164	4.5	4,338	8.5	8,700	12.5	13,500
.6	1,226	4.6	4,432	8.6	8,820	12.6	13,620
.7	1,289	4.7	4,527	8.7	8,940	12.7	13,740
.8	1,353	4.8	4,622	8.8	9,060	12.8	13,860
.9	1,418	4.9	4,718	8.9	9,180	12.9	13,980
1.0	1,484	5.0	4,815	9.0	9,300	13.0	14,100
1.1	1,551	5.1	4,912	9.1	9,420	13.1	14,220
1.2	1,619	5.2	5,010	9.2	9,540	13.2	14,340
1.3	1,688	5.3	5,109	9.3	9,660	13.2	14,460
1.4	1,758	5.4	5,208	9.4	9,780	13.4	14,580
1.5	1,829	5.5	5,308	9.5	9,900	13.5	14,700
1.6	1,903	5.6	5,409	9.6	10,020	13.6	14,820
1.7	1,976	5.7	5,511	9.7	10,140	13.7	14,940
1.8	2,050	5.8	5,613	9.8	10,260	13.8	15,060
1.9	2,125	5.9	5,716	9.9	10,380	13.9	15,180
2.0	2,200	6.0	5,820	10.0	10,500	14.0	15,300
2.1	2,276	6.1	5,925	10.1	10,620	14.1	15,420
2.2.	2,353	6.2	6,030	10.2	10,740	14.2	15,540
2.3	2,431	6.3	6,136	10.3	10,860	14.3	15,660
2.4	2,510	6.4	6,243	10.4	10,980	14.4	15,780
2.5	2,590	6.5	6,350	10.5	11,100	14.5	15,900
2.6	2,671	6.6	6,458	10.6	11,220	14.6	16,020
2.7	2,753	6.7	6,566	10.7	11,340	14.7	16,140
2.8	2,835	6.8	6,675	10.8	11,460	14.8	16,260
2.9	2,918	6.9	6,785	10.9	11,580	14.9	16,380
3.0	3,002	7.0	6,900	11.0	11,700	15.0	16,500
3.1	3,087	7.1	7,020	11.1	11,820	15.1	16,620
3.2	3,172	7.2	7,140	11.2	11,940	15.2	16,740
3.3	3,258	7.3	7,260	11.3	12,060	15.3	16,860
3.4	3,345	7.4	7,380	11.4	12,180	15.4	16,980
3.5	3,432	7.5	7,500	11.5	12,300	15.5	17,100
3.6	3,520	7.6	7,620	11.6	12,420	15.6	17,220
3.7	3,609	7.7	7,740	11.7	12,540	15.7	17,340

Rating table for Tombigbee River near Epes for 1900 and 1901—Continued.

Gage height.	Discharge.	Gage. height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
15.8	17,460	17.4	19,380	19.0	21,300	26.6	23,220
15.9	17,580	17.5	19,500	19.1	21,420	20.7	23,340
16.0	17,700	17.6	19,620	19.2	21,540	20.8	23,460
16.1	17,820	17.7	19,740	19.3	21,660	20.9	23,580
16.2	17,940	17.8	.19,860	19.4	21,780	21.0	23,700
16.3	18,060	17.9	19,980	19.5	21,900	21.1	23,820
16.4	18,180	18.0	20,100	19.6	22,020	21.2	23,940
16.5	18,300	18.1	20,220	19.7	22,140	21.3	24,060
16.6	18,420	18.2	20,340	19.8	22,260	21.4	24,180
16.7	18,540	18.3	20,460	19.9	22,380	21.5	24,300
16.8	18,660	18.4	20,580	20.0	22,500	21.6	24,420
16.9	18,780	18.5	20,700	20.1	22,620	21.7	24,540
17.0	18,900	18.6	20,820	20.2	22,740	21.8	24,660
17.1	19,020	18.7	20,940	20.3	22,860	21.9	24,780
17.2	19,140	18.8	21,060	20.4	22,980	22.0	24,900
17.3	19,260	18.9	21,180	20.5	23,100		

Estimated monthly discharge of Tombigbee River near Epes.

[Drainage area, 8,830 square miles.]

Month.	Discharge in second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1901.					
January	47,100	3,878	25,579	2.90	3.34
February	35,700	6,350	20,999	2.38	2.48
March	30,300	6,350	16,198	1.83	2.11
April	34,500	6,350	18,102	2.05	2.29
May	12,900	3,002	6,880	.78	.90
June	12,900	1,484	4,585	.52	.58
July	1,484	810	1,295	.15	.17
August 16–31			21,541	2.44	1.41
September	7,500	1,484	3,205	.36	.40
October	5,820	1,164	1,633	.18	.21
November	2,200	880	1,550	.18	.20
December	30,900	1,960	12,249	1.39	1 60

Net horsepower per foot of fall with a turbine efficiency of 80 per cent for the minimum monthly discharge of Tombigbee River near Epes.

Month.	1900.			1901.		
	Minimum discharge.	Minimum net horse-power per foot of fall.	Duration of minimum.	Minimum discharge.	Minimum net horse-power per foot of fall.	Duration of minimum.
	Second-feet.		Days.	Second-feet.		Days.
January	3,002	273	4	3,878	353	1
February	3,002	273	4	6,350	577	4
March	14,100	1,282	1	6,350	577	5
April	6,350	577	1	6,350	577	1
May	3,432	312	5	3,003	273	2
June	5,820	529	1	1,484	135·	6
July	4,815	438	2	810	74	3
August	1,484	135	2	....	....	....
September	1,164	106	11	1,484	135	3
October..................	1,164	106	9	1,164	106	8
November	2,200	200	4	880	80	5
December................	3,002	273	5	1,960	178	3

TRIBUTARIES OF TOMBIGBEE RIVER.

There are several large creeks in Marion and Lamar counties that flow into Mississippi and enter Tombigbee River near Columbus. One of these, Buttahatchee River, in Marion County, has numerous rapids, especially near the crossing of the military road.

Luxapallila Creek, in Lamar County, has two prongs that are both good power streams. They come together before the creek enters Mississippi, making Big Luxapallila Creek, which enters the Tombigbee at Columbus, Miss.

The following discharge measurements were made on Big Luxapallila Creek, at Water Works, near Columbus, Miss., by M. R. Hall and assistants:

Discharge measurements of Big Luxapallila Creek near Columbus, Miss.

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.
1901.	*Feet.*	*Second-feet.*	1902.	*Feet.*	*Second-feet.*
February 18	4.95	957	April 4	12.40	3,864
March 11	8.20	2,459	July 11	1.60	141
April 16	4.45	873	September 23	1.70	322
June 26	1.90	109	1903.		
October 31	2.00	126	July 16		272

TENNESSEE RIVER AND TRIBUTARIES.

TENNESSEE RIVER AT CHATTANOOGA, TENN.

This river, after passing Chattanooga, enters Alabama. It then makes a bend to the west and later to the north, returning to Tennessee. Flowing through this State and Kentucky, it empties into the Ohio 50 miles above Cairo. In 1879 a gage was established at Chattanooga, Tenn., at the foot of Lookout street, just below Chattanooga Island, by the Signal Corps of the United States Army. This gage has been in charge of the Weather Bureau since July 1, 1891. The drainage area above this station is 21,382 square miles, and is mapped on the following atlas sheets of the United States Geological Survey: Morristown, Greenville, Roan Mountain, London, Knoxville, Mount Guyot, Asheville, Murphy, Briceville, Standingstone, Wartburg, Pikeville, Maynardville, Cumberland Gap, Jonesville, Estillville, Bristol, Whitesburg, Grundy, Abington, Tazewell, Pocahontas, Wytheville, Cranberry, Morganton, Mount Mitchell, Saluda, Pisgah, Como, Nantahala, Walhalla, Dahlonega, Ellijay, Dalton, Cleveland, Ringgold, Kingston, and Chattanooga. The gage is on an inclined railroad iron for about 20 feet of its lower portion. Above this it is a vertical rod bolted to the rock bluff forming the river bank. The zero of the gage is 630.4 feet above sea level. Measurements are made from the Hamilton County steel highway bridge at the foot of Walnut street, a short distance below the gage. Gage heights are obtained from L. M. Pindell, United States Weather Bureau observer. In 1900 a new gage on the same datum was established. It is a vertical rod bolted to the south side of the third stone pier from the south end of the bridge.

Discharge measurements of Tennessee River at Chattanooga, Tenn.

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.
1893.	*Feet.*	*Second-feet.*	1898.	*Feet.*	*Second-feet.*
March 15............	10.3	63,039	November 29......	4.70	31,340
March 16............	9.2	58,310	1899.		
April 3.............	5.1	32,628	May 3..............	6.71	37,770
April 4.............	5.1	32,643	May 26.............	4.76	25,526
May 5.............	26.0	156,187	June 21............	4.15	21,391
May 8.............	26.0	151,660	September 15......	1.90	10,819
May 9.............	16.0	96,979	October 27.........	.80	6,566
May 17.............	9.9	65,867	1900.		
May 18.............	10.4	67,883	March 13...........	11.25	66,012
1897.			July 27.............	3.45	18,470
May 8..............	7.07	44,187	1901.		
May 28.............	4.52	25,892	January 24........	5.60	30,317
June 29............	5.76	32,943	April 4............	24.20	155,457
July 13............	4.59	26,884	July 31............	2.80	15,393
September 7........	1.67	10,313	August 18..........	31.70	198,718
October 6...........	.48	5,969	1902.		
November 16	.83	5,552	June 25............	3.80	17,773
December 23........	10.30	67,000	October 9..........	2.00	10,678
1898.			November 14......	1.55	9,282
May 10.............	4.14	22,066	1903.		
July 29.............	5.30	29,693	March 26....	28.85	190,279
August 19	6.37	36,671	July 21............	3.85	20,936
October 6...........	17.60	120,359	September 5.......	1.60	10,472
October 28..........	6.00	35,953	October 21.........	1.10	8,063
November 29.......	4.75	29,569			

Daily gage height, in feet, of Tennessee River at Chattanooga, Tenn.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept	Oct.	Nov.	Dec.
1890.												
1	4.9	8.0	40.2	10.0	7.5	6.1	3.2	5.8	7.6	9.4	6.8	2.4
2	5.2	7.3	42.5	9.8	7.1	6.6	2.9	5.2	5.6	8.1	6 6	2.4
3	5.1	7.3	41.0	9.4	6.7	5.3	2.9	4.7	5.7	7.7	5.7	2.3
4	5.0	7.4	34.4	9.7	6.8	5.3	3.0	4.7	4.0	7.2	5.3	2.3
5	5.0	7.2	23.0	12.2	7.0	5.2	3.0	4.8	3.6	6.4	5.0	2.3
6	4.8	7.8	15.1	14.0	7.5	5.3	3.0	4.5	3.2	5.7	4.6	2.5
7	4.7	8.3	14.2	13.6	8.9	5.2	3.0	5.2	3.6	5.2	4.4	2.8
8	4.6	11.5	14.4	13.4	9.1	4.9	2.9	5.7	3.2	5.2	4.3	2.9
9	4.7	19.3	12.8	11.9	8.7	4.7	2.8	6.6	2.8	5.5	4.0	7.1
10	4.9	20.4	11.2	10.5	8.7	4.5	2.7	7.5	2.8	5.3	3.9	8.1
11	4.7	17.8	10.0	9.6	8.1	4.5	2.7	7.2	3.0	4.8	3.8	8.2
12	4.6	14.7	9.2	8.7	7.7	4.4	3.0	6.3	3.4	4.6	3.6	7.7
13	4.6	12.0	8.6	8.0	7.2	4.0	2.7	5.8	3.6	4.4	3.5	7.4
14	4.9	10.0	8.7	7.5	6.7	3.9	2.5	5.2	4.6	4.2	3.4	6.4
15	4.6	9.8	9.7	7.1	6.6	4.0	2.3	4.8	4.0	3.9	3.3	3.7
16	5.4	9.6	13.7	6.9	7.8	4.1	2.1	4.2	4.0	3.7	3.2	4.2
17	7.2	9.0	15.1	7.1	9.3	4.0	2.0	3.8	3.7	3.7	3.2	3.9
18	9.2	9.3	14.9	9.4	8.6	3.9	2.2	3.7	4.0	3.7	3.0	3.9
19	8.2	8.5	13.0	16.6	7.9	3.7	4.7	3.3	5.3	4.2	3.2	4.0
20	7.5	7.8	11.7	20.4	8.8	3.6	4.7	3.1	3.7	4.0	3.1	4.0
21	7.0	7.3	12.4	18.2	10.7	3.7	4.1	2.6	3.7	4.0	3.1	3.9
22	9.6	7.1	14.0	14.3	11.9	3.8	3.5	2.5	5.8	3.8	3.1	3.9
23	13.0	7.2	20.0	11.3	11.9	3.7	3.2	3.8	3.5	5.3	2.9	3.9
24	12.3	7.4	25.5	9.6	11.6	3.8	3.2	4.0	3.3	7.2	2.8	3.9
25	11.7	12.1	27.2	8.7	9.2	4.0	4.1	3.3	3.4	8.8	2.8	4.3
26	10.0	18.7	26.0	8.4	7.8	4.0	5.9	3.8	4.0	9.2	2.7	4.6
27	8.3	26.4	21.4	8.4	7.4	3.9	7.5	3.6	4.3	9.5	2.6	9.4
28	7.3	34.8	15.4	8.5	8.0	3.9	7.7	3.0	4.0	8.6	2.6	12.5
29	6.6	......	13.0	8.4	8.1	3.5	7.0	3.8	3.8	7.6	2.5	12.9
30	7.7	......	11.9	8.1	7.4	3.1	6.3	5.4	5.3	7.1	2.4	12.4
31	8.3	......	10.7	......	6.8	......	6.2	6.5	......	7.0	......	9.3
1891.												
1	7.7	9.8	18.6	15.4	5.9	5.8	3.9	8.3	5.4	1.8	1.3	3.7
2	7.8	13.2	17.5	16.3	5.7	5.6	3.8	10.3	4.7	1.9	1.3	3.2
3	9.9	16.1	15.6	16.3	5.6	5.3	3.6	15.1	4.3	1.9	1.3	2.9
4	14.1	19.8	13.3	15.7	5.5	4.8	3.6	16.4	4.2	1.8	1.2	2.8
5	15.5	22.6	15.4	15.1	5.2	4.4	3.6	12.0	5.1	1.8	1.2	5.6
6	15.2	21.6	20.0	12.6	5.1	4.1	3.6	8.7	5.1	1.7	1.2	6.1
7	10.4	18.3	23.6	11.6	4.9	3.9	3.4	6.9	5.2	1.7	1.2	6.6
8	8.2	16.9	29.1	10.8	4.7	4.1	3.4	5.8	5.2	1.6	1.2	8.6
9	7.1	14.5	34.5	9.8	4.6	4.6	3.3	5.1	5.8	1.7	1.2	10.8
10	6.3	21.0	37.5	9.6	4.5	4.7	4.5	4.6	4.9	1.7	1.2	10.9
11	6.5	27.8	38.9	9.8	4.4	5.5	5.1	4.4	4.4	1.8	1.5	10.2
12	8.9	34.3	37.6	9.9	4.3	7.0	4.4	4.0	3.9	1.8	1.7	8.5
13	10.7	36.5	33.5	10.6	4.2	6.5	3.9	4.0	3.6	1.7	2.7	6.8
14	10.0	37.5	27.0	11.3	4.1	5.7	3.5	3.9	3.5	1.7	3.6	5.7
15	9.2	35.5	22.2	12.2	4.2	5.5	3.1	3.8	3.5	1.7	4.1	5.1
16	7.3	29.0	19.8	10.8	4.2	5.7	2.9	3.6	3.5	1.6	3.5	5.0
17	7.8	21.1	18.1	9.4	4.5	5.8	2.8	3.5	3.5	1.6	2.8	5.2
18	7.5	19.7	15.3	8.4	4.7	6.1	2.7	3.4	3.2	1.5	2.5	5.3
19	7.5	18.2	13.5	8.2	4.7	6.8	4.1	3.0	2.9	1.5	2.4	4.8
20	7.6	16.5	12.8	7.9	4.6	7.3	5.0	3.0	2.7	1.5	2.5	4.5
21	7.3	15.5	11.3	7.9	4.5	6.8	4.5	3.4	2.6	1.5	2.3	4.2
22	8.2	18.8	10.8	7.6	4.3	6.8	4.0	4.0	2.5	1.5	2.4	4.0
23	12.5	24.0	10.7	7.4	4.1	6.5	3.8	4.6	2.4	1.5	3.0	3.8
24	15.3	27.7	10.8	7.4	4.0	7.1	3.6	5.5	2.3	1.5	4.6	3.7
25	14.0	29.0	10.6	7.5	3.8	7.4	3.5	5.6	2.2	1.5	6.2	4.1
26	13.6	26.7	10.4	7.5	3.9	7.6	3.5	7.7	2.2	1.5	6.7	4.9
27	11.2	20.6	10.5	7.4	4.0	6.2	3.5	8.2	2.1	1.5	6.3	8.1
28	9.7	19.0	11.1	7.2	4.1	4.9	3.6	8.1	2.0	1.5	5.6	10.2
29	7.9	......	13.6	6.5	4.1	4.3	3.7	7.0	1.9	1.4	4.7	9.6
30	7.9	......	13.0	6.2	4.7	4.1	3.8	6.4	1.9	1.4	4.0	8.4
31	8.9	......	13.1	......	5.3	......	5.7	6.1	......	1.4	......	7.8

Daily gage height, in feet, of Tennessee River at Chattanooga, Tenn.—Continued.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1892.												
1	6.6	6.5	5.7	9.1	8.7	5.6	6.6	4.2	2.1	2.2	1.1	4.1
2	6.6	6.2	5.6	8.3	8.2	5.4	5.6	4.1	1.8	2.0	1.2	4.0
3	8.1	6.0	5.5	7.4	7.6	5.5	5.5	4.2	1.7	1.9	1.2	3.8
4	8.8	5.8	5.3	6.8	7.3	5.8	5.4	4.0	1.5	1.8	1.6	3.7
5	8.7	5.5	5.1	6.5	7.4	8.8	6.6	4.1	1.3	1.7	2.0	3.6
6	8.4	5.4	5.0	8.5	7.0	9.2	8.9	4.9	2.2	1.6	2.3	3.6
7	9.0	5.3	4.9	21.7	6.6	9.3	11.2	4.2	2.1	1.6	2.4	3.3
8	9.8	5.8	5.0	31.6	6.3	8.7	11.8	3.8	2.0	1.5	2.4	3.2
9	10.0	8.1	6.0	34.2	6.2	8.6	10.1	3.5	2.0	1.5	2.9	3.2
10	9.3	11.5	7.1	34.3	5.9	8.3	8.6	3.3	1.9	1.5	4.4	3.0
11	8.1	11.3	8.0	31.0	5.5	7.8	9.0	3.3	2.0	1.5	5.9	2.9
12	8.3	10.5	7.9	26.6	5.7	8.0	9.5	3.1	1.8	1.5	6.6	2.7
13	11.2	8.9	7.6	18.0	5.7	8.1	9.4	3.5	2.1	1.4	7.0	2.6
14	22.9	7.7	7.6	12.9	5.5	7.8	8.9	3.6	2.1	1.4	4.4	2.6
15	32.9	7.2	6.8	11.7	5.3	6.0	8.7	3.7	2.1	1.4	4.2	3.3
16	37.1	7.4	6.2	10.9	5.2	5.3	8.5	3.5	3.1	1.4	4.8	3.4
17	37.9	8.0	5.9	10.0	5.1	4.8	8.4	3.1	4.5	1.4	5.6	5.3
18	35.2	7.9	6.5	9.4	4.8	4.4	8.1	2.9	4.1	1.3	6.2	8.1
19	26.3	7.5	7.5	8.8	5.1	4.4	7.5	2.8	3.5	1.3	6.4	8.7
20	18.7	7.7	8.2	12.3	5.5	4.3	7.2	2.8	3.0	1.2	6.2	8.4
21	19.0	7.9	8.2	16.2	6.1	7.0	6.9	3.0	2.8	1.2	5.5	9.1
22	19.0	8.9	7.8	16.3	6.5	7.8	6.2	2.9	3.0	1.2	4.8	9.3
23	17.4	8.9	7.6	15.5	6.9	7.4	5.6	2.9	2.6	1.2	4.4	8.9
24	14.9	8.4	8.4	14.8	7.1	7.1	5.4	3.0	2.3	1.2	4.2	7.8
25	12.2	7.9	9.6	13.5	7.6	6.9	5.2	2.7	2.3	1.2	3.9	6.7
26	10.5	7.5	9.7	13.7	7.8	6.8	5.0	2.8	3.6	1.1	3.4	5.8
27	9.7	6.7	10.0	13.6	6.7	6.7	4.6	3.2	3.6	1.1	3.1	5.2
28	8.5	6.4	10.6	10.4	6.2	7.3	4.5	3.6	3.1	1.1	3.0	4.8
29	7.7	5.9	10.3	9.1	5.8	7.5	4.3	4.4	2.6	1.1	3.0	4.3
30	6.9	......	9.7	8.8	5.7	7.2	4.1	3.8	2.4	1.1	3.6	3.9
31	6.8	......	9.4	......	5.6	......	3.8	3.3	......	1.1	......	3.3
1893.												
1	3.4	10.4	8.4	5.5	10.2	7.4	3.9	2.6	8.4	2.6	3.1	2.5
2	3.8	12.1	9.1	5.3	9.6	8.0	3.8	2.5	6.8	2.5	3.0	3.9
3	4.7	10.6	8.9	5.1	11.0	10.0	4.2	3.1	5.0	2.4	2.8	3.7
4	5.7	8.6	8.9	5.1	18.4	8.1	5.2	3.5	6.2	2.4	2.7	4.1
5	5.6	8.0	8.7	5.1	24.5	6.6	4.8	3.3	6.0	2.6	2.6	4.3
6	5.3	7.7	9.0	5.2	28.2	8.3	3.9	3.2	4.9	2.5	2.5	4.7
7	5.2	7.0	9.1	5.4	30.0	16.0	3.8	4.9	4.3	2.9	2.4	4.7
8	4.7	6.5	8.8	5.4	28.2	20.7	3.5	5.0	3.5	3.1	2.4	4.5
9	4.0	6.1	8.8	5.1	18.0	19.1	3.4	4.1	3.2	2.9	2.3	4.1
10	3.8	6.2	9.4	5.1	12.8	15.2	3.6	3.8	2.8	2.9	2.4	4.0
11	3.4	8.5	11.1	5.1	11.7	11.8	3.4	3.3	2.8	2.6	2.5	3.7
12	2.9	14.7	11.7	5.0	10.4	8.9	3.4	3.0	3.7	2.5	4.8	3.2
13	2.9	21.8	11.5	4.8	9.4	7.3	3.3	2.7	5.8	2.4	3.8	3.1
14	(a)	23.6	12.0	10.2	8.8	6.8	3.2	2.5	10.9	2.5	3.6	3.0
15	(a)	22.6	10.6	12.1	8.1	6.5	3.0	2.8	12.7	2.0	3.5	2.9
16	(a)	21.3	9.5	10.4	7.8	6.2	2.8	2.9	9.6	1.7	3.0	3.0
17	(a)	23.6	8.4	8.6	9.4	5.6	2.7	3.8	8.0	9.6	2.8	3.2
18	(a)	29.4	7.6	7.4	10.4	5.4	2.8	5.2	7.0	6.4	2.7	3.5
19	(a)	32.4	7.0	6.5	8.9	5.3	3.0	4.9	6.1	5.7	2.5	3.8
20	(a)	33.4	6.7	6.4	7.7	5.2	3.2	4.0	5.1	5.2	2.6	3.9
21	(a)	32.0	6.3	7.2	7.4	5.4	3.5	2.9	4.2	4.1	2.6	3.9
22	(a)	28.5	6.0	7.2	6.7	5.6	3.6	2.6	3.6	3.4	2.6	3.5
23	2.9	18.2	5.8	7.1	6.1	5.7	4.6	2.4	3.4	3.1	2.5	3.3
24	3.1	12.3	5.7	6.8	5.7	5.4	5.2	2.3	3.2	2.8	2.5	3.1
25	3.1	10.4	6.4	6.7	5.4	5.9	5.5	2.2	3.0	3.1	2.4	2.9
26	3.4	9.3	6.8	6.0	5.2	5.6	3.7	1.9	2.9	3.3	2.5	2.8
27	3.7	8.4	6.8	5.7	5.0	5.2	3.4	1.8	2.7	4.9	2.6	2.7
28	3.8	8.2	6.3	7.0	4.6	5.1	2.9	1.6	2.6	4.6	2.8	2.6
29	4.4	......	5.9	9.5	5.4	4.7	3.7	1.6	2.4	4.0	2.7	2.5
30	5.3	......	5.8	10.4	6.5	4.1	2.6	1.7	2.5	3.5	2.5	2.7
31	7.1	......	5.7	......	7.4	......	2.6	1.6	......	3.2	......	3.1

a Frozen at gage.

Daily gage height, in feet, of Tennessee River at Chattanooga, Tenn.—Continued.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1894.												
1	2.9	5.1	7.7	5.0	3.9	3.8	4.4	2.9	4.0	0.9	1.4	1.0
2	3.4	5.0	8.2	4.8	3.8	3.6	4.0	2.9	3.8	.9	1.7	1.0
3	3.8	4.9	9.4	5.4	3.7	3.5	3.7	2.9	3.0	1.0	2.3	.9
4	3.9	5.5	9.7	5.3	3.7	3.4	4.4	2.8	2.6	1.5	1.6	.9
5	3.5	21.9	9.5	6.8	3.6	3.3	4.2	2.9	2.1	1.8	1.4	.9
6	3.1	25.5	9.3	6.9	3.5	3.2	3.7	3.0	2.0	1.8	1.5	.9
7	4.9	23.9	8.5	7.2	3.4	2.9	3.2	2.9	1.8	1.5	1.5	.9
8	6.1	19.7	8.2	7.4	3.3	2.8	3.3	2.9	1.7	1.3	1.3	.9
9	9.3	16.1	7.9	6.6	3.4	2.6	3.1	3.0	1.5	1.1	1.2	1.1
10	9.0	16.0	7.2	5.7	3.3	2.5	3.3	2.6	1.4	1.0	1.1	1.2
11	8.5	16.7	6.9	5.9	3.2	2.5	3.7	2.3	1.4	.8	1.0	1.6
12	7.9	15.4	6.6	7.2	4.7	2.4	3.3	2.1	1.4	.9	1.0	3.8
13	8.3	15.2	6.7	8.5	5.1	2.3	2.7	1.9	1.3	1.2	.9	8.6
14	8.0	14.1	7.2	7.8	4.8	2.3	2.4	1.8	1.2	1.9	.8	11.1
15	7.8	12.2	7.0	7.2	4.3	2.2	2.1	2.0	1.5	2.4	.8	11.2
16	7.8	10.3	6.9	6.9	4.0	2.1	1.9	3.6	1.8	2.1	.8	10.8
17	7.1	9.5	6.8	6.3	4.1	2.0	1.8	4.6	1.8	1.7	.8	8.6
18	7.2	8.6	7.3	5.5	5.2	2.1	2.8	3.5	2.0	1.4	.7	6.6
19	6.3	8.4	7.4	5.0	5.0	2.4	2.4	3.0	2.0	1.1	.8	4.7
20	6.0	8.3	7.7	5.1	5.4	2.5	2.4	3.1	1.6	1.0	.9	4.2
21	5.3	8.5	7.1	4.9	5.6	2.6	3.3	3.6	1.5	.9	.9	3.6
22	5.0	8.7	8.8	4.8	6.2	2.	3.7	3.7	1.5	.8	.9	3.2
23	5.0	8.8	8.7	4.7	6.8	2.3	3.8	4.0	1.8	.8	1.0	2.8
24	5.2	8.2	8.1	4.6	6.9	2.2	3.4	3.6	1.8	.8	1.0	2.7
25	5.3	7.9	7.7	4.5	7.1	2.2	4.0	3.0	1.6	.8	1.1	2.5
26	5.2	7.0	7.3	4.3	6.7	2.5	1.4	2.6	1.3	.8	1.2	2.4
27	5.4	7.7	7.0	4.2	6.0	2,6	3.9	2.2	1.1	.7	1.2	4.2
28	5.4	7.7	6.5	4.1	5.6	2.7	3.8	2.7	1.0	.7	1.1	6.9
29	5.1	....	5.9	4.0	5.1	2.9	3.6	2.4	.9	.7	1.1	8.4
30	5.0	....	5.7	4.0	4.7	4.3	3.3	2.7	.8	1.0	1.1	7.9
31	4.9	....	5.2	....	4.2	....	3.3	4.3	....	1.1	....	5.8
1895.												
1	4.7	7.6	6.8	7.8	6.0	5.6	3.2	4.4	3.3	.9	1.1	1.4
2	3.9	7.2	7.3	7.4	5.8	5.2	3.4	4.1	3.4	.8	1.2	1.5
3	3.3	7.3	12.1	6.8	5.5	4.8	3.8	3.8	3.2	.8	1.3	1.4
4	3.2	7.5	18.2	6.5	5.4	4.5	4.0	3.5	3.1	.8	1.6	1.4
5	3.1	7.6	19.9	6.3	5.7	4.2	4.5	3.4	2.9	.8	1.6	1.4
6	3.1	7.4	18.2	6.2	6.0	4.4	5.0	3.0	2.8	.8	1.3	1.6
7	3.3	6.9	13.4	6.0	6.5	4.6	5.0	3.2	2.8	.8	1.3	1.5
8	4.0	6.5	10.5	9.6	7.0	5.2	5.1	3.3	2.8	.9	1.2	1.4
9	10.9	6.4	9.2	10.7	8.2	5.1	5.5	3.3	2.5	.8	1.1	1.3
10	20.5	6.9	8.6	11.4	8.6	'4.6	5.7	3.0	2.4	.9	1.2	1.3
11	28.5	4.0	8.1	13.0	9.0	4.2	5.1	3.0	2.3	1.0	1.3	1.4
12	32.1	3.3	7.5	12.5	8.8	3.8	4.4	2.9	2.4	1.0	1.7	1.5
13	31.2	4.2	7.8	10.4	8.9	3.6	3.8	3.2	2.5	1.0	2.1	1.8
14	28.3	(a)	8.0	8.8	9.5	3.5	3.4	2.9	2.4	1.0	2.4	1.9
15	19.5	4.3	8.7	7.9	9.0	3.4	3.2	2.8	2.3	.9	2.2	2.0
16	12.3	4.7	9.4	7.4	8.2	3.4	3.2	2.7	2.2	1.0	2.0	1.9
17	10.9	4.7	9.2	7.0	7.7	3.8	3.7	3.1	2.1	1.0	1.9	1.8
18	10.0	4.2	9.6	9.0	7.1	3.7	3.6	4.3	2.3	1.0	1.8	1.7
19	9.7	4.7	9.4	11.8	7.0	3.5	3.3	4.9	2.2	.9	1.7	1.6
20	9.1	4.6	8.9	11.8	7.2	3.2	3.0	5.7	2.0	.9	1.5	1.5
21	9.6	5.1	14.3	9.9	7.1	3.1	2.7	5.3	2.1	.8	1.3	1.6
22	10.2	5.6	20.6	8.6	6.7	3.2	2.7	6.1	1.9	.8	1.1	2.1
23	9.9	6.1	22.7	7.7	6.5	3.1	2.5	5.3	1.6	.7	1.3	3.3
24	9.1	6.8	22.0	7.1	5.8	3.0	2.4	4.8	1.4	.7	1.4	4.2
25	10.8	6.8	18.2	6.7	5.6	2.9	2.4	4.6	1.3	.7	1.3	4.6
26	10.8	6.5	13.0	6.3	5.6	2.9	2.9	4.7	1.3	.7	1.3	4.3
27	10.0	6.3	11.3	6.0	7.0	2.6	3.8	4.2	1.2	.7	1.3	4.2
28	9.3	6.3	10.6	6.0	7.5	2.5	10.2	3.7	1.1	.7	1.3	4.5
29	8.8	....	9.5	5.9	7.4	2.5	10.4	3.5	1.0	.7	1.3	5.2
30	8.6	....	8.9	5.9	6.7	2.6	7.4	3.7	0.9	.7	1.5	4.7
31	8.4	....	8.4	....	6.0	....	5.3	3.4	....	1.0	....	4.7

a Frozen

Daily gage height, in feet, of Tennessee River at Chattanooga, Tenn.—Continued.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1896.												
1	4.9	4.4	4.1	14.8	3.4	2.6	3.3	5.5	2.4	2.5	1.2	2.4
2	5.0	6.2	3.9	27.7	3.4	3.0	3.2	5.2	2.1	2.3	1.2	2.5
3	4.9	10.0	3.8	34.4	3.4	4.4	3.1	4.8	1.9	2.6	1.3	2.5
4	4.9	11.6	3.7	38.8	3.5	5.7	3.2	4.6	1.8	3.0	1.5	2.6
5	4.7	10.5	3.6	40.5	4.0	5.2	3.3	4.5	1.6	2.7	1.5	2.6
6	4.3	9.3	3.5	36.9	4.6	4.7	3.2	4.9	1.6	2.6	1.6	2.7
7	3.6	11.8	3.4	23.3	4.6	4.1	3.6	5.0	1.5	2.1	2.3	2.9
8	3.3	14.0	3.5	11.6	4.3	3.5	5.0	4.2	2.0	1.7	3.5	3.0
9	3.2	13.8	3.5	9.0	4.0	3.5	3.9	3.8	2.8	1.5	4.2	2.8
10	3.2	13.2	3.4	8.0	3.7	4.5	14.2	3.4	2.7	1.4	4.1	2.8
11	3.1	12.8	3.6	7.2	3.4	7.0	21.1	3.3	2.4	1.2	3.3	2.7
12	3.1	11.4	3.6	6.7	3.1	6.3	21.6	3.4	2.0	1.2	3.2	2.6
13	2.9	10.1	3.8	6.2	2.9	5.1	15.6	3.2	1.8	1.2	5.8	2.4
14	2.7	11.1	3.8	5.8	2.8	4.3	11.5	3.2	1.6	1.2	7.3	2.6
15	2.6	12.8	3.7	5.5	2.7	3.6	11.2	3.1	1.6	1.5	6.5	4.1
16	2.4	13.6	3.8	5.2	2.6	3.2	11.4	3.0	1.5	1.7	5.5	6.5
17	2.3	12.5	5.5	5.0	2.5	3.0	11.0	3.0	1.3	1.6	4.9	6.6
18	2.3	11.0	10.1	4.8	2.4	2.8	13.9	2.9	1.4	1.6	4.3	6.3
19	2.3	9.0	13.1	4.2	2.4	2.9	12.5	2.7	1.4	1.7	3.8	6.4
20	2.3	7.6	15.7	4.4	2.2	3.1	9.6	2.6	1.3	1.6	3.4	6.8
21	2.3	6.7	13.8	4.2	2.1	3.7	7.6	2.4	1.2	1.6	3.0	7.0
22	2.5	6.0	11.2	4.1	2.1	3.5	6.5	2.4	1.2	1.4	2.8	7.2
23	3.1	5.4	9.5	4.1	2.5	3.5	8.5	2.2	1.3	1.2	2.5	7.3
24	5.0	4.9	8.4	4.0	3.2	3.3	8.8	2.2	1.4	1.2	2.4	7.0
25	6.5	4.7	7.9	4.0	3.6	3.1	8.6	2.8	1.6	1.2	2.3	6.6
26	8.2	4.6	7.5	3.8	3.8	2.9	7.8	2.6	2.0	1.2	2.2	5.9
27	8.0	4.5	7.2	3.8	3.2	2.6	11.1	2.7	1.7	1.2	2.1	5.3
28	7.0	4.4	6.7	3.8	3.1	2.6	12.2	3.2	1.5	1.2	2.2	4.8
29	6.0	4.2	6.2	3.6	2.8	2.8	9.3	4.0	1.5	1.1	5.3	4.4
30	5.3	....	5.8	3.6	2.7	3.0	7.2	3.6	2.7	1.1	9.4	3.7
31	4.8	....	7.7	....	2.5	....	6.2	2.8	....	1.3	....	3.0
1897.												
1	2.4	3.0	12.5	8.7	5.9	4.3	5.0	4.4	2.1	.8	.8	1.0
2	2.5	7.0	9.6	12.2	6.3	4.2	4.6	3.9	2.2	.8	.9	1.2
3	2.8	10.1	8.6	15.0	7.4	4.1	3.8	3.8	1.9	.7	1.0	1.3
4	2.6	10.5	9.0	16.0	9.6	4.1	3.4	3.6	1.8	.6	1.2	2.0
5	2.6	9.4	9.5	26.0	9.6	4.1	3.4	3.3	1.8	.5	1.2	3.3
6	2.7	8.3	12.1	30.4	8.5	4.1	4.0	3.5	1.7	.5	1.3	3.8
7	2.9	8.8	19.2	29.7	7.7	4.4	3.8	4.4	1.7	.5	1.4	3.9
8	3.0	10.7	25.1	25.4	7.2	4.4	3.8	4.2	1.6	.4	1.2	3.5
9	2.8	14.1	24.2	20.0	6.6	4.0	4.4	4.2	1.6	.4	1.2	2.9
10	2.8	15.5	21.3	16.0	6.2	5.2	4.0	5.6	1.4	.4	1.2	2.6
11	2.7	13.2	22.3	14.0	6.0	5.0	4.1	5.2	1.3	.5	1.1	2.4
12	2.6	10.8	28.4	26.0	6.2	5.7	4.6	4.6	1.2	.6	1.0	2.1
13	2.4	9.9	34.9	11.4	7.8	5.0	4.6	4.1	1.2	.9	1.0	1.8
14	2.6	10.0	37.9	10.3	18.4	4.3	4.2	3.5	1.1	1.4	.9	1.8
15	4.1	10.5	37.9	9.7	22.4	3.9	3.8	3.1	1.0	1.1	.8	2.5
16	6.5	10.7	37.0	9.8	20.3	3.6	3.6	2.8	1.0	1.2	.8	2.7
17	6.6	9.8	36.0	10.2	16.5	3.7	4.5	2.8	.9	1.2	.8	2.5
18	6.3	8.6	33.8	9.9	11.9	3.6	6.3	3.0	.9	1.2	.8	2.5
19	6.4	7.6	29.6	9.3	9.1	3.3	6.1	3.4	.8	1.1	.8	2.6
20	6.8	7.0	29.6	8.8	7.7	3.3	5.6	3.0	.8	1.4	.7	3.4
21	7.0	7.0	32.4	8.1	6.9	4.1	6.7	3.0	.9	2.0	.7	4.5
22	7.2	8.3	33.3	7.5	6.4	5.0	6.1	3.4	.9	1.0	.7	7.1
23	7.3	13.2	30.9	7.0	5.9	4.8	5.8	3.1	.8	1.6	.7	10.2
24	7.0	25.2	25.0	6.7	5.6	5.3	6.0	3.8	.9	1.4	.7	9.3
25	6.6	31.6	18.1	6.4	5.3	5.5	8.4	3.4	.8	1.6	.7	7.7
26	5.9	34.8	14.2	6.2	5.1	6.2	9.7	2.9	.8	1.4	.7	6.4
27	5.3	33.8	12.2	6.0	4.8	5.4	13.3	2.8	.7	1.2	.7	5.6
28	4.8	23.6	10.8	6.1	4.6	5.5	8.7	2.8	.7	1.0	.7	5.0
29	4.4	....	9.8	6.2	4.4	6.2	6.7	2.5	.7	.9	.7	4.5
30	3.7	....	9.1	5.8	4.2	5.2	5.6	2.2	.8	.8	.9	4.0
31	3.0	....	8.6	....	4.2	....	5.0	2.1	....	.8	....	3.8

Daily gage height, in feet, of Tennessee River at Chattanooga, Tenn.—Continued.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1898.												
1	3.45	7.55	3.30	17.45	6.40	3.35	2.45	8.15	3.55	3.55	4.60	5.10
2	3.25	6.70	3.15	17.80	5.80	3.30	2.35	7.55	3.95	3.30	4.30	5.05
3	3.05	6.15	3.00	15.00	5.40	3.30	2.25	6.45	9.15	3.20	4.25	4.90
4	2.90	5.40	2.95	11.45	5.05	3.30	2.05	5.35	18.50	3.90	4.05	5.00
5	2.75	5.00	3.30	10.35	4.70	2.85	2.35	6.25	25.00	8.90	3.90	5.05
6	2.65	4.55	3.45	12.15	4.45	2.55	2.10	11.85	22.15	16.90	3.90	5.60
7	2.70	4.45	3.50	11.60	4.35	2.35	2.10	14.65	15.70	16.50	4.25	5.95
8	2.80	4.35	3.40	10.30	4.10	2.20	2.15	12.55	11.25	10.75	4.45	5.90
9	3.05	4.30	3.25	9.30	4.20	2.05	2.60	10.15	9.50	8.80	4.50	5.85
10	3.25	4.15	3.05	8.30	4.15	1.95	3.05	8.50	8.60	8.40	4.45	5.55
11	3.25	4.00	2.90	8.60	4.45	1.80	3.50	9.05	7.45	7.55	4.65	5.10
12	5.50	3.90	2.85	9.50	4.65	1.95	3.40	12.30	6.45	6.55	5.05	4.75
13	13.20	3.80	2.80	9.40	4.40	1.80	3.20	14.85	5.70	6.00	5.30	4.55
14	14.40	3.80	2.85	9.00	4.15	1.75	2.80	15.85	5.20	5.70	4.95	4.30
15	12.25	3.80	3.15	9.05	3.95	1.65	2.85	14.95	4.80	5.35	4.55	4.00
16	12.20	3.70	5.10	9.15	3.90	1.75	3.50	11.60	4.45	4.90	4.40	3.85
17	12.35	3.55	5.05	8.60	3.80	2.00	4.55	8.90	4.25	4.70	4.55	2.70
18	10.00	3.50	5.20	8.20	3.70	2.35	5.35	7.10	3.95	5.25	4.75	3.60
19	9.20	3.30	5.50	8.00	3.70	3.50	4.60	6.40	3.75	6.70	4.95	3.75
20	11.70	3.30	6.10	7.95	3.65	4.05	4.15	6.05	3.55	7.75	5.30	5.20
21	13.80	3.20	5.70	7.40	3.60	5.35	4.00	5.95	3.45	9.30	5.85	5.85
22	13.40	3.25	5.45	7.05	3.60	5.55	3.30	5.65	3.55	8.80	6.05	6.00
23	12.55	3.40	5.15	6.60	3.50	5.05	3.30	5.40	5.00	7.65	6.55	5.85
24	12.35	3.50	4.65	6.85	3.40	4.55	3.40	4.75	5.05	7.25	6.85	5.35
25	12.35	3.60	4.30	6.65	3.45	3.70	3.55	4.30	6.40	7.20	6.55	5.20
26	16.05	3.80	4.15	6.60	3.70	3.40	3.55	4.05	7.20	7.60	6.10	5.40
27	18.20	3.50	4.45	6.45	4.95	2.90	4.55	4.00	6.15	6.90	5.65	5.90
28	16.70	3.35	4.45	7.10	5.60	2.80	5.56	4.10	5.00	6.20	5.15	5.70
29	14.15	......	4.65	7.05	4.90	2.80	5.35	4.30	4.30	5.65	4.80	5.15
30	11.20	......	5.55	6.75	4.20	2.55	5.90	4.10	3.85	5.15	4.95	4.80
31	8.95	......	13.25	......	3.70	......	7.90	3.85	......	4.85	......	4.50
1899.												
1	4.75	5.70	19.25	22.80	7.60	4.15	3.45	4.20	2.20	1.20	1.10	1.70
2	4.95	5.65	17.60	19.50	7.10	4.25	3.30	3.55	2.35	1.10	1.10	1.70
3	5.30	5.60	15.15	14.90	6.70	4.40	3.05	3.05	2.80	1.05	1.05	1.70
4	5.80	10.70	14.15	12.95	6.30	4.85	2.80	2.75	3.05	.95	1.10	1.70
5	5.95	23.10	17.95	13.25	6.15	4.65	2.60	2.45	2.65	.90	1.50	1.80
6	7.25	30.45	24.50	14.70	7.10	4.25	2.60	2.45	2.25	.80	1.50	1.70
7	18.80	34.30	26.55	15.70	8.50	4.05	2.65	2.40	1.95	.85	1.50	1.60
8	18.40	36.95	27.60	18.05	9.35	3.75	3.05	2.40	1.80	1.00	1.45	1.50
9	17.35	38.25	27.70	17.75	10.00	3.55	2.90	2.25	1.60	1.15	1.35	1.40
10	17.15	36.75	16.15	15.70	10.70	3.40	2.60	2.10	1.80	1.60	1.20	1.40
11	13.85	30.30	11.85	14.20	11.15	3.90	2.55	2.10	1.70	1.80	1.15	1.60
12	10.50	19.35	10.60	12.90	10.40	4.30	2.45	2.00	2.00	1.85	1.10	5.20
13	9.15	12.15	9.55	11.65	9.60	5.25	2.30	2.00	1.80	1.70	1.00	6.45
14	8.10	9.50	11.20	10.70	9.30	5.80	2.20	2.25	2.00	1.65	1.00	7.40
15	7.55	8.50	24.55	10.00	9.55	6.45	2.15	2.65	1.85	1.40	1.00	7.15
16	7.30	7.55	34.25	9.40	9.20	6.10	1.95	2.40	1.65	1.25	1.00	6.20
17	7.40	7.95	36.90	8.75	8.70	6.40	1.90	2.40	1.45	1.15	1.00	5.20
18	7.45	9.55	36.15	8.40	7.75	6.20	1.80	2.30	1.35	1.15	1.00	4.25
19	7.25	11.30	35.85	8.00	6.90	5.25	1.90	2.15	1.20	1.10	1.00	3.85
20	7.00	12.65	37.05	7.55	6.40	4.70	2.05	1.90	1.05	1.10	.95	4.25
21	6.80	11.50	39.20	7.35	5.90	4.20	2.05	1.70	1.00	1.10	.85	4.40
22	6.45	10.65	40.00	7.05	5.60	3.75	2.40	1.60	1.05	1.10	.85	4.40
23	5.90	10.10	38.70	7.85	5.35	3.50	2.70	1.45	1.30	1.05	1.00	4.15
24	5.65	9.75	32.70	9.65	5.30	3.25	3.50	1.30	1.50	1.00	1.15	5.65
25	6.05	9.50	23.15	9.35	5.05	3.15	3.40	1.20	1.50	.95	1.30	6.15
26	6.35	9.20	16.30	10.75	4.80	3.06	3.00	1.20	1.45	.85	1.70	6.30
27	5.85	13.20	13.65	10.30	4.65	3.25	3.05	1.20	1.30	.80	1.80	5.85
28	5.75	18.45	13.95	9.20	4.40	3.65	3.65	1.25	1.20	.80	1.85	5.55
29	5.55	......	17.30	8.35	4.30	3.50	4.25	1.50	1.25	.90	1.80	5.10
30	5.30	......	21.20	7.75	4.20	3.30	4.25	1.85	1.30	1.00	1.75	4.65
31	5.30	......	22.80	......	4.25	......	5.15	1.75	......	1.05	......	3.85

Daily gage height, in feet, of Tennessee River at Chattanooga, Tenn.—Continued.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1900.												
1	3.05	3.25	8.05	7.85	6.20	2.85	8.85	6.20	2.10	2.00	2.90	8.70
2	(a)	2.95	8.70	7.20	5.65	2.80	8.15	5.40	2.00	1.80	2.60	6.50
3	(a)	2.60	10.90	6.85	5.35	3.00	6.95	4.70	2.30	1.70	2.50	5.60
4	(a)	2.50	12.50	7.25	5.15	3.20	6.30	4.20	2.50	1.50	2.90	5.10
5	(a)	2.90	12.75	8.05	4.95	3.20	5.80	3.60	2.30	1.40	3.30	5.60
6	2.10	3.50	10.65	8.55	4.80	3.50	5.40	3.20	2.00	1.30	3.70	6.90
7	2.20	3.95	10.00	7.85	4.65	5.65	5.00	2.90	1.70	1.30	4.20	8.30
8	2.30	3.90	11.65	7.05	4.45	6.65	4.50	2.60	1.60	1.60	4.20	9.20
9	2.35	5.35	14.55	6.50	4.45	6.15	4.20	2.40	1.40	1.80	3.70	8.50
10	2.45	8.40	16.50	6.10	4.35	5.30	4.20	2.30	1.30	2.10	3.20	7.00
11	3.35	9.40	16.15	6.50	4.30	5.00	4.30	2.10	1.20	2.10	3.00	6.10
12	6.05	8.95	14.25	7.50	4.30	4.90	3.80	2.00	1.10	2.50	2.70	5.40
13	8.15	13.90	11.65	7.40	4.15	4.50	3.40	1.90	1.00	3.00	2.50	4.90
14	8.70	21.55	9.85	7.00	4.00	5.20	3.30	1.90	1.10	2.50	2.30	4.50
15	8.45	24.00	8.65	6.50	3.85	5.30	3.30	2.10	1.80	1.90	2.20	4.30
16	7.80	21.40	8.00	6.30	3.75	5.25	3.30	2.20	3.10	1.80	2.10	4.20
17	6.35	17.00	7.80	8.75	3.60	5.45	3.20	2.30	4.00	1.60	2.00	4.00
18	5.50	12.05	7.55	10.65	3.50	6.15	3.10	2.30	4.10	1.50	2.00	3.60
19	5.80	9.25	7.55	9.75	3.40	8.85	3.00	2.30	4.60	1.40	1.90	3.40
20	8.50	7.70	8.55	9.40	3.40	9.20	2.90	2.40	4.70	1.30	1.90	3.30
21	9.40	7.10	11.60	11.70	3.25	8.90	2.70	1.90	3.90	1.20	2.10	3.30
22	8.85	7.70	14.95	12.00	3.15	7.65	2.50	1.80	3.00	1.20	2.20	4.00
23	7.95	8.50	17.40	11.35	3.05	6.40	2.50	1.70	2.60	1.40	2.30	4.20
24	7.20	8.55	16.45	10.70	3.00	6.25	2.80	1.80	2.40	2.20	2.80	4.70
25	6.15	8.55	12.65	9.75	3.15	7.15	3.00	1.90	2.70	4.10	3.20	5.20
26	5.50	9.50	11.15	8.50	3.20	7.60	3.10	2.50	2.70	7.00	7.80	5.40
27	5.00	9.30	10.90	7.80	3.35	8.05	3.30	3.10	2.60	7.50	13.90	5.20
28	4.65	8.45	10.70	7.45	3.60	8.20	4.60	2.70	2.40	6.00	15.60	4.00
29	4.20	......	10.20	7.05	3.60	8.60	8.00	2.20	2.30	4.90	15.60	4.30
30	3.90	......	9.35	6.60	3.35	8.70	8.20	2.30	2.20	3.70	13.30	4.20
31	3.55	......	8.50	......	3.05	......	7.30	2.20	......	3.40	......	4.50
1901.												
1	5.2	6.5	3.7	12.4	10.8	12.0	6.0	2.8	9.9	4.2	2.6	2.3
2	5.7	6.7	3.7	13.2	9.3	11.1	5.9	2.8	9.8	4.5	2.6	2.2
3	5.8	7.2	3.7	19.7	8.5	9.8	6.3	2.9	9.7	4.6	2.5	2.3
4	5.6	8.7	3.7	24.1	7.6	8.5	6.4	2.8	10.3	4.5	2.5	2.5
5	5.1	10.1	3.8	23.9	7.0	7.7	6.0	2.6	9.4	4.4	2.5	2.5
6	4.7	10.0	4.0	22.4	6.7	6.9	5.2	2.6	7.9	4.8	2.5	2.5
7	4.4	9.4	4.1	18.9	6.4	6.9	5.1	3.2	6.9	4.5	2.4	3.0
8	4.1	8.9	4.1	14.2	6.2	6.9	5.4	9.1	6.4	4.1	2.4	3.2
9	3.9	8.5	4.0	11.8	5.9	6.5	5.6	12.2	5.9	3.9	2.4	3.2
10	3.8	7.7	7.0	10.3	5.6	6.9	6.3	9.9	5.5	3.7	2.4	3.5
11	6.1	7.6	9.8	9.2	5.6	8.2	6.6	7.3	5.3	3.4	2.4	3.5
12	15.4	7.0	11.2	8.4	5.4	7.4	5.6	5.8	5.1	3.4	2.4	4.0
13	26.6	7.1	9.7	7.9	5.6	6.4	5.0	5.3	5.7	3.5	2.5	4.1
14	28.1	7.2	8.2	6.8	5.5	6.1	4.4	6.5	5.9	4.0	2.5	4.7
15	25.3	7.0	7.3	9.8	5.5	6.4	4.1	14.0	6.0	4.3	2.5	17.9
16	19.5	6.4	6.4	10.3	5.4	7.5	3.6	27.3	6.1	4.1	2.5	26.8
17	12.7	5.8	5.8	10.2	5.2	8.9	3.7	32.8	6.3	4.1	2.4	28.8
18	9.7	5.3	5.4	9.6	4.9	9.8	3.9	32.6	8.8	4.0	2.4	26.7
19	8.1	5.1	5.0	10.8	5.3	9.3	3.7	28.6	9.9	3.7	2.3	19.9
20	7.2	5.0	4.7	21.1	8.0	8.9	3.7	23.4	9.3	3.3	2.3	11.4
21	6.4	4.9	4.7	26.5	10.2	8.4	4.2	18.6	8.3	3.1	2.2	8.3
22	5.9	4.7	4.8	24.7	20.2	7.7	3.9	17.0	7.4	3.1	2.1	6.6
23	5.4	4.5	5.2	23.0	26.5	10.1	3.7	16.5	6.4	3.1	2.2	5.7
24	5.6	4.4	5.0	22.2	29.7	9.5	3.5	18.5	5.6	3.0	2.5	5.8
25	5.8	4.2	5.0	19.0	32.4	7.6	3.1	16.5	5.2	3.0	2.5	6.9
26	5.8	4.1	7.7	17.1	32.5	9.6	3.0	13.1	4.9	2.9	2.5	7.9
27	5.4	3.8	15.9	14.9	23.5	9.8	2.9	11.0	4.6	2.8	2.6	10.2
28	5.2	3.7	22.3	14.9	13.5	8.4	2.9	10.3	4.4	2.7	2.5	16.0
29	5.2	......	21.7	14.5	12.1	7.2	2.8	10.7	4.4	2.6	2.5	24.0
30	5.2	......	18.4	13.8	11.9	6.4	2.8	10.0	4.3	2.5	2.4	32.0
31	5.5	......	14.7	......	12.3	......	2.8	9.8	......	2.5	......	37.4

a Frozen at gage.

Daily gage height, in feet, of Tennessee River at Chattanooga, Tenn.—Continued.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1902.												
1	40.1	20.1	24.0	30.9	5.6	4.0	9.8	2.2	1.4	3.9	1.3	5.2
2	40.8	21.8	31.9	27.0	8.5	3.8	10.2	2.0	1.2	3.7	1.3	5.1
3	37.6	23.2	35.8	18.0	9.3	3.6	8.8	2.1	1.2	3.9	1.4	6.7
4	26.8	21.7	38.0	12.3	8.0	3.5	7.5	2.4	1.5	3.3	1.5	7.4
5	15.0	18.0	35.9	10.7	6.8	3.4	6.5	2.4	1.3	3.0	1.5	7.8
6	10.9	14.5	30.3	10.0	6.0	3.4	5.5	2.8	1.4	2.8	1.5	7.5
7	9.7	11.7	25.5	9.5	5.6	3.2	4.5	2.5	1.5	2.4	1.4	7.5
8	8.9	10.0	20.7	·9.8	5.6	3.2	4.0	2.1	1.5	2.1	1.8	6.6
9	8.0	8.8	17.9	9.9	5.5	3.3	3.7	1.9	1.5	2.0	2.2	6.0
10	7.7	8.1	15.6	9.5	5.2	3.4	3.5	2.2	1.5	1.9	2.1	5.3
11	7.3	7.5	14.2	8.9	5.0	3.2	3.4	2.8	1.4	2.2	1.9	4.7
12	6.9	6.9	12.9	8.4	4.8	3.4	3.4	2.7	1.5	2.9	1.8	4.2
13	6.5	6.4	12.1	8.0	4.6	3.5	3.6	2.4	1.9	2.7	1.8	3.9
14	6.2	6.0	11.2	7.5	4.5	3.3	4.8	2.0	2.1	2.7	1.6	3.6
15	5.8	6.0	10.5	7.3	4.5	3.1	5.0	1.7	2.0	3.3	1.5	3.4
16	5.5	6.1	10.0	7.1	4.6	3.0	4.2	1.6	1.9	3.4	1.4	3.5
17	5.3	6.0	12.2	6.9	4.7	3.0	3.8	1.5	1.8	3.5	1.4	4.8
18	5.1	5.8	14.5	6.8	4.5	3.0	3.3	1.5	1.5	3.0	1.4	7.4
19	5.1	5.6	14.9	6.7	4.5	4.0	3.1	1.5	1.4	2.8	1.7	7.8
20	5.2	5.5	14.1	6.6	4.4	4.5	2.9	1.4	1.4	2.6	1.9	7.2
21	5.4	5.2	12.3	6.5	4.4	4.6	2.6	1.5	1.4	2.2	2.1	7.0
22	6.2	5.7	10.6	6.3	4.5	4.4	2.7	1.6	2.0	2.0	1.9	8.7
23	6.5	6.8	9.5	6.1	4.8	4.0	2.9	1.6	2.6	1.8	1.9	9.6
24	6.7	7.9	8.9	6.0	4.6	3.9	2.6	1.5	2.6	1.8	2.0	8.7
25	6.6	8.1	8.3	5.9	4.6	3.7	2.3	1.4	2.8	1.6	2.1	7.2
26	6.1	8.5	7.8	5.7	4.5	3.5	2.0	1.4	3.3	1.5	3.5	6.5
27	6.3	8.6	7.5	5.5	4.2	4.0	2.0	1.5	3.6	1.4	6.1	5.7
28	8.5	13.3	7.2	5.4	4.0	3.9	1.9	1.5	3.6	1.4	6.3	5.1
29	12.6	......	12.9	5.2	4.4	4.0	1.9	1.6	3.6	1.3	5.8	4.5
30	15.8	......	26.5	5.2	4.5	5.0	2.0	1.9	3.5	1.2	5.4	4.3
31	18.9	......	31.0	......	4.3	......	2.3	1.7	......	1.2	......	4.6
1903.												
1	4.7	4.8	26.5	17.4	9.0	6.5	4.1	2.8	1.7	0.6	0.8	1.1
2	4.5	4.9	31.0	16.6	8.3	8.2	3.8	2.6	1.6	.6	.9	1.1
3	5.3	5.1	29.2	14.8	7.8	11.6	3.7	2.9	1.4	.6	1.1	1.1
4	6.1	7.6	23.6	13.0	7.3	11.5	3.6	3.8	1.4	.6	1.2	1.0
5	6.9	15.4	16.5	12.3	7.0	10.1	3.6	3.8	1.3	.6	1.8	1.0
6	6.8	19.6	13.1	12.4	6.7	9.3	3.8	4.2	1.3	.6	1.8	.9
7	8.2	17.5	12.3	11.9	6.6	9.8	3.9	4.9	1.3	.6	1.5	1.0
8	7.6	18.0	14.6	15.5	6.3	11.2	3.8	4.2	1.3	.8	1.4	.9
9	6.7	17.2	20.7	24.5	6.0	10.5	4.0	3.6	1.3	1.0	1.3	1.0
10	6.0	15.3	24.4	30.3	5.8	9.0	4.0	3.0	1.2	1.5	1.3	.9
11	5.5	14.4	23.9	31.8	5.6	8.7	3.9	2.6	1.2	1.4	1.3	.9
12	6.2	16.0	21.0	28.0	5.4	7.8	3.8	2.7	1.1	1.3	1.3	.9
13	7.1	16.3	18.3	19.7	5.2	8.0	4.1	3.3	1.1	1.2	1.3	1.0
14	7.2	14.8	16.2	17.5	5.0	7.1	5.7	2.9	1.1	1.2	1.3	.9
15	6.5	13.6	14.9	20.4	4.9	6.3	5.5	3.2	1.2	1.0	1.2	.9
16	6.0	12.3	13.6	21.9	4.8	5.6	5.4	3.8	1.1	.9	1.2	1.0
17	5.8	18.4	11.9	21.2	·4.7	5.1	5.6	4.1	1.0	1.0	1.5	1.2
18	5.4	25.9	10.7	18.8	4.6	4.7	5.1	3.8	1.2	1.0	3.6	1.1
19	5.1	29.3	9.8	16.1	4.5	4.4	4.7	3.4	1.3	1.0	6.1	1.0
20	4.8	29.0	9.0	14.2	4.3	4.3	4.1	3.8	1.3	.9	5.8	1.4
21	4.5	24.4	9.0	13.2	4.2	4.3	3.8	3.3	1.1	.9	4.6	3.0
22	4.4	15.4	9.0	13.0	4.1	4.3	4.0	3.0	1.2	.9	3.8	4.7
23	4.2	11.3	10.0	13.0	4.0	4.3	3.6	2.9	1.2	.9	3.1	4.4
24	4.0	9.9	16.7	11.8	4.0	4.3	3.2	2.5	1.1	.8	2.5	3.7
25	4.0	8.8	25.8	10.8	3.8	4.2	2.9	2.2	1.0	.8	2.1	3.7
26	4.2	8.0	28.8	10.1	3.8	4.1	2.7	2.0	1.0	.7	1.8	3.4
27	4.3	7.5	27.3	9.6	3.6	4.1	2.6	1.8	.8	.7	1.6	3.1
28	4.4	12.7	20.1	9.2	3.5	4.5	2.4	1.7	.7	.6	1.5	3.7
29	4.5	......	13.8	9.2	3.5	4.7	2.3	1.6	.7	.6	·1.3	3.8
30	4.7	......	13.1	6.6	3.8	4.5	2.3	1.6	.6	.6	1.2	3.8
31	4.8	......	16.0	......	4.7	......	2.2	1.8	......	.7	......	3.7

Rating table for Tennessee River at Chattanooga, Tenn., from 1890 to 1895.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
0.7	16,360	11.0	66,850	22.5	133,665	34.0	293,820
.8	16,560	11.5	69,755	23.0	136,570	34.5	302,720
.9	16,780	12.0	72,660	23.5	139,475	35.0	311,620
1.0	17,000	12.5	75,565	24.0	142,380	35.5	320,520
1.5	18,160	13.0	78,470	24.5	145,285	36.0	329,420
2.0	19,500	13.5	81,375	25.0	148,190	36.5	338,320
2.5	21,100	14.0	84,280	25.5	151,095	37.0	347,220
3.0	23,000	14.5	87,185	26.0	154,000	37.5	356,120
3.5	25,090	15.0	90,090	26.5	162,500	38.0	365,020
4.0	27,300	15.5	92,995	27.0	171,000	38.5	373,920
4.5	29,660	16.0	95,900	27.5	179,900	39.0	382,820
5.0	32,200	16.5	98,805	28.0	188,800	39.5	391,720
5.5	34,895	17.0	101,710	28.5	197,700	40.0	400,620
6.0	37,800	17.5	104,615	29.0	206,600	40.5	409,520
6.5	40,705	18.0	107,520	29.5	215,500	41.0	418,420
7.0	43,610	18.5	110,425	30.0	224,400	41.5	427,320
7.5	46,515	19.0	113,330	30.5	233,300	42.0	436,220
8.0	49,420	19.5	116,235	31.0	242,200	42.5	445,120
8.5	52,325	20.0	119,140	31.5	251,100	43.0	454,020
9.0	55,230	20.5	122,045	32.0	260,000	43.5	462,920
9.5	58,135	21.0	124,950	32.5	268,900	44.0	471,820
10.0	61,040	21.5	127,855	33.0	276,020	44.5	480,720
10.5	63,945	22.0	130,760	33.5	284,920		

Rating table for Tennessee River at Chattanooga, Tenn., for 1896 and 1897.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
0.2	3,080	1.4	10,208	3.4	22,088	12.0	73,172
.3	3,674	1.6	11,396	3.6	23,276	13.0	79,112
.4	4,268	1.8	12,584	3.8	24,464	14.0	85,052
.5	4,862	2.0	13,772	4.0	25,652	15.0	90,992
.6	5,456	2.2	14,960	4.4	28,028	16.0	96,932
.7	6,050	2.4	16,148	4.8	30,404	18.0	108,812
.8	6,644	2.6	17,336	6.0	37,532	20.0	120,690
.9	7,238	2.8	18,524	8.0	49,412	22.0	132,570
1.0	7,832	3.0	19,712	10.0	61,292	24.0	144,450
1.2	9,020	3.2	20,900	11.0	67,232	*a* 26.0	156,330

a Above 26 feet use above table as applicable to 1890–1895.

Rating table for Tennessee River at Chattanooga, Tenn., for 1898.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
0.5	5,900	3.7	19,550	6.9	42,370	10.5	68,650
.6	6,266	3.8	20,120	7.0	43,100	11.0	72,300
.7	6,634	3.9	20,700	7.1	43,830	11.5	75,950
.8	7,004	4.0	21,320	7.2	44,560	12.0	79,600
.9	7,376	4.1	21,950	7.3	45,290	12.5	83,250
1.0	7,750	4.2	22,580	7.4	46,020	13.0	86,900
1.1	8,126	4.3	23,350	7.5	46,750	13.5	90,550
1.2	8,504	4.4	24,120	7.6	47,480	14.0	94,200
1.3	8,884	4.5	24,850	7.7	48,210	14.5	97,850
1.4	9,266	4.6	25,580	7.8	48,940	15.0	101,500
1.5	9,650	4.7	26,310	7.9	49,670	15.5	105,150
1.6	10,046	4.8	27,040	8.0	50,400	16.0	108,800
1.7	10,444	4.9	27,770	8.1	51,130	16.5	112,450
1.8	10,844	5.0	28,500	8.2	51,860	17.0	116,100
1.9	11,246	5.1	29,230	8.3	52,590	17.5	119,750
2.0	11,650	5.2	29,960	8.4	53,320	18.0	123,400
2.1	12,056	5.3	30,690	8.5	54,050	18.5	127,050
2.2	12,464	5.4	31,420	8.6	54,780	19.0	130,700
2.3	12,874	5.5	32,150	8.7	55,510	19.5	134,350
2.4	13,286	5.6	32,880	8.8	56,240	20.0	138,000
2.5	13,700	5.7	33,610	8.9	56,970	20.5	141,650
2.6	14,126	5.8	34,340	9.0	57,700	21.0	145,300
2.7	14,562	5.9	35,070	9.1	58,430	21.5	148,950
2.8	15,008	6.0	35,800	9.2	59,160	22.0	152,600
2.9	15,464	6.1	36,530	9.3	59,890	22.5	156,250
3.0	15,930	6.2	37,260	9.4	60,620	23.0	159,900
3.1	16,410	6.3	37,990	9.5	61,350	23.5	163,550
3.2	16,900	6.4	38,720	9.6	62,080	24.0	167,200
3.3	17,400	6.5	39,450	9.7	62,810	24.6	171,680
3.4	17,920	6.6	40,180	9.8	63,540		
3.5	18,460	6.7	40,910	9.9	64,270		
3.6	19,000	6.8	41,640	10.0	65,000		

Rating table for Tennessee River at Chattanooga, Tenn., for 1899 and 1900.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
0.8	6,600	4.8	25,760	8.8	50,560	12.8	75,360
.9	6,950	4.9	26,380	8.9	51,180	12.9	75,980
1.0	7,300	5.0	27,000	9.0	51,800	13.0	76,600
1.1	7,670	5.1	27,620	9.1	52,420	13.1	77,220
1.2	8,040	5.2	28,240	9.2	53,040	13.2	77,840
1.3	8,430	5.3	28,860	9.3	53,660	13.3	78,460
1.4	8,820	5.4	29,480	9.4	54,280	13.4	79,080
1.5	9,220	5.5	30,100	9.5	54,900	13.5	79,700
1.6	9,620	5.6	30,720	9.6	55,520	13.6	80,320
1.7	10,020	5.7	31,340	9.7	56,140	13.7	80,940
1.8	10,430	5.8	31,960	9.8	56,760	13.8	81,560
1.9	10,840	5.9	32,580	9.9	57,380	13.9	82,180
2.0	11,250	6.0	33,200	10.0	58,000	14.0	82,800
2.1	11,660	6.1	33,820	10.1	58,620	14.1	83,420
2.2	12,080	6.2	34,440	10.2	59,240	14.2	84,040
2.3	12,500	6.3	35,060	10.3	59,860	14.3	84,660
2.4	12,930	6.4	35,680	10.4	60,480	14.4	85,280
2.5	13,360	6.5	36,300	10.5	61,100	14.5	85,900
2.6	13,800	6.6	36,920	10.6	61,720	14.6	86,520
2.7	14,240	6.7	37,540	10.7	62,340	14.7	87,140
2.8	14,680	6.8	38,160	10.8	62,960	14.8	87,760
2.9	15,140	6.9	38,780	10.9	63,580	14.9	88,380
3.0	15,600	7.0	39,400	11.0	64,200	15.0	89,000
3.1	16,080	7.1	40,020	11.1	64,820	15.1	89,620
3.2	16,550	7.2	40,640	11.2	65,440	15.2	90,240
3.3	17,050	7.3	41,260	11.3	66,060	15.3	90,860
3.4	17,550	7.4	41,880	11.4	66,680	15.4	91,480
3.5	18,050	7.5	42,500	11.5	67,300	15.5	92,100
3.6	18,550	7.6	43,120	11.6	67,920	15.6	92,720
3.7	19,050	7.7	43,740	11.7	68,540	15.7	93,340
3.8	19,600	7.8	44,360	11.8	69,160	15.8	93,960
3.9	20,200	7.9	44,980	11.9	69,780	15.9	94,580
4.0	20,800	8.0	45,600	12.0	70,400	16.0	95,200
4.1	21,420	8.1	46,220	12.1	71,020	16.1	95,820
4.2	22,040	8.2	46,840	12.2	71,640	16.2	96,440
4.3	22,660	8.3	47,460	12.3	72,260	16.3	97,060
4.4	23,280	8.4	48,080	12.4	72,880	16.4	97,680
4.5	23,900	8.5	48,700	12.5	73,500	16.5	98,300
4.6	24,520	8.6	49,320	12.6	74,120	16.6	98,920
4.7	25,140	8.7	49,940	12.7	74,740	16.7	99,540

Rating table for Tennessee River at Chattanooga Tenn., for 1899 and 1900—Continued.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
16.8	100,160	20.8	124,960	24.8	149,760	28.8	174,560
16.9	100,780	20.9	125,580	24.9	150,380	28.9	175,180
17.0	101,400	21.0	126,200	25.0	151,000	29.0	175,800
17.1	102,020	21.1	126,820	25.1	151,620	29.1	176.420
17.2	102,640	21.2	127,440	25.2	152,240	29.2	177,040
17.3	103,260	21.3	128,060	25.3	152,860	29.3	177,6 0
17.4	103,880	21.4	128,680	25.4	153,480	29.4	178,280
17.5	104,500	21.5	129,300	25.5	154,100	29.5	178,900
17.6	105,120	21.6	129,920	25.6	154,720	29.6	179,520
17.7	105,740	21.7	130,540	25.7	155,340	29.7	180,140
17.8	106,360	21.8	131,160	25.8	155,960	29.8	180,760
17.9	106,980	21.9	131,780	25.9	156,580	29.9	181,380
18.0	107,600	22.0	132,400	26.0	157,200	30.0	183,000
18.1	108,220	22.1	133,020	26.1	157,820	30.1	182,620
18.2	108,840	22.2	133,640	26.2	158,440	30.2	183,240
18.3	109,460	22.3	134,260	26.3	159,060	30.3	183,850
18.4	110,080	22.4	134,880	26.4	159,680	30.4	184,480
18.5	110,700	22.5	135,500	26.5	160,300	30.5	185,100
18.6	111,320	22.6	136,120	26.6	160,920	30.6	185,720
18.7	111,940	22.7	136,740	26.7	161,540	30.7	186,340
18.8	112,560	22.8	137,360	26.8	162,160	30.8	186,960
18.9	113,180	22.9	137,980	26.9	162,780	30.9	187,580
19.0	113,800	23.0	138,600	27.0	163,400	31.0	188,200
19.1	114,420	23.1	139,220	27.1	164,020	31.1	188,820
19.2	115,040	23.2	139,840	27.2	164,640	31.2	189,440
19.3	115,660	23.3	140,460	27.3	165,260	31.3	190,060
19.4	116,280	23.4	141,080	27.4	165,880	31.4	190,680
19.5	116,900	23.5	141,700	27.5	166,500	31.5	191,300
19.6	117,520	23.6	142,320	27.6	167,120	31.6	191,920
19.7	118,140	23.7	142,940	27.7	167,740	31.7	192,540
19.8	118,760	23.8	143,560	27.8	168,360	31.8	193,160
19.9	119,380	23.9	144,180	27.9	168,980	31.9	193,780
20.0	120,000	24.0	144,800	28.0	169,600	32.0	194,400
20.1	120,620	24.1	145,420	28.1	170,220	32.1	195,020
20.2	121,240	24.2	146,040	28.2	170,840	32.2	195,640
20.3	121,860	24.3	146,660	28.3	171,460	32.3	196,260
20.4	122,480	24.4	147,280	28.4	172,080	32.4	196,880
20.5	123,100	24.5	147,900	28.5	172,700	32.5	197,500
20.6	123,720	24.6	148,520	28.6	173,320	32.6	198,120
20.7	124,340	24.7	149,140	28.7	173,940	32.7	198,740

Rating table for Tennessee River at Chattanooga, Tenn., for 1899 and 1900—Continued.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
32. 8	199, 360	34. 7	211, 140	36. 6	222, 920	38. 5	234, 700
32. 9	199, 980	34. 8	211, 760	36. 7	223, 540	38. 6	235, 320
33. 0	200, 600	34. 9	212, 380	36. 8	224, 160	38. 7	235, 940
33. 1	201, 220	35. 0	213, 000	36. 9	224, 780	38. 8	236, 560
33. 2	201, 840	35. 1	213, 620	37. 0	225, 400	38. 9	237, 180
33. 3	202, 460	35. 2	214, 240	37. 1	226, 020	39. 0	237, 800
33. 4	203, 080	35. 3	214, 860	37. 2	226, 640	39. 1	238, 420
33. 5	203, 700	35. 4	215, 480	37. 3	227, 260	39. 2	239, 040
33. 6	204, 320	35. 5	216, 100	37. 4	227, 880	39. 3	239, 660
33. 7	204, 940	35. 6	216, 720	37. 5	228, 500	39. 4	240, 280
33. 8	205, 560	35. 7	217, 340	37. 6	229, 120	39. 5	240, 900
33. 9	206, 180	35. 8	217, 960	37. 7	229, 740	39. 6	241, 520
34. 0	206, 800	35. 9	218, 580	37. 8	230, 360	39. 7	242, 140
34. 1	207, 420	36. 0	219, 200	37. 9	230, 980	39. 8	242, 760
34. 2	208, 040	36. 1	219, 820	38. 0	231, 600	39. 9	243, 380
34. 3	208, 660	36. 2	220, 440	38. 1	232, 220	40. 0	244, 000
34. 4	209, 280	36. 3	221, 060	38. 2	232, 840		
34. 5	209, 900	36. 4	221, 680	38. 3	233, 460		
34. 6	210, 520	36. 5	222, 300	38. 4	234, 080		

Rating table for Tennessee River at Chattanooga, Tenn., for 1901.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
2. 0	11, 250	3. 4	17, 550	4. 8	25, 760	6. 2	34, 500
2. 1	11, 660	3. 5	18, 050	4. 9	26, 380	6. 3	35, 150
2. 2	12, 080	3. 6	18, 550	5. 0	27, 000	6. 4	35, 800
2. 3	12, 500	3. 7	19, 050	5. 1	27, 620	6. 5	36, 450
2. 4	12, 930	3. 8	19, 600	5. 2	28, 240	6. 6	37, 100
2. 5	13, 360	3. 9	20, 200	5. 3	28, 860	6. 7	37, 750
2. 6	13, 800	4. 0	20, 800	5. 4	29, 480	6. 8	38, 400
2. 7	14, 240	4. 1	21, 420	5. 5	30, 100	6. 9	39, 050
2. 8	14, 680	4. 2	22, 040	5. 6	30, 720	7. 0	39, 700
2. 9	15, 140	4. 3	22, 660	5. 7	31, 340	7. 1	40, 350
3. 0	15, 600	4. 4	23, 280	5. 8	31, 960	7. 2	41, 000
3. 1	16, 080	4. 5	23, 900	5. 9	32, 580	7. 3	41, 650
3. 2	16, 550	4. 6	24, 520	6. 0	33, 200	7. 4	42, 300
3. 3	17, 050	4. 7	25, 140	6. 1	33, 850	7. 5	42, 950

Rating table for Tennessee River at Chattanooga, Tenn., for 1901—Continued.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet..*
7.6	43,600	11.7	70,250	15.8	96,900	19.9	123,550
7.7	44,250	11.8	70,900	15.9	97,550	20.0	124,200
7.8	44,900	11.9	71,550	16.0	98,200	20.1	124,850
7.9	45,550	12.0	72,200	16.1	98,850	20.2	125,500
8.0	46,200	12.1	72,850	16.2	99,500	20.3	126,150
8.1	46,850	12.2	73,500	16.3	100,150	20.4	126,800
8.2	47,500	12.3	74,150	16.4	100,800	20.5	127,450
8.3	48,150	12.4	74,800	16.5	101,450	20.6	128,100
8.4	48,800	12.5	75,450	16.6	102,100	20.7	128,750
8.5	49,450	12.6	76,100	16.7	102,750	20.8	129,400
8.6	50,100	12.7	76,750	16.8	103,400	20.9	130,050
8.7	50,750	12.8	77,400	16.9	104,050	21.0	130,700
8.8	51,400	12.9	78,050	17.0	104,700	21.1	131,350
8.9	52,050	13.0	78,700	17.1	105,350	21.2	132,000
9.0	52,700	13.1	79,350	17.2	106,000	21.3	132,650
9.1	53,350	13.2	80,000	17.3	106,650	21.4	133,300
9.2	54,000	13.3	80,650	17.4	107,300	21.5	133,950
9.3	54,650	13.4	81,300	17.5	107,950	21.6	134,600
9.4	55,300	13.5	81,950	17.6	108,600	21.7	135,250
9.5	55,950	13.6	82,600	17.7	109,250	21.8	135,900
9.6	56,600	13.7	83,250	17.8	109,900	21.9	136,550
9.7	57,250	13.8	83,900	17.9	110,550	22.0	137,200
9.8	57,900	13.9	84,550	18.0	111,200	22.1	137,850
9.9	58,550	14.0	85,200	18.1	111,850	22.2	138,500
10.0	59,200	14.1	85,850	18.2	112,500	22.3	139,150
10.1	59,850	14.2	86,500	18.3	113,150	22.4	139,800
10.2	60,500	14.3	87,150	18.4	113,800	22.5	140,450
10.3	61,150	14.4	87,800	18.5	114,450	22.6	141,100
10.4	61,800	14.5	88,450	18.6	115,100	22.7	141,750
10.5	62,450	14.6	89,100	18.7	115,750	22.8	142,400
10.6	63,100	14.7	89,750	18.8	116,400	22.9	143,050
10.7	63,750	14.8	90,400	18.9	117,050	23.0	143,700
10.8	64,400	14.9	91,050	19.0	117,700	23.1	144,350
10.9	65,050	15.0	91,700	19.1	118,350	23.2	145,000
11.0	65,700	15.1	92,350	19.2	119,000	23.3	145,650
11.1	66,350	15.2	93,000	19.3	119,650	23.4	146,300
11.2	67,000	15.3	93,650	19.4	120,300	23.5	146,950
11.3	67,650	15.4	94,300	19.5	120,950	23.6	147,600
11.4	68,300	15.5	94,950	19.6	121,600	23.7	148,250
11.5	68,950	15.6	95,600	19.7	122,250	23.8	148,900
11.6	69,600	15.7	96,250	19.8	122,900	23.9	149,550

Rating table for Tennessee River at Chattanooga, Tenn., for 1901—Continued.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
24.0	150,200	28.1	176,850	32.2	203,500	36.3	230,150
24.1	150,850	28.2	177,500	32.3	204,150	36.4	230,800
24.2	151,500	28.3	178,150	32.4	204,800	36.5	231,450
24.3	152,150	28.4	178,800	32.5	205,450	36.6	232,100
24.4	152,800	28.5	179,450	32.6	206,100	36.7	232,750
24.5	153,450	28.6	180,100	32.7	206,750	36.8	233,400
24.6	154,100	28.7	180,750	32.8	207,400	36.9	234,050
24.7	154,750	28.8	181,400	32.9	208,050	37.0	234,700
24.8	155,400	28.9	182,050	33.0	208,700	37.1	235,350
24.9	156,050	29.0	182,700	33.1	209,350	37.2	236,000
25.0	156,700	29.1	183,350	33.2	210,000	37.3	236,650
25.1	157,350	29.2	184,000	33.3	210,650	37.4	237,300
25.2	158,000	29.3	184,650	33.4	211,300	37.5	237,950
25.3	158,650	29.4	185,300	33.5	211,950	37.6	238,600
25.4	159,300	29.5	185,950	33.6	212,600	37.7	239,250
25.5	159,950	29.6	186,600	33.7	213,250	37.8	239,900
25.6	160,600	29.7	187,250	33.8	213,900	37.9	240,550
25.7	161,250	29.8	187,900	33.9	214,550	38.0	241,200
25.8	161,900	29.9	188,550	34.0	215,200	38.1	241,850
25.9	162,550	30.0	189,200	34.1	215,850	38.2	242,500
26.0	163,200	30.1	189,850	34.2	216,500	38.3	243,150
26.1	163,850	30.2	190,500	34.3	217,150	38.4	243,800
26.2	164,500	30.3	191,150	34.4	217,800	38.5	244,450
26.3	165,150	30.4	191,800	34.5	218,450	38.6	245,100
26.4	165,800	30.5	192,450	34.6	219,100	38.7	245,750
26.5	166,450	30.6	193,100	34.7	219,750	38.8	246,400
26.6	167,100	30.7	193,750	34.8	220,400	38.9	247,050
26.7	167,750	30.8	194,400	34.9	221,050	39.0	247,700
26.8	168,400	30.9	195,050	35.0	221,700	39.1	248,350
26.9	169,050	31.0	195,700	35.1	222,350	39.2	249,000
27.0	169,700	31.1	196,350	35.2	223,000	39.3	249,650
27.1	170,350	31.2	197,000	35.3	223,650	39.4	250,300
27.2	171,000	31.3	197,650	35.4	224,300	39.5	250,950
27.3	171,650	31.4	198,300	35.5	224,950	39.6	251,600
27.4	172,300	31.5	198,950	35.6	225,600	39.7	252,250
27.5	172,950	31.6	199,600	35.7	226,250	39.8	252,900
27.6	173,600	31.7	200,250	35.8	226,900	39.9	253,550
27.7	174,250	31.8	200,900	35.9	227,550	40.0	254,200
27.8	174,900	31.9	201,550	36.0	228,200		
27.9	175,550	32.0	202,200	36.1	228,850		
28.0	176,200	32.1	202,850	36.2	229,500		

Rating table for Tennessee River at Chattanooga, Tenn., for 1902.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
1.2	8,040	5.2	28,240	14.0	85,200	24.0	150,200
1.4	8,820	5.4	29,480	14.5	88,450	24.5	153,450
1.6	9,620	5.6	30,720	15.0	91,700	25.0	156,700
1.8	10,430	5.8	31,960	15.5	94,950	25.5	159,950
2.0	11,250	6.0	33,200	16.0	98,200	26.0	163,200
2.2	12,080	6.5	36,450	16.5	101,450	27.0	169,700
2.4	12,930	7.0	39,700	17.0	104,700	28.0	176,200
2.6	13,800	7.5	42,950	17.5	107,950	29.0	182,700
2.8	14,680	8.0	46,200	18.0	111,200	30.0	189,200
3.0	15,600	8.5	49,450	18.5	114,450	31.0	195,700
3.2	16,550	9.0	52,700	19.0	117,700	32.0	202,200
3.4	17,550	9.5	55,950	19.5	120,950	33.0	208,700
3.6	18,550	10.0	59,200	20.0	124,200	34.0	215,200
3.8	19,600	10.5	62,450	20.5	127,450	35.0	221,700
4.0	20,800	11.0	65,700	21.0	130,700	36.0	228,200
4.2	22,040	11.5	68,950	21.5	133,950	37.0	234,700
4.4	23,280	12.0	72,200	22.0	137,200	38.0	241,200
4.6	24,520	12.5	75,450	22.5	140,450	39.0	247,700
4.8	25,760	13.0	78,700	23.0	143,700	40.0	254,200
5.0	27,000	13.5	81,950	23.5	146,950		

Rating table for Tennessee River at Chattanooga, Tenn., for 1903.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
0.60	6,100	2.20	12,790	3.80	20,560	5.40	29,600
.70	6,490	2.30	13,240	3.90	21,090	5.50	30,210
.80	6,880	2.40	13,700	4.00	21,620	5.60	30,820
.90	7,280	2.50	14,160	4.10	22,160	5.70	31,430
1.00	7,680	2.60	14,620	4.20	22,700	5.80	32,050
1.10	8,080	2.70	15,090	4.30	23,250	5.90	32,670
1.20	8,490	2.80	15,560	4.40	23,800	6.00	33,290
1.30	8,900	2.90	16,040	4.50	24,360	6.10	33,920
1.40	9,320	3.00	16,520	4.60	24,920	6.20	34,550
1.50	9,740	3.10	17,010	4.70	25,490	6.30	35,180
1.60	10,160	3.20	17,500	4.80	26,060	6.40	35,820
1.70	10,590	3.30	18,000	4.90	26,640	6.50	36,460
1.80	11,020	3.40	18,500	5.00	27,220	6.60	37,100
1.90	11,460	3.50	19,010	5.10	27,810	6.70	37,750
2.00	11,900	3.60	19,520	5.20	28,400		
2.10	12,340	3.70	20,040	5.30	29,000		

Estimated monthly discharge of Tennessee River at Chattanooga, Tenn.

[Drainage area, 21,382 square miles.]

Month.	Discharge in second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1890.					
January	78, 470	30, 150	42, 749	2. 00	2. 31
February	308, 060	44, 191	76, 081	3. 56	3. 72
March	445, 120	52, 906	129, 093	6. 03	6. 96
April	121, 464	43, 029	64, 855	3. 03	3. 38
May	72, 079	41, 286	51, 200	2. 39	2. 76
June	41, 286	23, 400	29, 102	1. 36	1. 52
July	47, 677	19, 500	27, 036	1. 26	1. 45
August	46, 515	21, 100	30, 881	1. 44	1. 66
September	47, 096	22, 200	27, 843	1. 30	1. 45
October	58, 135	25, 950	37, 982	1. 77	2. 04
November	42, 448	20, 700	26, 394	1. 23	1. 37
December	77, 889	20, 400	36, 088	1. 69	1. 95
The year	445, 120	19, 500	48, 275	2. 26	30. 57
1891.					
January	92, 995	39, 543	59, 484	2. 78	3. 21
February	356, 120	59, 878	154, 822	7. 23	7. 53
March	381, 040	63, 364	135, 160	6. 32	7. 30
April	97, 643	38, 962	61, 873	2. 89	3. 22
May	37, 219	26, 380	30, 215	1. 41	1. 63
June	47, 096	26, 840	36, 276	1. 70	1. 90
July	36, 057	21, 800	26, 429	1. 24	1. 43
August	98, 224	23, 000	40, 402	1. 89	2. 18
September	36, 638	19, 200	25, 777	1. 20	1. 34
October	19, 200	17, 910	18, 461	. 86	. 99
November	41, 867	17, 440	23, 510	1. 10	1. 23
December	66, 269	22, 200	39, 299	1. 84	2. 12
The year	381, 040	17, 440	54, 309	2. 54	34. 08

Estimated monthly discharge of Tennessee River at Chattanooga, Tenn.—Continued.

Month.	Discharge in second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1892.					
January	363, 240	41, 286	103, 453	4. 83	5. 57
February	69, 755	33, 733	46, 755	2. 25	2. 43
March	64, 526	31, 680	45, 769	2. 14	2. 47
April	299, 160	40, 705	101, 287	4. 73	5. 27
May	53, 487	31, 160	39, 772	1. 86	2. 14
June	56, 972	28, 680	43, 265	2. 02	2. 25
July	71, 498	26, 380	44, 520	2. 08	2. 40
August	31, 680	21, 800	25, 121	1. 17	1. 35
September	29, 660	17, 660	21, 403	1. 00	1. 11
October	19, 800	17, 220	17, 952	. 84	. 97
November	43, 610	17, 220	27, 924	1. 30	1. 45
December	56, 972	21, 450	32, 793	1. 53	1. 76
The year	363, 240	17, 220	45, 835	2. 15	29. 17
1893.					
January	44, 191	22, 600	26, 812	1. 25	1. 44
February	283, 140	38, 381	105, 921	4. 95	5. 15
March	72, 660	36, 057	50, 320	·2. 35	2. 71
April	73, 241	31, 160	42, 137	1. 97	2. 20
May	224, 400	30, 150	71, 525	3. 34	3. 85
June	123, 207	27, 760	49, 679	2. 32	2. 59
July	34, 895	21, 450	25, 741	1. 20	1. 38
August	33, 152	18, 410	23, 477	1. 10	1. 27
September	76, 727	20, 750	33, 933	1. 59	1. 77
October	58, 716	18, 660	25, 550	1. 19	1. 37
November	31, 160	20, 400	22, 263	1. 04	1. 16
December	30, 640	21, 100	24, 970	1. 17	1. 35
The year	283, 140	18, 410	41, 861	1. 96	26. 24

Estimated monthly discharge of Tennessee River at Chattanooga, Tenn.—Continued.

Month.	Discharge in second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1894.					
January	56,972	22,600	37,389	1.75	2.02
February	151,095	31,680	70,893	3.31	3.45
March	59,297	33,152	46,796	2.19	2.53
April	52,325	27,300	36,287	1.70	1.90
May	44,191	23,800	31,137	1.43	1.68
June	28,680	19,500	21,983	1.03	1.15
July	29,170	18,910	24,486	1.14	1.31
August	30,150	18,910	22,971	1.07	1.23
September	27,300	16,560	19,160	.90	1.00
October	20,750	16,360	17,445	.82	.94
November	20,400	16,360	17,330	.81	.90
December	68,012	16,780	30,862	1.44	1.66
The year	151,095	16,360	31,395	1.53	19.77
1895.					
January	261,780	23,400	76,446	3.57	4.12
February	47,096	24,200	35,787	1.67	1.74
March	134,827	42,448	72,341	3.38	3.90
April	78,470	37,219	51,047	2.39	2.67
May	58,135	34,314	43,929	2.05	2.37
June	35,476	21,100	26,417	1.23	1.37
July	63,364	20,750	29,638	1.39	1.60
August	38,381	21,800	26,927	1.26	1.45
September	24,660	16,780	20,316	.95	1.05
October	17,000	16,360	16,665	.78	.90
November	20,750	17,220	18,162	.85	.94
December	33,152	17,660	21,561	1.01	1.16
The year	261,780	16,360	36,603	1.71	23.27

Estimated monthly discharge of Tennessee River at Chattanooga, Tenn.—Continued.

Month.	Discharge in second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1896.					
January	50, 600	15, 554	26, 169	1. 22	1. 41
February	85, 052	26, 840	55, 577	2. 59	2. 79
March.............................	95, 150	22, 088	39, 257	1. 83	2. 11
April.............................	409, 520	23, 276	87, 649	4. 09	4. 56
May	29, 216	14, 366	20, 574	. 96	1. 10
June	43, 472	17, 336	24, 365	1. 14	1. 27
July	130, 196	20, 306	55, 390	2. 59	2. 99
August	34, 562	14, 960	22, 433	1. 05	1. 21
September........................	18, 524	9, 020	12, 346	. 58	. 64
October	19, 712	8, 426	11, 588	. 54	. 62
November	57, 728	9, 020	22, 603	1. 06	1. 18
December	45, 254	16, 148	27, 951	1. 31	1. 51
The year	409, 520	8, 426	33, 825	1. 58	21. 39
1897.					
January	45, 254	16, 148	27, 932	1. 30	1. 50
February	308, 060	19, 712	89, 962	4. 20	4. 37
March.............................	363, 240	52, 976	165, 448	7. 72	8. 90
April.............................	231, 520	36, 344	81, 056	3. 78	4. 22
May	134, 948	26, 543	50, 124	2. 34	2. 70
June	38, 126	21, 494	29, 107	1. 36	1. 52
July	74, 657	21, 791	34, 428	1. 61	1. 86
August	34, 562	14, 366	25, 847	1. 21	1. 39
September........................	14, 960	6, 050	8, 951	. 42	. 47
October	13, 772	4, 268	7, 842	. 37	. 43
November	9, 614	6, 050	7, 330	. 34	. 38
December	62, 183	8, 129	24, 627	1. 15	1. 33
The year	363, 240	4, 268	46, 055	2. 15	29. 07

Estimated monthly discharge of Tennessee River at Chattanooga, Tenn.—Continued.

Month.	Discharge in second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1898.					
January	124, 860	14, 344	59, 509	2. 77	3. 20
February	47, 115	16, 900	22, 994	1. 07	1. 11
March	88, 725	15, 008	24, 774	1. 11	1. 28
April	121, 940	39, 085	60, 048	2. 80	3. 12
May	38, 720	17, 920	23, 701	1. 11	1. 28
June	32, 515	10, 245	16, 395	. 77	. 85
July	49, 670	11, 853	20, 063	. 94	1. 08
August	107, 705	20, 410	50, 638	2. 36	2. 72
September	174, 500	18, 190	47, 349	2. 21	2. 46
October	115, 370	16, 900	44, 215	2. 06	2. 38
November	42, 005	20, 700	28, 415	1. 33	1. 48
December	35, 800	19, 000	28, 909	1. 35	1. 56
The year	174, 500	10, 245	35, 584	1. 66	22. 52
1899.					
January	112, 560	25, 450	47, 250	2. 21	2. 55
February	233, 150	30, 720	95, 554	4. 46	4. 64
March	244, 000	55, 210	142, 700	6. 66	7. 68
April	137, 360	39, 710	69, 286	3. 23	3. 59
May	65, 130	22, 040	40, 450	1. 89	2. 18
June	35, 990	15, 600	23, 088	1. 08	1. 20
July	27, 930	10, 430	15, 053	. 70	. 81
August	22, 040	8, 040	11, 900	. 56	. 64
September	15, 840	7, 300	10, 118	. 47	. 53
October	10, 635	6, 600	7, 851	. 37	. 43
November	10, 635	6, 775	8, 216	. 38	. 43
December	41, 880	8, 820	22, 061	1. 03	1. 19
The year	244, 000	6, 600	41, 127	1. 09	25. 87

Estimated monthly discharge of Tennessee River at Chattanooga, Tenn.—Continued.

Month.	Discharge in second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1900.					
January	54,280	11,660	30,807	1.44	1.66
February	144,800	13,360	52,077	2.43	2.53
March	103,880	42,810	66,020	3.08	3.55
April	70,400	32,820	46,819	2.19	2.44
May	34,440	15,600	21,086	.98	1.13
June	53,040	14,680	33,295	1.55	1.73
July	50,870	13,360	24,674	1.15	1.33
August	34,440	10,020	14,602	.68	.78
September	25,140	7,300	13,393	.63	.70
October	42,500	8,040	14,230	.66	.76
November	92,720	10,840	25,138	1.17	1.31
December	53,040	17,050	29,001	1.35	1.56
The year	144,800	7,300	30,928	1.44	19.48
1901.					
January	189,200	19,600	50,641	2.36	2.72
February	59,850	19,050	36,516	1.70	1.77
March	139,150	19,050	44,952	2.10	2.42
April	166,450	38,400	95,080	4.44	4.95
May	205,450	26,380	68,736	3.21	3.70
June	72,200	33,850	47,673	2.23	2.49
July	37,100	14,680	23,932	1.12	1.29
August	207,400	13,800	75,761	3.54	4.08
September	61,150	22,660	38,859	1.81	2.02
October	25,760	13,360	18,979	.89	1.03
November	13,800	11,660	13,076	.61	.68
December	237,300	12,080	65,509	3.06	3.53
The year	237,200	11,660	48,310	2.26	30.68

Estimated monthly discharge of Tennessee River at Chattanooga, Tenn.—Continued.

Month.	Discharge in second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1902.					
January	259, 400	27, 620	70, 567	3. 29	3. 79
February	145, 000	28, 240	60, 106	2. 81	2. 93
March	241, 200	41, 000	108, 411	5. 06	5. 83
April	195, 050	28, 240	54, 811	2. 56	2. 86
May	54, 650	20, 800	28, 283	1. 32	1. 52
June	27, 000	15, 600	19, 043	. 89	. 99
July	60, 500	10, 840	22, 414	1. 05	1. 21
August	14, 680	8, 820	10, 892	. 51	. 59
September	18, 550	8, 040	11, 376	. 53	. 59
October	20, 200	8, 040	13, 260	. 62	. 71
November	35, 150	8, 430	13, 298	. 62	. 69
December	56, 600	17, 550	33, 763	1. 58	1. 82
The year	259, 400	8, 040	37, 185	1. 74	23. 53
1903.					
January	47, 500	21, 620	30, 435	1. 42	1. 64
February	184, 650	26, 060	90, 229	4. 21	4. 38
March	195, 700	52, 700	109, 690	5. 12	5. 90
April	200, 900	54, 000	99, 890	4. 66	5. 20
May	52, 700	19, 010	29, 098	1. 36	1. 57
June	69, 600	22, 160	38, 661	1. 81	2. 02
July	31, 430	12, 790	20, 855	. 97	1. 12
August	26, 640	10, 160	16, 818	. 79	. 91
September	10, 590	6, 100	8, 337	. 39	. 44
October	9, 740	6, 100	7, 124	. 33	. 38
November	37, 100	6, 880	12, 597	. 59	. 66
December	25, 490	7, 280	12, 176	. 57	. 66
The year	200, 900	6, 100	39, 659	1. 85	24. 88

Net horsepower per foot of fall with a turbine efficiency of 80 per cent for the minimum monthly discharge of Tennessee River at Chattanooga, Tenn.

Month.	1899.			1900.			1901.		
	Minimum discharge.	Minimum net horsepower per foot of fall.	Duration of minimum.	Minimum discharge.	Minimum net horsepower per foot of fall.	Duration of minimum.	Minimum discharge.	Minimum net horsepower per foot of fall.	Duration of minimum.
	Sec.-ft.		*Days.*	*Sec.-ft.*		*Days.*	*Sec.-ft.*		*Days.*
January	25,450	2,314	1	11,660	1,060	1	19,600	1,782	1
February	30,720	2,793	1	13,360	1,215	1	19,050	1,732	1
March	55,210	5,019	1	42,810	3,892	2	19,050	1,732	4
April	39,710	3,610	1	32,820	3,075	1	38,400	3,491	1
May	22,040	2,004	1	15,600	1,418	1	26,380	2,398	1
June	15,600	1,418	1	14,680	1,335	1	33,850	3,077	1
July	10,430	948	1	13,360	1,215	2	14,680	1,335	3
August	8,040	731	3	10,020	911	1	13,800	1,255	2
September	7,300	664	1	7,300	664	1	22,660	2,060	1
October	6,600	600	3	8,040	731	2	13,360	1,215	2
November	6,775	616	2	10,840	985	2	11,660	1,060	1
December	8,820	802	2	17,050	1,550	2	12,080	1,098	1

SHOALS IN TENNESSEE RIVER NEAR FLORENCE.

In Tennessee River, in the vicinity of Florence, Ala., are several shoals capable of the development of power. The compiler has brought together the data regarding these, his intention being not to discuss the manner in which the immense water power of these shoals can be developed, but to give some idea of its magnitude and the possibility of its utilization.

The shoals are a succession of cascades amid many islands, in a river bed varying in width from a half mile to 3 miles. The numerous channels thus formed are very irregular in fall and direction. The difference between high and low water is only 5 or 6 feet, corresponding to a rise of 50 feet at Chattanooga. Beginning at Browns Ferry, 12 miles below Decatur, Ala., the river has the following falls:
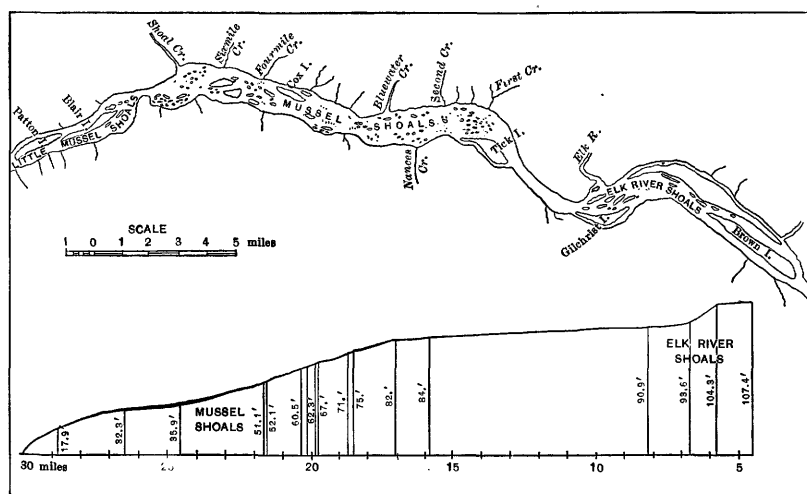
FIG. 9.—Map showing shoals in Tennessee River near Florence.

From Browns Ferry to the mouth of Elk River the fall is 26 feet in 11 miles. This is known as Elk River Shoals. Its most precipitous part is at the lower end, where there is a fall of 16.5 feet in about 4 miles.

From the mouth of Elk River to the head of Mussel Shoals, a distance of 5 miles, there is a fall of only 2 feet.

From the head of Mussel Shoals to Bainbridge the fall is 85 feet in 17 miles, and is known as Mussel Shoals.

From Bainbridge to Florence the fall is 23 feet in 7 miles, and is known as Little Mussel Shoals.

From Florence to the head of Colbert Shoals the fall is 3 feet in 11 miles.

From the head of the Colbert Shoals to Waterloo the fall is 21 feet in 6 miles.

The total fall from Browns Ferry to Waterloo is, therefore, 160 feet in a distance of 57 miles. Sixteen miles of the distance, however, has a fall of only 5 feet, leaving a fall of 155 feet in the 41 miles that cover the four shoals mentioned. The shoals are really more precipitous than the foregoing figures would indicate. For instance, 84.6 feet of the fall at Mussel Shoals is in a distance of 14 miles.

The bed rock at Elk River Shoals is Carboniferous limestone; that of Mussel Shoals is a hard siliceous rock of dark color and flinty structure.

Assuming that tributaries entering the river below Chattanooga will safely supply all of the water needed for lockage, the discharge at Chattanooga can be used in estimating the water power of these shoals, which are about 200 miles below Chattanooga, by river, and of which the drainage area is more than 7,000 square miles greater than that at Chattanooga.

Estimated minimum net horsepower of Tennessee River in Alabama on turbines realizing 80 per cent of the theoretical power.

Locality.	Fall.	*Minimum net power in driest years.	Minimum net power in average years.
	Feet.		
Elk River Shoals	26	15,600	30,550
Mussel Shoals	85	51,000	99,875
Little Mussel Shoals	23	13,800	27,025
Colbert Shoals	21	12,600	24,675
Total	155	93,000	182,125

The foregoing table assumes that the total fall can in each case be utilized. While this assumption is not correct, it stands as an offset to the assumption that the water supply available will be as low as the minimum discharge at Chattanooga, 200 miles above. The drainage area above Chattanooga is 21,418 square miles, while the drainage area above the shoals under consideration is about 29,000 square miles. It may therefore safely be assumed that the actual power available for development at the shoals is greater than that shown by the table.

The foregoing statements of fall and distance are from a report by Mr. William B. Gaw, chief assistant engineer, U. S. Army, 1868, and the map and profile are from drawings prepared under the direction of Lieut. Col. J. W. Barlow, United States Engineers, 1890.

BIG SPRING AT HUNTSVILLE, ALA.

TRIBUTARIES OF TENNESSEE RIVER.

Paint Rock Creek, Elk River, Shoal Creek, Flint Creek, Nance Creek, Town Creek, and Big Bear Creek are all large streams, and most of them have fine undeveloped water powers. But no surveys have been made of them, and no measurements of discharge so far. There are also many large bold springs in this basin that are said to have a pure and unfailing water supply, but no report can be made on them at this time.

Miscellaneous discharge measurements on streams that enter Tennessee River in Alabama.

Date.	Stream.	Locality.	Discharge.
1903.			*Second-feet.*
July 20	Big Spring.................	Tuscumbia	177
1904.			
Feb. 6	Big Spring.................	Tuscumbia	33
Do...	Creek from Big Spring......	.....do	43
Feb. 4	Paint Rock Creek	Paint Rock	159
Feb. 5	Flint Creek	Brownsboro	209
Feb. 8	Elk River	Prospect, Tenn..............	5,296
Feb. 9	Sequatchie River...........	2 miles from Jasper, Tenn	1,916
Do...	.....do	2 miles northeast of Jasper, Tenn.	1,829
Do...	Battle Creek...............	Near South Pittsburg, Tenn....	482

UTILIZED WATER POWERS.

The following is a list by counties of the water powers that are utilized. The most of these powers are small, but they make a large aggregate, and they represent only an insignificant part of the power that is capable of development.

Water powers in Alabama, by counties.

AUTAUGA COUNTY.

Name.	Post-office.	Industry.	Horse-power.
Charity P. Carter [a]	Billingsley	Flour and grist mill	15
Montgomery's mill [a]	Prattville [b]	.....do	30
Public gristmill [a]	Billingsley	.....do	9
Parker's mill [a]	Milton	.....do	20
Dawson's mill [a]	Netezen	Lumber and timber mill	20
Ellis's mill [a]	Jones Switch	.....do	4
Long Leaf Yellow Pine sawmill.[a]	Autaugaville	.....do	15
Ray's sawmill [a]	Jones Switch	.....do	10
Swift Creek Mill Co. (Swift Creek).[a]	Autaugaville	.....do	70
John H. Herod [a]	Netezen	.....do	6
Prattville Cotton Mills and Banking Co. (Autauga Creek).[a]	Prattville	Cotton goods	200
Continental Gin Co. (Autauga Creek). [c]	.....do	Cotton gin	
Prattville ice factory (Autauga Creek). [c]	.....do	Ice factory	
Doster ginnery (Autauga Creek). [c]	.....do	Cotton gin	
G. H. Roy [c]	Vine Hill	.....do	

[a] From U. S. Census, 1900.

[b] The water power at Prattville was first developed about 1830, when it was used by a man named May to operate a small sawmill. About 1833 this water power and the adjacent lands were purchased by Mr. Daniel Pratt, who then erected a cotton-gin factory, which was driven by the water power. The dam at that time was about 8 feet high. A number of years after the purchase of this property by Mr. Pratt he increased the dam so that it now has a height of 16 feet, and is built of brick. At present it is used jointly by the Prattville Cotton Mills and Banking Company and the Continental Gin Company, the former using about 255 horsepower and the latter 100 horsepower. About half a mile below the dam above referred to is another dam affording about 8 feet head and owned by the M. E. Pratt estate. This power operates a gristmill, cotton ginnery, and ice factory, and the water wheel at that point has a rated capacity of 54 horsepower. About 1 mile above the dam of the Cotton Mill and Gin Company there was formerly another dam 12 feet high, which afforded power for a cotton mill. This mill, however, was burned a number of years ago, and the dam has been allowed to go to ruin. It would probably afford 200 horsepower, or possibly a little more, should it be rebuilt.

There is also a dam about 2 miles below Prattville, known as the Montgomery mill property. This dam is about 12 feet high and affords power for a gristmill and ginnery. Only a small portion of the available power is used. It could afford easily 250 horsepower, if the proper wheels were installed.

[c] From report of probate judge.

Water powers in Alabama, by counties—Continued.

BARBOUR COUNTY.[a]

Name.	Post-office.	Industry.	Horse-power.
Hagler's mill	Louisville	Flour and grist mill	17
Carpenter's mill	....do	....do	15
Hoffman's mill	Clayton	....do	50
Hartman's mill	....do	....do	10
Zorn mills	Lodi	....do	8
William M. Wood	Bush	....do	12
Will Stewart	Whiteoak Springs	....do	12
Winn's mill	Clayton	....do	12
John White	Spivey	....do	10
Weston's mill	Louisville	....do	8
H. J. Turner	Whiteoak Springs	....do	10
Spencer's mill	Clayton	....do	10
Perkin's mill	Elamville	....do	12
Angus McSwain	Whiteoak Springs	....do	12
William Johnson	Clayton	....do	10
John M. Jenkins	Starhill	....do	10
Solomon's mills	Solomons Mills	....do	25
Danner mill	Elamville	....do	12
William H. Chambers	Oateston	....do	12
Wilson Deshazo	Cottonhill	....do	16

BIBB COUNTY.

Name.	Post-office.	Industry.	Horse-power.
Scottsville flour and grist mill.[a]	Scottsville	Flour and grist mill	30
Palmetto flouring and grist mill.[a]	Brierfield	....do	30
Williams's gristmill [a]	Blocton	....do	10
William S. Mathews [a]	Data	....do	8
Sixmile custom mill [a]	Sixmile	....do	15
Mayfield Bros.[a]	Mertz	Lumber and timber mill.	29
Scottsville Wool Carder [b]	Scottsville	Woolen goods	20
J. M. Battle (Sixmile Creek).[b]	Sixmile	Flour and grist mill	50
W. C. Trott (Sixmile Creek).[b]	....do	Cotton gin and grist mill.	50
W. H. Thomas (Sixmile Creek).[b]	Ashley	Lumber and grist mill.	35
Dock Mahan (Mahans Creek).[b]	Brierfield	Wool carder and grist-mill.	40

[a] From U. S. Census, 1900.   [b] From report of probate judge.

· *Water powers in Alabama, by counties*—Continued.

BIBB COUNTY—Continued.

Name.	Post-office.	Industry.	Horse-power.
Bessemer Land and Improvement Co. (Schultz Creek).*a*	Lopez	Wood carder, gristmill, and cotton gin.	100
R. R. McCally (Hills Creek) *a*	Blocton	Gin, lumber, and grist..	30
E. M. Timbro (Schultz Creek).*a*	Centerville	Gristmill	- 30
F. H. James (Haysoppy Creek).*a*	.....do	.....do	20
A. L. Elam (Affonee Creek) *a*	Affonee	.....do	15

BLOUNT COUNTY. *b*

Logan Snead	Snead	Flour and grist mill	10
E. B. Head	Gumspring	.....do	16
E. R. Wood	Wynnville..........	.....do	8
Hendrick's mill	Swansea...........	.....do	30
Jones M. Burns..........	Clarence	.....do	15
Wilson Adcock	Tidmore...........	.....do	10
G. M. D. Tidwell & Sons ..	Tidwell	.....do	20
Alldridge & Bro..........	Liberty...........	.....do	10
Brittain's mill	Summit	.....do	20
Rufus F. Wyatt..........	Bangor	.....do	10
Sam Mardis..............	Blountsville	.....do	60
Jno. H. Donahoo & Geo. W. Darden.	Rosa	Lumber and timber	20

BULLOCK COUNTY.

Brooks's mill	Mascotte..........	Flour and grist mill	6
Union Springs waste mill..	Union Springs	.....do	15
Chappell's gristmill	.....do	.....do	10
D. H. Mason (McBrides Creek).	Indian	Lumber, gin, and grist..	20
Chas. Radford (Conecuh Creek). *a*	Union Springs	Gristmill	10

BUTLER COUNTY. *b*

John W. Halso	Pigeon creek	Flour and grist mill	10
Glen Graham	Pontus	.....do	6
The Four-mile mill........	Greenville.........	.....do	10
The N. M. Rhodes Mill and Mercantile Co.	Shell	Flour, grist, and lumber mill.	50
Mrs. M. E. Crane..........	Monterey..........	Flour and grist mill	15
Rouse & Whiddon	Greenville.........	.....do	50

a From report of probate judge.   *b* From U. S. Census, 1900.

Water powers in Alabama, by counties—Continued.

CALHOUN COUNTY.

Name.	Post-office.	Industry.	Horse-power.
Joseph Francis *a*	Cane Creek	Flour and grist mill	50
Richey's mill *a*	Jacksonville	....do	20
Canada gristmill *a*	Womack	....do	16
Coldwater mills *a*	Coldwater	....do	20
Read's mill *a*	Reads	....do	60
Luther Barton *a*	Piedmont	....do	20
W. F. McCulley *a*	Oxford	....do	20
A. McCurdy *a*	Whiteplains	....do	34
Morris's gristmill *a*	Morrisville	....do	18
Nisbet's mill *a*	Jacksonville	....do	30
James A. Weatherly *a*	De Armanville	....do	8
Wood Milling Co. *a*	Ohatchee	....do	26
Davis & Henderson *a*	Piedmont	....do	24
Hendon's gristmill *a*	Ironcity	....do	10
Hughes's sawmill *a*	Oxford	Lumber and timber mill	28
F. M. Whiteside (Choccolocco Creek). *b*	Whiteplains		25 or 30
Downing & Morris (Choccolocco Creek). *b*	Choccolocco		50
J. T. De Arman (Choccolocco Creek). *b*	Anniston		15
W. E. Mellon (Choccolocco Creek). *b*	Oxford		40
Lee's mill (Choccolocco Creek). *b*	....do		30
T. G. Slaughter (Choccolocco Creek). *b*	....do		15
J. H. Savage (Terrapin Creek). *b*	Anniston		20
Do	....do		20
Frank Aderhold (Nances Creek). *b*	Ladiga		20
John Ramagnand (Champion Creek). *b*	Jacksonville		15
James Crook (Tallaseehatchee Creek). *b*	....do		10
W. J. Edmondson (Tallaseehatchee Creek). *b*	Anniston		30
W. A. Prickett (Tallaseehatchee Creek). *b*	Alexandria		10
Beaty Estate (Tallaseehatchee Creek). *b*	....do		30
Peter Heifner (Tallaseehatchee Creek). *b*	....do		15

a From U. S. Census, 1900.   *b* From report of probate judge.

Water powers in Alabama, by counties—Continued.

CALHOUN COUNTY—Continued.

Name.	Post-office.	Industry.	Horse-power.
James Aderhold (Ohatchee Creek).[b]	Reads		20
Pleas. Martin (Ohatchee Creek).[b]	Peekshill		25
C. J. Wood (Ohatchee Creek).[b]	Jacksonville		30
Wm. Thompson (Ohatchee Creek).[b]	Peekshill		8
R. L. Treadway (Tallasee-hatchee Creek).[b]	Anniston		10
J. H. Francis (Tallasee-hatchee Creek).[b]			25
R. H. Cobb (Tallasee-hatchee Creek).[b]	Anniston		20
G. W. S. Loyd (Cane Creek).[b]	Peaceburg		10
Mrs. Loyd (Cane Creek).[b]	....do	Gin	6
Morris Manufacturing Co. (Cane Creek).[b]	Morrisville	Shops	30
E. G. Morris (Cane Creek).[b]	....do		30
P. H. Brothers (Cane Creek).[b]	Zula		30
J. H. Francis (Cane Creek).[b]			50

CHAMBERS COUNTY.[a]

D. E. M. Smith	Barber	Flour and grist mill	24
Cumbee's gristmill	Stroud	....do	20
Thomas H. Fuller	Lafayette	....do	10
R. T. Humphrey	Westpoint, Ga	....do	42
J. T. Hudson	Hickoryflat	....do	4
Wyche Robinson	Lafayette	....do	16
Stephens's mill	Driver	....do	8
Ripville mills	Wise	....do	20
Charles F. Higgins	Finley	....do	20
J. E. Dixon	Lafayette	....do	10
Ratchford & Tucker	....do	....do	10
Benjamin F. Knight	....do	....do	10
Wooddy & Beall	Moorefield	....do	6
Leverett & Abernathy's Mill.	Milltown	....do	4
G. L. Leverett	Lafayette	....do	16
Westpoint Manufacturing Co.	Westpoint	Cotton goods	1,100

[a] From U. S. Census, 1900.   [b] From report of L. J. Morris.

Water powers in Alabama, by counties—Continued.

CHEROKEE COUNTY.

Name.	Post-office.	Industry.	Horse-power.
Shamblin & Toles mill [a]	Broomtown	Flour and grist mill	8
Chandler & Stinson [a]	Center	.....do	20
Shamblin & Toles mill [a]	Broomtown	.....do	20
J. A. Lumpkin [a]	Forney	.....do	13
Hurley's mill [a]	Hurley	.....do	12
Tyre G. Craig [a]	Grover	.....do	12
Rush mill [a]	Lawrence	.....do	10
E. W. Ragdale [a]	Spring Garden	.....do	30
W. F. Timmerman [a]	Round Mountain	.....do	8
M. E. Cohia [a]	Cedar Bluff	.....do	24
M. J. Abernathy [a]	Pleasant Gap	Lumber and timber mill.	15
Hurricane Creek Manufacturing and Mining Co. [a]	Spring Garden	Cotton goods	65
W. A. Stinson (Terrapin Creek). [b]	Center	Gin, flour, and grist mill.	60
J. J. Scroggin (Terrapin Creek). [b]	Coloma	.....do	60
T. F. Stewart (Terrapin Creek). [b]	Spring Garden	Flour and grist mill	60
J. M. Adderhold (Mill Creek). [b]	Piedmont	Flour, grist, and gin mill.	40
M. L. Braswell (Hurricane Creek). [b]	Pleasant Gap	Flour and grist mill	40
B. F. Newberry (Yellow Creek). [b]	Round Mountain	Flour, grist, and gin mill.	40
E. Cobia (Chattooga River) [b]	Cedar Bluff	.....do	60
R. A. Russell & Co. (Chattooga River). [b]	Gaylesville	.....do	60
W. F. Henderson (Mill Creek). [b]	Fullerton	.....do	40
Rush & Rinehart (Chattooga River). [b]	.....do	.....do	60
J. G. Toles (Mill Creek) [b]	Broomtown	Grist and gin mill	40
Elliott Bros. (North Spring Creek). [b]	Grassland	.....do	40
J. T. Webb & Bros. (Spring Creek). [b]	Hurley	.....do	40
J. D. Jordan (South Spring Creek). [b]	Noah	.....do	20

[a] From U. S. Census, 1900.   [b] From report of L. J. Morris.

Water powers in Alabama, by counties—Continued.

CHILTON COUNTY.ᵃ

Name.	Post-office.	Industry.	Horse-power.
James Dorming	Jemison	Flour and grist mill	10
Mahan's mill	Clanton	......do	20
W. W. Sansome	Adams	......do	12
Honeycutt mill	Jemison	Flour, grist, lumber, and timber mill.	20

CHOCTAW COUNTY.ᵃ

Pink Blackwell	Hinton	Flour and grist mill	12
Aquilla mills	Aquilla	Lumber and timber mill.	16

CLARKE COUNTY.ᵃ

Gate's mill	Vashti	Flour and grist mill	30
Fleming's gristmill	Nealton	......do	10
Dacy's mill	Whatley	......do	5

CLAY COUNTY.ᵃ

Henry F. Smedley	Mellow Valley	Flour and grist mill	15
Hezakiah Ingram	Hatchett Creek	......do	10
Allen P. Jenkins	Delta	......do	14
Knight's mill	Wesobulga	......do	14
F. M. Munroe	Millerville	......do	40
John R. Gilbert	Pinckneyville	......do	8
Hodnett & Co	Hat	......do	10
Moses R. Watts	Dean	......do	6
Thomas J. Watts	Shinbone	......do	8
Bishop, Carpenter & Co	Cherry	......do	10
Cockrell & Mitchell	Goldburg	......do	14
McRairie, Gladney & Co	Cherry	......do	20
Virginia Whellen	Coleta	......do	6
Stephens & East	Delta	......do	4
Deberry & Griffin	Flatrock	......do	15
Child's mill	Swann	......do	5
James B. Brown	Pinckneyville	......do	6
James J. Bachus	Fishhead	......do	24
Brooks & Handley	Hatchett Creek	......do	8
Columbus Bell	Lineville	Lumber and timber mill.	10
J. C. Kennedy	Fishhead	......do	14
William M. Patterson	Meadow	......do	30
Ward & Ford	Lineville	......do	15

ᵃ From U. S. Census, 1900.

Water powers in Alabama, by counties—Continued.

CLEBURNE COUNTY.a

Name.	Post-office.	Industry.	Horse-power.
J. T. & E. W. Beason	Beasons Mill	Flour and grist mill	10
W. M. Evans	Edwardsville	....do	20
Robert mill	Oaklevel	....do	16
Teague & Co	Eudora	....do	13
H. F. Alsabrook	Borden Springs	....do	30
Buttram's mill	Bucham	....do	20
John A. Brown	Bell Mills	....do	16
John I. Burgess	Edwardsville	....do	20
Wade H. Barnes	Muscadine	....do	4
J. W. Connor	Chulafinnee	....do	6
Lyon & Killebrue		....do	34
W. G. Miligan	Oakfuskee	....do	8
James McMahan	Edwardsville	....do	12
E. W. Pitchford	Oaklevel	....do	15
William J. Thrash	Oakfuskee	....do	6
Wade H. Barnes	Muscadine	....do	30
W. H. Tumlin & D. S. Baber.	Ai	....do	16

COFFEE COUNTY.a

Levy Wise	Ino	Flour and grist mill	5
Bell mill	Dot	....do	8
Lenora F. Hildreth	Enterprise	....do	17
Harper flour mills	Brockton	....do	4
F. M. Prestwood	Fresco	....do	20
McIntosh mill	Eta	....do	8
Wise's lower mill	Elba	....do	12
Wise's upper mill	....do	....do	10
Buck & Co	Penn	Lumber and timber mill.	50

COLBERT COUNTY.a

George Martin	Allsboro	Flour and grist mill	8
James Burns	Mand	....do	4
Tuscumbia mill	Tuscumbia	....do	40
C. C. Hester	....do	....do	40
Chambee's gristmill	....do	....do	8
Dillard's mills	Russellville	Lumber and timber	12
Steenson's mills	Sheffield	....do	30

a From U. S. Census, 1900.

Water powers in Alabama, by counties—Continued.

CONECUH COUNTY.*a*

Name.	Post-office.	Industry.	Horse-power.
George Stenson	Bonnette	Flour and grist mill	12
James B. Pate	Brooklyn	.....do	5
William M. Robinson	.....do	.....do	5
Jimson C. Cox	Gem	.....do	5
John N. Varner & Chas. M. Varner.	Herbert	.....do	10
James E. Wilson	Mount Union	.....do	20
Ransom H. Finley	Zern	.....do	8
G. G. Broker	Bowles	Lumber and timber mill	10
Cary & Johnston	Brooklyn	.....do	15
T. N. Piggott	Gravella	.....do	40
Robinson Bros	Brooklyn	.....do	30
H. J. Robinson	Burnt Corn	.....do	40
Henry Wills	Finklet	.....do	30

COOSA COUNTY.*a*

Name.	Post-office.	Industry.	Horse-power.
Miller's mill	Bentleyville	Flour and grist mill	20
Nolen's mill	Darden	.....do	15
J. T. M. Hodnett & O. P. Hodnett.	Equality	.....do	12
W. N. Neighbors	Goodwater	.....do	23
Smith's mill	Nixburg	.....do	10
George P. Waits	Rockford	.....do	8
Crawford mill	.....do	.....do	4
Lawson grist and sawmill	.....do	Lumber and timber mill	36

COVINGTON COUNTY.*a*

Name.	Post-office.	Industry.	Horse-power.
A. J. Fletcher	Andalusia	Flour and grist mill	10
Uatu gristmill	.....do	.....do	10
William Sharp	Ealums	.....do	10
Davis B. Gantt	Gantt	.....do	12
C. E. Rawls	.....do	.....do	10
Dorsey's mill	Glasiasko	.....do	10
James Aplin	Green Bay	.....do	20
William Watkins	Liberty Hill	.....do	8
Kearsey's mill	Redlevel	.....do	5
Ephram F. Lassiter	Rosehill	.....do	10
Thomas sawmill	Redlevel	Lumber and timber mill	25

a From U. S. Census, 1900.

Water powers in Alabama, by counties—Continued.

COVINGTON COUNTY *a*—Continued.

Name.	Post-office.	Industry.	Horse-power.
Simmons mill	Beck	Lumber and timber mill.	40
J. A. Prestwood, jr	Andalusia	.....do	40
George W. Lee	Rat	.....do	20
Buck Creek mill	River Falls	.....do	80
J. F. Guthrie	Veracruz	.....do	25
Gunter's mill	Andalusia	.....do	40
Gunter's sawmill	Gantt	.....do	15
Gantt's mill	River Falls	.....do	70
Pollard Gantt	Searight	.....do	35
Davis B. Gantt	Gantt	.....do	40
N. B. Dixon	Mason	.....do	60
Bartlett & Barker		.....do	60

CRENSHAW COUNTY. *a*

Name.	Post-office.	Industry.	Horse-power.
E. P. Lasseter	Bullock	Flour and grist mill	8
G. B. Morgan	.....do	.....do	15
Folmar's mill	Goshen	.....do	8
N. Skipper	Honoraville	.....do	10
Daniel & Co	Lapine	.....do	30
John S. Marsh	Rutledge	.....do	20
G. B. Sasser	Luverne	.....do	15

CULLMAN COUNTY. *a*

Name.	Post-office.	Industry.	Horse-power.
Joseph W. Hyatt	Baileyton	Flour and grist mill	10
Miles Humphries	.....do	.....do	4
D. H. Laney	Battleground	.....do	6
Robert J. Waldrop	Cranehill	.....do	20
Andrew J. Miller	Summit	.....do	6

DALE COUNTY. *a*

Name.	Post-office.	Industry.	Horse-power.
Archer McCall	Candy	Flour and grist mill	10
Floyd mill	Dothan	.....do	10
Lewis mill	Clopton	.....do	15
Murphy mill	Dothan	.....do	5
Maunds corn mill	Ewells	.....do	10
Pope's mill	Grimes	.....do	60

a From U. S. Census, 1900.

Water powers in Alabama, by counties—Continued.

DALE COUNTY—Continued.

Name.	Post-office.	Industry.	Horse-power.
Charles Thrower	Kleg	Flour and grist mill	16
Daniel McSwean	Ozark	.....do	20
Preston's mill	Peach	.....do	20
The Kelley gristmill	Pinckard	.....do	150
Atkinson's sawmill	Newton	Lumber and timber mill.	16
J. F. Bell	Daleville	.....do	22

DALLAS COUNTY.*a*

Calhoun's mill	Carlowville	Flour and grist mill	10
Ivey & Williams	Morrowville	..... do	8

DEKALB COUNTY.

L. D. Wooten *a*	Blake	Flour and grist mill	8
J. D. Hall *a*	Chavies	.....do	10
J. S. Ward *a*	Chumley	.....do	12
Kean & Warren *a*	Cordell	.....do	20
Swindell's mill *a*	Cotnam	.....do	12
Griffin's mill *a*	.....do	.....do	12
Emeline Clayton *a*	Crossville	.....do	6
Swader's mill *a*	Dekalb	.....do	15
James Clark *a*	Eula	.....do	15
David J. Harper *a*	Floy	.....do	3
Elrod's gristmill *a*	.....do	.....do	4
Davis mill *a*	Fort Payne	.....do	16
Thomas F. Everett *a*	Luna	.....do	8
Elrod's mill *a*	Geraldine	.....do	30
Pruitt's mill *a*	Skirum	.....do	12
Lebanon flour and grist mill.*a*	Lebanon	.....do	36
Robert F. Ellison *a*	Mentone	.....do	25
Ellic Ellsworth *a*	Ophir	.....do	6
Warren's gristmill *a*	Portersville	.....do	12
John F. Williams*a*	Rains	.....do	8
Edward W. Williams*a*	.....do	.....do	6
McGee's mill *a*	Sandrock	.....do	5
Charles G. Matheny *a*	Sauty Mills	.....do	20
Dixie Mills *a*	Sulphur Springs	.....do	10
Phillips's mill *a*	Valleyhead	.....do	4

a From U. S. Census, 1900.

*Water powers in Alabama, by counties—*Continued.

DEKALB COUNTY—Continued.

Name.	Post-office.	Industry.	Horse-power.
The Roberts Mill Co.[a]	Collinsville	Flour and grist mill	25
W. E. Brown & Son [a]	Sulphur Springs	Lumber and timber mill	15
James M. Durham [a]	Chavies	....do	16
William C. Hill & Co.[a]	Blanche	....do	40
D. D. Hughes [a]	Hughes	....do	15
Ward, Pickens & Co. [a]	Dawson	....do	15
John A. Davis (Wills Creek)[b]	Fort Payne	Grist mill and gin	
M. S. Brown and W. C. Thomas (Lookout Creek).[b]	Sulphur Springs	Flouring mill	
D. D. Hughes (Wills Creek)[b]	Hughes	Flour and grist mill	
P. M. Frazier (Wills Creek)[b]	Lebanon	....do	
S. D. Warren (Wills Creek)[b]	....do	....do	
Grif. Elrod (Town Creek)[b]	South Hill	....do	
Durham & Co. (Town Creek).[b]	Chavies	Flour, grist, and saw mill	

ELMORE COUNTY.[a]

E. & H. T. Andrews	Channahatchee	Flour and grist mill	25
Benjamin Spigener	Elmore	....do	5
Sykes mill	Sykes Mills	....do	16
John C. Birt (Lancaster old mill).	Tallassee	....do	24
Freeman's gristmill	....do	....do	5
J. J. Benson	Kowaliga	Lumber and timber mill	20
J. T. Rogers	Spigners	....do	36
Tallassee Falls Manufacturing Co. (Tallapoosa River).[c]	Tallassee	Cotton and woolen goods	8,900
Montgomery Power Co. (Tallapoosa River).	....do	Electric transmission to Montgomery, Ala.	5,600

ESCAMBIA COUNTY.[a]

Bradley mill		Flour and grist mill	10
S. S. Overstreet	Roberts	....do	20
James F. Douglas	Mason	Lumber and timber	25

[a] From U. S. Census, 1900.
[b] From report of probate judge.
[c] This is the same company that is now organized under the name of the Mount Vernon-Woodberry Cotton Duck Company, with office at Montgomery, Ala.

Water powers in Alabama, by counties—Continued.

ETOWAH COUNTY.

Name.	Post-office.	Industry.	Horse-power.
Wesson mills [a]	Attalla	Flour and grist mill	25
Cox & Bro. [a]	Avery	.....do	6
B. H. Rogers [a]	Etowahton	.....do	40
T. G. Ewing [a]	Ewings	.....do	60
John C. Rollins [a]	Fenton	.....do	8
Reese mill [a]	Hill	.....do	10
John H. Helms [a]	Ballplay	.....do	6
Ford & Sibert's mill [a]	Hokesbluff	.....do	30
Morgan & Cochran [a]	Keener	.....do	8.
W. J. Harris [a]	Nix	.....do	12
John B. Burns [a]	Seaborn	.....do	8
A. B. Stephens [a]	.....do	.....do	8
W. H. Cobb [a]	Steels Depot	.....do	20
P. C. Turner [a]	Walnutgrove	.....do	30
Do. [a]	.....do	Woolen goods	13
W. M. Brothers & Son [a]	Gallant	.....do	8
Gadsden Times-News [a]	Gadsden	Printing and publishing.	4
J. M. Morague (Wills Creek). [b]	.....do	Gristmill	100
Wm. McClendon (Wills Creek). [b]	Attalla	.....do	40
—— Griffith (Wills Creek). [b]	Keener	.....do	35
Bob Rigers (Canoe Creek). [b]	Gadsden	.....do	75
Tom Ewing (Cane Creek) [b]	.....do	.....do	40

FAYETTE COUNTY.

Rodolphus Cotton [a]	Bankston	Flour and grist mill	20
D. G. Hester [a]	Covin	.....do	12
John W. Anthony [a]	Glenallen	.....do	30
Landon Miles [a]	Hester	.....do	13
Bishop Emick [a]	Rena	Lumber and timber mill.	40
Phillip N. Fortenberry [a]	Bankston	.....do	8
W. L. Caine (Sipsey River) [b]	Fayette	Saw and gristmill	40
T. E. Newton & Bro. (Sipsey River). [b]	.....do	.....do	40
Licurgas Ray (Luxapallila Creek). [b]	Montcalm	.....do	30
John Barnes (Luxapallila Creek). [b]	Covin	Gin and grist mill	30

[a] From U. S. Census, 1900.   [b] From report of probate judge.

Water powers in Alabama, by counties—Continued.

FAYETTE COUNTY—Continued.

Name.	Post-office.	Industry.	Horse-power.
E. Bishop (Luxapallila Creek).[a]	Rainy	Saw, gin, and grist mill.	30
John Williams (Luxapallila Creek).[b]	Covin	Gin and grist mill	30
Washington Hubbert (Shirley Creek).[a]		...do	10
Gilpin & Jones (Shirley Creek).[a]		Saw, gin, and grist mill.	16
Jones & Jones (Shirley Creek).[a]	Hugent	...do	20
P. N. Fortenberry (Davis Creek).[a]	Bankston	...do	8
G. H. White (Davis Creek)[a]	Davis Creek	...do	16
J. W. Blackburn (Davis Creek).[a]	...do	...do	18
M. I. Barnette (Davis Creek).[a]	Ridge	...do	20
Dolphus Cotton (Clear Creek).[a]	Bankston	...do	16
M. Miller (Clear Creek) [a]	...do	...do	
John G. Kizer (North River).[a]	Berry station	...do	40
Marshall Jones (Bear Creek).[a]	Bear	...do	20
R. G. Walker (Bear Creek)[a]	...do	...do	24
Landon Miles (Stewart Creek).[a]	Hester	Gristmill	12
J. T. McCaleb (Mountain Creek).[a]	Newriver	...do	18
W. A. Ayers (Beaver Creek).[a]	Fayette	Gin and grist mill	12
G. W. Gray (Boxes Creek)[a]	Stough	Gristmill	16
Miles Whitson (Clear Creek).[a]	Handy	...do	12
Bud Wade (Hollingsworth Creek).[a]	Newriver	...do	12

FRANKLIN COUNTY.[b]

Helm's mill	Belgreen	Flour and grist mill	6
M. J. Height	Baggett	...do	10
James McNair	Kirby	...do	20
Andrew Posey	Igoburg	...do	24
Thomas Watson	Phil Campbell	...do	20
S. T. Bonds	Pleasant Site	...do	80

[a] From report of probate judge.   [b] From U. S. Census, 1900.

*Water powers in Alabama, by counties—*Continued.

FRANKLIN COUNTY—Continued.

Name.	Post-office.	Industry.	Horse-power.
Jes. S. Scott	Russellville	Flour and grist mill	10
Sparks mill	Underwood	....do	10
John T. McAlister	Phil Campbell	Lumber and timber mill.	10

GENEVA COUNTY.[a]

Name.	Post-office.	Industry.	Horse-power.
Avant's mill	Geneva	Flour and grist mill	15
Lowry's mill	....do	....do	10
Bell's mill	Fadette	....do	15
W. J. Keith and R. Y. Daniels.	Geneva	....do	15
Clark's gristmill	Highnote	....do	4
Underwood's gristmill	Sanders	....do	20
Condry's gristmill	Whitaker	....do	15
John T. Coleman	Geneva	Lumber and timber mill.	30
Clark Bros. & Co	Wicksburg	....do	10
Wilson Deshoga	Dundee	Lumber and timber	15
Nathan Hall	Dotham	....do	20

HALE COUNTY.

Name.	Post-office.	Industry.	Horse-power.
William Steward[a]	Fivemile	Flour and grist mill	8
William A. Avery (Five-mile Creek).[a]	....do	....do	10
J. H. Payne & Co.[a]	Ingram	....do	10
M. M. Avery[a]	Havana	....do	15
Pickens mill[a]	Greensboro	Lumber and timber mill.	15
Greensboro Carriage and Wagon Shops.[a]	....do	Carriages and wagons	6
Richardson's mills (Five-mile Creek).[b]	Fivemile	Grist mill and gin	20
J. H. Payne's mill (Five-mile Creek).[b]	Havana	....do	20
Avery's mill (Five-mile Creek).[b]	....do	....do	25
J. A. Stephenson (Prairie Creek).[b]	Newbern	....do	20
Irwin & Martin (Big Creek).[b]	Greensboro	....do	25

[a] From U. S. Census, 1900.   [b] From report of probate judge.

Water powers in Alabama, by counties—Continued.

HENRY COUNTY.[a]

Name.	Post-office.	Industry.	Horse-power.
Kennedy's mill	Shorterville	Flour and grist mill	8
Joshua A. Hart	Granger	.....do	15
Jeffcoat mill	Gordon	.....do	8
Blacksheer & Saunders	Haleburg	.....do	25
Cumming's mill	Bush	.....do	20
Joe Baker	Headland	.....do	27
Badiford gristmill	Little Rock	.....do	15
John L. Smith	Ashford	.....do	13
Mark Shelley	Balkum	.....do	6
Singleterry's water mill	Kinsey	Lumber and timber	27
J. P. Williams & Co	Columbia	.....do	25

JACKSON COUNTY.[a]

Name.	Post-office.	Industry.	Horse-power.
Moody's flouring mill	Kyles	Flour and grist mill	40
George W. Brown	Kosh	.....do	8
J. F. Bell	Maxwell	.....do	4
Coffey's mill	Scottsboro	.....do	8
Gross mill	Parks Store	.....do	10
Hackworth's mills	Boliver	.....do	8
John S. Henegar	Rosalie	.....do	20
Bort Harrison	Section	.....do	6
W. A. Howell	Hollytree	.....do	5
Mathew's gristmill	Carns	.....do	10
Page's mill	Woodville	.....do	6
Paint Rock Milling Co	Paintrock	.....do	8
Reid & Prince	Estillfork	.....do	20
David H. Starkey	Kosh	.....do	8
Shork mills	Hollywood	.....do	60
Cagle mill	Oakley	.....do	12
John Thomas	Pisgah	.....do	20
Martin Walker	Trenton	.....do	40
James P. Williams	.....do	.....do	20
John V. Wheeler	Pisgah	.....do	20
Charles W. Brown	Glenzaida	Lumber and timber mill	25
J. N. Gonce	Anderson	.....do	20
Melton Morris	Daugherty	.....do	12
David M. Starkey	Kosh	.....do	20
Tomon shingle mill	Culver	.....do	10

[a] From U. S. Census, 1900.

Water powers in Alabama, by counties—Continued.

JEFFERSON COUNTY. [a]

Name.	Post-office.	Industry.	Horse-power.
J. M. Landrum	Pinson	Flour and grist mill	20
John Lowery mill	Gary	....do	12
Hendon's corn mill	Trussville	....do	10
Posey's mill	Morris	....do	20
James W. Raney	Ezra	....do	35
William B. Rogers	Toadvine	....do	32
G. W. Underwood	Argo	....do	15
William J. Wedgworth	Cardiff	....do	10
W. W. Woodruff	Adamsville	....do	8
W. M. Self	Oneonto	....do	15
William M. Phillip	Greene	....do	40
Morris's mill	Ensley	....do	10
Hurst & Johnson	Pinson	Lumber and timber mill	18
James W. Raney	Ezra	Woolen goods	35

LAMAR COUNTY.

Name.	Post-office.	Industry.	Horse-power.
John H. Cantrell [a]	Pharos	Flour and grist mill	15
Claborn E. Carter [a]	Detroit	....do	12
Kirk's mill (Yellow Creek) [a]	Sizemore	....do	8
Mote's mill (Beaver Creek) [a]	Guin	....do	6
John T. Moore (Yellow Creek). [a]	Vernon	....do	35
W. H. Miller (Luxapallila Creek). [a]	Millport	....do	20
Stanford mills [a]	Detroit	....do	12
S. B. Thomas [a]	Arcola	....do	10
Lafayette J. Hayes [a]	Molloy	Lumber and timber mill	15
Hiram Hollis [a]	Vernon	....do	35
Dr. Wm. H. Kennedy [a]	Kennedy	....do	50
S. B. Thomas [a]	Arcola	....do	15
J. O. Kennedy [b]	Kennedy	Mill and gin	....
J. W. Thomas, jr. (Hills Creek). [b]	Alfred	Gin, saw, and grist mill	....
W. M. Thomas (Hills Creek). [b]	....do	....do	....
Osborn & Hill (Yellow Creek). [b]	Blowhorn	....do	....
D. M. Hollis (Beaver Creek). [b]	Beaverton	....do	....

[a] From U. S. Census, 1900.   [b] From report of probate judge.

Water powers in Alabama, by counties—Continued.

LAMAR COUNTY—Continued.

Name.	Post-office.	Industry.	Horse-power.
B. G. Boman (Yellow Creek).[a]	Vernon	Gin, saw, and grist mill.	
A. A. Mathews (Yellow Creek).[a]	Arcola	....do	
W. L. Morton (Yellow Creek).[a]	Vernon	....do	
Penning Bros[a]	Baxter	....do	

LAUDERDALE COUNTY.[b]

William M. Thornton	Rogersville	Flour and grist mill	20
James A. Bevis	Threet	....do	8
Jessie J. Bevis	Kendell	....do	6
George M. Bretherick	Hines	....do	24
Isa B. Eastep	Eastep	....do	8
Ingram Brothers	Anderson	....do	8
Thomas D. Pruitt	Pruitton	....do	24
Sharpe's mill	Florence	....do	40
Nancy Williams	Lexington	....do	20
H. N. Call	Reserve	....do	18
Chandler & Chittam	Oliver	....do	20

LAWRENCE COUNTY.

Burrell & Casteel[b]	Progress	Flour and grist mill	10
George's mill[b]	Leighton	....do	18
Jones's estate[b]	Kinlock	....do	10
Kerby's mill[b]	Avoca	....do	16
Thomas Oliver[b]	Hatton	....do	16
John S. Stephenson & Co.[b]	Kinlock	....do	27
Wesley L. Stover[b]	Crow	....do	15
Terry & Terry[b]	Courtland	....do	20
Wallace mill[b]	Avoca	....do	10
W. M. Willingham[b]	Camp Spring	Lumber and timber mill.	1
H. C. McClannaher (Town Creek).[a]	Mount Hope	Gristmill	
John S. Stephenson (Sipsey River).[a]	Moulton	Flour and gristmill	
Ben F. Masterson (Nances Creek).[a]	....do	Gristmill	

[a] From report of probate judge.   [b] From U. S. Census, 1900.

Water powers in Alabama, by counties—Continued.

LAWRENCE COUNTY—Continued.

Name.	Post-office.	Industry.	Horse-power.
W. G. Hamilton (Nances Creek).[a]	Pitt	Gristmill	....
J. M. Key (Brushey Creek)[a]	Pool	.....do	....
W. L. Stover (Flint Creek)[a]	Oakville	Flour and grist mill	....
B. A. Casteel (Flint Creek)[a]	Sewickley	.....do	....

LEE COUNTY.

Shelton's mill[b]	Opelika	Flour and grist mill	40
Floyd mill[b]	.....do	.....do	10
George W. McKinnon[b]	Yale	.....do	24
Vaugh mill[b]	Loachapoka	.....do	20
N. G. Macon (Reed Creek)[b]	.....do	.....do	30
W. O. Moore[b]	Auburn	.....do	40
W. K. Meadows (Halawochee Creek).[b]	Hattie.............	.....do	36
James Crosby[b]............	Osanippa	.....do	15
Benjamin F. Stripling[b]....	Yale	Lumber and timber	20
W. W. Wright (Chewacla Creek).[a]	Auburn	Not in use now	....
W. W. Wright & Geo. P. Harrison (Saugahatchee Creek).[a]	Opelika	....	....
H. J. Spratling (Frazer Creek).[a]	.....do	Gristmill	25
B. F. Meadows (Halawochee Creek).[a]	.....do	.....do	40

LIMESTONE COUNTY..

Weatherford Bros.[b]	Elkmont	Flour and grist mill	6
Carter's mill[b]	Athens............	.....do	16
Dupree & Stepp[b]..........	Mount Rozell......	.....do	25
Haye's gristmill[b]	Mooresville.......	.....do	15
T. M. Holmes[b]...........	Elkmont	.....do	12
John M. Head[b]	Pettusville........	.....do	8
Nancy Haney[b]	Legg	.....do	20
Edward G. Hampleton[b]...	Goodsprings	.....do	15
Thomas D. Hastings[b]	Elkmont	.....do	5
James L. Lamar[b].........	Goodsprings	.....do	8
Eugene Parham (Piney Creek).[b]	Athens............	.....do	8

[a] From report of probate judge.   [b] From U. S. Census, 1900.

Water powers in Alabama, by counties—Continued.

LIMESTONE COUNTY—Continued.

Name.	Post-office.	Industry.	Horse-power.
M. A. Phillips *a*	Shoalford	Flour and grist mill	12
Ripley's mill *a*	Ripley	....do	15
George Vassar *a*	Lax	....do	8
Witty's Mill (Birds Branch).*a*	Athens	....do	15
William J. Woodfin *a*	Pettusville	....do	15
Pioneer mill *a*	Mount Rozell	....do	20
A. P. Andrews *a*	Elkmont	....do	8
William N. Webb *a*	Elkriver Mills	....do	12
Baker's mill *a*	....do	....do	8
Allison Miller *a*	Rowland	....do	10
Grisham Bros.*a*	Elkriver Mills	Lumber and timber	40
Do	....do	Carriages and wagons	40
L. C. Hightower (Big Creek).*b*	....do	Saw, flour, and grist mill	
Wm. Bailey (Big Creek)*b*	Quidnunc	Flour and grist mill	
J. W. Carter (Big Creek)*b*	O'Neal	Gin, flour, and grist mill	
M. J.Witty(Birds Branch)*b*	Athens	Flour and grist mill	
J. C. Vaughn (Sulphur Creek).*b*	Elkmont	Gin, flour, and grist mill	
R. B. Malone (Sulphur Creek).*b*	Athens	....do	
Wm. Woodfin (Ragsdale Creek).*b*	Elkmont	....do	
J. W. Carter (Panther Creek).*b*	Carter	....do	
John Carroll (Leslie Creek).*b*	Centerhill	....do	
Wm. Davidson (Limestone Creek).*b*	Lax	....do	
R. M. Clem (Piney Creek)*b*	Fairmount	....do	
Eugene Parkam (Piney Creek).*b*	Athens	....do	
W. M. Hayes (Limestone Creek).*b*	Mooresville	....do	
W. H. Roberts (Sugar Creek).*b*	Athens	....do	
W. H. Marbut *b*	Goodsprings	....do	

LOWNDES COUNTY.

G. B. Holley *a*	Lowndesboro	Flour and grist mill	10
W. N. Bozeman *b*	Benton	Gin and mill	

a From U. S. Census, 1900.   *b* From report of probate judge.

Water powers in Alabama, by counties—Continued.

MADISON COUNTY.[a]

Name.	Post-office.	Industry.	Horse-power.
Fannie J. Ridley	Haden	Flour and grist mill	8
D. L. Middleton water mill	Gurley	....do	20
Delop's mill	Dan	....do	8
Hardy Keel water mill	Gurley	....do	15
Annie M. Taylor	Hazelgreen	....do	8
Bell Factory mill	Huntsville	....do	25
Key's mill	Keysmill	....do	28
William S. Russell	Madison Station	....do	12
Chas. F. Rountree	Maysville	....do	15
William S. Garvin	Monrovia	....do	15
A. D. & W. E. Rogers	Newmarket	....do	60
B tler Mill Co	Poplarridge	....do	30
Payne & Miller	Huntsville	....do	30
Martin's gristmill	....do	....do	15
H. C. Turner	Dan	Lumber and timber	16
Daily Mercury	Huntsville	Printing and publishing	6

MACON COUNTY.[b]

H. H. Robinson	Loachapoka	Flour and grist mill	4
M. W. Glass	Societyhill	....do	8
J. O. H. Perry	Tuskegee	....do	20

MARION COUNTY.

The Carter mill [a]	Ur	Flour and grist mill	5
Bexar Mercantile Co.[a]	Bexar	....do	8
Eads & Fowler [a]	Glenallen	....do	12
The Boatwright mill [a]	Inez	....do	12
Samuel A. & Wm. V. Read [a]	Eldridge	....do	20
Jasper N. Green & Sons[a]	Brilliant	....do	20
Elishu Vickery [a]	Winfield	....do	16
The Shirley mill [a]	Ur	....do	10
Jesse G. Poe[a]	Bearcreek	....do	6
Bull, Atkins & Donaldson[a]	Haleysville	....do	52
Buttahatchee Mill Co.[a]	....do	Lumber and timber	52
John Cumens[a]	....do	....do	12
Kelly sawmill [a]	....do	....do	15
John R. Phillips [a]	Bearcreek	....do	50

[a] From U. S. Census, 1900.　　　　[b] From U. S. Census.

Water powers in Alabama, by counties—Continued.

MARION COUNTY—Continued.

Name.	Post-office.	Industry.	Horse-power.
Simon W. Moss[a]	Winfield	Lumber and timber	36
The Powell Mill and Wool Carder.[a]	Duffey	Woolen goods	50
Albert J. Hamilton (Williams Creek).[b]	Hamilton	Flour and grist mill	
W. C. Gann (Sipsey Creek)[b]	Bexar	....do	
Q. Northington (Sipsey Creek).[b]	Hamilton	....do	
Crane & Riggs (Sipsey Creek).[b]	Delhi	....do	
T. L. Shotts (Bull Mountain Creek).[b]	Shottsville	....do	
I. J. Loyd (Bull Mountain Creek).[b]	Bull Mountain	....do	
D. F. Ballard (Williams Creek).[b]	Hamilton	....do	
James P. Pearce (Buttahatchee River).[b]	Pearces Mills	....do	
James P. Pearce (New River).[b]	Texas	....do	
J. C. Carter (Woods Creek)[b]	Elmira	....do	
James Young (Cantrell Mill Creek).[b]	Hamilton	....do	
W. J. Wright (Barnesville Mill Creek).[b]	Barnesville	....do	
Henry Guin[b]	Guin	....do	
Tucker Moss (Luxapallila Creek).[b]	Winfield	....do	
D. G. Morrow (Woods Creek).[b]	Elmira	....do	

MARSHALL COUNTY.[c]

J. M. Ellison	Preston	Flour and grist mill	4
Mathis mill	Albertville	....do	10
James B. Powell	Columbus City	....do	4
James F. Prentice	Arab	....do	7
P. C. Ragsdale	Uniongrove	....do	10
James P. Smith	Warrenton	....do	10
Scott's mill	Friendship	....do	8
John D. Sumers	Boaz	....do	15
Lakey mill	Bartlett	....do	10
George E. Whisnant & Son	Oleander	....do	10

[a] From U. S. Census, 1900.　　　[b] From report of probate judge.　　　[c] From U. S. Census.

Water powers in Alabama, by counties—Continued.

MARSHALL COUNTY—Continued.

Name.	Post-office.	Industry.	Horse-power.
I. G. Gross	Columbus City	Flour and grist mill	12
Walker & Fowler mills	Friendship	......do	20
William J. Copelan	Diamond	......do	5
James Wm. Barclay	Woodville	......do	10
The Winston mill	Meltonsville	......do	12
W. G. Smith Estate	Sidney	......do	10
Jas. M. Selvage	Grant	......do	4

MARENGO COUNTY.*a*

Rhodes mill	Sweetwater	Flour and grist mill	12

MOBILE COUNTY.*a*

N. Q. Thompson	Citronelle	Flour and grist mill	10
H. Brannan & Son	Pierce	Lumber and timber	30
T. A. Hatter & Son	Creola	......do	75
Littleton Lee	Pierce	......do	60

MONROE COUNTY.*a*

J. B. Solomon	Manistee	Flour and grist mill	15
James H. Simpson	Mexia	......do	10
Benjamin Johnson	Hollinger	......do	15
Andrew Bohanon	Franklin	......do	15
David J. Hatter & Son	Wait	Lumber and timber	60
Do	......do	......do	20
C. C. Yarbrough	Monroeville	......do	20

MONTGOMERY COUNTY.*a*

Daniel's mill	Sellers	Flour and grist mill	25
Montgomery cotton mill	Montgomery	Cotton goods	35

MORGAN COUNTY.*a*

Sarah M. McCutcheon	Briscoe	Flour and grist mill	10

a From U. S. Census, 1900.

Water powers in Alabama, by counties—Continued.

PERRY COUNTY.

Name.	Post-office.	Industry.	Horse-power.
Henry C. Nichols (Dobynes Creek).[a]	Theo	Flour and grist mill	20
Mary G. Wallace [a]	Marion	..... do	4
Hodger's mill [a]	Newbern	..... do	15
W. F. Moore [a]	Marion	..... do	4
Downey's sawmill [a]	Greensboro	Lumber and timber	15
Stevenson's saw and water mills.[a]	Newbern	..... do	20
Lucinda Washburn (Taylors Creek).[a]	Jericho	..... do	18
W. T. Downey (Limestone Creek).[b]	Folsom	Gristmill	6
James Wallace (Legroane Creek).[b]	Jericho	..... do	8
Dr. J. B. Tucker (Taylors Creek).[b]	..... do	..... do	6
Lucinda Washburn (Taylors Creek).[b]	..... do	..... do	8
S. M. Bolling (Branch of Oakmulgee Creek).[b]	Pinetucky	..... do	8
C. C. Cosby (Oakmulgee Creek).[b]	Perryville	..... do	8
Thomas J. Fountain (Little Creek).[b]	Oakmulgee	Gin, saw, and grist mill.	8
Pann Patterson (Little Creek).[b]	..... do	..... do	8
Sarah Fountain (Little Creek).[b]	..... do	..... do	8
Thaddeus Smith (Little Creek).[b]	Active	Gristmill	8
W. M. Eiland (Fords Mill Creek).[b]	Marion	..... do	20
J. F. Morton (Potato Patch Creek).[b]	Levert	..... do	6
Elijah Smith (Beaver Creek).[b]	Bliss	..... do	6
Noah Coker (Beaver Dam Creek).[b]	Bethlehem	..... do	6
W. A. Fountain (Oakmulgee Creek).[b]	Oakmulgee	Rice mill	10

[a] From U. S. Census, 1900.   [b] From report of probate judge.

Water powers in Alabama, by counties—Continued.

PICKENS COUNTY.

Name.	Post-office.	Industry.	Horse-power.
Richardson & Prichards	Coalfire	Flour and grist mill	25
James Mullenix	Gordo	do	6
H. B. & A. W. Latham	Carrollton	do	12
Slaughter's mill	Raleigh	do	16
W. A. Kerr	Reform	Lumber and timber	10

PIKE COUNTY.[a]

Name.	Post-office.	Industry.	Horse-power.
M. J. Youngblood	Youngblood	Flour and grist mill	110
William F. Ingram	Josie	do	20
Nancy Cotton (Cotton's mill).	Milo	do	12
Ely Dees & J. D. Murphee	Pronto	do	20
George W. King	Goshen	do	30
The Lewis mill	Rodney	do	24
McQuaggis mill	Ansley	do	15
George F. Williams	Tatum	do	4
Slatting's gristmill	Henderson	do	25
P. A. Motia	Wingard	do	8
Bowden & Daughtry	Tennille	do	16
William E. Brown	Josie	do	10
G. B. Howard	Goshen	do	20

RANDOLPH COUNTY.[a]

Name.	Post-office.	Industry.	Horse-power.
W. W. Dobson	Wedowee	Flour and grist mill	20
J. H. White & Z. N. Lipham	Clack	do	11
Mrs. Georgia Gibbs	Wedowee	do	10
Giles mill	Ofelia	do	10
Eppie M. White	Bernice	do	5
Larkin & M. B. Taylor	Lamar	do	8
Joseph B. Taylor	Roanoke	do	24
Owins mill	Potash	do	15
Rogers mill	Ofelia	do	8
C. A. Prescott	Wedowee	do	20
H. A. Merrill	Lamar	do	6
Elizabeth H. Merrill	Micaville	do	12
J. E. McCosh & Co	Lime	do	40
William S. McCarley	Graham	do	20
John H. Landers	Lofty	do	8

[a] From U. S. Census, 1900.

Water powers in Alabama, by counties—Continued.

RANDOLPH COUNTY[a]—Continued.

Name.	Post-office.	Industry.	Horse-power.
Edward Lavoorn		Flour and grist mill	8
Thomas J. Lavoorn	Hawk	......do	16
Thomas J. Lavoorn, sr	Newell	......do	8
James L. & John T. Kaylor	Kaylor	......do	60
Henry C. Jordon	Clack	......do	6
J. B. Hammond	Sewell	......do	8
T. M. Halaway	Tolbut	......do	15
Robert H. Harris	Louina	......do	15
Dock Huckaby	Almond	......do	10
Holley's mill	Rock Mills	......do	30
E. C. Heaton	Hawk	......do	10
William N. Gladney	Roanoke	......do	12
A. B. East	Christiana	......do	2
Adamson & Edwards's mills	Ofelia	......do	25
Bailey Mill	Haywood	......do	12
F. P. Parker	Foresters Chapel	......do	10
John C. Murphy	Gay	......do	2
E. L. Pool	Happyland	......do	20
James M. Kitchens	Rockdale	......do	8
James H. Wright	Jeptha	......do	.12
Adamson & Edwards	Ofelia	Lumber and timber	40
William W. Brooks	Lofty	......do	15
William A. Camp	Almond	......do	10
James L. & John T. Kaylor	Kaylor	......do	20
H. H. Stephens	Pencil	......do	20
Samuel H. Striplin	Roanoke	Leather, tanned, curried, and finished.	6
Wehadkee cotton mills	Rock Mills	Cotton goods	108

RUSSELL COUNTY.

Name.	Post-office.	Industry.	Horse-power.
Davis's mill[a]	Crawford	Flour and grist mill	20
H. R. Dudley[a]	Seale	Lumber and timber	40
E. M. Anderson (Watermelon Creek).[b]	......do	Grist mill and gin	20

[a] From U. S. Census, 1900.   [b] From report of probate judge.

Water powers in Alabama, by counties—Continued.

SHELBY COUNTY.[a]

Name.	Post-office.	Industry.	Horse-power.
W. C. Denson	Pelham............	Flour and grist mill	12
William H. Schrader	Shelby	.....do	20
William H. Pledger	Pelham............	.....do	40
Hendrick & Alverson......	Vincent	.....do	40
David A. Whitfield........	Vandiver	.....do	-10
Brownings mill	Columbiana........	Lumber and timber	30

ST. CLAIR COUNTY.[a]

The Yarbrough mill.......	Ashville	Flour and grist mill	8
Hare's mill	.....do	.....do	8
John R. Dyke	Wolfcreek	.....do	30
Perry E. Wyatt...........	Coal City	.....do	10
Henry A. Palmer	Partlow	.....do	10
J. M. McLaughlin.........	Springville	.....do	25
The Machen mill	Partlow	.....do	10
The Lindsey mill	Ashville...........	.....do	10
Hill & Foreman...........	Springville	.....do	28
Henderson's mill	Ragland	.....do	5
Helm & Truss	Helms.............	.....do	20
Grout's mills	Wolfcreek	.....do	10
The Gilchrist mill.........	Ashville...........	.....do	5
The Cox mill	.....do	.....do	10
Rufus W. Beason	Whitney	.....do	11
Rock Bridge mill..........	Gallant............	Lumber and timber mill.	20

SUMTER COUNTY.[a]

E. B. Hearn (Kinterbish Creek).	Gaston	....	40
R. H. Stephens (Kinterbish Creek).	Alamuchee	....	20
R. D. Simmons (Toomsooba Creek).	Bells Station.......	....	30
R. W. Shaw	Cuba..............	....	10
W. H. Walker (Silver Creek).	Alamuchee	....	20
J. U. Gillespie (Coatopa Creek).	Coatopa	....	10

[a] From U. S. Census, 1900.

Water powers in Alabama, by counties—Continued.

TALLADEGA COUNTY.

Name.	Post-office.	Industry.	Horse-power.
Jefferson Roberson [a]	Fayetteville	Flour and grist mill	10
J. C. Brock [a]	Eastaboga	....do	12
Riser & Bro. [a]	Talladega	....do	40
Shock E. Jemison [a]	Sunnyside	....do	15
Vincent's mill [a]	Talladega	....do	25
O. F. Luttrell [a]	....do	....do	40
Riddle mills [b]	Waldo	....do	16
J. F. Smith [a]	Eastaboga	....do	40
John W. Thweatt [a]	McFall	....do	12
J. B. Turner [a]	....do	....do	15
Allison's mill [a]	Talladega	....do	60
J. F. Smith [a]	Eastaboga	Lumber and timber	40
Cragdale mill [a]	Talladega	....do	40
J. B. Turner [a]	McFall	....do	20
Priebes mill (Choccolocco Creek). [a]	Jenifer	Gristmill	200
J. F. Smith's mill (Choccolocco Creek). [a]	Oxford	....do	225
B. Schmidt's mill (Choccolocco Creek). [a]	Lincoln	....do	200
Craig's mill (Choccolocco Creek). [a]	Oxford	....do	150
Wilson's mill (Choccolocco Creek). [a]	Jenifer	....do	150
Eureka mills (Choccolocco Creek). [a]	Eureka	....do	150
Turner's mill (Chehawhaw Creek). [a]	McFall	....do	150
Kants mill (Talladega Creek). [a]	Chandler Springs	....do	50
Riddle's mill (Talladega Creek). [a]	Waldo	....do	75
Taylor's mill (Talladega Creek). [a]	Talladega	....do	150
Reynold's mill (Talladega Creek). [a]	Nottingham	....do	150
Allison's mill (Talladega Creek). [a]	Talladega	....do	75
Duncan's mill (Talladega Creek). [a]	Alpine	....do	75
Baker's mill (Talladega Creek). [a]	Kymulga	....do	100
Vincent's mill (Crooked Creek). [a]	Sylacauga	....do	50

[a] From report of probate judge.

Water powers in Alabama, by counties—Continued.

TALLEDEGA COUNTY—Continued.

Name.	Post-office.	Industry.	Horse-power.
Oden's mill (Short Creek)[a].	Sylacauga	Gristmill	75
Jemison's mill (Kelly Creek).[a]	Sunnyside	.....do	50
Camp & Sons' mill (Salt Creek).[a]	Hopeful	.....do	50
Robinson's mill (Cedar Creek).[a]	Fayetteville	.....do	50
Lackey's mill (Horse Creek).[a]	Ironaton	.....do	25
Talladega Company (Choccolocco Creek).[a]	Talladega..........	Organized for electric transmission.	....

TALLAPOOSA COUNTY.[b]

Name.	Post-office.	Industry.	Horse-power.
George Stewart	Thaddeus..........	Flour and grist mill	12
John W. Britt	Jacksons Gap......	.....do	20
Benjamin F. Jarvis........	Yates	.....do	12
T. J. Hamlet..............	Hamlet.............	.....do	15
T. W. Whitman...........	Dadeville..........	.....do	20
Sanford Milling and Manufacturing Co.	.....do	.....do	25
John W. Hay.............	Camphill	.....do	15
John B. Calhoun..........	Camphill	.....do	8
Hammond's mill..........	Dadeville..........	.....do	20
Hodnett grist and flour mill.	Acme	.....do	16
Thomas L. Bulger.........	Dadeville..........	.....do	15
Vines mills	Easton	.....do	40
A. T. & H. C. Vickers.....	Newsite	.....do	20
J. C. Street	Anniston	.....do	25
Shephard Bros. & Co......	Tohopeka	.....do	10
G. W. Stewart	Thaddeus..........	.....do	25
Albert J. Hollaway	Alexander.........	.....do	20
Mrs. Milliner	Mary..............	.....do	25
Jno. L. Patterson	Hackneyville	.....do	12
Thomas B. Griffiin........	Matilda	.....do	10
Daviston mill.............	Daviston	.....do	8
Lamberth & Dewberry	Logpit.............	.....do	20
Silver Shoals mill	Buttston..........	.....do	80
M. R. Hays & Bro	Notasulga.........	.....do	40

[a] From report of probate judge.   [b] From U. S. Census, 1900.

Water powers in Alabama, by counties—Continued.

TALLAPOOSA COUNTY—Continued.

Name.	Post-office.	Industry.	Horse-power.
Farrows flour and grist mill.	Susanna	Flour and grist mill	60
J. H. Yarbrough	Hackneyville	....do	12
T. F. Garnett	Tallassee	Lumber and timber	20
G. W. Stewart	Thaddeus	....do	20

WINSTON COUNTY.

Name.	Post-office.	Industry.	Horse-power.
Richard H. Blake *a*	Houston	Flour and grist mill	8
Thomas O. Partridge *a*	Elk	....do	10
Wm. D. Shadix (Sandy Creek). *a*	Double Springs	....do	4
George D. Wilson *a*	Haleysville	....do	8
Manna A. Posey *a*	Motes	....do	10
Martin A. & Martha Peak *a*.	Peaks Mill	....do	10
Miligan mill *a*	Double Springs	....do	10
James Cantrell *a*	Addison	....do	4
Burks mill *a*	Cranal	....do	10
Nauvoo mill (Blackwater Creek). *b*	Nauvoo	Grist mill and gin	
Anderson Ward mill (Clear Creek). *b*	Haleysville	Flour and grist mill	
J. Calvin Cagle (Clear Creek). *b*	Double Springs	Saw, flour, and grist mill and gin	
Jonathan Barton mill (Clear Creek). *b*	Deer	Gristmill	
Hadder mill (Clear Creek) *b*.	Double Springs	....do	
Posey mill (Clear Creek) *b*.	Motes	Gristmill, saw, and gin.	
S. D. Spain (Clear Creek) *b*.	Malta	....do	
Gus Posey mill (Clear Creek). *b*	Elk	....do	
Wm. Dodd (Splunge Creek). *b*	Natural Bridge	....do	
Kelley mill (Blackwater Creek). *b*	Lynn	....do	
Peaks mill (Grindstone Creek). *b*	Peaks Mill	....do	
Jack Curtis (Sandy Creek) *b*.	Double Springs	....do	
Manley Payne (Beech Creek). *b*	Gumpond	....do	
Christian mill (Christian Creek). *b*	Peaks Mill	Grist and saw mill	

a From U. S. Census, 1900.   *b* From report of probate judge.

APPENDIX.

STREAM MEASUREMENTS IN MISSISSIPPI.

In the foregoing sections (pp. 167–175, 179–180) have been included discharge measurements, gage heights, and estimates of flow at Columbus, Miss., on Tombigbee River, which flows into Alabama, and Luxapallila Creek, which flows out of Alabama into Mississippi.

The following is a statement of the hydrographic work on the remaining important streams of Mississippi, exclusive of Mississippi River:

PEARL RIVER AT JACKSON, MISS.

This station was established June 24, 1901, and is situated at the highway bridge 2 miles from the union station at Jackson and one-eighth mile above the Alabama and Vicksburg Railway bridge.

The gage is a wire gage fastened to the guard timber on the downstream side of the bridge. The rod is 10 feet long, graded to feet and tenths, and is marked with staples and brass figures. Above 10 feet the guard timber is marked. The bench mark is the downstream end of the top of the iron crossbeam 120 feet from the right-bank end of the bridge, which latter is the initial point for soundings. The elevation of the bench mark is 39 feet above datum. The bridge floor at the same point is 40.15 feet above datum.

The observer is James Hurst. The following discharge measurements were made by K. T. Thomas, M. R. Hall, and others:

Discharge measurements of Pearl River at Jackson, Miss.

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.
1901.	*Feet.*	*Second-feet.*	1903.	*Feet.*	*Second-feet.*
June 24	2.10	430	March 10	24.00	16,050
August 15	5.85	1,880	July 13	4.15	1,348
October 28	1.55	262	July 14	5.37	1,988
1902.			September 24	.80	128
July 14	1.10	193	Do	.78	142
September 25	.90	290			

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Daily gage height, in feet, of Pearl River at Jackson, Miss.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1901.												
1							1.90	1.50	5.90	1.90	1.40	3.50
2							1.70	1.50	5.70	1.80	1.30	3.30
3							1.80	1.50	5.60	1.60	1.30	3.40
4							1.80	1.40	5.40	1.40	1.40	3.20
5							1.70	1.30	5.20	1.50	1.20	3.30
6							1.80	1.30	4.70	1.60	1.00	3.30
7							1.80	1.20	3.90	1.50	1.30	3.20
8							1.80	1.20	3.50	1.50	1.50	3.40
9							1.80	1.20	3.20	1.40	1.80	3.90
10							1.80	1.20	3.00	1.40	1.80	4.20
11							1.80	1.20	2.00	1.30	1.60	5.40
12							1.80	1.20	2.60	1.40	1.60	5.80
13							1.80	1.30	2.50	2.00	1.60	6.40
14							1.60	1.40	2.30	3.00	1.60	10.00
15							1.80	1.60	2.30	3.40	1.50	14.90
16							1.70	1.80	2.50	3.40	1.50	15.00
17							1.70	2.10	2.80	3.00	1.50	15.20
18							1.70	2.60	3.40	2.10	1.50	15.90
19							1.70	3.70	3.40	2.30	1.50	15.40
20							1.60	4.50	3.60	2.10	1.60	15.00
21							1.70	6.00	3.80	2.00	1.60	14.60
22							1.70	6.30	3.70	1.90	1.80	14.30
23							1.70	7.40	3.50	1.80·	1.90	13.20
24						2.10	1.80	7.40	3.10	1.80	2.10	12.60
25						2.10	2.20	7.30	2.20	1.70	2.40	12.70
26						2.00	2.00	7.30	2.40	1.70	2.70	11.90
27						2.00	1.90	7.40	2.50	1.60	3.30	11.30
28						1.90	1.90	7.60	2.50	1.60	3.50	10.60
29						2.00	1.80	6.90	2.30	1.60	3.70	13.60
30						2.10	1.80	6.90	2.10	1.50	3.70	14.60
31							1.60	6.70	....	1.40	....	15.00
1902.												
1	15.00	13.90	13.00	37.20	6.00	2.20	1.30	1.30	7.90	1.90	1.00	3.10
2	15.20	16.60	13.00	36.20	5.90	2.20	1.30	1.20	4.80	2.00	1.00	4.60
3	15.10	17.10	13.00	34.60	5.60	2.10	1.30	1.70	3.60	2.40	1.00	4.10
4	15.00	18.30	13.20	33.10	5.10	2.00	1.20	1.70	3.40	2.80	1.00	5.30
5	14.80	18.60	13.40	32.00	4.90	2.00	1.20	1.60	3.20	3.00	1.10	5.80
6	14.50	18.40	13.70	31.00	4.80	1.90	1.20	1.60	2.50	3.60	1.00	6.30
7	14.20	18.30	14.00	30.10	4.60	1.90	1.20	1.40	3.90	3.20	1.00	6.80
8	13.90	18.20	13.80	29.10	4.30	1.80	1.30	1.40	3.80	3.10	1.00	6.40
9	13.40	17.00	13.60	28.10	4.00	1.80	1.30	1.40	3.60	2.90	1.20	6.00
10	12.60	17.70	13.20	27.10	3.90	1.80	1.30	1.40	3.50	2.30	1.20	5.80
11	11.80	17.60	12.60	26.30	3.50	1.80	3.50	1.40	3.60	2.30	1.30	5.70
12	10.80	17.40	12.20	25.60	3.20	1.70	3.00	1.40	3.50	2.60	1.30	5.60
13	10.00	16.90	11.70	24.80	3.20	1.70	1.20	1.40	3.50	2.60	1.30	5.20
14	9.10	15.80	11.90	24.10	3.10	1.70	1.20	1.30	3.90	2.80	1.40	5.70
15	8.10	14.30	10.30	24.00	3.00	1.60	1.20	1.30	3.70	3.00	1.40	5.10
16	8.00	12.60	9.90	23.50	2.10	1.60	1.30	1.30	3.60	3.20	1.40	10.60
17	7.90	10.90	10.60	23.00	2.80	1.50	1.30	1.20	3.40	3.30	1.40	10.70
18	6.70	9.70	10.60	22.30	2.60	1.50	1.20	1.20	3.00	3.60	1.30	10.50
19	5.40	9.00	10.50	21.20	3.00	1.50	1.10	1.10	2.90	3.50	1.30	11.10
20	5.10	8.60	10.00	19.50	2.90	1.40	1.10	1.10	2.60	3.30	1.20	11.30
21	5.40	8.30	9.90	17.20	2.80	1.30	1.10	1.10	2.40	3.20	1.20	11.60
22	5.60	8.20	9.90	14.00	2.60	1.30	1.10	1.10	1.00	2.00	1.20	12.20
23	5.80	8.30	9.90	11.10	2.80	1.30	1.10	.90	1.20	1.20	1.10	12.20
24	6.40	9.00	10.80	9.30	3.00	1.40	1.10	1.00	1.20	1.80	1.80	11.90
25	6.90	10.70	12.90	8.10	3.00	1.40	1.20	.90	1.10	1.50	1.70	11.70
26	6.20	11.40	13.80	7.20	2.80	1.30	1.40	.80	1.30	1.50	1.80	11.10
27	7.00	11.60	22.70	7.10	2.70	1.30	1.40	1.00	1.30	1.40	1.70	10.80
28	7.10	12.30	28.55	6.50	2.60	1.30	1.40	2.30	1.40	1.30	1.60	10.00
29	7.20	......	30.40	6.40	2.50	1.30	1.40	4.50	1.60	1.20	1.60	10.90
30	8.50	......	32.10	6.20	2.40	1.30	1.40	7.20	1.80	1.10	2.60	8.00
31	10.10	......	36.50	......	2.20	......	1.40	7.40	......	1.10	......	9.90

Daily gage height, in feet, of Pearl River at Jackson, Miss.—Continued.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1903.												
1	10.90	6.7	26.0	12.6	2.8	2.3	1.7	2.0	2.2	0.7	0.3	0.3
2	13.80	7.4	25.1	10.9	2.7	2.3	1.8	2.0	2.0	.7	.3	.3
3	14.90	12.2	24.2	9.8	2.6	2.2	1.8	1.8	1.9	.7	.3	.3
4	15.20	13.4	23.0	9.2	2.6	2.2	1.9	1.7	1.8	.7	.3	.3
5	15.80	14.6	22.4	8.5	2.5	2.1	2.0	1.5	1.6	.7	.3	.4
6	16.60	15.8	21.8	7.8	2.5	2.2	2.1	1.6	1.6	.7	.3	.5
7	16.00	19.0	21.6	7.1	2.4	2.2	2.2	2.5	1.5	.7	.3	.6
8	16.00	23.0	21.6	6.7	2.4	2.3	2.3	2.6	1.3	.6	.3	.8
9	15.90	23.4	23.5	6.1	2.5	3.5	2.4	2.8	1.2	.6	.3	.9
10	15.60	24.6	23.9	5.7	2.5	3.4	2.5	2.9	1.2	.6	.3	.9
11	15.60	27.5	24.7	5.2	2.4	2.5	2.7	3.5	1.1	.6	.3	1.0
12	15.40	30.4	24.9	5.0	2.4	2.4	2.8	4.4	1.1	.6	.3	1.0
13	14.00	32.5	25.2	5.8	2.5	2.3	2.7	4.5	1.0	.6	.3	1.0
14	14.60	33.7	25.4	4.6	2.6	2.3	5.3	4.6	1.0	.6	.3	1.0
15	13.80	33.5	25.7	4.4	2.8	2.4	4.6	4.6	1.0	.5	.3	1.2
16	13.40	33.2	25.9	4.3	3.0	2.5	4.3	4.5	1.0	.5	.3	1.2
17	13.10	33.1	25.9	4.5	3.1	2.3	3.8	4.6	.9	.5	.3	1.3
18	13.20	32.8	25.8	4.7	3.5	2.2	2.7	4.0	.9	.5	.3	1.3
19	13.10	32.3	25.3	4.6	4.0	2.1	2.5	4.6	.8	.5	.3	1.3
20	13.00	31.5	24.6	4.5	4.4	2.0	2.4	4.8	.8	.5	.3	1.3
21	12.50	30.9	23.7	4.3	4.5	1.9	2.2	5.1	.8	.6	.3	1.3
22	11.40	30.9	23.7	4.2	4.2	1.8	2.0	4.8	.8	.6	.3	1.3
23	10.40	30.1	23.4	4.0	3.9	1.7	1.9	4.6	.8	.6	.3	1.3
24	9.50	30.0	22.8	3.8	3.7	1.6	1.7	4.3	.8	.6	.3	1.4
25	8.40	29.8	21.9	3.6	3.5	1.7	1.6	4.1	.8	.5	.3	1.4
26	8.90	28.7	20.9	3.4	3.4	1.8	1.5	3.8	.8	.5	.3	1.4
27	7.80	27.6	19.6	3.2	3.3	1.8	1.5	3.4	.8	.5	.3	1.4
28	7.30	26.7	18.0	3.0	3.1	1.7	1.4	3.0	.8	.5	.3	1.4
29	6.80	....	16.5	2.9	3.5	1.7	1.3	2.7	.8	.4	.3	1.4
30	6.50	....	15.3	2.8	2.7	1.8	1.2	2.5	.8	.3	.3	1.3
31	6.60	....	13.8	....	2.5	....	1.2	2.3	....	.3	....	1.3

Rating table for Pearl River at Jackson, Miss., for 1901, 1902, and 1903.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
0. 30	98	4. 90	1, 730	9. 50	4, 860	14. 10	8, 310
. 40	103	5. 00	1, 790	9. 60	4, 935	14. 20	8, 385
. 50	109	5. 10	1, 850	9. 70	5, 010	14. 30	8, 460
. 60	117	5. 20	1, 910	9. 80	5, 085	14. 40	8, 535
. 70	126	5. 30	1, 970	9. 90	5, 160	14. 50	8, 610
. 80	136	5. 40	2, 030	10. 00	5, 235	14. 60	8, 685
. 90	148	5. 50	2, 090	10. 10	5, 310	14. 70	8, 760
1. 00	162	5. 60	2, 150	10. 20	5, 385	14. 80	8, 835
1. 10	177	5. 70	2, 210	10. 30	5, 460	14. 90	8, 910
1. 20	194	5. 80	2, 270	10. 40	5, 535	15. 00	8, 983
1. 30	214	5. 90	2, 330	10. 50	5, 610	15. 10	9, 060
1. 40	235	6. 00	2, 390	10. 60	5, 685	15. 20	9, 135
1. 50	257	6. 10	2, 450	10. 70	5, 760	15. 30	9, 210
1. 60	280	6. 20	2, 510	10. 80	5, 835	15. 40	9, 285
1. 70	305	6. 30	2, 570	10. 90	5, 910	15. 50	9, 360
1. 80	333	6. 40	2, 630	11. 00	5, 985	15. 60	9, 435
1. 90	365	6. 50	2, 695	11. 10	6, 060	15. 70	9, 510
2. 00	398	6. 60	2, 760	11. 20	6, 135	15. 80	9, 585
2. 10	432	6. 70	2, 825	11. 30	6, 210	15. 90	9, 660
2. 20	467	6. 80	2, 890	11. 40	6, 285	16. 00	9, 735
2. 30	503	6. 90	2, 955	11. 50	6, 360	16. 50	10, 135
2. 40	540	7. 00	3, 020	11. 60	6, 435	17. 00	10, 535
2. 50	580	7. 10	3, 090	11. 70	6, 510	17. 50	10, 935
2. 60	620	7. 20	3, 160	11. 80	6, 585	18. 00	11, 355
2. 70	660	7. 30	3, 230	11. 90	6, 660	18. 50	11, 735
2. 80	700	7. 40	3, 300	12. 00	6, 735	19. 00	12, 135
2. 90	740	7. 50	3, 370	12. 10	6, 810	19. 50	12, 535
3. 00	785	7. 60	3, 440	12. 20	6, 885	19. 80	12, 935
3. 10	830	7. 70	3, 510	12. 30	6, 960	19. 90	13, 335
3. 20	875	7. 80	3, 585	12. 40	7, 035	21. 00	13, 735
3. 30	920	7. 90	3, 660	12. 50	7, 110	22. 00	14, 535
3. 40	965	8. 00	3, 735	12. 60	7, 185	23. 00	15, 335
3. 50	1, 010	8. 10	3, 810	12. 70	7, 260	24. 00	16, 135
3. 60	1, 055	8. 20	3, 885	12. 80	7, 335	25. 00	16, 935
3. 70	1, 100	8. 30	3, 960	12. 90	7, 410	26. 00	17, 735
3. 80	1, 150	8. 40	4, 035	13. 00	7, 485	27. 00	18, 535
3. 90	1, 200	8. 50	4, 110	13. 10	7, 560	28. 00	19, 335
4. 00	1, 250	8. 60	4, 185	13. 20	7, 635	29. 00	20, 135
4. 10	1, 300	8. 70	4, 260	13. 30	7, 710	30. 00	20, 935
4. 20	1, 350	8. 80	4, 335	13. 40	7, 785	31. 00	21, 735
4. 30	1, 400	8. 90	4, 410	13. 50	7, 860	32. 00	22, 535
4. 40	1, 455	9. 00	4, 485	13. 60	7, 935	33. 00	23, 335
4. 50	1, 510	9. 10	4, 560	13. 70	8, 010	34. 00	24, 135
4. 60	1, 565	9. 20	4, 635	13. 80	8, 085		
4. 70	1, 620	9. 30	4, 710	13. 90	8, 160		
4. 80	1, 675	9. 40	4, 785	14. 00	8, 235		

Estimated monthly discharge of Pearl River at Jackson, Miss.

Month.	Discharge in second-feet.		
	Maximum.	Minimun.	Mean.
1903.			
January	10, 215	2, 695	7, 082
February	23, 895	2, 825	17, 421
March	17, 735	8, 085	15, 162
April	7, 185	700	2, 265
May	1, 510	540	821
June	1, 010	280	468
July	1, 970	194	558
August	1, 850	257	1, 023
September	467	136	197
October	126	98	115
November	98	98	98
December	235	98	178
The year	23, 895	98	3, 782

Net horsepower per foot of fall with a turbine efficiency of 80 per cent for the minimum monthly discharge of Pearl River at Jackson, Miss.

Month.	1901.			1902.			1903.		
	Minimum discharge.	Minimum net horsepower per foot of fall.	Duration of minimum.	Minimum discharge.	Minimum net horsepower per foot of fall.	Duration of minimum.	Minimum discharge.	Minimum net horsepower per foot of fall.	Duration of minimum.
	Sec.-feet.		Days.	Sec.-feet.		Days.	Sec.-feet.		Days.
January				1, 850	168	1	2, 695	245	1
February				3, 885	353	1	2, 825	257	1
March				5, 160	469	4	8, 085·	735	1
April				2, 510	228	1	700	64	1
May				432	39	1	540	49	4
June	398	36	3	214	19	9	280	25	1
July	280	25	3	177	16	6	194	18	2
August	194	·18	6	136	12	1	257	23	1
September	398	36	1	162	15	1	136	12	12
October	235	21	5	177	16	2	98	9	2
November	194	18	1	162	15	7	98	9	30
December	875	80	2	830	75	1	98	9	4

YAZOO RIVER AT YAZOO CITY, MISS.

A gage has been maintained at this point by the Engineer Corps of the Army. It was replaced in 1901 by a new gage rod in three sections, marked with brass figures and brass tacks, the sections being placed as follows: The lowest, marked from −3 to +4.5 feet, is attached to the protecting work of the bridge; the middle section, marked from 4.5 to 18.5 feet, is attached to the piling that protects the bridge pier; the uppermost section, continuing the graduation up to 32.3 feet, is on a post under the approach to the bridge. The highest known water occurred in 1882, reaching a gage height of 36.5 feet; the lowest occurred on October 15 to 17 and 20 to 22, 1896, with a gage height of −2.8 feet. The danger line is at 25 feet. A bench mark was established on the top of the upstream cylinder of the second pier from the left bank, at a distance of 85 feet from the initial point for soundings, which is on the downstream end of iron bridge on the left bank. The elevation of the mark is 35.85 feet above the zero of the gage. Other important bench marks in Yazoo City are the following: P. B. M. 12, Yazoo City, is a copper bolt in stone underground, surmounted by an iron pipe and cap, in the north corner of the county court-house yard. It is 44.1 feet above the zero of the gage and 116.2 feet above mean sea level. P. B. M. 13, Yazoo City, is a copper bolt in a stone underground, surmounted by an iron pipe and cap, in the north corner of the public school yard, near Washington and Main streets. It is 29.2 feet above the zero of the gage, and 101.3 feet above mean sea level. Discharge measurements are made by the United States Geological Survey from the city toll bridge, one-half mile northwest from the Illinois Central station. The observer is P. C. Battaille. Daily gage heights are furnished by the Weather Bureau.

The following measurements were made by K. T. Thomas, M. R. Hall, and others:

Discharge measurements of Yazoo River at Yazoo City, Miss.

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.
1901.	*Feet.*	*Second-feet.*	1902.	*Feet.*	*Second-feet.*
March 9	11.80	11,618	September 24........	−1.0	2,108
April 12.............	13.40	11,779	September 25........	−1.0	2,048
June 22.............	2.92	3,935	1903.		
1902.			July 13.............	5.80	4,755
July 12.............	3.40	2,887	September 23........	−2.00	1,623
July 14.............	4.40	3,672			

Daily gage height, in feet, of Yazoo River at Yazoo City, Miss.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1900.												
1	5.0	1.0	15.0	19.7	22.9	8.0	21.1	18.7	0.6	1.6	9.6	9.6
2	4.6	.7	15.0	19.5	22.9	9.5	21.2	18.2	.6	1.5	9.6	9.8
3	4.3	.4	15.0	19.2	22.9	8.1	21.3	17.8	.6	1.4	9.6	10.0
4	4.0	.4	15.3	18.8	22.8	8.3	21.4	17.4	.7	1.2	9.5	10.3
5	3.5	.4	15.4	18.5	22.8	8.6	21.5	17.0	.7	.9	5.3	10.5
6	3.0	.3	15.4	18.1	22.7	9.4	21.6	16.5	.6	.6	9.2	10.8
7	2.4	.2	15.5	17.6	22.6	10.3	21.7	16.0	.4	.2	9.0	11.1
8	1.7	.2	16.0	17.0	22.4	11.0	21.9	15.5	.1	.1	8.8	11.5
9	1.2	1.1	16.1	16.4	22.3	11.5	22.0	14.7	.9	.3	8.5	11.7
10	.9	1.5	16.2	15.6	22.0	12.0	22.1	13.7	.9	.5	8.1	11.9
11	1.3	2.0	16.3	17.6	21.7	12.6	22.1	12.9	.8	.7	7.7	12.0
12	1.3	3.2	16.4	17.2	21.4	13.1	22.1	11.7	.8	.7	7.3	12.1
13	1.0	4.9	16.5	17.0	21.0	13.9	22.1	10.5	.7	.6	6.8	12.2
14	1.0	6.0	16.5	17.0	20.7	17.6	22.1	9.2	.6	.5	6.2	12.2
15	1.6	6.9	16.5	17.2	20.3	17.3	22.0	7.8	.5	.3	5.5	12.0
16	2.1	7.5	17.0	17.6	20.0	17.6	21.9	6.5	.4	.1	4.7	11.7
17	2.5	8.0	17.2	21.5	19.6	17.7	21.9	5.3	.3	.3	3.9	11.5
18	2.8	8.3	17.3	24.4	19.2	18.1	21.8	4.3	.2	.8	3.2	11.1
19	3.0	8.5	18.8	21.8	18.6	18.8	21.6	3.5	.1	.9	2.5	10.7
20	3.3	8.8	19.5.	22.0	18.0	19.1	22.3	2.8	.1	1.0	2.1	11.8
21	3.5	9.9	19.5	22.0	17.4	19.8	22.0	2.4	.6	.9	1.6	11.1
22	3.6	10.5	19.8	22.0	16.6	20.0	21.5	2.0	.5	1.3	1.4	10.7
23	3.7	11.0	20.0	22.2	16.0	20.0	21.2	1.7	.5	1.4	2.2	10.5
24	3.7	11.4	20.2	22.2	15.0	20.2	20.0	1.4	.7	1.2	3.6	10.5
25	3.6	12.1	20.5	22.2	13.8	20.3	20.6	1.2	.0	1.9	5.0	10.5
26	3.4	12.4	20.5	22.2	12.7	20.5	20.5	1.0	.4	3.9	6.2	10.5
27	3.1	12.5	20.5	22.3	11.6	20.8	20.4	.9	.9	6.0	7.0	10.2
28	2.7	14.4	20.5	22.3	10.4	20.8	20.2	.8	1.3	7.1	8.0	10.8
29	2.3	......	20.3	22.9	9.2	20.9	19.9	.7	1.5	8.0	8.6	11.1
30	1.8	......	20.2	23.0	8.0	21.0	19.4	.6	1.6	8.7	9.1	11.4
31	1.4	......	20.0	......	7.1	......	19.0	.6	......	9.1	......	11.7
1901.												
1	11.8	16.8	16.4	16.5	16.6	9.0	— .1	— 1.4	9.1	7.4	—1.5	.1
2	11.9	16.7	16.0	16.4	16.6	8.1	— .2	— 1.4	8.9	7.3	—1.5	.1
3	12.1	17.7	15.6	16.2	16.5	7.6	— .3	— 1.4	8.4	7.0	—1.5	.0
4	12.2	18.2	15.1	16.0	16.3	7.5	— .3	— 1.3	7.8	6.9	—1.0	— .4
5	12.3	17.8	14.7	15.6	16.0	7.4	— .2	— 1.0	7.0	6.8	—1.3	— .5
6	12.4	17.6	14.1	15.3	15.8	7.2	— .1	— .7	6.2	6.5	—1.4	— .5
7	12.4	17.6	13.4	14.9	15.6	7.5	+ .1	— .8	5.3	6.0	—1.5	— .6
8	12.4	18.0	13.5	14.5	15.5	7.0	.3	— 1.0	4.3	5.6	—1.5	— .8
9	12.4	17.7	11.8	14.2	15.4	6.5	.4	— 1.2	3.4	4.8	—1.5	+ 2.1
10	12.4	17.8	12.0	13.9	15.2	6.1	.4	— 1.3	2.5	4.0	—1.5	2.5
11	18.8	17.7	12.3	13.7	15.2	5.7	.3	— 1.4	1.8	3.1	—1.5	2.3
12	18.2	17.9	12.4	13.6	15.2	5.4	.1	— .1	1.1	2.3	—1.6	2.8
13	17.6	17.9	12.6	13.4	· 15.2	5.0	— .3	.3	1.0	1.7	—1.6	3.5
14	17.6	17.8	12.9	13.3	15.5	4.7	— .6	— .7	2.5	1.1	—1.7	6.7
15	17.8	17.7	13.0	13.1	15.5	4.5	— .9	+ 1.2	2.5	.7	—1.7	6.9
16	17.8	17.7	13.1	12.9	15.4	4.2	— 1.0	2.0	3.0	.4	—1.8	7.3
17	17.8	17.7	13.3	12.8	15.4	4.1	— 1.2	1.2	3.5	.2	—1.8	8.0
18	17.8	17.6	13.5	14.4	15.4	3.9	— 1.2	1.8	4.7	.0	—1.8	8.7
19	17.7	17.5	13.7	14.6	15.1	3.7	— 1.2	2.6	5.9	— .3	—1.7	9.3
20	17.6	17.5	14.0	14.8	14.7	3.5	— 1.2	3.8	7.0	— .5	—1.7	9.5
21	17.5	17.4	14.3	15.2	14.2	3.3	— .5	4.9	7.7	— .7	—1.7	9.7
22	17.4	17.3	14.7	15.5	13.2	3.0	— .3	5.6	8.2	— .7	—1.4	9.8
23	17.3	17.2	15.0	15.8	11.9	2.6	— .7	6.1	8.3	— .8	— .4	9.8
24	17.4	17.1	15.5	16.0	10.7	2.2	— .7	6.5	8.3	— .8	— .1	9.8
25	17.4	17.0	15.9	16.1	11.7	1.8	— .8	6.9	8.3	— .8	— .1	9.8
26	17.3	16.8	16.2	16.3	12.2	1.4	— .9	7.3	8.1	— .9	— .1	9.7
27	17.3	16.5	16.2	16.5	11.3	1.0	— 1.0	8.4	8.0	—1.0	+ .5	9.7
28	17.3	16.2	16.2	16.6	10.7	.6	— 1.1	8.3	7.8	—1.1	.5	10.0
29	17.2	......	16.3	16.6	10.2	.3	— 1.2	8.8	7.7	—1.1	.6	11.6
30	17.1	......	16.3	16.6	9.5	.1	— 1.3	9.0	7.5	—1.3	.5	11.5
31	17.0	......	16.6	......	9.2	......	— 1.4	9.1	......	—1.4	......	11.4

Daily gage height, in feet, of Yazoo River at Yazoo City, Miss.—Continued.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1902.												
1	11.40	11.30	16.70	23.90	25.30	2.30	.10	3.20	— .70	−1.00	−2.10	4.90
2	11.50	12.40	16.60	23.80	25.00	1.90	.20	3.00	— .80	— .90	−2.10	5.30
3	11.40	12.80	16.60	23.80	24.70	1.80	.20	3.00	— .50	— .80	−2.10	5.80
4	11.00	13.20	16.60	23.80	24.40	1.60	.00	3.20	— .50	.00	−2.10	5.90
5	10.90	13.40	16.90	23.80	24.10	1.50	.00	3.60	— .50	.60	−2.10	6.00
6	10.80	13.70	16.90	23.80	23.70	1.50	— .10	4.00	— .30	1.00	−2.10	6.30
7	10.50	13.90	16.80	25.10	23.30	1.70	— .20	4.40	.00	1.30	−2.10	6.50
8	10.30	14.10	16.80	25.10	22.90	2.00	.00	4.50	.20	1.50	−2.10	6.90
9	10.00	14.30	16.80	25.00	22.40	2.20	.70	4.70	.30	1.50	−2.10	7.00
10	9.70	14.60	16.70	25.00	21.80	2.40	1.50	4.70	.00	1.20	−2.10	7.20
11	9.30	14.90	16.70	25.10	20.90	2.50	2.40	4.70	— .20	.90	−2.10	7.30
12	8.90	15.20	16.90	25.30	20.10	2.40	3.40	4.70	— .50	.70	−2.10	7.40
13	8.40	15.50	17.40	25.50	19.20	2.10	4.00	4.60	— .70	.50	−2.10	7.40
14	7.90	15.80	17.30	25.60	18.00	1.80	4.50	4.60	−1.10	.50	−2.10	7.50
15	7.30	16.00	17.30	25.80	16.90	1.50	4.90	4.50	−1.20	.50	−2.10	7.50
16	6.50	16.30	17.90	26.00	15.50	1.20	5.00	4.50	−1.30	.20	−2.10	9.80
17	5.70	16.40	17.80	26.20	14.20	.90	5.00	4.40	−1.40	— .20	−2.10	9.80
18	4.90	16.40	17.70	26.30	13.00	.50	4.70	4.40	−1.50	— .50	−2.10	10.20
19	4.20	16.40	17.70	26.40	11.90	.40	4.40	4.30	−1.50	−1.00	−2.10	10.90
20	3.50	16.30	17.80	26.50	10.80	.30	4.00	4.20	−1.50	−1.20	−2.10	11.50
21	3.20	16.20	18.00	26.60	9.70	.00	3.90	4.00	−1.50	−1.30	−2.10	12.00
22	3.50	16.10	18.10	26.60	8.50	— .10	3.50	3.80	−1.50	−1.50	−2.10	12.70
23	3.00	16.00	18.10	26.50	7.70	— .20	3.40	3.30	−1.50	−1.60	−2.10	13.20
24	3.50	16.00	19.00	26.50	6.70	— .30	3.00	2.60	−1.10	−1.60	−2.10	13.80
25	4.00	16.20	19.00	26.50	5.80	— .40	3.00	1.90	−1.10	−1.70	−1.10	14.30
26	4.70	16.10	18.90	26.40	5.00	— .40	2.90	1.30	−1.10	−1.70	.20	14.80
27	5.40	16.20	21.00	26.20	4.40	— .40	2.90	.50	−1.00	−1.70	.80	15.20
28	6.40	16.60	24.80	26.00	3.90	— .40	2.90	— .10	−1.00	−1.80	1.50	15.40
29	7.40	....	24.80	25.80	3.30	— .20	2.80	— .10	−1.00	−2.00	3.00	15.80
30	9.40	....	24.30	25.60	3.00	.00	2.70	— .30	−1.00	−2.10	4.40	16.00
31	10.30	....	24.00	....	2.50	....	2.60	— .60	....	−2.10	....	16.20
1903.												
1	16.4	17.3	24.1	28.6	22.0	6.7	16.9	— .6	.5	−2.2	−2.5	−2.2
2	18.0	17.2	24.2	28.6	21.8	6.5	16.8	— .6	.4	−2.2	−2.5	−2.1
3	18.0	19.0	24.4	28.6	21.4	6.7	16.5	— .5	.2	−2.2	−2.5	−2.1
4	18.1	19.0	24.6	28.6	21.0	7.4	16.0	— .5	— .4	−2.2	−2.5	−2.1
5	18.4	18.5	24.7	28.7	20.7	8.3	15.5	— .5	— .6	−2.3	−2.5	·2.2
6	18.7	18.2	24.8	28.7	20.3	9.2	14.8	— .4	— .9	−2.3	−2.5	−2.3
7	18.9	19.7	24.9	28.7	20.0	10.0	13.9	— .3	−1.0	−2.3	−2.5	−2.3
8	19.0	22.4	25.2	28.7	19.8	10.9	12.5	— .2	−1.2	−2.3	−2.5	−2.3
9	19.0	21.9	25.3	28.6	19.5	11.5	11.0	— .1	−1.3	−2.3	−2.5	−2.3
10	19.0	21.8	25.4	28.5	19.2	12.4	9.6	— .1	−1.4	−2.3	−2.5	−2.3
11	19.4	22.4	25.8	28.4	19.0	13.0	8.2	1.0	−1.5	−2.3	−2.5	−2.3
12	19.4	22.0	25.9	28.3	18.4	13.5	6.9	1.0	−1.6	−2.4	−2.4	−2.4
13	19.3	21.9	26.0	28.2	18.5	14.1	6.0	.9	−1.7	−2.4	−2.3	−2.3
14	19.3	21.9	26.2	28.0	18.0	14.7	5.0	.9	−1.7	−2.4	−2.2	−2.2
15	19.3	22.0	26.4	27.8	17.5	15.0	4.0	1.4	−1.7	−2.4	−2.1	— .2
16	19.2	23.1	26.5	27.5	16.9	15.5	3.5	1.6	−1.8	−2.4	−2.0	−2.2
17	19.0	23.4	26.6	27.2	16.2	15.8	2.8	1.8	−1.8	−2.4	−1.9	−2.3
18	19.0	23.3	26.8	26.9	15.5	16.0	2.4	1.8	−1.8	−2.4	−1.9	−2.1
19	18.9	23.3	26.9	26.6	14.5	16.2	2.0	2.0	−1.8	−2.4	−2.1	−2.0
20	18.8	23.3	27.0	26.3	13.4	16.3	1.8	2.5	−2.0	−2.4	−2.1	−1.8
21	18.6	23.3	27.2	25.9	12.0	16.4	1.5	1.8	−2.0	−2.4	−2.2	−1.6
22	18.4	23.4	27.5	25.5	10.8	16.5	1.2	1.5	−2.1	−2.4	−2.3	−1.4
23	18.1	23.5	27.6	25.0	9.5	16.6	1.0	1.5	−2.2	−2.4	−2.3	−1.2
24	18.0	23.6	27.8	24.7	8.8	16.7	.8	1.5	−2.2	−2.4	−2.3	— .2
25	17.8	23.6	27.9	24.3	8.2	16.9	.5	1.5	−2.2	−2.4	−2.3	— .8
26	17.6	23.7	28.0	23.9	7.8	17.0	.5	1.5	−2.2	−2.4	−2.3	1.6
27	17.5	23.8	28.2	23.5	7.6	17.1	.4	1.4	−2.2	−2.4	−2.3	1.9
28	17.8	24.1	28.3	23.0	7.5	17.1	.0	1.3	−2.2	−2.4	−2.3	2.1
29	17.6	....	28.4	22.8	7.4	17.1	— .2	1.2	−2.2	−2.4	−2.3	2.3
30	17.5	....	28.5	22.5	7.2	17.1	— .4	1.0	−2.2	−2.4	−2.3	2.5
31	17.4	....	28.6	....	6.9	....	— .5	.8	....	−2.4	−2.3	2.5

Rating table for Yazoo River at Yazoo City, Miss., for 1901, 1902, and 1903.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage. height.	Discharge.
Feet.	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*	*Feet.*	*Second-feet.*
—2.0	1,830	1.0	2,620	4.0	3,870	11.5	10,500
—1.8	1,870	1.2	2,690	4.5	4,145	12.0	11,000
—1.6	1,915	1.4	2,760	5.0	4,440	12.5	11,500
—1.4	1,965	1.6	2,830	5.5	4,790	13.0	12,000
—1.2	2,015	1.8	2,900	6.0	5,150	13.5	12,500
—1.0	2,065	2.0	2,970	6.5	5,550	14.0	13,000
— .8	2,115	2.2	3,050	7.0	6,000	14.5	13,500
— .6	2,165	2.4	3,130	7.5	6,500	15.0	14,000
— .4	2,215	2.6	3,210	8.0	7,000	15.5	14,500
— .2	2,265	2.8	3,300	8.5	7,500	16.0	15,000
.0	2,320	3.0	3,390	9.0	8,000	16.5	15,500
.2	2,380	3.2	3,480	9.5	8,500	17.0	16,000
.4	2,440	3.4	3,570	10.0	9,000	17.5	16,500
.6	2,500	3.6	3,660	10.5	9,500	18.0	17,000
.8	2,560	3.8	3,760	11.0	10,000		

Estimated monthly discharge of Yazoo River at Yazoo City, Miss.

Month.	Discharge in second-feet.		
	Maximum.	Minimum.	Mean.
1901.			
January	17,300	10,800	14,829
February	17,200	15,200	16,443
March	15,600	10,800	13,377
April	15,600	11,800	14,043
May	15,600	8,200	13,094
June	8,000	2,350	4,478
July	2,440	1,965	2,181
August	8,100	1,965	3,805
September	8,100	2,620	5,456
October	6,400	1,965	3,327
November	2,500	1,870	2,046
December	10,600	2,115	5,978
The year	17,300	1,965	8,255

Estimated monthly discharge of Yazoo River at Yazoo City, Miss.—Continued.

Month.	Discharge in second-feet.		
	Maximum.	Minimum.	Mean.
1902.			
January	10, 500	3, 390	8, 493
February	15, 600	10, 300	14, 082
March	23, 800	15, 600	17, 448
April	25, 600	22, 800	24, 477
May	24, 300	3, 170	14, 004
June	3, 170	2, 215	2, 651
July	4, 440	2, 265	3, 281
August	4, 260	2, 165	3, 578
September	2, 410	1, 940	2, 104
October	2, 795	1, 810	2, 223
November	4, 090	1, 810	2, 023
December	15, 200	4, 380	9, 065
The year	25, 600	1, 810	8, 619
1903.			
January	18, 400	15, 400	17, 432
February	23, 100	16, 200	20, 807
March	27, 600	23, 100	25, 442
April	27, 700	21, 500	25, 753
May	21, 000	5, 910	14, 075
June	16, 100	5, 550	12, 610
July	15, 900	2, 190	6, 549
August	3, 170	2, 165	2, 593
September	2, 470	1, 790	1, 953
October	1, 790	1, 750	1, 760
November	1, 850	1, 730	1, 767
December	3, 170	1, 750	2, 089
The year	27, 700	1, 730	11, 068

Net horsepower per foot of fall, with a turbine efficiency of 80 per cent, for the minimum monthly discharge of Yazoo River at Yazoo City, Miss.

Month.	1901.			1902.			1903.		
	Minimum discharge.	Minimum net horse-power per foot of fall.	Dura-tion of mini-mum.	Minimum discharge.	Minimum net horse-power per foot of fall.	Dura-tion of mini-mum.	Minimum discharge.	Minimum net horse-power per foot of fall.	Dura-tion of mini-mum.
	Sec.-ft.		*Days.*	*Sec.-ft.*		*Days.*	*Sec.-ft.*		*Days.*
January	10, 800	982	1	3, 390	308	1	15, 400	1, 400	1
February	15, 200	1, 382	1	10, 300	936	1	16, 200	1, 473	1
March	10, 800	982	1	15, 600	1, 418	3	23, 100	2, 100	1
April	11, 800	1, 073	1	22, 800	2, 073	5	21, 500	1, 955	1
May	8, 200	745	1	3, 170	288	1	5, 910	537	1
June	2, 350	214	1	2, 215	201	4	5, 550	505	1
July	1, 965	179	1	2, 265	206	1	2, 190	199	1
August	1, 965	179	4	2, 165	197	1	2, 165	197	2
September	2, 620	238	1	1, 940	176	6	1, 790	163	8
October	1, 965	179	1	1, 810	164	2	1, 750	159	20
November	1, 870	170	3	1, 810	164	24	1, 730	157	11
December	2, 115	192	1	4, 380	398	1	1, 750	159	1

MISCELLANEOUS MEASUREMENTS.

The following miscellaneous measurements have been made:

Miscellaneous measurements in Mississippi.

Date.	Stream.	Locality.	Discharge.
1901.			*Second-feet.*
Aug. 15..	Sakatonchee River	Mhoon Valley	559
Aug. 16..	Tombigbee River	Waverly	6, 726
Mar. 7...	Yalobusha River	Grenada	1, 336
Apr. 15..	Big Black River	Goodman	614
1903.			
July 14 ..	Big Black River	Morey	491
July 15 ..	.....do	Way	1, 397

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Hall, Benjamin M[ortimer] 1853-

. . . Water powers of Alabama, with an appendix on stream measurements in Mississippi; by Benjamin M. Hall. Washington, Gov't print. off., 1904.

253 p., 1 l. illus., 9 pl. (incl. map) 23^{cm}. (U. S. Geological survey. Water-supply and irrigation paper no. 107)

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