Wm. A. Lamb.

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

WATER-SUPPLY PAPER 322

SURFACE WATER SUPPLY OF THE UNITED STATES

1912

PART II. SOUTH ATLANTIC COAST AND EASTERN GULF OF MEXICO BASINS

BY

W. E. HALL AND C. H. PIERCE

WASHINGTON
GOVERNMENT PRINTING OFFICE
1914

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

WATER-SUPPLY PAPER 322

SURFACE WATER SUPPLY OF THE UNITED STATES

1912

PART II. SOUTH ATLANTIC COAST AND EASTERN GULF OF MEXICO BASINS

BY

W. E. HALL AND C. H. PIERCE

WASHINGTON
GOVERNMENT PRINTING OFFICE
1914

CONTENTS.

ILLUSTRATIONS.

SURFACE WATER SUPPLY OF THE SOUTH ATLANTIC COAST AND EASTERN GULF OF MEXICO BASINS, 1912.

By W. E. HALL and C. H. PIERCE.

AUTHORIZATION AND SCOPE OF WORK.

This volume is one of a series of twelve reports presenting results of measurements of flow made on streams in the United States during the calendar year 1912.

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

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

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

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

Annual appropriations for the fiscal year ending June 30—

1895	$12,500
1896	20,000
1897 to 1900, inclusive	50,000
1901 to 1902, inclusive	100,000
1903 to 1906, inclusive	200,000
1907	150,000
1908 to 1910, inclusive	100,000
1911 to 1913, inclusive	150,000

In the execution of the work many private and State organizations have cooperated, either by furnishing data or by assisting in collecting data. Acknowledgments for cooperation of the first kind are made in connection with the description of each station affected, and of the second kind on page 14.

Measurements of stream flow have been made at about 2,000 points in the United States and also at many points in small areas in Seward

Peninsula and the Yukon-Tanana region, Alaska, and in the Hawaiian Islands. During 1912 gaging stations were maintained by the Survey and the cooperating organizations at about 1,500 points, and many discharge measurements were made at other points. In connection with this work data were also collected in regard to precipitation, evaporation, storage reservoirs, river profiles, and water power in many sections of the country and will be made available in the regular water supply papers from time to time.

PUBLICATIONS.

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

Prior to 1902 gage heights and discharge measurements were published in water-supply papers or bulletins and estimates of monthly discharge in annual reports; since 1902 both classes of data have been published in water-supply papers and they are now being published in twelve parts, as shown in the following table:

Papers on surface water supply of the United States, 1912.

Part.[a]	No.	Title.
I	321	North Atlantic coast basins.
II	322	South Atlantic coast and eastern Gulf of Mexico basins.
III	323	Ohio River basin.
IV	324	St. Lawrence River basin.
V	325	Upper Mississippi River and Hudson Bay basins.
VI	326	Missouri River basin.
VII	327	Lower Mississippi River basin.
VIII	328	Western Gulf of Mexico basins.
IX	329	Colorado River basin.
X	330	Great Basin.
XI	331	Pacific coast basins in California.
XII	332	North Pacific coast basins.

[a] For the purpose of uniformity in the presentation of reports, a general plan has been agreed upon by the United States Reclamation Service, the United States Forest Service, the United States Weather Bureau, and the United States Geological Survey, according to which the area of the United States has has been divided into 12 parts, whose boundaries coincide with natural drainage lines indicated by the parts of the report.

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

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

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

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

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

The table which follows gives, by years and drainage basins, the numbers of the papers on surface-water supply published from 1899 to 1911. The data for any particular station will be found in the reports covering the years during which the station was maintained. For example, data for any station in the area covered by Part I are published in Water-Supply Papers 97, 124, 165, 201, 241, 261, 281, 301, and 321, which contain records for the New England streams from 1903 to 1912. The year covered by the report is indicated at the head of the column in which the paper is listed.

Numbers of water-supply papers containing results of stream measurements, 1899–1912.

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

[a] Rating tables and index to Water-Supply Papers 35–39 contained in Water-Supply Paper 39. Estimates for 1899 in Twenty-first Annual Report, part 4.
[b] Rating tables and index to Water-Supply Papers 47–52 and data on precipitation, wells, and irrigation in California and Utah contained in Water-Supply Paper 52. Estimates for 1900 in Twenty-second Annual Report, part 4.
[c] Wissahickon and Schuylkill rivers to James River.
[d] New England rivers only.
[e] Hudson River to Delaware River, inclusive.
[f] Susquehanna River to Yadkin River, inclusive.
[g] James River only.
[h] Scioto River.
[i] Lake Ontario and tributaries to St. Lawrence River proper.
[j] Tributaries of Mississippi from east.
[k] Gallatin River.
[l] Loup and Platte rivers near Columbus, Nebr., and all tributaries below junction with Platte.
[m] Platte and Kansas rivers.
[n] Green and Gunnison rivers and Grand River above junction with Gunnison.
[o] Below junction with Gila.
[p] Mohave River only
[q] Great Basin in California, except Truckee and Carson drainage basins.
[r] Kings and Kern rivers and south Pacific coast drainage basins.
[s] Rogue, Umpqua, and Siletz rivers only.

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

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

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

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

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

Albany, N. Y., room 18, Federal Building.
Atlanta, Ga., Post Office Building.
St. Paul, Minn., Old Capitol Building.
Helena, Mont., Montana National Bank Building.
Denver, Colo., 302 Chamber of Commerce Building.
Salt Lake City, Utah, 421 Federal Building.
Boise, Idaho, 615 Idaho Building.
Portland, Oreg., 416 Couch Building.
Tacoma, Wash., Federal Building.
San Francisco, Cal., 505 Customhouse.
Los Angeles, Cal., Federal Building.
Santa Fe, N. Mex., Capitol Building.
Honolulu, Hawaii, Kapiolani Building.

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

DEFINITION OF TERMS.

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

"Second-foot" is an abbreviation for cubic foot per second and is the unit for the rate of discharge of water flowing in a stream 1 foot wide, 1 foot deep, at a rate of 1 foot a second. It is generally used as a fundamental unit from which others are computed by the use of the factors given in the following table of equivalents.

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

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

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

CONVENIENT EQUIVALENTS.

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

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

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

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

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

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

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

1 second-foot equals 40 California miner's inches (law of March 23, 1901).

1 second-foot equals 38.4 Colorado miner's inches.

1 second-foot equals 40 Arizona miner's inches.

1 second-foot equals 7.48 United States gallons per second; equals 448.8 gallons per minute; equals 646,317 gallons for one day.

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

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

EXPLANATION OF DATA.

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

In addition to statements regarding the location and installation of current-meter stations, the descriptions give information in regard to any conditions which may affect the constancy of the relation of gage height to discharge, covering such points as ice, logging, shifting

channels, and backwater; also information regarding diversions which decrease the total flow at the measuring section. Statements are also made regarding the accuracy and reliability of the data.

The table of daily gage heights records the daily fluctuations of the surface of the river as found from the mean of the gage readings taken each day, usually in the morning and in the evening. The gage height given in the table represents the elevation of the surface of the water above the zero of the gage. All gage heights affected by the presence of ice in the streams or by backwater from obstructions are published as recorded, with suitable footnotes. The rating table is not applicable for such periods unless the proper corrections to the gage heights are known and applied. Attention is called to the fact that the zero of the gage is placed at an arbitrary datum and has no relation to zero flow or the bottom of the river. In general the zero is located somewhat below the lowest known flow, so that negative readings shall not occur.

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

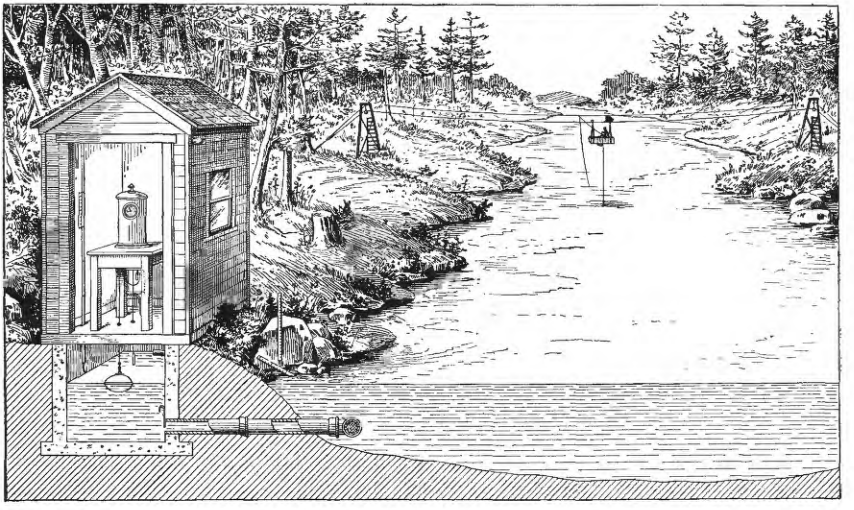
The rating table gives, either directly or by interpolation, the discharge in second-feet corresponding to every stage of the river recorded during the period for which it is applicable. It is not published in this report, but can be determined from the tables of daily gage heights and daily discharge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

The table of daily discharges gives the discharges in second-feet corresponding to the observed gage heights as determined from the rating tables.

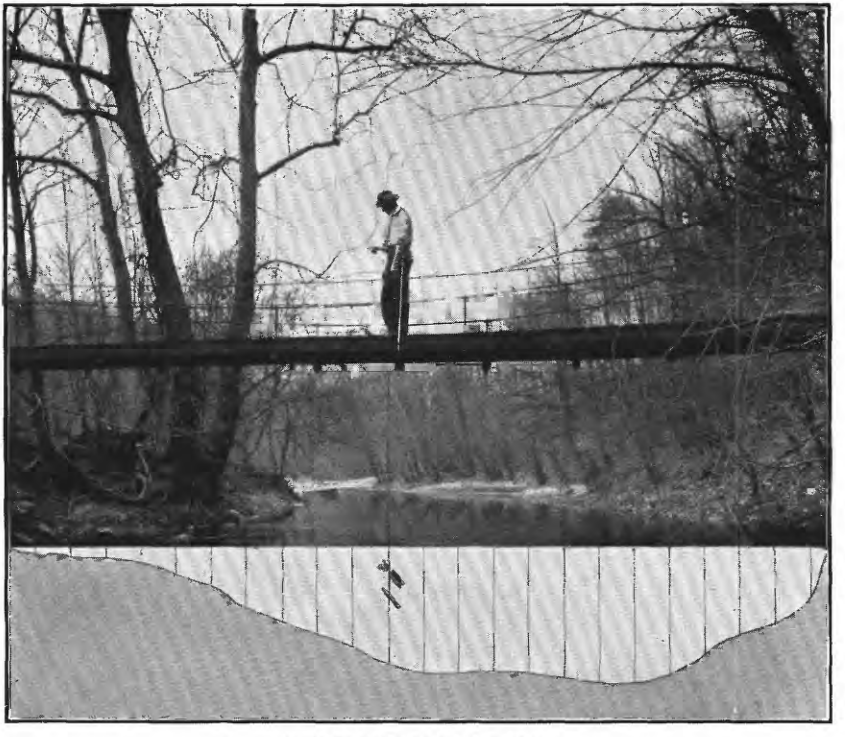
In the table of monthly discharge the column headed "Maximum" gives the mean flow, as determined from the rating table, for the day when the mean gage height was highest. As the gage height is the mean for the day, it does not indicate correctly the stage when the water surface was at crest height and the corresponding discharge was consequently larger than given in the maximum column. Likewise in the column at "Minimum" the quantity given is the mean flow for the day when the mean gage height was lowest. The column headed "Mean" is the average flow in cubic feet for each second during the month. On this the computations for the remaining columns, which are defined on pages 9 and 10, are based.

The base data presented in this report, unless otherwise stated in description of station, have been collected by the methods commonly used at current-meter gaging stations and described in standard text books.

Plate I shows typical gaging stations. Plate II shows current meters used in the work.

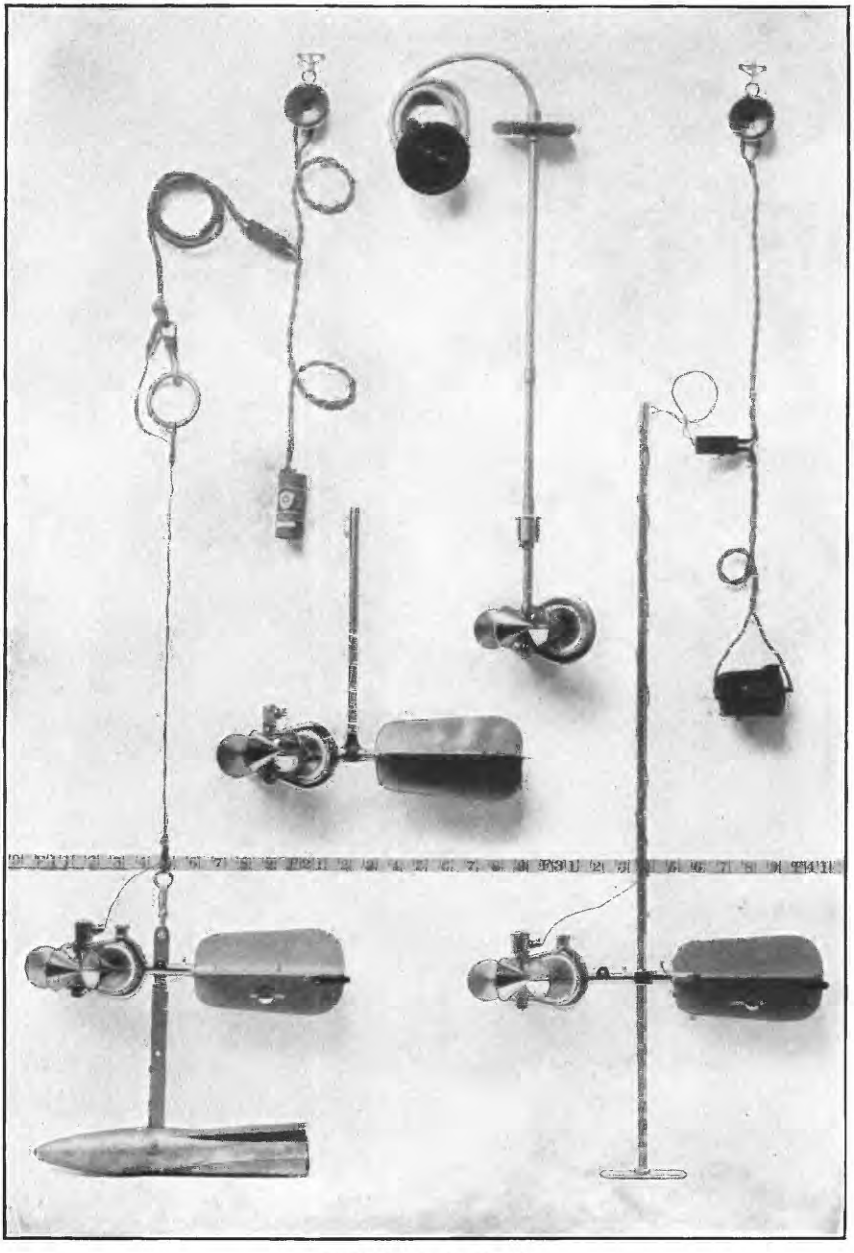


A. CABLE STATION WITH AUTOMATIC GAGE.



B. FOR BRIDGE MEASUREMENT.

TYPICAL GAGING STATIONS.



PRICE CURRENT METERS.

ACCURACY AND RELIABILITY OF FIELD DATA AND COMPARATIVE RESULTS.

The accuracy of stream-flow data depends primarily on the natural conditions at the gaging station and on the methods and care with which the data are collected. Errors of the first group depend on the degree of permanency of channel and of permanency of the relation between discharge and stage.

Errors of the second class are due, first, to errors in observation of stage; second, to errors in measurements of flow; and, third, to errors due to misinterpretation of stage and flow data.

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

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

Even though the monthly means for any station may represent with a high degree of accuracy the quantity of water flowing past the gage, the figures showing discharge per square mile and depth of runoff in inches may be subject to gross errors which result from including in the measured drainage area large noncontributing districts or omitting estimates of water diverted for irrigation or other use, and they should, therefore, be considered as only approximate, particularly for periods of irrigation or of low water. For these errors it is as a rule not feasible to make adequate correction.

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

the variation in flow by which the period of deficiency may be determined.

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

COOPERATION.

Special acknowledgments are due for financial assistance rendered by the following individuals and corporations: Virginia-Carolina Power Co., William C. Whitner, president; Southern Aluminum Co.; Northern Contracting Co.; Central Georgia Power Co.; Columbus Power Co.; Mr. B. H. Hardaway; Alabama Geological Survey; North Carolina Electric & Power Co.; and North Georgia Electric Co.

DIVISION OF WORK.

The field data in the James and Roanoke drainage basins were collected under the direction of R. H. Bolster, hydraulic engineer, by E. A. Porter, H. J. Jackson, and C. L. Batchelder.

The field data for all drainage basins south of Roanoke River were collected by M. R. Hall and W. E. Hall, district engineers.

The ratings, special estimates, and studies of the completed data were made by W. E. Hall and C. H. Pierce. The computations and preparation of the data for publication were made by C. H. Pierce, C. L. Batchelder, G. A. Wallace, and M. I. Walters.

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

GAGING STATIONS.

The following list comprises the gaging stations regularly maintained in south Atlantic coast and eastern Gulf of Mexico drainage basins by the United States Geological Survey and cooperative parties. Data for these stations have appeared in the published reports as shown in tables on pages 7 and 8. The stations are arranged by river basins and appear in downstream order, tributaries of main streams being indicated by indention.

South Atlantic coast drainage basins:
- James River basin:
  - Jackson River at Covington, Va., 1907–8.
  - James River at Buchanan, Va., 1895–1912.
  - James River at Holcomb Rock, Va., 1900–1912.
  - James River at Cartersville, Va., 1899–1912.
    - Cowpasture River near Clifton Forge, Va., 1907–8.
    - North Fork of James River near Glasgow, Va., 1895–1905.
    - Appomattox River at Mattoax, Va., 1900–1905.

South Atlantic coast drainage basins—Continued.
Roanoke River basin:
Roanoke River at Roanoke, Va., 1896–1912.
Roanoke River at Randolph, Va., 1900–1906.
Roanoke River above the Dan at Clarksville, Va., 1895–1898.
Roanoke River at Old Gaston, N. C., 1911–12.
Roanoke River at Weldon, N. C., 1912.
Roanoke River at Neal, N. C., 1896–1903.
Tinker Creek at Roanoke, Va., 1907–8.
Back Creek near Roanoke, Va., 1907–8.
Dan River at Madison, N. C., 1903–1908.
Dan River at South Boston, Va., 1900–1907.
Dan River at Clarksville, Va., 1895–1898.
Banister River at Houston, Va., 1904–5.
Tar River basin:
Tar River near Tarboro, N. C., 1896–1900.
Neuse River basin:
Neuse River near Selma, N. C., 1896–1900.
Cape Fear River basin:
Haw River near Moncure, N. C., 1898–99.
Cape Fear River near Fayetteville, N. C., 1899–1903.
Deep Creek near Cumnock, N. C., 1900–1902.
Deep Creek near Moncure, N. C., 1898–99.
Rockfish Creek near Brunt, N. C., 1902–3.
Yadkin River basin:
Yadkin River at North Wilkesboro, N. C., 1903–1909.
Yadkin River near Siloam, N. C., 1900–1901.
Yadkin River near Salisbury, N. C., 1895–1909; 1911–12.
Yadkin River near Norwood, N. C., 1896–1899.
Yadkin River near Peedee, N. C., 1906–1912.
Peedee River at Cheraw, S. C., 1909–1912.
Santee River basin:
Catawba River at Old Fort, N. C., 1907.
Catawba River near Morganton, N. C., 1900–1909.
Catawba River near Catawba, N. C., 1896–1905.
Catawba River near Rockhill, S. C., 1895–1903.
Wateree River near Camden, S. C., 1904–1910.
Mill Creek at Old Fort, N. C., 1907.
Linville River at Fonta Flora, N. C., 1907–8.
Linville River near Bridgewater, N. C., 1900.
Johns River at Collettsville, N. C., 1907.
Johns River near Morganton, N. C., 1900–1901.
Congaree River basin:
Broad River (of the Carolinas) at Uree, N. C., 1907–1909.
Broad River (of the Carolinas) at Dellinger, S. C., 1900–1901.
Broad River (of the Carolinas) near Gaffney, S. C., 1896–1899.
Broad River (of the Carolinas) at Alston, S. C., 1896–1907.
Green River near Saluda, N. C., 1907–1909.
Second Broad River near Logan's store, N. C., 1907–8.
Saluda River near Waterloo, S. C., 1896–1905.
Saluda River near Ninety Six, S. C., 1905.
Savannah River basin:
Chattooga River near Clayton, Ga., 1907–8.
Tugaloo River near Toccoa, Ga., 1907–8.
Tugaloo River near Madison, S. C., 1898–1910.

South Atlantic coast drainage basins—Continued.
Savannah River basin—Continued.
Savannah River near Calhoun Falls, S. C., 1896–1903.
Savannah River at Woodlawn, S. C., 1905–1910.
Savannah River at Augusta, Ga., 1899–1906.
Stekoa Creek near Clayton, Ga., 1907–8.
Tallulah River at Tallulah Falls, Ga., 1900–1912.
Tallulah River at Mathis, Ga., 1912.
Chauga River near Madison, S. C., 1907.
Seneca River near Clemson College, S. C., 1903–1905.
Broad River (of Georgia) near Carlton, Ga., 1897–1912.
Ogeechee River basin:
Ogeechee River near Millen, Ga., 1903.
Williamsons Swamp Creek near Davisboro, Ga., 1903–4.
Cannoochee River near Groveland, Ga., 1903–1907.
Altamaha River basin:
South River near Lithonia, Ga., 1903–4.
Ocmulgee River near Jackson, Ga., 1906–1912.
Ocmulgee River near Flovilla, Ga., 1901–1905.
Ocmulgee River at Macon, Ga., 1893–1912.
Yellow River at Almon, Ga., 1897–1901.
Alcovy River near Covington, Ga., 1901–1904.
Alcovy River near Stewart, Ga., 1905–6.
Towaliga River near Juliette, Ga., 1899–1901.
Oconee River at Barnett Shoals, near Watkinsville, Ga., 1901–2.
Oconee River near Greensboro, Ga., 1903–1912.
Oconee River at Carey, Ga., 1896–1898.
Oconee River at Fraleys Ferry, near Milledgeville, Ga., 1905–1912.
Oconee River at Milledgeville, Ga., 1893–1905.
Oconee River at Dublin, Ga., 1897–1912.
Middle Oconee River near Athens, Ga., 1901–2.
Apalachee River near Buckhead, Ga., 1901–1908.
Ohoopee River near Reidsville, Ga., 1903–1907.
St. John River basin:
Silver Springs River near Silver Springs, Fla., 1906.
Eastern Gulf of Mexico drainage basins:
Suwanee River basin:
Suwanee River near White Springs, Fla., 1906–1908.
Apalachicola River basin:
Chattahoochee River near Aerial, Ga., 1907–1909.
Chattahoochee River near Leaf, Ga., 1907.
Chattahoochee River near Gainesville, Ga., 1901–1903.
Chattahoochee River near Buford, Ga., 1901.
Chattahoochee River near Norcross, Ga., 1902–1912.
Chattahoochee River near Oakdale, Ga., 1895–1904.
Chattahoochee River at West Point, Ga., 1896–1912.
Chattahoochee River at Columbus, Ga., 1912.
Chattahoochee River at Alaga, Ala., 1908–1912.
Soque River near Demorest, Ga., 1904–1909.
Sweetwater Creek near Austell, Ga., 1904–5.
Flint River near Woodbury, Ga., 1900–1912.
Flint River near Culloden, Ga., 1911–12.
Flint River near Mussela, Ga., 1907.
Flint River near Montezuma, Ga., 1905–1912.
Flint River at Albany, Ga., 1902–1912.

Eastern Gulf of Mexico drainage basins—Continued.
Apalachicola River basin—Continued.
Chattahoochee River at Alaga, Ala., 1908–1912—Continued.
Flint River at Bainbridge, Ga., 1908–1912.
Kinchafoonee Creek near Leesburg, Ga., 1905–1909.
Kinchafoonee Creek near Albany, Ga., 1903.
Muckalee Creek near Albany, Ga., 1903.
Ichawaynochaway Creek at Milford, Ga., 1905–1907.
Chipola River near Altha, Fla., 1912.
Choctawhatchee River basin:
Choctawhatchee River near Newton, Ala., 1906–1908; 1911–12.
Choctawhatchee River near Geneva, Ala., 1904.
Double Bridge Creek at Geneva, Ala., 1904.
Pea River at Pera, Ala., 1904–1912.
Pea River at Elba, Ala., 1906.
Escambia River basin:
Conecuh River at Beck, Ala., 1904–1912.
Mobile River basin:
Cartecay River near Cartecay, Ga., 1904–5, 1907.
Coosawattee River at Carters, Ga., 1896–1908.
Oostanaula River at Resaca, Ga., 1896–1912.
Coosa River at Rome, Ga., 1897–1903.
Coosa River at Lock No. 4, above Riverside, Ala., 1890–1901.
Coosa River at Riverside, Ala., 1896–1912.
Coosa River at Lock No. 5, near Childersburg, Ala., 1892–1897.
Coosa River near Wetumpka, Ala., 1896–1898.
Alabama River at Montgomery, Ala., 1899–1903.
Alabama River at Selma, Ala., 1900–1912.
Ellijay River at Ellijay, Ga., 1907.
Conasauga River at Beaverdale, Ga., 1907–8.
Etowah River near Ball Ground, Ga., 1907–1912.
Etowah River at Canton, Ga., 1892–1905.
Etowah River near Rome, Ga., 1904–1912.
Etowah River at Rome, Ga., 1903.
Amicalola River near Potts Mountain, Ga., 1907–8; 1910–1912.
Choccolocco Creek at Jenifer, Ala., 1903–1908.
Talladega Creek at Nottingham, Ala., 1900–1904.
Tallapoosa River at Sturdevant, Ala., 1900–1912.
Tallapoosa River near Susanna, Ala., 1900–1901.
Tallapoosa River at Milstead, Ala., 1897–1903.
Hillabee Creek near Alexander City, Ala., 1900–1903.
Big Sandy Creek near Dadeville, Ala., 1900–1901.
Cahaba River at Centerville, Ala., 1901–1908.
Tombigbee River at Columbus, Miss., 1900–1912.
Tombigbee River at Epes, Ala., 1900–1912.
Black Warrior River near Cordova, Ala., 1900–1912.
Black Warrior River near Coal, Ala., 1908–1910.
Black Warrior River at Tuscaloosa, Ala., 1889–1905.
Clear Creek near Elk, Ala., 1904–5.
Locust Fork of Black Warrior River at Palos, Ala., 1901–1905.
Village Creek near Mulga, Ala., 1909.
Camp Branch near Ensley, Ala., 1908–1910.
Venison Branch near Mulga, Ala., 1908–9.
Pearl River basin:
Pearl River at Jackson, Miss., 1901–1912.
Bogue Chitto at Warnerton, La., 1906.

SOUTH ATLANTIC COAST DRAINAGE BASINS.

JAMES RIVER BASIN.

JAMES RIVER AT BUCHANAN, VA.

Location.—At the highway bridge near the Chesapeake & Ohio Railway depot at Buchanan, Va.

Records available.—August 18, 1895, to December 31, 1912.

Drainage area.—2,060 square miles.

Gage.—A chain gage, attached to the highway bridge, was installed November 21, 1903, to replace the original wire gage read from August 18, 1895, to that date. The datum of the gage was lowered 2 feet April 3, 1897, to avoid negative readings; subsequently the datum of the gage has remained constant.

Channel.—The bed of the river under the bridge is composed of rock overlain with a deep deposit of mud. There is a rock control several hundred feet below the station.

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

Winter flow.—Occasionally affected by ice for short periods.

Accuracy.—Rating curve well developed. Published data considered good.

Cooperation.—Previous to July 15, 1906, the observations of daily gage height were made by employees of the Geological Survey; since that time gage height records have been furnished by the United States Weather Bureau.

The following discharge measurement was made by Jackson and Batchelder. November 21, 1912, gage height, 2.21 feet; discharge, 560 second-feet.

Daily gage height, in feet, of James River at Buchanan, Va., for 1912.

[D. D. Booze, observer.]

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	4.7	5.0	4.8	6.7	3.8	3.0	3.6	2.1	1.9	2.2	2.0	2.0
2	5.0	4.5	4.5	6.7	3.7	2.9	3.8	2.1	1.9	2.1	2.0	2.0
3	4.8	4.2	4.3	8.0	3.6	2.9	3.4	2.1	1.9	2.1	2.0	2.0
4	4.6	4.0	4.0	6.9	3.4	2.8	3.0	2.1	1.8	2.0	2.0	2.0
5	4.2	3.8	3.9	6.2	3.3	2.7	2.9	2.1	1.8	2.0	2.0	2.0
6	3.6	3.7	3.8	5.4	3.5	2.7	3.0	2.0	1.8	2.0	2.0	2.2
7	3.2	3.6	3.7	5.1	4.2	2.6	3.0	2.0	1.8	2.0	2.6	2.4
8	3.0	3.4	3.6	4.8	4.0	2.6	2.9	2.0	1.8	2.0	5.3	2.5
9	3.0	3.3	4.3	4.5	3.8	2.5	2.8	2.0	1.8	1.9	4.5	2.4
10	3.0	3.2	5.2	4.2	3.6	2.5	2.7	2.0	1.8	1.9	3.7	2.3
11	3.4	3.1	4.9	4.0	3.4	2.4	2.7	2.0	1.9	1.9	3.1	2.2
12	3.3	3.0	4.6	3.9	8.4	2.4	2.9	2.0	1.9	1.9	2.9	2.2
13	3.2	2.9	6.9	3.7	10.6	2.4	2.8	2.0	1.9	1.9	2.7	2.2
14	3.1	2.8	7.6	3.6	8.0	2.3	2.7	2.0	1.8	1.9	2.6	2.2
15	3.0	2.8	7.3	3.5	6.0	2.3	2.7	1.9	1.8	2.0	2.5	2.1
16	3.0	2.7	14.4	3.5	7.3	2.3	2.6	1.9	1.8	2.0	2.4	2.1
17	3.0	2.7	9.0	3.4	10.8	2.3	2.6	1.9	1.8	2.0	2.3	2.1
18	2.9	2.7	6.7	3.4	7.6	2.3	2.5	1.9	1.8	2.0	2.3	2.1
19	3.0	2.9	5.8	3.4	6.0	2.3	2.4	1.9	2.1	2.0	2.2	2.1
20	3.3	2.9	5.3	4.0	5.6	2.5	2.4	1.9	2.0	2.0	2.2	2.1
21	3.8	3.3	5.1	3.9	5.2	2.6	2.3	1.9	2.0	2.0	2.2	2.0
22	4.2	8.2	5.3	3.7	4.8	2.5	2.2	1.9	1.9	2.0	2.2	2.0
23	4.0	8.0	5.1	3.7	4.4	2.5	2.2	1.9	2.1	2.0	2.2	2.0
24	3.9	5.6	5.9	3.5	4.1	2.5	2.2	1.9	2.4	2.0	2.2	2.0
25	3.9	5.8	7.0	3.4	3.9	2.5	2.2	1.9	2.9	2.0	2.2	2.0
26	3.9	5.8	7.8	3.4	3.7	2.7	2.2	1.9	3.4	2.0	2.1	2.0
27	3.8	6.8	7.0	3.4	3.5	2.9	2.6	1.9	2.9	2.0	2.1	2.0
28	3.6	7.2	6.0	4.1	3.3	3.6	2.4	1.9	2.6	2.0	2.1	2.0
29	3.5	5.7	9.6	4.0	3.2	3.4	2.2	1.9	2.4	2.0	2.1	2.0
30	4.1	.....	16.2	3.9	3.1	3.3	2.2	1.9	2.4	2.0	2.0	2.9
31	5.8	.....	8.4	.....	3.0	.....	2.2	1.9	.....	2.0	.....	6.1

Daily discharge, in second-feet, of James River at Buchanan, Va., for 1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	4,450	5,100	4,660	9,300	2,680	1,480	2,340	520	385	600	450	450
2	5,100	4,030	4,030	9,300	2,500	1,360	2,680	520	385	520	450	450
3	4,660	3,430	3,620	13,100	2,340	1,360	2,030	520	385	520	450	450
4	4,240	3,040	3,040	9,850	2,030	1,240	1,480	520	325	450	450	450
5	3,430	2,680	2,860	7,970	1,880	1,120	1,360	520	325	450	450	450
6	2,340	2,500	2,680	6,020	2,180	1,120	1,480	450	325	450	450	600
7	1,740	2,340	2,500	5,330	3,430	1,000	1,480	450	325	450	1,000	790
8	1,480	2,030	2,340	4,660	3,040	1,000	1,360	450	325	450	5,780	890
9	1,480	1,880	3,620	4,030	2,680	890	1,240	450	325	385	4,030	790
10	1,480	1,740	5,560	3,430	2,340	890	1,120	450	325	385	2,500	690
11	2,030	1,610	4,880	3,040	2,030	790	1,120	450	385	385	1,610	600
12	1,880	1,480	4,240	2,860	14,400	790	1,360	450	385	385	1,360	600
13	1,740	1,360	9,850	2,500	22,700	790	1,240	450	385	385	1,120	600
14	1,610	1,240	11,900	2,340	13,100	690	1,120	450	325	385	1,000	600
15	1,480	1,240	11,000	2,180	7,460	690	1,120	385	325	450	890	520
16	1,480	1,120	40,700	2,180	11,000	690	1,000	385	325	450	790	520
17	1,480	1,120	16,500	2,030	23,600	690	1,000	385	325	450	690	520
18	1,360	1,120	9,300	2,030	11,900	690	890	385	325	450	690	520
19	1,480	1,360	6,960	2,030	7,460	690	790	385	520	450	600	520
20	1,880	1,360	5,780	3,040	6,480	890	790	385	450	450	600	520
21	2,680	1,880	5,330	2,860	5,560	1,000	690	385	450	450	600	450
22	3,430	13,800	5,780	2,500	4,660	890	600	385	385	450	600	450
23	3,040	13,100	5,330	2,500	3,820	890	600	385	520	450	600	450
24	2,860	6,480	7,210	2,180	3,240	890	600	385	790	450	600	450
25	2,860	6,960	10,100	2,030	2,860	890	600	385	1,360	450	600	450
26	2,860	6,960	12,500	2,030	2,500	1,120	600	385	2,030	450	520	450
27	2,680	9,580	10,100	2,030	2,180	1,360	1,000	385	1,360	450	520	450
28	2,340	10,700	7,460	3,240	1,880	2,340	790	385	1,000	450	520	450
29	2,180	6,720	18,700	3,040	1,740	2,030	600	385	790	450	520	450
30	3,240	.....	50,300	2,860	1,610	1,880	600	385	790	450	450	1,360
31	6,960	.....	14,400	.....	1,480	.....	600	385	.....	450	.....	7,720

NOTE.—Daily discharge computed from a rating curve fairly well defined below 20,000 second-feet.

Monthly discharge of James River at Buchanan, Va., for 1912.

[Drainage area, 2,060 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
January	6,960	1,360	2,640	1.28	1.48	A.
February	13,800	1,120	4,070	1.98	2.14	A.
March	50,300	2,340	9,780	4.75	5.48	B.
April	13,100	2,030	4,080	1.98	2.21	A.
May	23,600	1,480	5,700	2.77	3.19	B.
June	2,340	690	1,070	.519	.58	A.
July	2,680	600	1,110	.539	.62	A.
August	520	385	426	.207	.24	A.
September	2,030	325	555	.269	.30	A.
October	600	385	447	.217	.25	A.
November	5,780	450	1,030	.500	.56	A.
December	7,720	450	795	.368	.44	A.
The year	50,300	325	2,640	1.28	17.49	

JAMES RIVER AT HOLCOMB ROCK, VA.

Location.—At the works of the Wilson Aluminum Co., at Holcomb Rock, Va.

Records available.—Gage heights January 1, 1900, to December 31, 1912.

Drainage area.—Not measured.

Gage.—A copper float inclosed in a stilling box, with a vertical rod extending up through the power-house floor.

Discharge measurements.—No discharge measurements have been made at this station.

Cooperation.—Gage heights have been furnished the Geological Survey by George O. Seward, general manager of the Wilson Aluminum Co.

Daily gage height, in feet, of James River at Holcomb Rock, Va., for 1912.

[J. H. Webb, observer.]

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	4.7	4.4	4.5	7.05	2.65	2.05	2.25	1.35	0.85	1.35	.85	1.05
2	5.0	3.5	3.9	6.55	2.6	1.9	2.15	1.3	.85	1.3	1.0	1.3
3	4.15	3.1	3.4	8.2	2.5	2.05	2.1	1.3	.9	1.0	.85	1.2
4	3.6	2.35	3.2	7.0	2.5	2.0	1.8	.85	.85	1.2	.9	1.15
5	2.35	2.4	3.0	5.65	2.1	1.9	1.85	1.05	.8	1.1	.8	1.25
6	2.6	2.7	2.75	4.85	2.35	1.8	1.95	1.0	.85	.8	.80	1.4
7	2.65	2.45	2.65	4.5	2.3	1.8	1.95	1.0	.75	1.1	1.9	1.35
8	2.65	2.15	2.55	4.3	2.8	1.65	1.8	.85	.9	.95	4.45	1.15
9	2.35	2.1	3.15	3.8	2.4	1.45	1.7	1.0	1.05	.9	3.75	1.55
10	2.15	2.1	4.1	3.55	2.7	1.45	1.5	1.0	1.0	.95	3.05	1.5
11	2.25	1.7	4.1	3.35	2.4	1.4	1.5	.9	1.0	1.0	2.35	1.4
12	2.2	1.85	4.05	3.2	12.85	1.4	1.5	1.0	.95	.95	2.05	1.25
13	1.95	1.8	7.25	2.95	12.05	1.45	1.85	.80	.95	.65	1.9	1.35
14	1.55	1.85	7.75	2.75	8.0	1.4	1.4	1.15	.55	1.0	1.8	1.2
15	1.05	1.75	8.95	2.8	6.1	1.3	2.3	1.1	.85	.75	1.7	.85
16	2.15	1.7	14.95	2.75	7.1	1.2	1.65	.95	.8	.85	1.7	1.25
17	1.85	1.65	10.5	3.45	11.1	1.35	1.55	.8	.0	1.1	1.25	1.3
18	1.8	1.6	7.3	4.0	7.95	1.45	1.45	.8	.9	.9	1.5	1.15
19	1.9	1.7	5.95	3.6	5.95	1.4	1.6	.7	1.5	1.05	1.25	1.3
20	2.6	1.85	5.2	3.55	4.95	1.5	1.6	.95	1.4	.65	1.15	1.1
21	3.3	2.25	4.75	2.9	4.2	1.5	1.4	1.0	1.0	.85	1.25	1.25
22	3.2	7.55	4.65	2.9	3.7	1.4	1.4	1.0	.75	.85	1.3	1.0
23	2.95	8.65	4.4	2.8	3.35	1.35	1.4	.75	1.75	1.0	1.25	1.15
24	2.75	5.4	4.9	2.7	3.0	1.55	1.35	.9	3.9	1.05	1.05	1.15
25	2.6	4.6	9.15	2.55	2.8	1.45	1.4	.85	2.85	1.0	1.35	1.1
26	2.6	4.3	9.85	2.35	2.5	1.8	1.35	.85	2.45	.95	1.3	1.2
27	2.5	7.5	7.1	2.4	2.55	1.8	1.4	1.0	2.1	.8	1.2	1.15
28	2.4	7.65	5.8	2.3	2.45	2.5	1.4	.8	1.8	.9	1.2	1.15
29	2.4	5.65	11.8	2.85	2.35	2.4	1.35	.85	1.35	.95	1.15	1.1
30	2.85	.....	15.45	2.8	2.3	2.0	1.4	.85	1.6	1.0	1.0	1.25
31	4.95	.....	9.1	.....	2.15	.....	1.15	.9	.....	.8	.....	1.15

JAMES RIVER AT CARTERSVILLE, VA.

Location.—At the highway bridge crossing James River between Pemberton and Cartersville, about 50 miles above Richmond.

Records available.—January 1, 1899, to December 31, 1912.

Drainage area.—6,230 square miles.

Gage.—A standard chain gage was attached to the highway bridge July 24, 1903, to replace the wire gage which had been used from January 1, 1899, to that date. The datum of the gage has remained the same since the station was established.

Channel.—The left bank overflows for several hundred feet at a stage of about 20 feet. The right bank does not overflow.

Discharge measurements.—Made from downstream side of six-span highway bridge.

Winter flow.—Occasionally affected by ice for short periods during severe winters.

Accuracy.—Rating curve well developed for ordinary stages. Above the overflow point the discharge is uncertain.

Discharge measurements of James River at Cartersville, Va., in 1912.

Date.	Hydrographer.	Gage height.	Discharge.
		Feet.	*Sec.-ft.*
Mar. 18	E. A. Porter	12.8	35,100
Nov. 20	Jackson and Batchelder	1.84	3,010

Daily gage height, in feet, of James River at Cartersville, Va., for 1912.

[B. W. Palmore, observer.]

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	6.1	5.2	7.7	10.1	3.9	2.9	3.1	1.1	0.62	2.5	1.1	1.3
2	5.8	5.4	6.0	9.0	3.8	2.8	3.0	1.1	.61	1.9	1.05	1.35
3	6.1	4.3	5.3	8.6	3.4	2.5	2.4	1.15	.57	1.7	1.1	1.3
4	5.2	4.1	4.6	9.4	3.3	2.5	2.5	1.2	.56	1.5	1.1	1.5
5	4.5	3.6	4.2	8.2	3.2	2.4	2.4	1.2	.58	1.45	1.1	1.7
6	3.7	3.4	4.1	7.2	3.2	2.2	2.3	1.05	.61	1.4	1.05	1.9
7	3.6	3.3	4.2	6.7	3.5	2.6	2.1	1.0	.60	1.3	1.2	2.0
8	3.2	3.2	4.6	6.0	3.9	2.7	1.9	1.0	.68	1.15	10.6	1.9
9	2.8	2.8	5.1	5.5	4.1	2.5	2.2	.94	1.05	1.1	6.6	1.7
10	2.7	2.6	6.0	5.1	3.6	2.0	1.8	.91	.98	1.1	6.1	1.6
11	2.8	2.4	5.2	4.7	3.7	2.0	1.7	.98	.92	1.05	4.1	1.7
12	2.8	2.5	5.9	4.4	13.8	1.8	1.8	1.0	.74	1.0	3.3	1.7
13	3.2	2.5	12.2	4.3	21.4	1.6	1.7	.92	.69	1.0	2.7	1.7
14	4.1	2.3	11.0	4.4	18.0	1.5	1.7	.94	.64	1.15	2.5	1.6
15	5.7	2.2	14.3	4.4	11.8	1.5	1.7	.92	.58	1.2	2.5	1.5
16	5.7	2.3	21.4	4.3	11.8	1.45	2.2	.92	.54	1.25	2.4	1.4
17	5.8	2.4	19.0	4.3	14.5	2.6	2.1	1.2	.56	1.2	2.3	1.4
18	5.8	2.8	13.5	4.3	13.9	2.5	1.7	1.4	.64	1.0	2.0	1.5
19	6.2	3.9	9.4	5.6	10.6	2.4	1.9	1.5	1.05	1.15	1.9	1.5
20	6.2	3.8	7.8	4.6	8.1	2.3	2.2	.94	1.8	1.15	1.9	1.8
21	6.3	4.0	6.9	4.4	6.6	1.8	2.1	.88	1.2	1.2	1.6	1.6
22	6.2	8.4	6.5	4.3	5.9	1.8	1.9	.84	1.1	1.25	1.5	1.4
23	5.6	8.7	6.1	4.3	5.4	2.0	1.2	.82	1.05	1.3	1.5	1.2
24	4.3	10.1	8.7	4.1	4.7	2.3	1.2	.82	11.1	1.45	1.4	1.4
25	3.8	8.8	10.1	3.7	4.4	2.0	1.4	.74	12.7	1.45	1.4	1.5
26	3.4	6.9	11.6	3.5	4.1	1.9	1.5	.70	5.7	1.35	1.35	1.45
27	3.4	12.6	11.5	3.3	3.8	1.9	1.7	.64	4.3	1.25	1.4	1.6
28	3.3	10.2	9.4	3.4	3.5	3.2	1.4	.59	4.3	1.1	1.4	1.7
29	3.3	9.7	14.5	3.6	3.2	2.9	1.05	.63	4.0	1.15	1.4	1.7
30	4.1	.....	19.6	3.8	3.1	2.8	1.05	.65	2.5	1.1	1.3	2.4
31	5.1	.....	16.3	.....	3.3	.....	1.1	.64	.....	1.1	.....	4.4

Daily discharge, in second-feet, of James River at Cartersville, Va., for 1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	13,300	10,800	18,000	26,100	7,580	5,310	5,750	1,740	980	4,460	1,740	2,090
2	12,400	11,400	13,000	22,300	7,340	5,090	5,530	1,740	965	3,230	1,660	2,180
3	13,300	8,540	11,100	20,900	6,420	4,460	4,250	1,820	905	2,830	1,740	2,090
4	10,800	8,060	9,280	23,700	6,190	4,460	4,460	1,910	890	2,450	1,740	2,450
5	9,030	6,880	8,300	19,600	5,970	4,250	4,250	1,910	920	2,360	1,740	2,830
6	7,110	6,420	8,060	16,500	5,970	3,830	4,040	1,660	965	2,270	1,660	3,230
7	6,880	6,190	8,300	15,000	6,650	4,670	3,630	1,570	950	2,090	1,910	3,430
8	5,970	5,970	9,280	13,000	7,580	4,880	3,230	1,570	1,070	1,820	27,800	3,230
9	5,090	5,090	10,600	11,600	8,060	4,460	3,830	1,470	1,660	1,740	14,700	2,830
10	4,880	4,670	13,000	10,600	6,880	3,430	3,030	1,430	1,540	1,740	13,300	2,640
11	5,090	4,250	10,800	9,530	7,110	3,430	2,830	1,540	1,440	1,660	8,060	2,830
12	5,090	4,460	12,700	8,780	39,700	3,030	3,030	1,570	1,160	1,570	6,190	2,830
13	5,970	4,460	33,700	8,540	72,700	2,640	2,830	1,440	1,086	1,570	4,880	2,830
14	8,060	4,040	29,300	8,780	57,200	2,450	2,830	1,470	1,010	1,820	4,460	2,640
15	12,200	3,830	41,700	8,780	32,200	2,450	2,830	1,440	920	1,910	4,460	2,450
16	12,200	4,040	72,700	8,540	32,200	2,360	3,830	1,440	860	2,000	4,250	2,270
17	12,400	4,250	61,700	8,540	42,500	4,670	3,630	1,910	890	1,910	4,040	2,270
18	12,400	5,090	38,600	8,540	40,100	4,460	2,830	2,270	1,010	1,570	3,430	2,450
19	13,500	7,580	23,700	11,900	27,800	4,250	3,230	2,450	1,660	1,820	3,230	2,450
20	13,500	7,340	18,300	9,280	19,300	4,040	3,830	1,470	3,030	1,820	3,230	3,030
21	13,800	7,820	15,600	8,780	14,700	3,030	3,630	1,380	1,910	1,910	2,640	2,640
22	13,500	20,300	14,400	8,540	12,700	3,030	3,230	1,310	1,740	2,000	2,450	2,270
23	11,900	21,300	13,300	8,540	13,400	3,430	1,910	1,280	1,660	2,090	2,450	1,910
24	8,540	26,100	21,300	8,060	9,530	4,040	1,910	1,280	29,600	2,360	2,270	2,270
25	7,340	21,600	26,100	7,110	8,780	3,430	2,270	1,160	35,500	2,360	2,270	2,450
26	6,420	15,600	31,400	6,650	8,060	3,230	2,450	1,100	12,200	2,180	2,180	2,360
27	6,420	35,200	31,100	6,190	7,340	3,230	2,830	1,010	8,540	2,000	2,270	2,640
28	6,190	26,400	23,700	6,420	6,650	5,970	2,270	935	8,540	1,740	2,270	2,830
29	6,190	24,700	42,500	6,880	5,970	5,310	1,660	995	7,820	1,820	2,270	2,830
30	8,060	.....	64,500	7,340	5,750	5,090	1,660	1,020	4,460	1,740	2,090	4,250
31	10,600	.....	49,800	.....	6,190	.....	1,749	1,010	.....	1,740	.....	8,780

NOTE.—Daily discharge computed from a rating curve, well defined below 10,000 second-feet and fairly well defined below 40,000 second-feet.

Monthly discharge of James River at Cartersville, Va., for 1912.

[Drainage area, 6,230 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
January	13,800	4,880	9,290	1.49	1.72	A.
February	35,200	3,830	11,100	1.78	1.92	B.
March	72,700	8,060	25,300	4.06	4.68	C.
April	26,100	6,190	11,500	1.85	2.06	B.
May	72,700	5,750	17,400	2.79	3.22	C.
June	5,970	2,360	3,950	.634	.71	A.
July	5,750	1,660	3,200	.514	.59	A.
August	2,450	935	1,490	.239	.28	A.
September	35,500	860	4,530	.727	.81	B.
October	4,460	1,570	2,080	.334	.39	A.
November	27,800	1,660	4,580	.735	.82	B.
December	8,780	1,910	2,850	.457	.53	A.
The year	72,700	860	8,110	1.30	17.73	

ROANOKE RIVER BASIN.

ROANOKE RIVER AT ROANOKE, VA.

Location.—At the Walnut Street highway bridge at Roanoke, Va

Records available.—July 10, 1896, to July 14, 1906; May 7, 1908, to December 31, 1912.

Drainage area.—388 square miles.

Gage.—A standard chain gage was attached to the Walnut Street Bridge November 28, 1903, to replace the wire gage which had been read from July 10, 1896, to that date. The datum of the gage has remained unchanged since the station was established.

Channel.—Nearly straight, 160 feet wide between bridge abutments; broken by one pier. The bed of the stream is composed of coarse gravel and small bowlders. The right bank is above high water but the left bank may overflow at extreme flood stages.

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

Winter flow.—Occasionally affected by ice for short periods.

Accuracy.—Owing to varying conditions of flow frequent measurements are required at low stages to adequately define the discharge curve from year to year.

Cooperation.—Gage-height records furnished through the courtesy of the Roanoke Railway & Electric Co., J. W. Hancock, general manager.

Discharge measurements of Roanoke River at Roanoke, Va., in 1912.

Date.	Hydrographer.	Gage height.	Discharge.
		Feet.	*Sec.-ft.*
Nov. 22	Jackson and Batchelder	0.88	132
22	....do	.86	131

Daily gage height, in feet, of Roanoke River at Roanoke, Va., for 1912.

[C. C. Hogshead, observer.]

Date.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.8	1.8	2.2	3.8	1.7	1.3	1.7	1.2	0.8	1.1	0.8	0.9
2	1.7	1.6	1.8	3.2	1.7	1.3	1.6	1.1	.8	1.1	.8	.9
3	1.6	1.4	1.8	2.9	1.7	1.3	1.5	1.1	.8	1.0	.8	.8
4	1.55	1.4	1.8	2.6	1.6	1.2	1.4	1.0	.8	1.0	.8	.9
5	1.4	1.2	1.8	2.4	1.5	1.2	1.6	1.0	.8	.95	.8	.9
6	1.3	1.2	1.7	2.3	1.4	1.2	1.4	1.0	.8	.9	.8	1.3
7	1.25	1.2	1.6	2.2	1.4	1.2	1.4	1.0	.8	.9	1.6	1.4
8	1.25	1.2	1.7	2.1	1.4	1.2	1.3	1.0	.8	.8	1.8	1.3
9	1.2	1.15	1.8	2.0	1.3	1.1	1.5	1.0	.8	.8	1.4	1.3
10	1.2	1.1	2.5	1.9	1.3	1.1	1.5	.95	.8	.8	1.3	1.2
11	1.2	1.1	2.2	1.8	1.3	1.1	1.8	.95	.8	.8	1.2	1.1
12	1.2	1.1	2.4	1.7	8.5	1.1	1.6	.95	.8	.8	1.2	1.1
13	1.2	1.1	4.5	1.6	4.4	1.1	1.4	.90	.8	.8	1.1	1.1
14	1.2	1.1	7.6	1.6	3.8	1.1	1.5	.90	.8	.8	1.1	1.1
15	1.2	1.1	5.5	1.5	4.0	1.1	1.3	.90	.8	.8	1.0	1.1
16	1.0	1.1	4.2	1.5	4.5	1.1	1.2	.90	.8	.8	1.0	1.1
17	1.1	1.1	3.1	1.5	5.0	1.1	1.1	.90	1.0	.8	1.0	1.0
18	1.2	1.1	2.9	1.4	4.0	1.1	1.1	.90	1.2	.8	1.0	1.0
19	1.4	1.1	2.4	1.4	3.0	1.1	1.4	.85	.9	.8	1.0	1.0
20	1.7	1.1	2.3	1.4	2.2	1.2	1.5	.85	.9	.8	1.0	1.0
21	1.5	1.2	2.0	1.4	2.0	1.1	1.7	.85	.85	.8	1.0	1.0
22	1.4	3.6	2.6	1.4	1.9	1.2	1.7	.85	.85	.8	.9	1.0
23	1.4	2.2	2.7	1.3	1.8	1.2	1.6	.90	.9	.8	.9	1.0
24	1.4	2.1	2.5	1.3	1.7	1.25	1.5	.90	1.1	.8	.9	1.0
25	1.3	2.2	2.4	1.3	1.6	1.7	1.5	.90	3.3	.8	.9	1.0
26	1.3	2.8	2.3	1.3	1.5	1.3	1.4	.85	2.2	.8	.9	1.0
27	1.2	4.2	2.2	1.2	1.5	a 2.6	1.4	.85	2.0	.8	.9	1.0
28	1.2	3.1	2.2	1.2	1.4	2.4	1.4	.85	1.8	.8	.9	1.0
29	1.2	2.8	7.2	1.3	1.4	1.7	1.3	.85	1.6	.8	.9	1.0
30	1.8	.....	4.1	1.6	1.3	1.6	1.25	.85	1.3	.8	.9	1.1
31	2.1	.....	4.0	.....	1.3	.....	1.2	.80	.....	.8	.....	1.7

a Estimated from observer's notes.

NOTE.—Gage heights Nov. 19 to 21 and possibly also on other days, estimated by observer.

Daily discharge, in second-feet, of Roanoke River at Roanoke, Va., for 1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	550	550	850	2,640	490	282	490	242	115	206	115	143
2	490	430	550	1,900	490	282	430	206	115	206	115	143
3	430	326	550	1,540	490	282	375	206	115	173	115	115
4	402	326	550	1,230	430	242	326	173	115	173	115	143
5	326	242	550	1,030	375	242	430	173	115	158	115	143
6	282	242	490	940	326	242	326	173	115	143	115	282
7	262	242	430	850	326	242	326	173	115	143	430	326
8	262	242	490	770	326	242	282	173	115	115	550	282
9	242	224	550	690	282	206	375	173	115	115	326	282
10	242	206	1,130	620	282	206	375	158	115	115	282	242
11	242	206	850	550	282	206	550	158	115	115	242	206
12	242	206	1,030	490	8,980	206	430	158	115	115	242	206
13	242	206	3,580	430	3,440	206	326	143	115	115	206	206
14	242	206	7,760	430	2,640	206	375	143	115	115	206	206
15	242	206	4,930	375	2,900	206	282	143	115	115	173	206
16	173	206	3,180	375	3,580	206	242	143	115	115	173	206
17	206	206	1,780	375	4,260	206	206	143	173	115	173	173
18	242	206	1,540	326	2,900	206	206	143	242	115	173	173
19	326	206	1,030	326	1,660	206	326	129	143	115	173	173
20	490	206	940	326	850	242	375	129	143	115	173	173
21	375	242	690	326	690	206	490	129	129	115	173	173
22	326	2,390	1,230	326	620	242	490	129	129	115	143	173
23	326	850	1,330	282	550	242	430	143	143	115	143	173
24	326	770	1,130	282	490	262	375	143	206	115	143	173
25	282	850	1,030	282	430	490	375	143	2,020	115	143	173
26	282	1,440	940	282	375	282	326	129	850	115	143	173
27	242	3,180	850	242	375	1,230	326	129	690	115	143	173
28	242	1,780	850	242	326	1,030	326	129	550	115	143	173
29	242	1,440	7,220	282	326	490	282	129	430	115	143	173
30	550	.....	3,040	430	282	430	262	129	282	115	143	206
31	770	.....	2,900	.....	282	.....	242	115	.....	115	.....	490

NOTE.—Daily discharge computed from a rating curve well defined below 2,000 second-feet.

Monthly discharge of Roanoke River at Roanoke, Va., for 1912.

[Drainage area, 388 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
January	770	173	326	0.840	0.97	A.
February	3,180	206	622	1.60	1.73	A.
March	7,760	430	1,740	4.48	5.16	B.
April	2,640	242	640	1.65	1.84	A.
May	8,980	282	1,290	3.32	3.83	B.
June	1,230	206	316	.814	.91	A.
July	550	206	354	.912	1.05	A.
August	242	115	153	.394	.45	A.
September	2,020	115	266	.686	.77	A.
October	206	115	128	.330	.38	A.
November	550	115	189	.487	.54	A.
December	490	115	203	.523	.60	A.
The year	8,980	115	520	1.34	18.23	

ROANOKE RIVER AT OLD GASTON, N. C.

Location.—At railroad bridge of Roanoke Railway Co. at Old Gaston, N. C., 1¼ miles north of Thelma, N. C., about three-fourths of a mile below mouth of Indian Creek and 2½ miles above mouth of Deep Creek.

Records available.—December 7, 1911, to December 31, 1912.

Drainage area.—Not measured.

Gage.—Standard chain gage attached to outside of guard timber on downstream side of second span from right end of decked plate girder railroad bridge of Roanoke Railway Co.

Channel.—Fairly permanent. Point of control, about 1 mile below, is of rock and probably permanent.

Discharge measurements.—Made from downstream side of bridge to which gage is attached. Measuring section broken by 11 bridge piers.

Floods.—Flood of 1877 highest known in this locality. No definite marks preserved at Old Gaston, but from authentic information regarding the crest height as observed in 1877 the approximate height has been determined as about 19 feet, referred to present gage datum. The corresponding discharge is about 275,000 second-feet. The crest height of the flood of March, 1912, is shown in Plate III.

Winter flow.—Ice sometimes forms to considerable thickness at this station.

Artificial control.—It has been stated by those engaged in the operation of power plants at Roanoke Rapids and Weldon that a weekly trough has been noticed to occur on Tuesday or Wednesday during periods of low water. Such troughs have been said to be due probably to the weekly shut down of large power plants farther upstream.

Accuracy.—Gage observer considered reliable. The gage being situated about 1 mile from the lower end of a pool approximately 3 miles long, the station is not very sensitive. The left bank overflows in extreme floods but a fair determination can be made of the overflow discharge around the bridge.

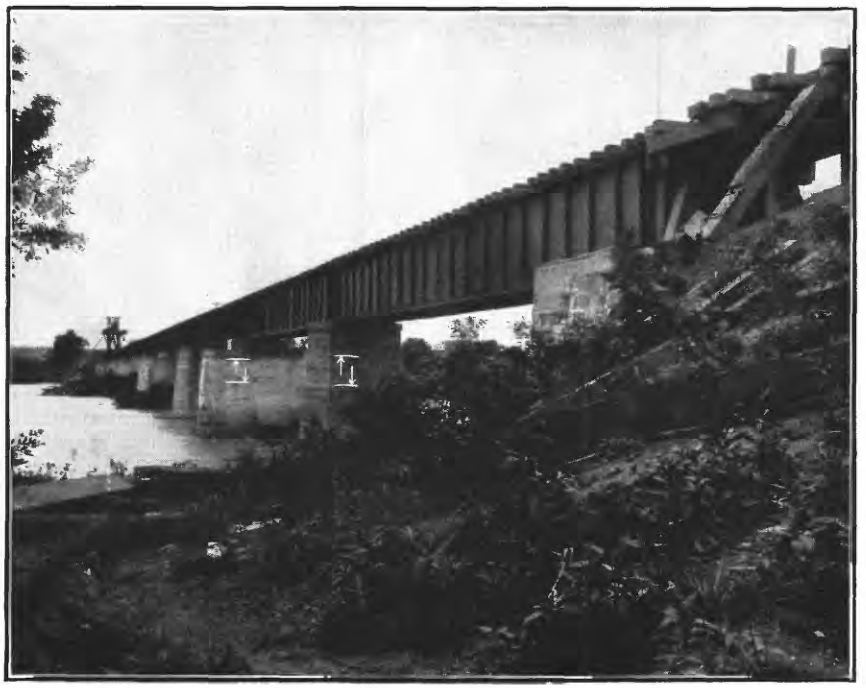
Discharge measurements of Roanoke River at Old Gaston, N. C., in 1912.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Feb. 24	H. J. Jackson	6.81	31,300	Mar. 19	H. J. Jackson	11.68	89,300
26	do	5.08	18,400	25	do	6.53	30,300
28	do	8.48	47,000	Aug. 25	L. J. Bevan[a]	1.42	1,940
Mar. 2	do	4.09	12,400	Nov. 18	Jackson and Batchelder	2.06	3,900
17	do	15.00	169,000				

[a] Engineer with Vielé, Blackwell and Buck.

A. FLOOD OF MARCH, 1912.

Horizontal line indicates height of crest of flood.



B. MEDIUM STAGE, JULY, 1911.

Lower line on bridge piers indicates level reached by water in 1912; upper line, height of crest of flood of March, 1912.

ROANOKE RIVER AT OLD GASTON, N. C.

A. FLOOD OF MARCH, 1912.

North channel looking upstream toward Atlantic Coast Line Railroad bridge.

B. MEDIUM STAGE, JULY, 1911.

Main channel from right bank, downstream side of Atlantic Coast Line Railroad bridge. Level reached by water in 1912 indicated by horizontal line and arrow on bridge pier.

ROANOKE RIVER AT WELDON, N. C.

Daily gage height, in feet, of Roanoke River at Old Gaston, N. C., for 1912.

[R. A. Howell, observer.]

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.4	5.4	5.6	10.45	4.05	2.45	3.75	1.65	1.4	1.95	1.7	1.75
2	3.9	4.4	4.3	5.6	3.85	2.55	3.75	1.9	1.25	1.95	1.6	1.75
3	3.8	3.4	3.75	4.85	3.45	2.45	4.75	1.5	1.15	1.75	1.7	1.75
4	3.6	3.4	3.5	4.75	3.15	2.55	3.75	1.5	1.15	1.75	1.65	1.65
5	3.5	2.5	3.25	4.35	2.9	2.25	3.2	1.45	.95	1.65	1.6	1.85
6	3.3	2.5	3.4	3.9	2.8	2.3	2.35	1.9	1.4	1.65	1.5	1.85
7	2.9	2.5	3.35	3.6	2.6	2.35	2.75	1.45	1.4	1.6	1.65	2.2
8	2.5	2.2	4.0	3.65	3.45	2.35	3.0	1.65	1.45	1.8	1.95	2.3
9	.....	2.2	5.5	3.65	4.45	3.0	2.55	1.75	1.25	1.4	7.3	2.25
10	2.3	2.4	5.7	3.55	4.1	2.8	2.6	1.55	1.25	1.5	5.8	2.05
11	2.3	2.5	5.4	3.5	3.25	2.15	2.05	1.55	1.5	1.25	3.75	2.3
12	2.3	2.4	4.65	3.35	3.85	2.35	2.25	1.55	1.5	1.55	2.8	2.4
13	2.3	2.0	5.2	3.25	6.5	2.5	2.7	1.45	1.35	1.55	2.7	1.85
14	2.3	2.3	6.8	3.2	9.8	2.05	2.5	1.4	1.25	1.45	2.15	1.85
15	2.3	2.0	7.1	3.25	11.05	2.10	2.05	1.55	1.2	1.65	2.0	1.8
16	2.3	2.8	12.5	2.9	7.2	3.2	2.0	1.55	1.2	1.5	1.95	1.8
17	2.3	3.6	13.4	3.2	7.2	2.35	2.25	1.5	1.65	1.75	2.0	1.75
18	2.3	3.5	16.6	3.2	7.8	2.35	1.9	1.45	1.4	1.8	1.95	1.65
19	2.3	4.2	13.8	3.65	6.2	2.65	1.9	1.4	1.5	1.8	1.85	1.85
20	2.3	4.9	5.6	3.6	4.6	2.75	1.95	1.35	1.85	1.65	1.85	1.8
21	4.2	4.5	4.45	3.35	3.95	2.8	2.25	1.3	2.75	1.7	1.8	1.8
22	3.6	4.6	4.0	3.15	3.65	2.5	2.4	1.45	2.2	1.7	1.8	1.8
23	3.3	6.9	3.8	3.65	3.45	2.2	2.05	1.55	1.8	1.45	1.8	1.85
24	3.1	7.3	3.95	4.55	3.3	2.9	1.95	1.45	1.9	1.75	1.75	1.85
25	2.9	5.0	6.1	4.25	3.15	2.5	2.05	1.4	5.4	1.7	1.7	1.85
26	2.8	5.0	8.3	3.6	3.0	3.05	1.85	1.35	6.3	1.65	1.75	2.1
27	2.7	6.7	8.7	3.2	2.95	2.85	1.9	1.25	4.25	1.7	1.55	2.05
28	2.7	8.3	6.0	3.0	2.65	2.35	1.75	1.15	3.2	1.65	1.75	2.1
29	2.8	8.8	4.95	3.1	2.9	4.55	1.75	1.25	2.8	1.8	1.7	2.35
30	3.3	.....	8.3	3.15	2.6	3.85	1.85	1.45	2.25	1.3	1.7	2.2
31	5.5	.....	9.6	.....	2.5	.....	1.45	1.95	.....	1.55	.....	2.0

NOTE.—Relation of gage height to discharge probably affected by ice January 13–18.

Daily discharge, in second-feet, of Roanoke River at Old Gaston, N. C., for 1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	9,040	20,700	22,100	68,700	a12,300	5,220	10,700	2,740	2,100	3,600	2,880	3,020
2	11,500	14,200	13,600	22,100	11,200	5,580	10,700	3,450	1,740	a3,600	2,610	3,020
3	a11,000	9,040	10,700	a16,900	9,270	5,220	a16,300	2,350	1,520	3,020	2,880	3,020
4	9,980	9,040	9,500	16,300	7,940	5,580	10,700	2,350	a1,520	3,020	2,740	a2,740
5	9,500	5,400	8,370	13,900	6,900	a4,540	8,150	2,220	1,100	2,740	2,610	3,300
6	8,590	5,400	a9,040	11,500	6,510	4,710	4,880	3,450	2,100	2,740	a2,350	3,300
7	6,900	a5,400	8,820	9,980	5,760	4,880	6,320	a2,220	2,100	2,610	2,740	4,380
8	5,400	4,380	12,000	10,200	a9,270	4,880	7,300	2,740	2,220	3,160	3,600	4,710
9	b 5,050	4,380	21,400	10,200	14,500	7,300	5,580	3,020	1,740	a2,100	36,000	4,540
10	a4,710	5,050	22,800	a9,740	12,500	6,510	a5,760	2,480	1,740	2,350	23,600	3,900
11	4,710	5,400	20,700	9,500	8,370	4,220	3,900	2,480	a2,350	1,740	10,700	a4,710
12	4,710	5,050	15,700	8,820	11,200	a4,880	4,540	2,480	2,350	2,480	6,510	5,050
13	4,600	3,750	a19,300	8,370	29,000	5,400	6,130	2,220	1,980	2,480	a6,130	3,300
14	4,400	a4,710	31,500	8,150	60,800	3,900	5,400	a2,100	1,740	2,220	4,220	3,300
15	4,200	3,750	34,200	8,370	a78,000	4,060	3,900	2,480	1,630	2,740	3,750	3,160
16	4,100	6,510	106,000	6,900	35,100	8,150	3,750	2,480	1,630	a2,350	3,600	3,160
17	a4,000	9,980	127,000	a8,150	35,100	4,880	a4,540	2,350	2,740	3,020	3,750	3,020
18	4,400	9,500	210,000	8,150	40,600	4,880	3,450	2,220	a2,100	3,160	3,600	a2,740
19	4,710	13,100	137,000	10,200	26,600	a5,940	3,450	2,100	2,350	3,160	3,300	3,300
20	4,710	17,200	a22,100	9,980	15,400	6,320	3,600	1,980	3,300	2,740	a3,300	3,160
21	13,100	a14,800	14,500	8,820	11,700	6,510	4,540	a1,860	6,320	2,880	3,160	3,160
22	9,980	15,400	12,000	7,940	a10,200	5,400	5,050	2,220	4,380	2,880	3,160	3,160
23	8,590	32,400	11,000	10,200	9,270	4,380	3,900	2,480	3,160	a2,220	3,160	3,300
24	a7,720	36,000	11,700	a15,100	8,590	6,900	a3,600	2,220	3,450	3,020	3,020	3,300
25	6,900	17,900	25,900	13,400	7,940	5,400	3,900	2,100	a20,700	2,880	2,880	a3,300
26	6,510	17,900	45,400	9,980	7,300	a7,510	3,300	1,980	27,400	2,740	3,020	4,060
27	6,130	30,700	a49,300	8,150	7,100	6,700	3,450	1,740	13,400	2,880	a2,480	3,900
28	6,130	a45,400	25,100	7,300	5,940	4,880	3,020	a1,520	8,150	2,740	3,020	4,060
29	6,510	50,300	17,600	7,720	a6,900	15,100	3,020	1,740	6,510	3,160	2,880	4,880
30	8,590	.....	45,400	7,940	5,760	11,200	3,300	2,220	4,540	a1,860	2,880	4,380
31	a21,400	.....	58,600	.....	5,400	.....	a2,220	3,600	.....	2,480	.....	3,750

a Wednesday; see "artificial control." b Interpolated.

NOTE.—Daily discharge computed from a rating curve well defined between 1,900 and 33,300 second-feet, and fairly well defined between 34,200 and 181,000 second-feet. Above 194,000 second-feet the rating curve is assumed a tangent. Discharge estimated January 13–18 because of ice.

Monthly discharge of Roanoke River at Old Gaston, N. C., for 1912.

[Drainage area, 8,350 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
January	21,400	a 4,000	7,350	0.880	1.01	B.
February	50,300	3,750	14,600	1.75	1.89	A.
March	210,000	8,370	38,000	4.55	5.25	A.
April	68,700	6,900	12,400	1.49	1.66	A.
May	78,000	5,400	16,900	2.02	2.33	A.
June	15,100	3,900	6,030	.722	.81	A.
July	16,300	2,220	5,430	.650	.75	A.
August	3,600	1,520	2,370	.284	.33	A.
September	27,400	1,100	4,600	.551	.61	A.
October	3,600	1,740	2,730	.327	.38	A.
November	36,000	2,350	5,350	.641	.72	A.
December	5,050	2,740	3,620	.434	.50	A.
The year	210,000	1,100	9,950	1.19	16.24	

a Ice estimate.

ROANOKE RIVER AT WELDON, N. C.

General statement.—The Geological Survey entered into a study of this United States Weather Bureau station to ascertain whether or not a record of discharge could be obtained from the gage record for back years. The gaging station at Old Gaston, about 13 miles above Weldon, was established for comparative purposes. It has been found, upon brief study, that the Weldon gage record can not be utilized for discharge purposes without a disproportionate expenditure of funds—if at all. The study therefore has been abandoned and the base data and information obtained are published herewith.

Location.—At Seaboard Air Line Railway bridge, just north of Weldon, N. C., about 1 mile below mouth of Chockyott Creek and about 500 yards above the lower end of the "fall line."

Records available.—Gage heights November 1, 1890, to December 31, 1912, in the publications of the United States Weather Bureau. The following corrections are necessary to the published records: December 13 to 31, 1907, and June 1 to 30, 1908, subtract 4.0 feet, and January 1 to May 31, 1908, subtract 2.0 feet from the printed records. (See "Discharge measurements.")

Drainage area.—8,420 square miles.

Gage.—Property of the United States Weather Bureau, by which records are kept. The present gage is a chain gage attached to upstream guard timber in center panel of second through span from south end of bridge. The original gage is said to have been a staff gage in two sections, attached to a rock out in the channel and a tree on the right bank about 400 or 500 yards below the Seaboard Air Line Bridge. The zero of this gage is said to have been set at about low water, which was taken as the bottom of a hole in a large rock, familiarly known in the locality as "Cuba" rock. The first gage observer here was a Mr. Clark, and upon his death no record was kept for a time. A new gage, of the Missouri River wire-cable type, was installed by the present observer, Mr. H. D. Allen, on April 1, 1899. It was intended that this should read the same as the old gage, but the chain length and datum to which it was set are in question. This gage was just above the second rock pier from the south end of the bridge. In December, 1907, the gage was destroyed and was replaced on December 13, 1907, by a chain gage. It is questionable whether or not there was a change between 1899 and 1907.

It was later discovered that this chain was 2 feet too long, and consequently on July 1, 1908, the new chain was shortened 2 feet. This chain was cut off on May 15, 1910, and a new chain, the present one, installed on May 25, 1910. During September or October, 1911, this gage was moved two bridge panels farther out into the river to its present location. On December 9, 1911, the chain length was found to be 67.60 feet (elongation probably due to stretch since installation) and was changed to the correct length, 66.30 feet. With the chain length correct the gage was found to read 0.60 foot low, by wye levels from the bench mark on the Bank of Weldon Building. (Elevation 64.20 feet above zero of gage.) See United States Weather Bureau publication "Daily river stages, principal rivers of the United States, Part X."

Channel.—Sand, gravel, and small rocks. Probably shifting, especially at high stages.

Discharge measurements.—Made from the foot walk on downstream side of Seaboard Air Line Railway bridge. Eleven discharge measurements were made at this station in 1911 and 1912 by the United States Geological Survey. (See table, p. 28.) Measurements Nos. 6 to 11 were made during the flood of March, 1912. If the Weldon measurements are plotted on cross section paper (gage heights in feet as ordinates, scale 4 feet to the inch, and discharge in second-feet as abscissas, scale 10,000 second-feet to the inch), it will be seen that a smooth curve can be drawn among the points representing measurements Nos. 1, 2, 3, 5, 6, and 7. This will be an approximate "free flow" or rising stage discharge curve for the March, 1912, flood at Weldon. Another smooth curve can be drawn among the points representing measurements Nos. 1, 7, 8, 9, 10, and 11, and this will be a probable "backwater" or "falling stage" discharge curve for the March, 1912, flood at Weldon. Measurement No. 4, made at the crest of the February, 1912, rise, will be found to be midway between the two curves. These curves may be used to determine the discharge at Weldon during the March, 1912, flood, using the curves over the proper periods of rising and falling stage as indicated by the measurements. The relation of gage height to discharge indicated by these curves, however, is probably not applicable to other periods and engineers making use of these data for discharge purposes should do so with caution. The discharge measurements at Old Gaston, made during the same periods (see p. 25), will be found to plot on a smooth curve, but the Survey has made no comparative study of these data.

Floods.—The United States Weather Bureau publishes the maximum stage at Weldon as 60.3 feet, November 26, 1877, but from information obtained at Weldon in March, 1912, it seems probable that this value is about 7 feet too high—namely, the 1877 flood reached a crest height of about 53 feet, referred to the present gage datum. The flood of March, 1912, reached a crest height of 50.3 feet (discharge about 162,000 second-feet) at 4.30 p. m. March 18, about 3 feet lower than the 1877 flood. Plate IV, *A*, shows Roanoke River at Weldon during the flood of March, 1912 (gage height 47.9 feet, discharge about 120,000 second-feet), and Plate IV, *B*, a comparative view taken at medium low water. The horizontal lines and arrows on the piers show the crest height (gage height 50.3 feet) and the height at the time of the flood photograph.

Regulation.—The Roanoke Rapids Power Co. has a series of low dams or wing walls that divert water from the river above Roanoke Rapids, about 8 miles above Weldon. It is probable that they cause little pondage. Officials of power companies at Roanoke Rapids and Weldon state that during seasons of low water they have noticed low periods about Tuesday evening or Wednesday morning each week, which they ascribe to the ponding of water from Saturday night to Monday morning by the power plants at Danville.

Diversions.—The Roanoke Navigation & Water Power Co. diverts water from the river at Shaws Island, about 9 miles above Weldon. This company's canal is said to carry from 150 to 300 second-feet, with an average of about 250 second-feet. This water passes around the gaging section at Weldon, the outlet of the canal being about 200 yards below the bridge to which the gage is attached. Flow in the canal is included in the discharge given in the table of discharge measurements.

Accuracy.—The discharge measurements are accurate and reliable. The accuracy of the gage-height records for discharge purposes will best be determined by a detailed study of the data.

Cooperation.—The work of the Survey at this station was done in cooperation with the Virginia-Carolina Power Co., William C. Whitner, president.

Discharge measurements of Roanoke River at Weldon, N. C., in 1911–12.

[Hydrographer, H. J. Jackson.]

No.	Date.	Gage height.	Discharge.	Gage height change.	No.	Date.	Gage height.	Discharge.	Gage height change.
	1911.	*Feet.*	*Sec.-ft.*			1912.	*Feet.*	*Sec.-ft.*	
1	Dec. 10	10.56	3,440	Rising.	6	Mar. 17	43.12	98,800	Rising.
					7	18	49.98	158,000	Rising (crest).
	1912.				8	19	48.22	123,000	Falling.
2	Feb. 25	23.88	19,700	Falling.	9	20	36.79	26,600	Do.
3	27	29.16	37,600	Rising.	10	20	35.20	27,000	Do.
4	29	35.05	44,900	Crest.	11	21	28.25	15,600	Do.
5	Mar. 4	16.07	10,200	Falling.					

YADKIN OR PEEDEE RIVER BASIN.

YADKIN RIVER NEAR SALISBURY, N. C.

Location.—At the highway bridge known as the Piedmont Toll Bridge, 1,000 feet above the Southern Railway bridge, 6 miles east of Salisbury, and about 5 miles below the mouth of South Yadkin River.

Records available.—September 24, 1895, to December 31, 1909; September 1, 1911, to December 31, 1912.

Drainage area.—3,400 square miles.

Gage.—Standard chain gage attached to the highway bridge. From the date of establishment to May 31, 1899, the gage was at the Southern Railway bridge, and from the latter date it was at the highway bridge until moved back to the railroad bridge early in the year 1903, where it remained until the end of the year 1905. Since January 1, 1906, the gage has been at the highway bridge on the same datum as originally established there in 1899. The last gage at the railroad bridge read the same as the gage at the highway bridge at gage height 3.2 feet but was not the same for higher and lower stages. There is some uncertainty as to the datum of the original gage at the railroad bridge.

Channel.—Practically permanent; wide and rather rough.

Discharge measurements.—Made from the highway bridge. During the time that the gage was at the railroad bridge most of the measurements were made from that bridge.

Winter flow.—Ice or snow have little if any effect on the records of the station.

Artificial control.—There are some developed powers on the river and tributaries above which may slightly affect the flow.

The following discharge measurement was made by W. E. Hall:

October 28, 1912, gage height, 2.22 feet; discharge, 2,240 second-feet.

Daily gage height, in feet, of Yadkin River near Salisbury, N. C., for 1912.

[J. T. Yarbrough, observer.]

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.6	3.4	3.4	4.1	3.5	2.7	2.6	2.3	2.0	2.4	2.1	2.2
2	3.5	2.9	3.1	4.5	3.0	2.6	2.55	2.3	1.95	2.4	2.1	2.2
3	3.2	2.6	3.0	5.0	2.95	2.7	2.6	2.15	1.9	2.3	2.3	2.3
4	3.0	2.5	2.9	4.0	2.85	2.6	2.6	2.2	1.85	2.25	2.3	2.2
5	3.0	2.35	3.1	3.5	2.7	2.7	3.1	2.5	1.85	2.15	2.1	2.3
6	2.6	2.25	3.3	3.3	2.9	2.7	4.9	2.35	1.85	2.2	2.2	2.45
7	2.55	2.35	3.6	3.3	3.5	2.9	4.2	2.2	1.9	2.2	2.3	2.5
8	2.6	2.4	4.3	3.3	3.5	3.0	3.0	2.1	2.3	2.1	5.1	2.5
9	2.5	2.45	4.7	3.1	3.0	2.7	2.8	2.2	2.5	2.1	4.0	2.4
10	2.6	2.4	4.1	3.0	2.75	2.55	2.9	2.15	2.1	2.05	3.0	2.2
11	2.65	2.25	3.7	3.0	3.1	2.65	3.1	2.4	2.0	2.1	2.7	2.25
12	2.6	2.35	3.3	2.9	7.5	2.45	3.0	2.35	1.9	2.0	2.5	2.2
13	2.6	2.25	3.5	3.0	12.6	2.5	3.1	2.15	2.0	2.0	2.45	2.2
14	2.2	2.25	3.7	2.8	9.3	2.55	3.0	2.1	3.4	2.25	2.4	2.1
15	2.15	2.4	9.9	2.8	4.3	3.0	2.9	2.1	3.1	2.5	2.35	2.15
16	2.25	4.1	19.0	2.9	4.5	3.2	3.0	2.15	3.1	2.6	2.3	2.25
17	2.15	3.8	13.5	3.5	5.3	3.0	2.8	2.2	2.7	2.35	2.3	2.2
18	2.2	3.4	5.9	3.5	4.2	2.8	2.7	2.1	2.1	2.15	2.3	2.2
19	2.65	3.0	4.2	3.3	3.5	2.75	2.7	2.25	2.05	2.2	2.25	2.2
20	2.85	2.85	3.7	2.9	3.3	2.6	3.1	2.2	2.1	2.3	2.25	2.3
21	2.75	2.95	3.5	2.9	3.2	2.55	3.5	2.1	2.2	2.35	2.3	2.2
22	2.55	6.1	3.2	3.8	3.0	2.3	3.5	2.05	2.0	2.2	2.2	2.2
23	2.45	5.6	3.2	5.5	3.0	2.45	3.0	2.0	2.4	2.2	2.2	2.2
24	2.4	3.9	3.5	4.5	2.85	2.65	2.65	1.95	7.3	2.35	2.2	2.25
25	2.4	3.8	4.9	3.3	2.8	2.8	2.5	1.9	6.6	2.3	2.3	2.3
26	2.35	4.1	4.3	2.9	2.8	2.5	2.4	2.2	4.7	2.15	2.2	2.3
27	2.3	5.8	3.6	3.0	2.85	2.8	2.45	2.7	3.1	2.15	2.15	2.3
28	2.35	5.2	3.3	3.0	2.7	3.2	2.2	2.55	2.85	2.15	2.2	2.25
29	2.3	4.0	4.5	3.0	2.7	2.9	2.25	2.1	2.75	2.1	2.2	2.3
30	3.8	.....	7.9	3.5	2.8	2.6	2.15	2.05	2.55	2.1	2.2	2.3
31	3.9	.....	5.2	.....	2.8	.....	2.4	2.0	.....	2.1	.....	2.3

Daily discharge, in second-feet, of Yadkin River near Salisbury, N. C., for 1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	6,460	5,740	5,740	8,370	6,100	3,500	3,210	2,410	1,730	2,660	1,940	2,170
2	6,100	4,090	4,720	9,990	4,400	3,210	3,070	2,410	1,630	2,660	1,940	2,170
3	5,050	3,210	4,400	12,200	4,240	3,500	3,210	2,060	1,530	2,410	2,410	2,410
4	4,400	2,930	4,090	7,980	3,940	3,210	3,210	2,170	1,440	2,290	2,410	2,170
5	4,400	2,540	4,720	6,100	3,500	3,500	4,720	2,930	1,440	2,060	1,940	2,410
6	3,210	2,290	5,390	5,390	4,090	3,500	11,700	2,540	1,440	2,170	2,170	2,800
7	3,070	2,540	6,460	5,390	6,100	4,090	8,770	2,170	1,530	2,170	2,410	2,930
8	3,210	2,660	9,170	5,390	6,100	4,400	4,400	1,940	2,410	1,940	12,600	2,930
9	2,930	2,800	10,800	4,720	4,400	3,500	3,790	2,170	2,930	1,940	7,980	2,660
10	3,210	2,660	8,370	4,400	3,640	3,070	4,090	2,060	1,940	1,840	4,400	2,170
11	3,360	2,290	6,830	4,400	4,720	3,360	4,720	2,660	1,730	1,940	3,500	2,290
12	3,210	2,540	5,390	4,090	24,300	2,800	4,400	2,540	1,530	1,730	2,930	2,170
13	3,210	2,290	6,100	4,400	57,200	2,930	4,720	2,060	1,730	1,730	2,800	2,170
14	2,170	2,290	6,830	3,790	34,700	3,070	4,400	1,940	5,740	2,290	2,660	1,940
15	2,060	2,660	38,600	3,790	9,170	4,400	4,090	1,940	4,720	2,930	2,540	2,060
16	2,290	8,370	103,000	4,090	9,990	5,050	4,400	2,060	4,720	3,210	2,410	2,290
17	2,060	7,210	63,600	6,100	13,500	4,400	3,790	2,170	3,500	2,540	2,410	2,170
18	2,170	5,740	16,300	6,100	8,770	3,790	3,500	1,940	1,940	2,060	2,410	2,170
19	3,360	4,400	8,770	5,390	6,100	3,640	3,500	2,290	1,840	2,170	2,290	2,170
20	3,940	3,940	6,830	4,090	5,390	3,210	4,720	2,170	1,940	2,410	2,290	2,410
21	3,640	4,240	6,100	4,090	5,050	3,070	6,100	1,940	2,170	2,540	2,410	2,170
22	3,070	17,200	5,050	7,210	4,400	2,410	6,100	1,840	1,730	2,170	2,170	2,170
23	2,800	14,900	5,050	14,400	4,400	2,800	4,400	1,730	2,660	2,170	2,170	2,170
24	2,660	7,590	6,100	9,990	3,940	3,360	3,360	1,630	23,200	2,540	2,170	2,290
25	2,660	7,210	11,700	5,390	3,790	3,790	2,930	1,530	19,700	2,410	2,410	2,410
26	2,540	8,370	9,170	4,090	3,790	2,930	2,660	2,170	10,800	2,060	2,170	2,410
27	2,410	15,800	6,460	4,400	3,940	3,790	2,800	3,500	4,720	2,060	2,060	2,410
28	2,540	13,000	5,390	4,400	3,500	5,050	2,170	3,070	3,940	2,060	2,170	2,290
29	2,410	7,980	9,990	4,400	3,500	4,090	2,290	1,940	3,640	1,940	2,170	2,410
30	7,210	.....	26,400	6,100	3,790	3,210	2,060	1,840	3,070	1,940	2,170	2,410
31	7,590	.....	13,000	.....	3,790	.....	2,660	1,730	.....	1,940	.....	2,410

NOTE.—Daily discharge computed from a rating curve fairly well defined below 21,700 second-feet.

Monthly discharge of Yadkin River near Salisbury, N. C., for 1912.

[Drainage area, 3,400 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
January	7,590	2,060	3,530	1.04	1.20	A.
February	17,200	2,290	5,840	1.72	1.86	B.
March	103,000	4,090	13,900	4.09	4.72	B.
April	14,400	3,790	6,020	1.77	1.98	B.
May	57,200	3,500	8,520	2.51	2.89	B.
June	5,050	2,410	3,550	1.04	1.16	A.
July	11,700	2,060	4,190	1.23	1.42	A.
August	3,500	1,530	2,180	.641	.74	A.
September	23,200	1,440	4,100	1.21	1.35	B.
October	3,210	1,730	2,230	.656	.76	A.
November	12,600	1,940	2,950	.868	.97	A.
December	2,930	1,940	2,330	.685	.79	A.
The year	103,000	1,440	4,950	1.46	19.84	

YADKIN RIVER NEAR PEEDEE, N. C.

Location.—At a private ferry about 1,500 feet below the dam of the Rockingham Power Co., half a mile below the mouth of Smith Creek and 1 mile above Partridge Creek.

Records available.—August 9, 1906, to January 21, 1912.

Drainage area.—Not measured.

Gage.—Vertical timber gage on right bank above the ferry landing.

Channel.—Wide, with rough bed, mostly rock, some of which projects from surface at low water. Current irregular.

Discharge measurements.—Made from the ferry boat.

Artificial control.—The large power plant of the Rockingham Power Co., just above the station, was put into operation January 21, 1912, The tailrace of the plant empties into the river below the gage, so there is no flow past the gage at times when this plant is using all the flow of the river. There had not been much artificial regulation of the flow previous to January 21, 1912.

Accuracy.—Owing to diurnal flictuations caused by the operations of the power plant above the station (see artificial control), two gage-height readings a day are not considered sufficient data upon which to base estimates of daily discharge subsequent to January 21, 1912. No discharge measurements were made at this station during 1912.

Cooperation.—All gage heights have been furnished by the engineers of the Rockingham Power Co.

Daily gage height, in feet, and discharge, in second-feet, of Yadkin River near Peedee, N. C., for 1912.

[W. S. Ide, observer.]

Day.	January.		Day.	January.	
	Gage height.	Discharge.		Gage height.	Discharge.
1	89.6	8,350	11	89.6	8,350
2	90.8	11,500	12	89.7	8,600
3	90.2	9,900	13	89.8	8,860
4	90.1	9,640	14	89.2	7,360
5	90.2	9,900	15	88.6	5,930
6	89.6	8,350	16	88.8	6,400
7	89.0	6,880	17	88.1	4,790
8	88.6	5,930	18	88.5	5,700
9	89.2	7,360	19	96.2	.....
10	89.7	8,600	20	120.2	.....
			21	86.6	.....

NOTE.—Daily discharge computed from a rating curve fairly well defined between 2,700 and 13,400 second-feet. Below 2,500 and above 15,000 second-feet the rating is very uncertain and daily discharge has not been computed.

PEEDEE RIVER AT CHERAW, S. C.

Location.—At the highway bridge in Cheraw, S. C., below the bridge of the Seaboard Air Line Railway.

Records available.—April 1, 1891, to August 27, 1908; November 2, 1909, to December 31, 1912.

Drainage area.—6,670 square miles.

Gage.—Vertical timber attached to bridge pier. The original gage and the bridge to which it was attached were washed away August 27, 1908. The rating for recent years would probably not apply to these old gage heights, and it is not certain that the new gage is set on the same datum as the former gage.

Discharge measurements.—Made from the highway bridge to which the gage is attached. Some measurements have been made at the Seaboard Air Line Railway bridge, one-half mile above.

Artificial control.—Large Power plants at Rockingham, N. C., and at Whitney, N. C., put into operation early in 1912, seriously affect the flow at this station.

Accuracy.—Estimates are based upon one gage-height reading a day and may be considerably in error at low stages owing to diurnal fluctuations caused by the operation of power plants above. The 1912 estimate is based on the 1911 rating, which is not developed for high stages. No discharge measurements were made at this station during 1912.

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

Daily gage height, in feet, of Peedee River at Cheraw, S. C., for 1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	5.4	18.6	16.5	21.8	7.9	3.3	4.8	2.0	2.1	4.1	1.4	2.0
2	7.2	11.8	12.3	16.6	8.1	4.0	4.1	2.0	1.9	3.9	1.4	1.8
3	9.6	8.3	8.8	11.2	6.2	3.9	4.8	2.3	1.8	3.2	1.6	1.8
4	10.2	6.4	8.9	15.2	5.7	3.8	4.1	2.2	1.7	2.9	1.6	1.8
5	8.8	5.2	10.8	15.4	5.4	4.8	3.5	2.1	1.6	2.7	1.6	1.7
6	9.1	4.8	12.6	13.5	5.1	8.6	3.3	2.1	1.6	2.5	1.5	1.7
7	6.2	4.4	22.4	9.0	5.1	10.0	6.3	2.0	1.8	2.3	1.5	1.6
8	5.0	3.9	21.5	7.6	15.2	11.7	9.8	1.9	1.7	2.1	8.2	1.6
9	6.1	3.2	17.3	6.5	12.3	10.2	6.5	2.1	1.6	2.0	17.4	1.6
10	8.4	2.9	22.0	7.2	8.5	8.1	4.7	2.4	1.6	1.9	13.2	1.8
11	9.1	3.0	18.3	6.9	6.9	6.2	4.9	2.2	1.8	1.9	9.0	1.7
12	8.4	3.6	15.0	6.2	5.8	4.2	5.2	2.1	2.8	1.9	6.2	1.7
13	7.0	3.2	15.3	5.7	10.2	3.9	7.5	2.0	3.1	1.8	4.6	1.6
14	6.6	3.1	17.7	5.6	25.2	3.5	7.4	2.0	2.8	1.7	2.9	1.6
15	6.6	3.6	13.2	5.6	29.1	23.5	6.8	1.9	2.6	1.7	2.1	1.6
16	6.2	28.3	32.4	5.6	23.2	25.7	5.2	2.2	2.5	1.9	1.8	1.5
17	4.9	33.7	39.2	5.4	18.8	16.8	4.5	3.0	2.3	1.9	1.7	1.5
18	4.2	29.2	38.4	5.6	17.3	9.6	4.8	2.8	4.1	1.7	1.6	1.5
19	4.0	23.4	33.2	6.1	14.2	6.2	5.1	2.6	2.9	1.6	1.6	1.8
20	4.8	18.6	25.6	8.5	9.8	4.6	4.4	3.1	2.6	1.6	1.6	1.8
21	3.6	14.2	18.8	6.3	7.6	4.1	7.0	2.9	2.5	1.9	1.5	1.7
22	2.8	17.6	14.3	6.0	5.8	3.9	10.4	3.1	2.4	2.1	1.5	1.7
23	2.2	25.3	11.0	21.5	5.3	3.7	10.8	2.9	2.3	1.9	1.5	1.6
24	5.1	23.6	10.3	28.1	4.8	3.5	8.2	2.7	3.0	1.8	1.4	2.0
25	4.7	18.0	13.0	22.4	4.5	3.3	5.9	2.5	11.5	1.8	1.4	2.4
26	3.9	16.5	14.6	14.6	4.2	3.2	4.6	2.5	18.8	1.7	1.3	2.1
27	4.1	20.1	13.8	9.1	4.5	3.1	4.1	3.4	15.1	1.6	1.3	2.1
28	3.8	24.8	10.8	7.0	4.1	3.8	3.4	3.2	8.6	1.6	1.3	2.8
29	3.6	22.1	9.0	6.2	4.0	4.1	3.0	3.1	6.4	1.5	1.5	3.0
30	3.6	.....	22.0	6.2	3.8	5.0	2.6	2.8	4.9	1.5	1.8	2.8
31	22.3	.....	26.1	.....	3.5	.....	2.3	2.5	.....	1.5	.....	3.1

Daily discharge, in second-feet, of Peedee River at Cheraw, S. C., for 1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	7,120	.....	.....	.....	10,600	4,630	6,360	3,300	3,390	5,520	2,760	3,300
2	9,600	17,400	.....	.....	11,000	5,400	5,520	3,300	3,210	5,290	2,760	3,120
3	13,400	11,300	12,100	16,300	8,180	5,290	6,360	3,580	3,120	4,520	2,940	3,120
4	14,500	8,460	12,200	.....	7,510	5,180	5,520	3,480	3,030	4,190	2,940	3,120
5	12,100	6,860	15,500	.....	7,120	6,360	4,850	3,390	2,940	3,980	2,940	3,030
6	12,600	6,360	.....	.....	6,730	11,800	4,630	3,390	2,940	3,780	2,850	3,030
7	8,180	5,580	.....	12,400	6,730	14,100	8,320	3,300	3,120	3,580	2,850	2,940
9	6,660	5,290	.....	10,200	.....	17,200	13,800	3,210	3,030	3,390	11,100	2,940
9	8,040	4,520	.....	8,600	.....	14,500	8,600	3,390	2,940	3,[illegible]	.....	2,940
10	11,400	4,190	.....	9,600	11,600	11,000	6,240	3,680	2,940	3,210	.....	3,120
11	12,600	4,300	.....	9,160	9,160	8,180	6,480	3,480	3,120	3,210	12,400	3,030
12	11,400	4,960	.....	8,180	7,640	5,640	6,860	3,390	4,080	3,210	8,180	3,030
13	9,300	4,520	.....	7,510	14,500	5,290	10,000	3,300	4,410	3,120	6,120	2,940
14	8,740	4,410	.....	7,380	.....	4,850	9,900	3,300	4,080	3,030	4,190	2,940
15	8,740	4,960	.....	7,380	.....	.....	9,020	3,210	3,880	3,030	3,390	2,940
16	8,180	.....	.....	7,380	.....	.....	6,860	3,480	3,780	3,210	3,120	2,850
17	6,480	.....	.....	7,120	.....	.....	6,000	4,300	3,580	3,210	3,030	2,850
18	5,640	.....	.....	7,380	.....	13,400	6,360	4,080	5,520	3,030	2,940	2,850
19	5,400	.....	.....	8,040	.....	8,180	6,730	3,880	4,190	2,940	2,940	3,120
20	6,360	.....	.....	11,600	13,800	6,120	5,880	4,410	3,880	2,940	2,940	3,120
21	4,960	.....	.....	8,320	10,200	5,520	9,300	4,190	3,780	3,210	2,850	3,030
22	4,080	.....	.....	7,900	7,640	5,290	14,800	4,410	3,680	3,390	2,850	3,030
23	3,480	.....	15,900	.....	6,990	5,070	15,500	4,190	3,580	3,210	2,850	2,940
24	6,730	.....	14,600	.....	6,360	4,850	11,100	3,980	4,300	3,120	2,760	3,300
25	6,240	.....	.....	.....	6,000	4,630	7,770	3,780	16,800	3,120	2,760	3,680
26	5,290	.....	.....	.....	5,640	4,520	6,120	3,780	.....	3,030	2,680	3,390
27	5,520	.....	.....	12,600	6,000	4,410	5,520	4,740	.....	2,940	2,680	3,390
28	5,180	.....	15,500	9,300	5,520	5,180	4,740	4,520	11,800	2,940	2,680	4,080
29	4,960	.....	12,400	8,180	5,400	5,520	4,300	4,410	8,460	2,850	2,850	4,300
30	4,960	.....	.....	8,180	5,180	6,600	3,880	4,080	6,480	2,850	3,120	4,080
31	.....	.....	.....	.....	4,850	.....	3,580	3,780	.....	2,850	.....	4,410

NOTE.—Daily discharge determined from a rating curve fairly well defined between 3,000 and 14,900 second-feet. The discharge was greater than 18,000 second-feet on days for which no estimates are given.

SAVANNAH RIVER BASIN.

TALLULAH RIVER AT TALLULAH FALLS, GA.

Location.—At the wagon bridge at Tallulah Falls, about one-fourth mile above the beginning of the falls proper, and 3½ miles above the junction of Tallulah and Chattooga rivers. No important streams flow into Tallulah River below the station.

Records available.—August 29 to October 19, 1900; January 18 to December 31, 1901; July 15, 1904, to September 30, 1912.

Drainage area.—191 square miles.

Gage.—Standard chain gage attached to the bridge; datum same as that of the original vertical gage.

Channel.—Rocky, rather deep; slow current at low stages, becoming very swift at high stages. Some change of rating has occurred, probably caused by bowlders lodging on or washing away from the shallow, rocky crest a short distance below.

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

Artificial control.—The dam of the Georgia Railway & Power Co. at Tallulah Falls, about 1,000 feet below the station, was constructed during 1912. Backwater from this dam reached the gage about October 1, 1912, necessitating the abandonment of the station.

Accuracy.—For flood stages above gage height 6 feet the rating is not well developed.

Discharge measurements of Tallulah River at Tallulah Falls, Ga., in 1912.

Date.	Hydrographer.	Gage height.	Discharge.
		Feet.	*Sec.-ft.*
May 9	W. E. Hall	2.45	845
10	do	2.37	784

Daily gage height, in feet, of Tallulah River at Tallulah Falls, Ga., for 1912.

[Wiley Pitts, observer.]

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	2.6	2.2	2.6	3.4	2.8	2.0	2.0	2.2	1.4
2	2.4	2.1	2.4	3.2	2.7	1.95	2.1	1.95	1.3
3	2.4	2.1	2.4	3.0	2.7	2.0	2.9	1.9	1.3
4	2.2	2.0	2.4	2.9	2.7	2.0	2.6	2.9	1.35
5	2.0	1.8	2.4	2.8	2.6	1.95	3.2	2.0	1.4
6	2.0	1.8	2.7	2.8	2.6	2.2	3.6	1.95	1.4
7	1.9	1.8	2.5	2.8	2.8	2.2	2.9	1.9	1.3
8	2.0	1.8	2.4	2.7	2.6	2.0	2.6	1.9	1.3
9	2.2	1.8	2.5	2.6	2.4	1.9	2.6	2.1	1.2
10	2.0	1.8	2.3	2.6	2.4	1.8	2.6	2.1	1.2
11	1.9	1.75	2.3	2.6	2.4	1.8	3.0	2.0	1.45
12	1.9	1.7	2.4	2.5	2.4	1.75	2.6	1.9	1.35
13	1.9	1.7	2.3	2.5	2.2	1.7	2.4	1.85	1.25
14	1.8	1.75	2.3	2.5	2.2	2.9	2.4	1.8	1.3
15	1.7	3.6	6.1	2.5	2.2	2.8	2.3	1.85	4.0
16	1.6	2.7	3.6	2.6	2.4	2.5	2.4	1.8	2.3
17	1.6	2.4	3.2	2.8	2.4	2.1	2.6	1.8	1.7
18	1.7	2.4	2.9	2.7	2.2	1.95	2.6	1.95	1.4
19	2.2	2.3	2.8	2.6	2.2	1.85	3.2	1.8	1.35
20	1.9	2.3	2.7	2.5	2.2	1.8	2.6	1.7	1.3
21	1.8	3.6	2.6	2.5	2.2	1.7	2.9	1.65	1.25
22	1.7	3.1	2.5	2.6	2.1	1.7	2.6	2.0	1.6
23	1.7	2.6	2.6	3.1	2.1	1.6	2.8	1.8	6.0
24	1.7	2.7	3.9	2.8	2.1	1.9	2.6	1.65	2.7
25	1.65	2.7	3.1	2.6	2.0	2.8	2.4	1.6	2.0
26	1.6	3.7	2.8	2.5	2.0	2.4	2.2	1.65	1.8
27	1.6	3.4	2.7	2.8	2.2	2.4	2.2	1.6	1.85
28	1.6	3.0	2.7	2.7	2.2	2.2	2.0	1.5	2.3
29	3.7	2.8	6.0	2.9	3.2	2.5	2.0	1.45	1.85
30	3.1	.....	3.8	3.0	2.4	2.2	2.0	1.5	1.7
31	2.4	.....	3.4	.....	2.2	.....	1.95	1.45	.....

Daily discharge, in second-feet, of Tallulah River at Tallulah Falls, Ga., for 1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	910	700	910	1,520	1,030	610	610	700	365
2	800	655	800	1,330	970	588	655	588	330
3	800	655	800	1,170	970	610	1,100	565	330
4	700	610	800	1,100	970	610	910	1,100	348
5	610	520	800	1,030	910	588	1,330	610	365
6	610	520	970	1,030	910	700	1,730	588	365
7	565	520	850	1,030	1,030	700	1,100	565	330
8	610	520	800	970	910	610	910	565	330
9	700	520	850	910	800	565	910	655	295
10	610	520	750	910	800	520	910	655	295
11	565	500	750	910	800	520	1,170	610	382
12	565	480	800	850	800	500	910	565	348
13	565	480	750	850	700	480	800	542	312
14	520	500	750	850	700	1,100	800	520	330
15	480	1,730	5,230	850	700	1,030	750	542	2,200
16	440	970	1,730	910	800	850	800	520	750
17	440	800	1,330	1,030	800	655	910	520	480
18	480	800	1,100	970	700	588	910	588	365
19	700	750	1,030	910	700	542	1,330	520	348
20	565	750	970	850	700	520	910	480	330
21	520	1,730	910	850	700	480	1,100	460	312
22	480	1,250	850	910	655	480	910	610	440
23	480	910	910	1,250	655	440	1,030	520	5,060
24	480	970	2,080	1,030	655	565	910	460	970
25	460	970	1,250	910	610	1,030	800	440	610
26	440	970	1,030	850	610	800	700	460	520
27	440	1,520	970	1,030	700	800	700	440	542
28	440	1,170	970	970	700	700	610	400	750
29	1,840	1,030	5,060	1,100	1,330	850	610	382	542
30	1,250	.....	1,960	1,170	800	700	610	400	480
31	800	.....	1,520	.....	700	.....	588	382	.....

NOTE.—Daily discharge computed from a rating curve fairly well defined below 5,000 second-feet.

Monthly discharge of Tallulah River at Tallulah Falls, Ga., for 1912.

[Drainage area, 191 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
January	1,840	440	641	3.36	3.87	A.
February	1,730	480	828	4.34	4.68	A.
March	5,230	750	1,300	6.81	7.85	B.
April	1,520	850	1,000	5.24	5.85	A.
May	1,330	610	800	4.19	4.83	A.
June	1,100	440	658	3.45	3.85	A.
July	1,730	588	904	4.73	5.45	A.
August	1,100	382	547	2.86	3.30	A.
September	5,060	295	647	3.39	3.78	B.

TALLULAH RIVER AT MATHIS, GA.

Location.—About one-fourth mile southeast of Mathis, Ga., railroad station on the Tallulah Falls Railway and 500 feet below the mouth of Tiger Creek. The station is about 5 miles above Tallulah Falls, Ga., and 1 mile below the Mathis storage dam of the Georgia Railway & Power Co.

Records available.—October 31 to December 31, 1912 (gage heights only).

Drainage area.—Not measured.

Gage.—Staff gage spiked to a big maple tree on the left bank. The present gage is temporary and is to be replaced by a permanent gage at same place.

Discharge measurements.—Will be made by wading or from a cable. No discharge measurements were made at this station during 1912.

Artificial control.—The storage dam of the Georgia Railway & Power Co., about 1 mile above the station, will, when completed, seriously interfere with the natural conditions of flow at this place.

Daily gage height, in feet, of Tallulah River at Mathis, Ga., for 1912.

[Miles Phillips, observer.]

Day.	Nov.	Dec.	Day.	Nov.	Dec.	Day.	Nov.	Dec.
1	2.15	1.65	11	1.95	1.8	21	1.7	1.7
2	1.95	1.65	12	1.8	1.85	22	1.65	1.7
3	1.9	1.75	13	1.65	1.7	23	1.6	1.75
4	1.9	1.85	14	1.75	1.7	24	1.65	1.95
5	1.8	2.15	15	1.7	1.7	25	1.6	1.85
6	1.9	2.9	16	1.7	1.75	26	1.6	1.7
7	2.45	2.2	17	1.7	1.75	27	1.65	1.85
8	2.25	2.05	18	1.7	1.85	28	1.65	1.8
9	2.05	1.9	19	1.7	1.8	29	1.65	1.75
10	1.95	1.9	20	1.75	1.7	30	1.65	2.2
						31		2.05

SANTEE RIVER BASIN.

BROAD RIVER (OF GEORGIA) NEAR CARLTON, GA.

Location.—At the Seaboard Air Line Railway bridge 3 miles east of Carlton, Ga., and 2 miles above the mouth of South Fork, Broad River.

Records available.—May 27, 1897, to December 31, 1912.

Drainage area.—762 square miles.

Gage.—Standard chain gage attached to the railroad bridge; datum unchanged.

Channel.—The bed of the stream is sand and gravel and may be slightly changeable. The left bank overflows for about 400 feet at a gage height of 16 feet.

Discharge measurements.—Made from the upstream side of decked railroad bridge. No discharge measurements were made at this station during 1912.

Artificial control.—The flow is affected little or not at all by artificial control.

Accuracy.—As no discharge measurements have been made at this station since 1910 it is not known what conditions may have affected the rating, and the estimates for 1912 should be used with caution.

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

Daily gage height, in feet, of Broad River (of Georgia) near Carlton, Ga., for 1912.

[M. C. Power, observer.]

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.0	3.6	2.7	3.3	4.2	2.3	3.0	2.4	2.4	2.8	2.5	2.3
2	4.2	2.8	2.3	2.8	3.8	2.5	2.7	3.0	2.2	2.5	2.3	2.5
3	3.6	2.3	2.8	2.5	2.9	3.0	3.1	2.6	2.5	2.2	2.2	2.2
4	2.8	2.1	3.3	2.3	3.2	3.3	2.7	2.8	2.4	2.5	2.4	2.5
5	2.4	2.3	2.8	2.5	3.1	2.9	3.2	3.1	2.6	3.9	2.6	2.7
6	2.2	2.0	5.5	2.2	3.5	3.5	5.9	2.7	2.9	3.2	2.4	2.4
7	2.3	2.2	5.2	2.5	3.2	4.5	4.0	2.4	2.6	2.5	3.5	2.8
8	2.6	2.4	4.2	2.3	4.5	5.0	3.1	2.3	2.5	2.7	3.4	2.5
9	2.9	2.1	3.2	2.6	3.8	3.9	2.8	4.5	2.1	2.4	2.9	2.3
10	3.2	2.3	3.0	2.4	3.0	2.7	3.6	6.2	2.4	2.7	2.5	2.6
11	2.7	2.3	2.5	2.2	2.5	3.0	3.9	5.5	2.9	2.5	2.7	2.4
12	2.4	2.1	2.9	2.4	3.0	2.7	4.9	3.8	3.2	2.3	2.4	2.2
13	2.1	2.4	2.7	2.6	2.7	2.4	3.0	2.6	2.8	2.8	2.6	2.0
14	2.8	2.2	2.5	2.5	2.3	6.5	3.5	2.4	3.0	3.2	2.3	2.3
15	2.5	5.0	26.1	2.8	2.5	17.0	4.2	2.2	4.8	2.6	2.5	2.1
16	2.2	7.6	21.9	2.5	3.0	9.1	3.2	2.4	4.6	3.0	2.2	2.3
17	2.0	6.8	12.0	5.5	2.7	7.5	4.1	2.6	3.8	2.5	2.4	2.5
18	2.3	5.3	4.5	5.2	2.3	3.3	5.5	2.9	2.7	2.3	2.2	2.2
19	2.5	4.4	3.7	4.6	2.8	2.6	4.5	2.6	3.0	2.7	2.5	2.6
20	2.3	2.8	2.8	3.5	2.5	2.8	7.6	2.9	2.6	6.8	2.2	2.3
21	2.2	2.5	2.5	3.5	2.8	2.5	6.2	2.7	2.3	4.9	2.0	2.1
22	2.4	6.2	2.3	3.1	2.5	2.2	4.4	2.5	2.8	3.4	2.3	2.4
23	2.2	4.8	2.5	7.2	2.2	2.5	3.5	2.8	3.6	2.8	2.6	2.2
24	2.5	3.3	3.5	7.9	2.4	2.2	3.0	2.4	5.7	2.3	2.3	3.0
25	2.3	4.6	3.8	3.9	2.2	8.0	2.8	2.2	4.4	2.4	2.1	3.3
26	2.1	7.4	2.6	2.8	2.3	10.2	2.5	2.5	3.7	2.2	2.4	2.5
27	2.3	7.0	2.3	2.4	2.1	6.1	2.2	3.0	4.8	2.4	2.2	2.3
28	2.2	6.2	2.6	3.4	3.4	4.2	2.8	2.6	3.2	2.2	2.5	2.1
29	2.5	3.7	6.3	4.2	3.8	3.1	2.4	2.4	2.9	2.3	2.3	3.0
30	3.7	.....	7.8	3.7	4.7	2.6	2.2	2.2	2.5	2.4	2.1	2.7
31	5.9	.....	8.3	.....	3.3	.....	2.5	2.0	.....	2.2	.....	2.4

Daily discharge, in second-feet, of Broad River (of Georgia) near Carlton, Ga., for 1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,070	1,540	865	1,290	2,060	645	1,070	695	695	930	750	645
2	2,060	930	645	930	1,700	750	865	1,070	595	750	645	750
3	1,540	645	930	750	1,000	1,070	1,140	805	750	595	595	595
4	930	545	1,290	645	1,220	1,290	865	930	695	750	695	750
5	695	645	930	750	1,140	1,000	1,220	1,140	805	1,790	805	865
6	595	500	3,440	595	1,450	1,450	3,920	865	1,000	1,220	695	695
7	645	595	3,100	750	1,220	2,350	1,880	695	805	750	1,450	930
8	805	695	2,060	645	2,350	2,880	1,140	645	750	865	1,370	750
9	1,000	545	1,220	805	1,700	1,790	930	2,350	545	695	1,000	645
10	1,220	645	1,070	695	1,070	865	1,540	4,300	695	865	750	805
11	865	645	750	595	750	1,070	1,790	3,440	1,000	750	865	695
12	695	545	1,000	695	1,070	865	2,770	1,700	1,220	645	695	595
13	545	695	865	805	865	695	1,070	805	930	930	805	500
14	930	595	750	750	645	4,690	1,450	695	1,070	1,220	645	645
15	750	2,880	38,600	930	750	21,500	2,060	595	2,660	805	750	545
16	595	6,200	30,100	750	1,070	8,370	1,220	695	2,450	1,070	595	645
17	500	5,090	13,000	3,440	865	6,060	1,970	805	1,700	750	695	750
18	645	3,210	2,350	3,100	645	1,290	3,440	1,000	865	645	595	595
19	750	2,260	1,620	2,450	930	805	2,350	805	1,070	865	750	805
20	645	930	930	1,450	750	930	6,200	1,000	805	5,090	595	645
21	595	750	750	1,450	930	750	4,300	865	645	2,770	500	545
22	695	4,300	645	1,140	750	595	2,260	750	930	1,370	645	695
23	595	2,660	750	5,640	595	750	1,450	930	1,540	930	805	595
24	750	1,290	1,450	6,620	695	595	1,070	695	3,680	645	645	1,070
25	645	2,450	1,700	1,790	595	6,760	930	595	2,260	695	545	1,290
26	545	5,920	805	930	645	10,100	750	750	1,620	595	695	750
27	645	5,360	645	695	545	4,180	595	1,070	2,660	695	595	645
28	595	4,300	805	1,370	1,370	2,060	930	805	1,220	595	750	545
29	750	1,620	4,430	2,060	1,700	1,140	695	695	1,000	645	645	1,070
30	1,620	.....	6,480	1,620	2,560	805	595	595	750	695	545	865
31	3,920	.....	7,200	.....	1,290	.....	750	500	.....	595	.....	695

NOTE.—Daily discharge computed from the rating curve used since 1906. The curve is well defined below 9,800 second-feet.

Monthly discharge of Broad River (of Georgia) near Carlton, Ga., for 1912.

[Drainage area, 762 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).
	Maximum.	Minimum.	Mean.	Per square mile.	
January	3,920	500	930	1.22	1.41
February	6,200	500	2,030	2.66	2.87
March	38,600	645	4,230	5.55	6.40
April	6,620	595	1,540	2.02	2.25
May	2,560	545	1,130	1.48	1.71
June	21,500	595	2,940	3.86	4.31
July	6,200	595	1,720	2.26	2.61
August	4,300	500	1,070	1.40	1.61
September	3,680	545	1,250	1.64	1.83
October	5,090	595	1,040	1.36	1.57
November	1,450	500	737	.967	1.08
December	1,290	500	730	.958	1.10
The year	38,600	500	1,610	2.11	28.75

ALTAMAHA RIVER BASIN.

OCMULGEE RIVER NEAR JACKSON, GA.

Location.—At Pittmans Ferry, 8 miles southeast of Jackson, Ga., half a mile above the mouth of Yellow Water Creek and a short distance below Heards Creek. The station is 1½ miles below the 100-foot dam and power plant of the Central Georgia Power Co.

Records available.—May 18, 1906, to December 31, 1912.

Drainage area.—1,400 square miles.

Gage.—Vertical staff in three sections, on right bank of river, upstream side of ferry landing; datum unchanged.

Channel.—Bottom sandy; shifts considerably, but the shifting has little, if any, effect on the rating, as the control is formed by a rocky ledge about 400 feet below the gage.

Discharge measurements.—Made at the ferry, either from the ferryboat or a small boat held in place by the ferry cable.

Artificial control.—Since the power plant of the Central Georgia Power Co. has been in operation the artificial regulation has very greatly affected the normal low water flow.

Accuracy.—The records are based on two gage-height readings a day, but as there is a large diurnal fluctuation, due to the operation of the power plant above, it is possible that the estimates of daily discharge may be considerably in error for individual days, especially at low stages.

The following discharge measurement was made by W. E. Hall:

December 11, 1912, gage height, 4.76 feet; discharge, 1,400 second-feet.

Daily gage height, in feet, of Ocmulgee River near Jackson, Ga., for 1912.

[C. A. Pittman, observer.]

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	5.6	6.7	5.8	6.8	5.4	5.3	5.45	4.45	4.40	4.85	4.85	4.32
2	5.6	6.0	5.6	6.4	5.3	5.15	5.35	4.6	4.45	4.75	4.7	4.8
3	5.5	5.6	5.45	6.0	5.2	5.45	5.9	4.6	4.40	4.6	4.32	4.8
4	5.5	5.5	5.5	5.7	5.8	5.9	6.2	4.6	4.40	5.4	4.9	4.85
5	5.4	5.2	5.7	5.6	6.8	5.6	5.8	4.6	4.6	6.6	4.75	4.8
6	5.2	5.05	6.4	5.5	6.7	5.7	5.9	4.65	4.8	6.2	4.75	4.8
7	5.0	5.0	6.8	5.4	6.4	7.0	5.8	4.6	4.5	5.6	4.7	4.7
8	5.15	5.0	6.4	5.3	7.6	7.8	5.5	4.6	4.40	5.25	4.9	4.10
9	5.8	4.9	6.0	5.3	6.4	6.8	5.4	4.8	4.40	4.9	4.9	4.6
10	6.0	5.0	5.8	5.3	5.8	5.9	5.6	5.0	4.45	4.95	4.6	4.95
11	5.7	5.0	5.8	5.2	5.6	5.4	5.4	5.25	4.55	4.7	4.9	4.9
12	5.5	5.0	5.6	5.2	5.5	5.2	6.6	5.2	4.6	4.65	4.9	4.8
13	5.35	4.9	5.6	5.2	5.4	5.05	7.0	4.95	4.45	4.35	4.7	4.9
14	5.2	5.0	5.6	5.15	5.3	6.0	6.6	4.85	4.40	4.7	4.8	4.6
15	5.2	6.0	13.2	5.1	5.15	10.0	6.0	4.8	4.40	4.6	4.75	4.5
16	5.1	7.8	19.9	5.9	5.15	10.7	5.5	4.7	4.40	4.85	4.65	4.8
17	4.95	7.3	16.7	8.2	5.25	8.4	5.6	4.85	4.5	5.0	4.35	4.8
18	4.9	6.2	10.8	8.4	5.05	6.8	5.8	4.8	4.65	5.0	4.85	4.9
19	4.95	6.0	8.0	7.3	5.0	6.1	5.6	5.5	4.55	4.6	4.9	4.8
20	5.0	5.6	6.8	6.8	4.8	5.45	5.3	5.1	4.5	4.7	4.8	4.9
21	5.0	6.2	6.4	7.6	4.95	5.3	5.2	4.9	4.45	5.45	4.8	4.9
22	5.0	6.6	6.2	8.2	4.9	5.1	5.2	4.9	4.15	5.2	4.8	3.7
23	4.9	6.4	6.0	10.0	4.85	5.0	5.0	4.9	5.25	5.05	4.85	4.40
24	4.9	6.8	6.3	8.4	4.85	5.0	4.95	4.8	5.4	4.95	4.30	4.55
25	4.9	7.4	6.8	6.8	4.8	5.4	4.9	4.7	5.3	4.7	4.9	4.95
26	4.8	7.4	6.6	6.1	4.8	7.6	4.9	5.0	5.2	4.65	4.8	5.05
27	4.7	7.0	6.2	5.7	4.85	7.9	4.8	4.9	5.1	4.45	4.8	5.35
28	4.7	6.8	5.9	5.6	4.75	6.6	4.75	4.65	4.9	4.75	4.7	5.6
29	5.05	6.4	7.6	5.6	4.95	5.9	4.7	4.6	4.8	4.7	4.9	4.28
30	6.6	.....	9.0	5.5	5.7	5.6	4.6	4.5	5.1	4.8	4.9	5.5
31	7.8	.....	8.0	.....	5.6	.....	4.55	4.5	.....	4.5	.....	5.2

Daily discharge, in second-feet, of Ocmulgee River near Jackson, Ga., for 1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	3,050	5,300	3,460	5,510	2,640	2,440	2,740	858	790	1,520	1,520	694
2	3,050	3,870	3,050	4,690	2,440	2,130	2,540	1,080	858	1,330	1,240	1,420
3	2,840	3,050	2,740	3,870	2,230	2,740	3,660	1,080	790	1,080	694	1,420
4	2,840	2,840	2,840	3,260	3,460	3,660	4,280	1,080	790	2,640	1,620	1,520
5	2,640	2,230	3,260	3,050	5,510	3,050	3,460	1,080	1,080	5,100	1,330	1,420
6	2,230	1,920	4,690	2,840	5,300	3,260	3,660	1,160	1,420	4,280	1,330	1,420
7	1,820	1,820	5,510	2,640	4,690	5,920	3,460	1,080	925	3,050	1,240	1,240
8	2,130	1,820	4,690	2,440	7,150	7,560	2,840	1,080	790	2,330	1,620	470
9	3,460	1,620	3,870	2,440	4,690	5,510	2,640	1,420	790	1,620	1,620	1,080
10	8,870	1,820	3,460	2,440	3,460	3,660	3,050	1,820	858	1,720	1,080	1,720
11	3,260	1,820	3,460	2,230	3,050	2,640	2,640	2,330	1,000	1,240	1,620	1,620
12	2,840	1,820	3,050	2,230	2,840	2,230	5,100	2,230	1,080	1,160	1,620	1,420
13	2,540	1,620	3,050	2,230	2,640	1,920	5,920	1,720	858	730	1,240	1,620
14	2,230	1,820	3,050	2,130	2,440	3,870	5,100	1,520	790	1,240	1,420	1,080
15	2,230	3,870	18,800	2,020	2,130	12,100	3,870	1,420	790	1,080	1,330	925
16	2,020	7,560	32,900	3,660	2,130	13,600	2,840	1,240	790	1,520	1,160	1,420
17	1,720	6,540	26,200	8,380	2,330	8,790	3,050	1,520	925	1,820	730	1,420
18	1,620	4,280	13,800	8,790	1,920	5,510	3,460	1,420	1,160	1,820	1,520	1,620
19	1,720	3,870	7,970	6,540	1,820	4,080	3,050	2,840	1,000	1,080	1,620	1,420
20	1,820	3,050	5,510	5,510	1,420	2,740	2,440	2,020	925	1,240	1,420	1,620
21	1,820	4,280	4,690	7,150	1,720	2,440	2,230	1,620	858	2,740	1,420	1,620
22	1,820	5,100	4,280	8,380	1,620	2,020	2,230	1,620	518	2,230	1,420	210
23	1,620	4,690	3,870	12,100	1,520	1,820	1,820	1,620	2,330	1,920	1,520	790
24	1,620	5,510	4,480	8,790	1,520	1,820	1,720	1,420	2,640	1,720	670	1,000
25	1,620	6,740	5,510	5,510	1,420	2,640	1,620	1,240	2,440	1,240	1,620	1,720
26	1,420	6,740	5,100	4,080	1,420	7,150	1,620	1,820	2,230	1,160	1,420	1,920
27	1,240	5,920	4,280	3,260	1,520	7,760	1,420	1,620	2,020	858	1,420	2,540
28	1,240	5,510	3,660	3,050	1,330	5,100	1,330	1,160	1,620	1,330	1,240	3,050
29	1,920	4,690	7,150	3,050	1,720	3,660	1,240	1,080	1,420	1,240	1,620	649
30	5,100	.....	10,000	2,840	3,260	3,050	1,080	925	2,020	1,420	1,620	2,840
31	7,560	.....	7,970	.....	3,050	.....	1,000	925	.....	925	.....	2,230

NOTE.—Daily discharge computed from a rating curve fairly well defined below 10,000 second-feet.

Monthly discharge of Ocmulgee River near Jackson, Ga., for 1912.

Month.	Discharge in second-feet.			Accuracy.
	Maximum.	Minimum.	Mean.	
January	7,560	1,240	2,480	C.
February	7,560	1,620	3,850	C.
March	32,900	2,740	6,980	D.
April	12,100	2,020	4,500	C.
May	7,150	1,330	2,720	C.
June	13,600	1,820	4,500	C.
July	5,920	1,000	2,810	C.
August	2,840	858	1,450	D.
September	2,640	518	1,220	D.
October	5,100	730	1,750	D.
November	1,620	670	1,360	D.
December	3,050	210	1,460	D.
The year	32,900	210	2,920	

OCMULGEE RIVER AT MACON, GA.

Location.—At the Fifth Street bridge in the city of Macon, near the Southern Railway passenger depot and about 500 feet above the Central of Georgia Railway bridge.

Records available.—October 18, 1895, to December 31, 1912.

Drainage area.—2,420 square miles.

Gage.—The United States Weather Bureau gage originally used at this station is a heavy timber bolted to a pier of the Central of Georgia Railway bridge. A standard chain gage was installed October 9, 1905, on the downstream steel handrail of highway bridge, about 600 feet upstream from old gage. These gages have been referred to the same datum and have given practically the same readings. Since August 1, 1912, the old relation of gage height to discharge has been considerably changed owing to the construction of a dock about 800 feet below the gage.

Channel.—Both banks are high and neither is subject to overflow; bed soft and shifting; considerable change in the station rating curve has occurred as the result of changes in the river bed at and below the station.

Discharge measurements.—Made from the downstream side of the highway bridge to which the gage is attached.

Artificial control.—The natural condition of flow, especially at low stages, is likely to be considerably affected by the operations of the power dam near Jackson, Ga.

Accuracy.—As the station is situated below the fall line, rapidly rising or falling stages are likely to be attended by variations in surface slope, causing greater or less discharge than for the normal rating. The possible error in mean gage heights due to artificial control may cause the estimates for individual days to be considerably in error, especially at low stages. No rating has been developed for the changed conditions due to the construction of the new dock about 800 feet below the gage, and, owing to the uncertainty as to the applicability of the old rating to observations made during the period of the construction of the dock, no estimates of daily discharge are given for 1912.

Cooperation.—Since June 1, 1899, all gage heights have been furnished by the United States Weather Bureau.

Discharge measurements of Ocmulgee River at Macon, Ga., in 1912.

Date.	Hydrographer.	Gage height.	Discharge.
		Feet.	*Sec.-ft.*
Apr. 23	W. E. Hall	17.15	16,900
Aug. 22	do	5.16	2,240

Daily gage height, in feet, of Ocmulgee River at Macon, Ga., for 1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	12.3	13.2	9.0	12.4	7.9	7.6	7.0	4.5	3.8	5.4	3.6	3.6
2	9.2	10.9	7.8	10.8	7.4	6.3	7.1	4.5	3.5	4.8	4.0	2.6
3	8.0	9.7	6.9	9.6	7.2	7.1	7.2	4.4	3.6	4.4	3.5	3.5
4	8.0	7.0	10.0	8.4	9.2	10.2	11.9	4.5	3.5	4.3	2.7	3.7
5	7.1	5.8	8.6	7.7	10.1	10.2	10.0	4.2	3.6	6.5	3.6	3.7
6	6.4	5.6	16.0	7.5	14.9	10.3	8.6	4.4	6.7	10.1	3.5	3.7
7	5.7	5.0	13.4	7.2	12.2	16.6	8.8	4.4	4.9	8.5	7.5	3.7
8	5.4	4.6	12.3	6.9	12.0	15.0	7.7	4.2	4.2	6.6	5.5	3.4
9	14.7	4.5	11.0	7.1	12.3	12.8	6.9	5.7	3.5	5.5	4.7	2.4
10	11.8	4.4	10.0	6.9	10.3	10.7	7.0	5.6	3.7	4.9	4.5	3.1
11	10.0	4.5	8.6	6.8	8.5	8.6	7.4	5.9	3.6	4.5	3.5	3.7
12	8.4	4.2	10.2	6.7	7.6	7.0	8.3	6.4	5.0	4.2	4.3	3.5
13	7.3	4.7	10.0	6.6	7.3	6.2	13.9	6.1	4.4	3.9	4.1	3.6
14	6.8	4.5	8.8	6.5	7.2	6.3	12.6	5.5	4.1	3.8	3.9	3.6
15	5.9	10.5	16.7	6.2	6.6	9.0	10.9	5.0	3.9	4.2	4.0	3.0
16	5.7	12.5	22.7	11.1	6.5	15.6	8.9	4.7	3.8	4.8	3.8	2.4
17	5.1	13.9	22.3	15.6	6.6	15.4	11.9	7.8	4.4	4.8	3.8	3.1
18	4.8	12.0	20.2	16.9	6.5	12.8	12.7	5.8	4.4	4.7	2.8	3.4
19	4.9	9.8	15.4	14.7	6.1	10.0	11.2	5.0	4.0	4.4	3.7	3.5
20	5.6	8.4	12.1	12.2	5.7	8.2	8.3	6.7	3.7	4.5	3.5	3.4
21	5.5	7.6	10.6	16.9	6.0	6.9	6.8	5.8	3.5	3.7	3.8	3.5
22	5.0	14.4	9.5	15.1	5.9	6.4	6.1	5.0	3.2	5.9	3.6	3.1
23	4.9	13.7	8.7	17.7	5.7	5.7	6.2	5.0	4.1	5.5	3.6	2.4
24	4.6	12.3	9.6	16.2	5.6	5.3	5.7	5.1	11.8	4.9	3.6	10.3
25	4.4	15.4	11.6	13.1	5.4	8.8	5.6	4.6	7.8	4.6	2.6	5.4
26	4.2	14.0	11.4	11.0	5.4	11.6	5.5	5.0	6.0	4.1	3.8	5.1
27	4.0	13.6	11.1	9.5	5.0	14.4	5.4	5.7	5.6	3.7	3.8	5.7
28	3.9	12.2	8.9	8.6	5.6	12.7	5.1	5.5	4.8	3.0	4.1	5.9
29	3.6	10.5	10.4	8.0	5.7	10.8	4.7	4.5	4.3	4.0	3.6	4.9
30	12.6	.....	14.4	8.0	9.7	8.4	4.9	4.1	4.4	3.9	4.0	3.7
31	13.1	.....	14.4	.....	8.7	.....	4.8	3.9	.....	3.8	.....	5.3

OCONEE RIVER NEAR GREENSBORO, GA.

Location.—At the highway bridge, 5 miles west of Greensboro on the road to Madison, Ga., about 4 miles above the mouth of Apalachee River and 1½ miles below Town Creek.

Records available.—July 25, 1903, to December 31, 1912.

Drainage area.—1,100 square miles.

Gage.—Standard chain gage attached to the bridge; datum unchanged.

Channel.—Bed composed chiefly of sand; slightly shifting.

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

Artificial control.—In the spring of 1911 a new dam was completed near Athens, Ga., greatly increasing the storage capacity in that vicinity. The operation of this dam does not appear to cause very great daily fluctuation at Greensboro, but it does cause abnormally low daily discharge at times.

Accuracy.—Owing to the operation of power plants above the station it is probable that the estimates of daily discharge may be somewhat in error for individual days, especially at low stages.

Discharge measurements of Oconee River near Greensboro, Ga., in 1912.

Date.	Hydrographer.	Gage height.	Discharge.
		Feet.	*Sec.-ft.*
Jan. 17	W. E. Hall	3.56	1,150
Dec. 17	do	2.49	738

Daily gage height, in feet, of Oconee River near Greensboro, Ga., for 1912.

[W. E. Strickland, observer.]

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	5.8	9.4	6.8	9.7	4.6	5.7	5.0	3.4	2.4	3.0	5.4	2.6
2	5.7	7.1	5.2	6.6	4.7	5.0	4.3	3.6	2.2	2.8	3.6	2.6
3	5.6	5.4	5.4	5.6	4.4	4.1	5.8	3.2	1.9	2.3	3.0	2.4
4	5.7	4.2	6.2	5.0	5.2	4.9	5.2	3.1	1.8	2.4	2.8	2.7
5	4.2	4.0	6.4	4.9	7.0	6.8	5.4	3.0	1.7	5.4	2.8	3.0
6	4.4	3.8	8.2	4.8	6.8	7.4	5.8	2.8	1.8	5.2	3.0	2.7
7	3.9	3.6	10.4	4.6	7.4	10.2	5.2	2.8	2.0	4.5	4.9	2.8
8	4.4	3.4	8.4	4.6	7.4	7.9	5.0	3.0	2.2	3.7	3	2.6
9	6.8	3.2	6.8	4.4	6.0	6.2	5.9	3.8	2.3	3.3	3.4	2.3
10	6.2	3.0	5.8	4.3	4.8	4.4	9.4	5.4	2.6	3.0	2.8	2.5
11	5.0	3.3	5.0	4.4	4.4	3.8	7.6	8.4	2.9	2.4	2.6	3.0
12	4.6	3.5	5.9	4.2	4.2	3.6	12.0	7.4	2.7	1.8	2.8	3.0
13	4.4	3.4	5.4	4.0	4.2	3.3	15.0	6.1	2.6	1.6	3.5	2.8
14	4.4	6.4	5.3	3.8	3.9	7.4	13.8	3.8	3.4	1.8	3.5	2.7
15	4.1	9.8	17.8	3.9	3.6	13.5	10.8	3.4	7.0	2.1	3.2	2.6
16	3.6	12.4	27.4	8.6	4.0	19.6	7.1	3.2	6.4	2.4	3.1	2.6
17	3.4	11.5	25.3	10.2	3.8	19.7	6.0	3.0	5.8	2.6	3.0	2.6
18	3.6	8.5	20.4	11.3	3.6	13.6	6.8	3.0	5.4	3.8	2.9	2.6
19	3.8	6.9	14.0	9.9	3.6	7.0	8.0	4.0	4.2	4.2	2.8	2.8
20	4.0	8.8	7.4	7.8	3.4	5.0	7.4	4.0	3.1	4.7	2.6	2.6
21	3.8	10.2	6.2	7.4	3.3	4.7	7.1	3.6	2.6	4.7	2.9	2.6
22	3.7	11.2	5.8	9.4	3.4	4.1	6.6	3.2	2.7	4.2	2.6	2.6
23	3.6	9.0	5.5	12.5	3.4	3.9	5.8	2.8	4.1	4.0	2.7	2.8
24	3.2	9.4	6.2	12.0	3.4	3.6	5.5	2.6	11.3	3.6	2.6	4.4
25	3.2	10.4	7.8	10.8	3.2	7.6	5.0	3.4	11.0	3.2	2.5	5.2
26	3.2	10.0	6.7	7.1	3.1	10.2	4.4	3.5	7.6	2.9	2.4	4.0
27	3.0	11.5	5.8	5.2	3.0	11.8	3.6	3.2	3.6	2.7	2.6	3.6
28	3.8	11.3	5.6	5.2	5.5	10.8	3.4	3.0	4.3	2.5	4.5	3.4
29	6.6	7.8	10.7	5.5	4.8	7.6	3.4	2.8	5.6	2.3	4.4	3.4
30	9.4	.....	13.4	5.0	8.4	4.9	3.2	2.7	3.4	2.2	2.8	3.4
31	9.6	.....	13.0	.....	8.1	.....	3.0	2.5	.....	2.6	.....	3.4

Daily discharge, in second-feet, of Oconee River near Greensboro, Ga., for 1912.

Date.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	2,220	4,350	2,770	4,540	1,640	2,180	1,820	1,110	750	960	2,020	820
2	2,180	2,940	1,920	2,660	1,680	1,820	1,500	1,190	680	890	1,190	820
3	2,120	2,020	2,020	2,120	1,540	1,410	2,220	1,030	582	715	960	750
4	2,180	1,460	2,440	1,820	1,920	1,780	1,920	995	550	750	890	855
5	1,460	1,360	2,550	1,780	2,880	2,770	2,020	960	520	2,020	890	960
6	1,540	1,280	3,590	1,720	2,770	3,110	2,220	890	550	1,920	960	855
7	1,320	1,190	5,000	1,640	3,110	4,870	1,920	890	614	1,590	1,780	890
8	1,540	1,110	3,710	1,640	3,110	3,410	1,820	960	680	1,230	1,280	820
9	2,770	1,030	2,770	1,540	2,330	2,440	2,280	1,280	715	1,070	1,110	715
10	2,440	960	2,220	1,500	1,720	1,540	4,350	2,020	820	960	890	785
11	1,820	1,070	1,820	1,540	1,540	1,280	3,230	3,710	925	750	820	960
12	1,640	1,150	2,280	1,460	1,460	1,190	6,110	3,110	855	550	890	960
13	1,540	1,110	2,020	1,360	1,460	1,070	8,330	2,380	820	490	1,150	890
14	1,540	2,550	1,980	1,280	1,320	3,110	7,430	1,280	1,110	550	1,150	855
15	1,410	4,610	10,500	1,320	1,190	7,200	5,270	1,110	2,880	647	1,030	820

Daily discharge, in second-feet, of Oconee River near Greensboro, Ga., for 1912—Contd.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
16	1,190	6,390	18,600	3,830	1,360	11,900	2,940	1,030	2,550	750	995	820
17	1,110	5,760	16,700	4,870	1,280	12,000	2,330	960	2,220	820	960	820
18	1,190	3,770	12,600	5,620	1,190	7,280	2,770	960	2,020	1,280	925	820
19	1,280	2,820	7,580	4,680	1,190	2,880	3,470	1,360	1,460	1,460	890	890
20	1,360	3,960	3,110	3,350	1,110	1,820	3,110	1,360	995	1,680	820	820
21	1,280	4,870	2,440	3,110	1,070	1,680	2,940	1,190	820	1,680	925	820
22	1,230	5,550	2,220	4,350	1,110	1,410	2,660	1,030	855	1,460	820	820
23	1,190	4,090	2,080	6,460	1,110	1,320	2,220	890	1,410	1,360	855	890
24	1,030	4,350	2,440	6,110	1,110	1,190	2,080	820	5,620	1,190	820	1,540
25	1,030	5,000	3,350	5,270	1,030	3,230	1,820	1,110	5,410	1,030	785	1,920
26	1,030	4,740	2,720	2,940	995	4,870	1,540	1,150	3,230	925	750	1,360
27	960	5,760	2,220	1,920	960	5,970	1,190	1,030	1,190	855	820	1,190
28	1,280	5,620	2,120	1,920	2,080	5,270	1,110	960	1,500	785	1,590	1,110
29	2,660	3,350	5,200	2,080	1,720	3,230	1,110	890	2,120	715	1,540	1,110
30	4,350	.....	7,130	1,820	3,710	1,780	1,030	855	1,110	680	890	1,110
31	4,480	.....	6,830	.....	3,530	.....	960	785	.....	820	.....	1,110

NOTE.—Daily discharge computed from a rating curve fairly well defined below 6,000 second-feet. Above 6,000 second-feet the discharges, as shown above, are probably too low.

Monthly discharge of Oconee River near Greensboro, Ga., for 1912.

Month.	Discharge in second-feet.			Accuracy.
	Maximum.	Minimum.	Mean.	
January	4,480	960	1,750	A.
February	6,390	960	3,250	A.
March	18,600	1,820	4,680	B.
April	6,460	1,280	2,880	A.
May	3,710	960	1,750	A.
June	12,000	1,070	3,500	B.
July	8,330	960	2,770	B.
August	3,710	785	1,270	A.
September	5,620	520	1,520	A.
October	2,020	490	1,050	A.
November	2,020	750	1,050	A.
December	1,920	715	965	A.
The year	18,600	490	2,200	

OCONEE RIVER AT FRALEYS FERRY, NEAR MILLEDGEVILLE, GA.

Location.—At Fraleys Ferry, 6 miles above Milledgeville, Ga., and about 4 miles below the mouth of Little River.

Records available.—May 23, 1906, to December 31, 1908; October 6, 1909, to December 31, 1912.

Drainage area.—2,840 square miles.

Gage.—Sloping section of timber, bolted to solid rock on left bank above the ferry landing; datum unchanged.

Channel.—Sandy and shifting at measuring section; rock control below.

Discharge measurements.—Made from ferry boat. No discharge measurements were made at this station during 1912.

Artificial control.—None below vicinity of Athens, Ga., where storage may cause low daily discharge at this station at times.

Accuracy.—Records for previous years excellent, except for high stages which can not be measured. Estimates for 1912 are based on 1911 rating.

Daily gage height, in feet, of Oconee River near Milledgeville, Ga., for 1912.

[H. A. Taylor, observer.]

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	10.3	10.0	7.7	9.2	7.0	7.4	6.8	5.8	5.6	6.0	5.6	6.0
2	8.0	7.9	7.2	8.0	6.8	6.8	7.1	6.0	5.5	5.9	5.7	5.9
3	7.6	7.4	7.1	7.5	6.8	6.6	7.8	6.0	5.45	5.8	5.8	5.8
4	7.6	6.8	7.6	7.2	7.6	8.6	7.8	6.0	5.4	5.8	5.8	5.8
5	7.2	6.6	7.8	7.0	8.4	8.6	7.4	6.0	5.4	7.0	5.8	5.8
6	7.0	6.5	b12.6	6.9	10.1	8.5	8.2	5.9	5.5	7.0	5.8	5.8
7	6.8	6.4	10.7	6.9	9.7	17.2	8.7	5.9	5.5	6.7	9.0	5.8
8	7.4	6.4	9.2	6.8	9.5	14.0	7.6	6.1	5.5	6.4	8.6	6.0
9	10.6	6.4	8.3	6.8	8.4	9.4	6.8	6.4	5.4	5.0	7.0	6.0
10	8.7	6.4	7.8	6.7	7.5	7.6	7.4	7.4	5.45	5.8	6.3	5.9
11	7.7	6.4	7.4	6.7	7.0	7.0	7.6	8.4	5.8	5.8	6.0	5.8
12	7.4	6.4	8.2	6.7	6.8	6.8	11.4	7.6	6.2	5.8	6.0	5.8
13	7.3	6.4	8.0	6.6	6.8	6.6	10.6	6.7	6.0	5.8	6.0	5.8
14	7.2	6.4	7.6	6.7	6.6	7.0	11.1	6.3	5.9	5.8	6.0	5.8
15	6.8	a10.8	9.0	14.3	6.5	8.8	9.2	6.0	6.4	5.8	5.9	5.8
16	6.8	10.8	b22.4	14.3	6.4	a10.5	7.4	6.2	7.0	6.2	5.9	5.8
17	6.6	10.8	21.6	14.9	6.7	13.2	7.2	7.4	6.4	6.1	5.8	5.8
18	6.5	a9.0	18.8	13.8	6.4	12.6	7.6	6.2	6.0	5.8	5.8	5.8
19	6.8	8.2	14.6	11.4	6.3	9.0	7.6	6.6	5.8	6.0	5.8	6.0
20	7.0	7.6	9.7	8.7	6.3	7.0	7.5	6.3	5.6	6.4	5.7	5.9
21	6.8	8.1	8.1	9.7	6.2	6.8	7.1	6.2	5.5	7.4	5.8	5.8
22	6.7	8.6	7.8	10.1	6.2	6.6	6.8	5.9	5.45	7.3	5.8	5.8
23	6.4	12.0	7.6	12.3	6.2	6.4	7.2	6.4	7.2	6.4	5.8	6.0
24	6.4	12.0	8.0	10.6	6.1	6.4	6.6	5.8	9.8	6.0	5.8	8.4
25	6.4	a12.0	8.8	9.0	6.1	8.6	6.6	5.8	9.0	5.8	5.8	7.7
26	6.3	a11.0	8.4	8.2	6.0	9.6	6.2	6.1	7.8	5.8	5.7	6.9
27	6.2	a10.0	7.8	7.4	6.0	8.6	6.0	6.0	6.6	5.8	5.8	7.0
28	6.1	a9.0	7.4	7.3	6.3	9.2	6.0	6.0	6.4	5.8	5.8	6.8
29	6.3	8.4	9.4	7.2	7.0	8.2	5.9	5.8	6.2	5.8	5.8	6.5
30	a6.8	.....	10.7	7.1	8.1	7.2	5.9	5.6	6.1	5.7	6.0	6.3
31	a8.2	.....	10.2	.....	8.1	.....	5.8	5.6	.....	5.6	.....	6.4

a Gage height estimated. b Maximum gage height for the day.

Daily discharge, in second-feet, of Oconee River at Fraleys Ferry, near Milledgeville, Ga., for 1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	10,400	9,780	5,070	8,070	3,770	4,500	3,420	1,870	1,610	2,150	1,610	2,150
2	5,650	5,450	4,130	5,650	3,420	3,420	3,950	2,150	1,490	2,010	1,740	2,010
3	4,880	4,500	3,950	4,690	3,420	3,080	5,260	2,150	1,440	1,870	1,870	1,870
4	4,880	3,420	4,880	4,130	4,880	6,850	5,260	2,150	1,380	1,870	1,870	1,870
5	4,130	3,080	5,260	3,770	6,450	6,850	4,500	2,150	1,380	3,770	1,870	1,870
6	3,770	2,920	14,000	3,590	10,000	6,650	6,050	2,010	1,490	3,770	1,870	1,870
7	3,420	2,760	11,300	3,590	9,120	29,000	7,050	2,010	1,490	3,250	7,650	1,870
8	4,500	2,760	8,070	3,420	8,700	20,000	4,880	2,300	1,490	2,760	6,850	2,150
9	11,100	2,760	6,250	3,420	6,450	8,490	3,420	2,760	1,380	990	3,770	2,150
10	7,050	2,760	5,260	3,250	4,690	4,880	4,500	4,500	1,440	1,870	2,600	2,010
11	5,070	2,760	4,500	3,250	3,770	3,770	4,880	6,450	1,870	1,870	2,150	1,870
12	4,500	2,760	6,050	3,250	3,420	3,420	13,000	4,880	2,450	1,870	2,150	1,870
13	4,310	2,760	5,650	3,080	3,420	3,080	11,100	3,250	2,150	1,870	2,150	1,870
14	4,130	2,760	4,880	3,250	3,080	3,770	12,300	2,600	2,010	1,870	2,150	1,870
15	3,420	11,600	7,650	20,800	2,920	7,250	8,070	2,150	2,760	1,870	2,010	1,870
16	3,420	11,600	38,500	20,800	2,760	10,900	4,500	2,450	3,770	2,450	2,010	1,870
17	3,080	11,600	41,300	22,500	3,250	17,800	4,130	4,500	2,760	2,300	1,870	1,870
18	2,920	7,650	33,400	19,400	2,760	16,100	4,880	2,450	2,150	1,870	1,870	1,870
19	3,420	6,050	21,700	13,000	2,600	7,650	4,880	3,080	1,870	2,150	1,870	2,150
20	3,770	4,880	9,120	7,050	2,600	3,770	4,690	2,600	1,610	2,760	1,740	2,010
21	3,420	5,850	5,850	9,120	2,450	3,420	3,950	2,450	1,490	4,500	1,870	1,870
22	3,250	6,850	5,260	10,000	2,450	3,080	3,420	2,010	1,440	4,310	1,870	1,870
23	2,760	14,500	4,880	15,300	2,450	2,760	4,130	2,760	4,130	2,760	1,870	2,150
24	2,760	14,500	5,650	11,100	2,300	2,760	3,080	1,870	9,340	2,150	1,870	6,450
25	2,760	14,500	7,250	7,650	2,300	6,850	3,080	1,870	7,650	1,870	1,870	5,070
26	2,600	12,000	6,450	6,050	2,150	8,910	2,450	2,300	5,260	1,870	1,740	3,590
27	2,450	9,780	5,260	4,500	2,150	6,850	2,150	2,150	3,080	1,870	1,870	3,770
28	2,300	7,650	4,500	4,310	2,600	8,070	2,150	2,150	2,760	1,870	1,870	3,420
29	2,600	6,450	8,490	4,130	3,770	6,050	2,010	1,870	2,450	1,870	1,870	2,920
30	3,420	.....	11,300	3,950	5,850	4,130	2,010	1,610	2,300	1,740	2,150	2,600
31	6,050	.....	10,200	.....	5,850	.....	1,870	1,610	.....	1,610	.....	2,760

NOTE.—Daily discharge computed from a rating curve well defined below 5,600 second-feet.

Monthly discharge of Oconee River at Fraleys Ferry, near Milledgeville, Ga., for 1912.

Month.	Discharge in second-feet.		
	Maximum.	Minimum.	Mean.
January	11,100	2,300	4,260
February	14,500	2,760	6,780
March	41,300	3,950	10,200
April	22,500	3,080	7,870
May	10,000	2,150	4,060
June	29,000	2,760	7,470
July	13,000	1,870	4,870
August	6,450	1,610	2,620
September	9,340	1,380	2,600
October	4,500	990	2,310
November	7,650	1,610	2,350
December	6,450	1,870	2,430
The year	41,300	990	4,800

OCONEE RIVER AT DUBLIN, GA.

Location.—At the Wrightsville & Tennille Railroad bridge at Dublin, Ga.

Records available.—February 11, 1898, to December 31, 1912; fragmentary records prior to 1898.

Drainage area.—4,180 square miles.

Gage.—Vertical timber attached to the downstream side of the central or turn-span pier of the railroad bridge; also a short sloping section bolted to rock just above the bridge on the right bank. The datum has not been changed.

Channel.—Rocky and nearly permanent at the wagon bridge, but shifting of the bottom in the channel below causes slight changes in the discharge rating. At a stage of about 20 feet the left bank overflows for 1,100 feet through an iron frame trestle approach to the bridge. This ground is thickly covered with brushy growth, which probably retards the flow of water over the overflow section. The right bank does not overflow.

Discharge measurements.—Made from the downstream side of the wagon bridge, 500 feet above the railroad bridge.

Artificial control.—The only power plant of consequence is near Athens, Ga., and is so far above the station that its operation probably does not affect the accuracy of observations at Dublin.

Accuracy.—Lack of data covering changes in channel makes results at this station uncertain prior to 1910. A good degree of accuracy may be obtained by making frequent discharge measurements.

Cooperation.—Since 1898 the gage heights have been furnished by the United States Weather Bureau.

The following discharge measurement was made by W. E. Hall:

April 24, 1912, gage height, 19.98 feet; discharge, 32,300 second-feet.

Daily gage height, in feet, of Oconee River at Dublin, Ga., for 1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	10.8	9.6	14.7	10.0	8.3	6.8	9.7	1.1	0.8	2.6	1.2	2.4
2	8.9	9.8	13.7	11.0	6.9	7.8	8.4	1.0	.8	1.9	1.3	2.3
3	8.7	9.9	12.5	12.0	6.1	7.0	6.2	1.8	.4	1.7	1.4	1.9
4	6.4	9.6	11.2	12.2	6.1	5.1	4.9	2.2	.2	1.4	1.3	1.8
5	9.6	8.7	9.9	11.3	7.1	4.9	6.9	2.2	−.1	1.2	1.0	1.7
6	10.4	7.2	10.9	8.5	7.8	8.5	7.2	2.2	−.2	1.8	1.0	1.7
7	8.9	3.2	11.8	6.2	8.8	10.0	6.4	1.8	−.4	2.8	1.9	1.9
8	7.4	3.3	12.6	5.6	9.9	12.8	6.8	1.7	.6	3.1	6.5	2.3
9	12.9	3.5	15.0	5.2	10.7	13.7	7.0	1.6	.9	2.1	8.4	2.9
10	11.1	3.5	16.2	4.7	11.7	19.0	6.8	2.2	.8	1.6	9.5	2.8
11	8.9	3.7	15.7	4.8	12.2	19.4	6.4	3.4	.7	1.2	10.0	2.7
12	12.5	3.2	12.4	5.1	11.9	17.4	6.8	5.4	2.0	.9	7.1	2.7
13	13.1	3.1	13.2	5.0	9.0	14.4	6.9	6.2	3.0	.8	3.9	1.8
14	11.1	3.0	12.2	4.9	5.9	9.9	7.9	6.3	3.7	.7	2.9	1.5
15	10.9	5.8	11.7	4.9	5.1	5.4	8.4	3.6	3.0	.5	2.3	1.4
16	9.4	8.5	12.6	4.8	4.5	4.9	10.4	2.6	2.2	1.7	2.5	1.1
17	7.8	9.4	13.1	6.1	4.4	7.3	11.9	2.8	3.5	1.9	1.8	.9
18	7.4	10.9	20.8	9.5	4.1	8.0	12.8	2.4	3.2	1.9	2.1	1.6
19	6.8	12.2	25.0	10.9	4.0	9.3	11.9	4.0	2.5	1.7	2.0	1.6
20	4.7	13.2	25.2	15.0	3.5	11.6	9.8	3.2	2.2	1.4	1.8	1.5
21	5.1	13.3	24.5	18.2	3.1	13.9	6.2	2.4	1.1	1.2	1.7	1.3
22	4.8	12.4	22.0	18.7	2.9	13.7	4.8	2.3	.8	2.9	1.7	1.0
23	4.8	11.8	18.7	19.4	2.7	10.7	3.4	2.2	.9	4.8	1.6	.7
24	3.6	11.0	15.6	20.0	2.7	4.8	4.2	2.1	1.9	4.0	1.5	3.9
25	3.4	12.2	12.9	19.4	2.4	3.6	4.7	1.8	5.8	3.2	1.4	7.6
26	3.9	13.2	10.8	18.9	2.2	4.2	3.4	1.7	6.8	1.9	1.2	8.4
27	3.2	14.2	10.0	17.7	1.9	6.4	2.8	2.4	7.5	.9	1.2	8.7
28	2.9	15.4	10.2	15.9	1.9	7.6	2.3	2.4	7.8	1.0	1.2	7.6
29	3.6	15.1	10.4	13.8	2.7	8.8	1.8	1.9	5.4	1.2	1.2	5.6
30	3.8	.....	10.1	11.3	2.9	9.4	1.6	1.3	3.9	1.3	1.9	4.9
31	6.2	.....	9.6	.....	5.1	.....	1.2	1.0	.....	1.2	.....	3.2

Daily discharge, in second-feet, of Oconee River at Dublin, Ga., for 1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	14,300	12,300	21,400	13,000	10,400	8,340	12,500	2,500	2,260	3,760	2,580	3,580
2	11,200	12,700	19,500	14,600	8,470	9,660	10,500	2,420	2,260	3,140	2,660	3,490
3	11,000	12,800	17,300	16,400	7,480	8,600	7,600	3,060	1,950	2,980	2,740	3,140
4	7,840	12,300	15,000	16,800	7,480	6,310	6,090	3,400	1,810	2,740	2,660	3,060
5	12,300	11,000	12,800	15,100	8,730	6,090	8,470	3,400	1,600	2,580	2,420	2,980
6	13,600	8,860	14,500	10,600	9,660	10,600	8,860	3,400	1,530	3,060	2,420	2,980
7	11,200	4,320	16,000	7,600	11,100	13,000	7,840	3,060	1,400	3,940	3,140	3,140
8	9,120	4,420	17,500	6,880	12,800	17,800	8,340	2,980	2,100	4,220	7,960	3,490
9	8,000	4,620	22,000	6,420	14,100	19,500	8,600	2,900	2,340	3,310	10,500	4,030
10	14,800	4,620	24,400	5,870	15,900	30,200	8,340	3,400	2,260	2,900	12,200	3,940
11	11,200	4,820	23,400	5,980	16,800	31,000	7,840	4,520	2,180	2,580	13,000	3,850
12	17,300	4,320	17,100	6,310	16,200	26,800	8,340	6,640	3,220	2,340	8,730	3,850
13	18,400	4,220	18,600	6,200	11,400	20,900	8,470	7,600	4,120	2,260	5,020	3,060
14	14,800	4,120	16,800	6,090	7,240	12,800	9,800	7,720	4,820	2,180	4,030	2,820
15	14,500	7,120	15,900	6,090	6,310	6,640	10,500	4,720	4,120	2,020	3,490	2,740
16	12,000	10,600	17,500	5,980	5,650	6,090	13,600	3,760	3,400	2,980	3,670	2,500
17	9,660	12,000	18,400	7,480	5,540	8,990	16,200	3,940	4,620	3,140	3,060	2,340
18	9,120	14,500	34,100	12,200	5,220	9,940	17,800	3,580	4,320	3,140	3,310	2,900
19	8,340	16,800	43,400	14,500	5,120	11,900	16,200	5,120	3,670	2,980	3,220	2,900
20	5,870	18,600	43,900	22,000	4,620	15,700	12,700	4,320	3,400	2,740	3,060	2,820
21	6,310	18,800	42,200	28,500	4,220	19,900	7,600	3,580	2,500	2,580	2,980	2,660
22	5,980	17,100	36,700	29,600	4,030	19,500	5,980	3,490	2,260	4,030	2,980	2,420
23	5,980	16,000	29,600	31,000	3,850	14,100	4,520	3,400	2,340	5,980	2,900	2,180
24	4,720	14,600	23,200	32,300	3,850	5,980	5,320	3,310	3,140	5,120	2,820	5,020
25	4,520	16,800	18,000	31,000	3,580	4,720	5,870	3,060	7,120	4,320	2,740	9,380
26	5,020	18,600	14,300	30,000	3,400	5,320	4,520	2,980	8,340	3,140	2,580	10,500
27	4,320	20,500	13,000	27,500	3,140	7,840	3,940	3,580	9,250	2,340	2,580	11,000
28	4,030	22,800	13,300	23,800	3,140	9,380	3,490	3,580	9,660	2,420	2,580	9,380
29	4,720	22,200	13,600	19,700	3,850	11,100	3,060	3,140	6,640	2,580	2,580	6,880
30	4,920	.....	13,100	15,100	4,030	12,000	2,900	2,660	5,020	2,660	3,140	6,090
31	7,600	.....	12,300	.....	6,310	.....	2,580	2,420	.....	2,580	.....	4,320

NOTE.—Daily discharge computed from a rating curve fairly well defined between 1,800 and 32,300 second-feet.

Monthly discharge of Oconee River at Dublin, Ga., for 1912.

Month.	Discharge in second-feet.			Accuracy.
	Maximum.	Minimum.	Mean.	
January	18,400	4,030	9,760	A.
February	22,800	4,120	12,200	A.
March	43,900	12,300	21,300	B.
April	32,300	5,870	15,800	A.
May	16,800	3,140	7,540	A.
June	31,000	4,720	13,000	A.
July	17,800	2,580	8,330	A.
August	7,720	2,420	3,790	A.
September	9,660	1,400	3,790	B.
October	5,980	2,020	3,120	A.
November	13,000	2,420	4,260	A.
December	11,000	2,180	4,300	A.
The year	43,900	1,400	8,910	

EASTERN GULF OF MEXICO DRAINAGE BASINS.

APALACHICOLA RIVER BASIN.

CHATTAHOOCHEE RIVER NEAR NORCROSS, GA.

Location.—At Medlock's bridge, 4½ miles north of Norcross, Ga., 1½ miles above the mouth of John Creek, and about 5 miles above Suwanee Creek.

Records available.—January 9, 1903, to December 31, 1912.

Drainage area.—1,170 square miles.

Gage.—Standard chain gage on the toll bridge. The original gage was a vertical staff attached to an oak tree on the right bank, about 100 feet above the bridge. A chain gage, established March 14, 1903, was read in connection with the vertical gage until June 28, 1905, when the present gage was installed. The datum of the vertical staff gage originally used and that of the present chain gage has not been changed.

Channel.—The right bank is high and overflows only slightly; the left bank will overflow for about 800 feet at a gage height of 16 to 18 feet. The bed of the stream is sandy and changeable, necessitating frequent discharge measurements and occasional changes in the rating.

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

Artificial control.—Dams near Gainesville, Ga., and on Chestatee River interfere with the natural flow. It is thought that the two readings a day give a good daily mean gage height.

Accuracy.—Except for possible error in mean gage heights due to artificial control, the results at this station are considered excellent.

Cooperation.—Since May 1, 1910, the gage heights have been furnished by the United States Weather Bureau.

The following discharge measurement was made by W. E. Hall:

June 14, 1912, gage height, 8.27 feet; discharge, 7,580 second-feet.

Several measurements made early in 1913 were used in determining the discharge rating for 1912.

Daily gage height, in feet, of Chattahoochee River near Norcross, Ga., for 1912.

[W. O. Medlock, observer.]

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	7.6	5.0	4.8	6.2	5.7	3.9	3.8	3.3	2.4	2.8	2.6	2.4
2	5.0	4.2	4.4	5.8	5.0	3.7	3.6	3.0	2.4	2.6	2.8	2.3
3	4.3	3.8	4.2	5.6	4.7	3.7	4.1	2.9	2.4	2.6	2.8	2.6
4	4.2	3.6	4.8	5.2	4.7	4.7	4.0	3.5	2.4	4.8	2.6	2.7
5	3.7	3.5	4.7	4.9	4.8	3.9	4.6	3.4	2.4	5.4	2.6	2.7
6	3.4	3.4	7.0	4.8	4.4	4.1	5.8	3.0	2.4	3.3	2.6	3.0
7	3.3	3.3	6.0	4.7	5.0	4.7	5.0	2.9	2.4	2.9	2.8	3.4
8	3.4	3.2	5.0	4.7	4.8	4.2	4.1	3.0	2.3	2.8	3.2	2.9
9	3.7	3.2	4.6	4.6	4.3	3.8	4.2	6.0	2.5	2.6	3.0	2.7
10	4.0	3.2	4.3	4.3	4.2	3.5	6.2	5.4	2.4	2.6	2.7	2.7
11	3.6	3.1	4.2	4.4	4.2	3.4	8.0	3.9	2.5	2.5	2.6	2.6
12	3.5	3.1	4.2	4.4	4.2	3.3	5.5	3.4	2.4	2.5	2.7	2.6
13	3.4	3.1	4.3	4.3	3.9	3.1	4.6	3.1	2.5	2.5	2.6	2.6
14	3.2	3.2	4.1	4.3	3.9	12.5	4.2	3.0	2.5	2.5	3.1	2.5
15	3.1	5.7	14.5	4.3	3.8	9.2	4.4	2.9	3.1	2.5	2.6	2.5
16	3.1	9.2	18.6	8.2	3.8	7.6	3.9	3.0	3.8	2.6	2.6	2.3
17	3.0	5.6	10.2	6.9	4.0	5.0	4.2	3.2	2.9	2.5	2.5	2.5
18	3.0	4.6	6.5	5.9	3.8	4.2	5.4	2.9	2.4	2.4	2.5	2.5
19	3.2	4.5	5.8	5.0	3.5	3.9	4.5	3.0	2.5	3.8	2.6	2.5
20	3.4	4.1	5.3	4.7	3.6	3.6	5.2	2.9	2.4	7.6	2.4	2.5
21	3.1	6.4	5.2	5.0	3.6	3.4	4.4	2.8	2.3	4.2	2.4	2.5
22	3.0	8.4	5.0	8.4	3.6	3.4	4.2	2.7	2.3	3.4	2.4	2.4
23	3.0	5.4	4.8	11.0	3.4	3.2	3.8	2.8	4.6	3.1	2.4	2.4
24	2.9	5.2	6.9	6.2	3.4	3.6	3.6	2.9	6.1	2.9	2.4	3.2
25	2.8	6.4	7.9	5.1	3.4	8.0	3.8	2.7	3.5	2.7	2.4	3.3
26	2.8	10.0	5.8	4.9	3.3	7.6	3.4	3.6	3.0	2.7	2.4	2.9
27	2.8	9.4	5.2	4.9	3.3	5.6	3.2	3.0	3.2	2.6	2.4	2.7
28	2.7	6.8	5.2	6.0	5.0	4.2	3.2	2.6	3.3	2.6	2.4	2.7
29	6.2	5.4	11.4	5.2	5.6	4.0	3.0	2.6	3.4	2.6	2.4	2.6
30	11.7	.....	12.9	6.2	6.9	3.8	3.0	2.5	2.9	2.6	2.4	2.6
31	7.4	.....	7.1	.....	4.5	.....	3.0	2.5	.....	2.6	.....	2.9

Daily discharge, in second-feet, of Chattahoochee River near Norcross, Ga., for 1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	7,090	3,750	3,530	5,210	4,590	2,610	2,520	2,070	1,320	1,640	1,480	1,320
2	3,750	2,900	3,100	4,710	3,750	2,430	2,340	1,800	1,320	1,480	1,640	1,240
3	3,000	2,520	2,900	4,420	3,420	2,430	2,800	1,720	1,320	1,480	1 640	1,480
4	2,900	2,340	3,530	3,990	3,420	3,420	2,700	2,250	1,320	3,530	1,480	1,560
5	2,430	2,250	3,420	3,640	3,530	2,610	3,310	2,160	1,320	4,230	1,480	1,560
6	2,160	2,160	6,250	3,530	3,100	2,800	4,710	1,800	1,320	2,070	1,480	1,800
7	2,070	2,070	4,950	3,420	3,750	3,420	3,750	1,720	1,320	1,720	1,640	2,160
8	2,160	1,980	3,750	3,420	3,530	2,900	2,800	1,800	1,240	1,640	1,980	1,720
9	2,430	1,980	3,310	3,310	3,000	2,520	2,900	4,950	1,400	1,480	1,800	1,560
10	2,700	1,980	3,000	3,000	2,900	2,250	5,210	4,230	1,320	1,480	1,560	1,560
11	2,340	1,890	2,900	3,100	2,900	2,160	7,650	2,610	1,400	1,400	1,480	1,480
12	2,250	1,890	2,900	3,100	2,900	2,070	4,350	2,160	1,320	1,400	1,560	1,480
13	2,160	1,890	3,000	3,000	2,610	1,890	3,310	1,890	1,400	1,400	1,480	1,480
14	1,980	1,980	2,800	3,000	2,610	14,500	2,900	1,800	1,400	1,400	1,890	1,400
15	1,890	4,590	17,800	3,000	2,520	9,400	3,100	1,720	1,890	1,400	1,480	1,400
16	1,890	9,400	25,100	7,930	2,520	7,090	2,610	1,800	2,520	1,480	1,480	1,240
17	1,800	4,470	10,900	6,120	2,700	3,750	2,900	1,980	1,720	1,400	1,400	1,400
18	1,800	3,310	5,600	4,830	2,520	2,900	4,230	1,720	1,320	1,320	1,400	1,400
19	1,980	3,200	4,710	3,750	2,250	2,610	3,200	1,800	1,400	2,520	1,480	1,400
20	2,160	2,800	4,110	3,420	2,340	2,340	3,990	1,720	1,320	7,090	1,320	1,400
21	1,890	5,470	3,990	3,750	2,340	2,160	3,100	1,640	1,240	2,900	1,320	1,400
22	1,800	8,210	3,750	8,210	2,340	2,160	2,900	1,560	1,240	2,160	1,320	1,320
23	1,800	4,230	3,530	12,100	2,160	1,980	2,520	1,640	3,310	1,890	1,320	1,320
24	1,720	3,990	6,120	5,210	2,160	2,340	2,340	1,720	5,080	1,720	1,320	1,980
25	1,640	5,470	7,510	3,870	2,160	7,650	2,520	1,560	2,250	1,560	1,320	2,070
26	1,640	10,600	4,710	3,640	2,070	7,090	2,160	2,340	1,800	1,560	1,320	1,720
27	1,640	9,700	3,990	3,640	2,070	4,470	1,980	1,800	1,980	1,480	1,320	1,560
28	1,560	5,990	3,990	4,950	3,750	2,900	1,980	1,480	2,070	1,480	1,320	1,560
29	5,210	4,230	12,700	3,990	4,470	2,700	1,800	1,480	2,160	1,480	1,320	1,480
30	13,200	.....	15,100	5,210	6,120	2,520	1,800	1,400	1,720	1,480	1,320	1,480
31	6,810	.....	6,390	.....	3,200	.....	1,800	1,400	.....	1,480	.....	1,720

NOTE.—Daily discharge computed from a rating curve well defined below 8,000 second-feet and fairly well defined below 15,000 second-feet.

Monthly discharge of Chattahoochee River near Norcross, Ga., for 1912.

[Drainage area, 1,170 square miles.]

Month.	Discharge in second-feet.			Accuracy.
	Maximum.	Minimum.	Mean.	
January	13,200	1,560	2,900	A.
February	10,600	1,890	4,040	A.
March	25,100	2,800	6,110	B.
April	12,100	3,000	4,480	A.
May	6,120	2,070	3,020	A.
June	14,500	1,890	3,740	A.
July	7,650	1,800	3,100	A.
August	4,950	1,400	1,990	A.
September	5,080	1,240	1,720	A.
October	7,090	1,320	1,960	A.
November	1,980	1,320	1,480	A.
December	2,160	1,240	1,540	A.
The year	25,100	1,240	3,000	

CHATTAHOOCHEE RIVER AT WEST POINT, GA.

Location.—At the Montgomery Street Bridge, West Point, Ga., until October 21, 1912; after that date at a point about a mile upstream, just below the mouth of Oseligee Creek, about 300 feet east of the West Point waterworks pumping plant, and about 4 miles above Long Cane Creek.

Records available.—July 30, 1896, to December 31, 1912.

Drainage area.—3,300 square miles.

Gage.—The new staff gage is at a different datum from the chain gage formerly used and is in two sections; the lower section, reading from 0 to 6 feet, is near the right bank; the upper section, reading from 6 to 25 feet, is fastened to a tree on the left bank.

Channel.—Rough, rocky bottom and fairly permanent section; banks are overflowed at high stages.

Discharge measurements.—May be made from a boat at a section near the new gage, or from the highway bridge where the gage was formerly located; no tributaries enter between the two sections.

Artificial control.—The operation of power plants at points above causes some diurnal fluctuation. The Langdale Dam, 5 miles below the station, forms a pond reaching back as far as West Point. This affected the gage heights at the highway bridge, making the old rating valueless for 1912. The new gage established in October, 1912, is not affected by backwater.

Accuracy.—A new rating was developed for the old gage at the highway bridge applying to the changed conditions during 1912. A rating has also been developed for the new staff gage covering low and medium stages. Discharges computed from the two ratings for the period October 21 to December 31, 1912, agree within 0.2 per cent.

Cooperation.—Gage heights after October 21, 1912, have been furnished by the Columbus Power Co., of Columbus, Ga. The hydraulic engineer for that company has also assisted in making discharge measurements.

Discharge measurements of Chattahoochee River at West Point, Ga., in 1912.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Jan. 25[a]	W. E. Hall	[b] 4.01	4,320	Sept. 19	Columbus Power Co.	3.80	4,120
Aug. 26	Columbus Power Co.	4.50	6,000	24	do	4.50	5,650
31	do	3.20	3,050	Oct. 21	do	5.60	8,400
Sept. 6	do	2.90	2,560	Nov. 21	Hall and King	2.99	2,650
18	do	3.40	3,360	30[a]	W. E. Hall	2.94	2,560

[a] Measurement made from highway bridge at old station.
[b] Gage height taken at old gage on highway bridge.

NOTE.—Measurements made from boat at new station except as noted. Gage heights refer to new staff gage except as noted. Additional measurements made early in 1913 were used in determining the ratings.

Daily gage height, in feet, of Chattahoochee River at West Point, Ga., for 1912.

[E. N. Dunn and J. H. Miller, observers.]

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	5.8	11.4	6.5	11.9	6.4	5.5	4.9	3.3	2.7	3.6	3.2	3.2
2	5.9	7.5	5.7	7.5	6.4	4.3	4.8	3.1	2.6	3.6	3.1	3.1
3	6.7	5.6	5.4	6.5	5.8	3.9	5.4	3.4	2.6	3.2	3.1	2.9
4	5.8	5.0	5.6	6.0	6.2	4.6	5.6	4.2	2.5	4.6	3.2	3.2
5	5.4	4.4	6.0	5.7	7.2	4.7	5.6	3.7	2.6	6.4	2.9	4.2
6	5.0	4.2	8.6	5.4	6.2	5.0	6.5	3.4	2.6	6.0	3.3	4.0
7	4.7	4.0	8.6	5.4	6.3	5.4	7.0	3.5	3.0	4.9	3.5	3.9
8	5.0	4.0	7.7	5.2	7.2	6.3	5.4	6.0	3.2	4.0	3.7	3.9
9	7.8	3.9	6.8	5.2	6.6	5.1	5.3	5.1	2.8	3.7	3.5	3.9
10	7.1	4.0	6.2	5.1	5.4	4.2	6.2	5.6	2.7	3.2	3.5	3.6
11	5.8	4.4	5.6	5.0	4.9	4.0	6.4	7.5	2.8	3.3	3.4	3.6
12	5.2	4.2	6.1	4.9	5.1	3.7	6.8	5.9	3.0	3.4	3.2	3.5
13	4.8	3.9	6.0	5.1	5.1	3.6	7.8	4.4	3.0	3.4	3.4	3.4
14	4.6	4.4	5.5	5.0	4.9	15.2	7.0	3.8	3.1	3.5	3.2	3.2
15	4.3	7.2	20.0	4.7	4.5	17.7	6.0	3.6	3.2	3.2	3.2	3.3
16	4.2	9.4	22.7	5.3	4.4	14.8	5.0	3.5	3.4	3.4	3.3	3.3
17	4.0	8.8	19.4	11.6	4.4	12.4	5.8	3.4	3.6	3.1	3.4	3.0
18	4.0	8.1	17.6	12.6	4.3	7.4	5.8	3.8	3.7	3.3	3.3	3.4
19	4.2	6.0	15.4	9.7	4.4	5.4	5.6	4.5	3.7	3.8	2.8	3.3
20	4.6	5.4	7.1	8.2	4.0	4.6	5.2	3.9	3.0	5.3	3.3	3.3
21	4.4	6.4	6.4	10.6	4.0	4.2	4.8	3.5	3.0	5.3	3.1	3.3
22	4.2	9.9	6.0	10.8	3.9	4.0	4.6	3.4	3.2	5.6	3.0	3.3
23	3.9	9.4	5.7	14.0	3.8	3.9	4.3	3.6	5.2	4.1	3.1	3.7
24	3.9	9.0	7.6	12.0	3.8	3.8	4.1	3.2	4.8	3.8	3.0	5.2
25	4.0	10.0	9.6	10.2	3.8	7.2	3.8	3.1	5.6	3.5	3.1	5.2
26	3.6	8.8	8.6	6.7	3.8	12.0	3.8	4.2	5.0	3.4	2.7	4.4
27	3.8	9.4	7.2	5.9	3.7	10.8	3.9	3.5	3.8	3.3	3.1	4.1
28	3.8	9.6	6.2	6.5	3.5	7.6	3.6	3.3	3.8	3.3	3.0	4.1
29	10.5	8.3	11.8	6.6	4.1	5.6	3.4	3.2	3.8	3.1	3.1	4.5
30	14.4	.....	13.5	7.4	5.6	4.9	3.8	2.8	4.0	3.2	3.0	3.7
31	13.0	.....	12.3	.....	6.4	.....	3.2	2.8	.....	3.1	.....	3.7

NOTE.—Gage heights Jan. 1 to Oct. 20, 1912, taken at the old station at Montgomery Street Bridge. Oct. 21 to Dec. 31, 1912, the gage heights taken at the new station one-half mile farther upstream.

Daily discharge, in second-feet, of Chattahoochee River at West Point, Ga., for 1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	8,250	23,400	9,980	24,900	9,730	7,530	6,160	3,000	1,990	3,560	2,990	2,990
2	8,490	12,600	8,010	12,600	9,730	4,900	5,940	2,640	1,840	3,560	2,830	2,830
3	10,500	7,770	7,300	9,980	8,250	4,130	7,300	3,180	1,840	2,820	2,830	2,540
4	8,250	6,380	7,770	8,730	9,320	5,510	7,770	4,700	1,700	5,510	2,990	2,990
5	7,300	5,100	8,730	8,010	11,800	5,720	7,770	3,750	1,840	9,730	2,540	5,080
6	6,380	4,700	15,400	7,300	9,320	6,380	9,980	3,180	1,840	8,730	3,160	4,600
7	5,720	4,320	15,400	7,300	9,480	7,300	11,300	3,370	2,470	6,160	3,530	4,370
8	6,380	4,320	13,100	6,840	11,800	9,480	7,300	8,730	2,820	4,320	3,940	4,370
9	13,300	4,130	10,700	6,840	10,200	6,610	7,070	6,610	2,140	3,750	3,530	4,370
10	11,500	4,320	9,320	6,610	7,300	4,700	9,320	7,770	1,990	2,820	3,530	3,730
11	8,250	5,100	7,770	6,380	6,160	4,320	9,730	12,600	2,140	3,000	3,340	3,730
12	6,840	4,700	8,980	6,160	6,610	3,750	10,700	8,490	2,470	3,180	2,990	3,530
13	5,940	4,130	8,730	6,610	6,610	3,560	13,300	5,100	2,470	3,180	3,340	3,340
14	5,510	5,100	7,530	6,380	6,160	35,500	11,300	3,940	2,640	3,370	2,990	2,990
15	4,900	11,800	52,200	5,720	5,300	44,200	8,730	3,560	2,820	2,820	2,990	3,160
16	4,700	17,600	61,600	7,070	5,100	34,100	6,380	3,370	3,180	3,180	3,160	3,160
17	4,320	16,000	50,100	24,000	5,100	26,400	8,250	3,180	3,560	2,640	3,340	2,680
18	4,320	14,100	43,800	27,100	4,900	12,300	8,250	3,940	3,750	3,000	3,160	3,340
19	4,700	8,730	36,200	18,400	5,100	7,300	7,770	5,300	3,750	2,940	2,400	3,160
20	5,510	7,300	11,500	14,400	4,320	5,510	6,840	4,130	2,470	7,070	3,160	3,160
21	5,100	9,730	9,730	21,000	4,320	4,700	5,940	3,370	2,470	7,720	2,830	3,160
22	4,700	19,000	8,730	21,600	4,130	4,320	5,510	3,180	2,820	8,440	2,680	3,160
23	4,130	17,600	8,010	31,500	3,940	4,130	4,900	3,560	6,840	4,840	2,830	3,940
24	4,130	16,500	12,800	25,200	3,940	3,940	4,510	2,820	5,940	4,150	2,680	7,480
25	4,320	19,300	18,200	19,800	3,940	11,800	3,940	2,640	7,770	3,530	2,830	7,480
26	3,560	16,000	15,400	10,500	3,940	25,200	3,940	4,700	6,380	3,340	2,260	5,560
27	3,940	17,600	11,800	8,490	3,750	21,600	4,130	3,370	3,940	3,160	2,830	4,840
28	3,940	18,200	9,320	9,980	3,370	12,800	3,560	3,000	3,940	3,160	2,680	4,840
29	20,700	14,600	24,600	10,200	4,510	7,770	3,180	2,820	3,940	2,830	2,830	5,800
30	32,800	.....	29,900	12,300	7,770	6,160	3,940	2,140	4,320	2,990	2,680	3,940
31	28,300	.....	26,100	.....	9,730	.....	2,820	2,140	.....	2,830	.....	3,940

NOTE.—Daily discharge Jan. 1 to Oct. 20, 1912, computed from a rating curve for the old station at the Montgomery Street Bridge, the rating curve for this period being fairly well defined below 20,000 second-feet. Daily discharge Oct. 21 to Dec. 31, 1912, computed from a well-defined rating curve for the new station one-half mile farther upstream.

Monthly discharge of Chattahoochee River at West Point, Ga., for 1912.

Month.	Discharge in second-feet.			Accuracy.
	Maximum.	Minimum.	Mean.	
January	32,800	3,560	8,280	B.
February	23,400	4,130	11,000	B.
March	61,600	7,300	18,300	C.
April	31,500	5,720	13,100	B.
May	11,800	3,370	6,630	B.
June	44,200	3,560	11,400	B.
July	13,300	2,820	7,020	B.
August	12,600	2,140	4,330	B.
September	7,770	1,700	3,270	B.
October	9,730	2,640	4,270	A.
November	3,940	2,260	3,000	A.
December	7,480	2,540	4,010	A.
The year	61,600	1,700	7,870	

CHATTAHOOCHEE RIVER AT COLUMBUS, GA.

Location.—Behind the Columbus Gas Works between Columbus, Ga., and Girard, Ala., just below mouth of Hollands Creek and about half a mile below Eagle and Phoenix dam.

Records available.—September 3 to December 31, 1912.

Gate.—Vertical staff on left bank 600 feet above new concrete highway bridge and about 800 feet above steamboat landing. Zero of gage, 185 feet above sea level.

Channel.—Deep near left bank and gradually shallowing near the right bank; bed smooth and sandy and will probably shift at every flood; left bank high; overflows about 75 feet back to a secondary bank, which is not overflowed. At low stages the right bank is a large sand bar about 300 feet wide; the sand is deposited by Hollands Creek and the bar is changed at every flood. Current swift at all stages.

Discharge measurements.—Made from boat. A light steel cable is stretched from the left bank to the sand bar; cable is fastened to trees on the left bank and rests on an A-frame on the sand bar; a tag line is stretched just below the cable.

Winter flow.—Not affected by ice.

Artificial control.—The operation of dams above the station causes constant fluctuation in gage heights.

Accuracy.—Conditions very poor and many measurements must be made to insure accurate results.

Cooperation.—The gage heights and discharge measurements have all been furnished by the Columbus Power Co.

Discharge measurements of Chattahoochee River at Columbus, Ga., in 1912.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Sept. 5	Columbus Power Co.	4.10	3,310	Oct. 3	Columbus Power Co.	4.00	3,200
8	do	2.20	1,420	12	do	3.00	2,450
11	do	4.60	4,050	14	do	5.00	5,100
26	do	8.10	8,860	Dec. 18	do	2.96	2,640

Daily gage height, in feet, and discharge, in second-feet, of Chattahoochee River at Columbus, Ga., for 1912.

Day.	Dec.		Day.	Dec.		Day.	Dec.	
	Gage height.	Discharge.		Gage height.	Discharge.		Gage height.	Discharge.
1	3.4	3,100	11	4.7	4,650	21	4.2	4,020
2	4.0	3,780	12	4.7	4,650	22	4.1	3,900
3	3.6	3,320	13	4.3	4,140	23	5.3	5,430
4	3.6	3,320	14	3.8	3,540	24	10.1	12,400
5	5.3	5,430	15	3.9	3,660	25	.....	10,800
6	6.8	7,520	16	4.5	4,390	26	8.0	9,300
7	5.6	5,840	17	4.3	4,140	27	6.6	7,240
8	5.6	5,840	18	3.6	3,320	28	6.8	7,520
9	5.6	5,840	19	4.4	4,260	29	6.0	6,400
10	5.0	5,040	20	4.2	4,020	30	5.7	5,980
						31	5.7	5,980

CHATTAHOOCHEE RIVER AT ALAGA, ALA.

Location.—At the Atlantic Coast Line Railway bridge one-fourth mile east of Alaga, 4 miles east of Gordon, and one-half mile west of Saffold, Ga.; about 35 miles above the junction of Chattahoochee and Flint rivers.

Records available.—Gage heights from January 1, 1908, to December 31, 1912.

Drainage area.—8,780 square miles. (United States Weather Bureau figures.)

Gage.—Standard chain gage attached to the railroad bridge; datum unchanged since 1908.

Channel.—Shifting; lack of conformity in discharge measurements indicates much change.

Discharge measurements.—Made from the railroad bridge. No discharge measurements were made at this station during 1912.

Accuracy.—No rating has yet been developed.

Cooperation.—The gage heights have been furnished by the United States Weather Bureau.

Daily gage height, in feet, of Chattahoochee River at Alaga, Ala., for 1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	11.9	29.7	17.6	25.6	16.5	7.6	11.2	5.0	5.1	6.8	3.6	4.1
2	16.9	28.6	15.5	23.0	16.9	10.1	9.3	5.2	4.3	6.7	4.0	4.5
3	15.9	23.3	13.1	21.2	14.9	9.8	9.6	6.1	3.3	6.2	4.3	4.3
4	15.5	16.1	12.0	16.9	14.2	8.3	10.4	10.0	3.9	5.5	4.3	4.4
5	15.9	12.2	12.1	13.6	16.4	8.4	10.7	9.9	4.6	5.3	3.3	4.9
6	13.9	10.4	14.2	12.5	14.7	8.1	9.9	7.3	4.1	5.0	4.0	5.8
7	11.3	9.3	19.8	11.8	15.9	9.2	9.7	7.7	3.6	9.0	9.0	7.5
8	10.3	8.5	20.5	11.2	16.2	13.3	9.8	6.8	3.8	9.2	12.4	8.6
9	21.3	8.1	18.6	10.9	15.2	12.7	10.7	8.1	3.8	8.6	9.9	7.5
10	25.3	7.9	16.0	10.7	15.0	11.9	12.7	12.0	3.2	6.4	7.7	6.6
11	22.8	7.7	14.9	10.8	13.8	10.4	12.4	11.9	3.4	5.3	6.9	6.5
12	18.7	7.3	14.3	10.8	12.2	8.8	12.3	11.9	4.0	4.8	6.2	5.8
13	14.8	8.2	19.9	10.9	12.2	7.6	11.5	13.7	4.2	4.2	5.9	5.6
14	12.7	8.9	20.3	11.2	11.4	7.4	11.8	12.6	4.1	4.4	4.6	5.6
15	11.3	8.8	18.6	10.9	10.9	7.1	13.3	9.7	4.2	9.4	5.3	5.4
16	10.0	10.7	31.1	10.5	10.2	18.6	12.4	7.5	4.7	9.2	4.5	4.8
17	9.3	11.3	36.0	10.9	9.5	24.4	10.7	6.7	4.4	7.1	4.0	4.6
18	8.6	16.1	37.7	21.8	8.9	24.5	11.7	6.8	4.0	5.7	3.8	4.8
19	8.3	15.1	38.1	30.2	9.0	21.2	16.6	8.5	5.1	5.6	3.3	5.1
20	8.3	14.3	37.1	30.4	8.5	14.4	12.3	7.9	6.9	9.1	2.9	4.7
21	8.9	12.1	34.3	32.7	8.0	10.5	10.7	8.0	6.0	8.8	3.6	4.4
22	8.9	15.9	25.7	37.5	8.3	8.5	9.7	8.5	5.0	9.2	3.8	4.8
23	8.5	19.4	16.7	38.9	7.6	7.6	8.5	7.7	5.5	8.9	[illegible]	4.9
24	7.8	20.1	14.4	38.5	7.7	6.9	8.1	8.2	6.0	9.1	3.9	8.5
25	7.2	22.1	16.3	36.9	7.2	7.1	7.3	7.7	8.4	8.7	4.0	16.7
26	6.9	25.5	21.5	32.2	7.7	10.1	6.9	7.0	8.0	6.8	3.7	15.9
27	6.8	24.4	21.6	26.3	6.9	11.0	6.7	7.7	7.2	5.5	3.4	13.0
28	6.6	21.2	18.2	18.9	6.5	17.4	7.0	7.6	8.5	4.9	4.0	11.8
29	6.3	18.8	15.8	15.6	7.1	17.8	6.3	7.2	7.2	4.6	4.2	10.2
30	10.0	.....	18.7	15.1	7.1	14.2	5.9	5.8	6.7	4.5	3.6	9.5
31	25.0	.....	24.4	.....	7.5	.....	5.5	5.5	.....	4.4	.....	8.5

FLINT RIVER NEAR WOODBURY, GA.

Location.—At the Macon & Birmingham Railroad bridge, 3 miles east of Woodbury, Ga., about one-third of a mile above the mouth of Cane Creek and one-fourth of a mile below Elkins Creek.

Records available.—March 29, 1900, to December 31, 1912.

Drainage area.—1,090 square miles.

Gage.—Vertical staff, in two sections, on the left bank about 300 feet above the railroad bridge. The datum of the gage, which is 660 feet above sea level, has remained the same since the establishment of the station.

Channel.—The bottom is rough, consisting chiefly of rock, and currents are irregular. Above gage height 10 feet the banks are subject to overflow for a width of about 350 feet, but all water passes beneath the bridge and its approaches.

Discharge measurements.—Made from the downstream side of the railroad bridge, which does not make a right angle with the current.

Artificial control.—Power developments on tributary streams above affect the daily flow at low stages.

Accuracy.—Since July 1, 1910, the records are based on one gage height reading a day, and as the operation of the power plants above causes some diurnal fluctuation the estimates of daily discharge may be considerably in error for individual days, especially at low stages. The discharge rating was fairly constant for a number of years, but changed considerably in 1909 and 1910, probably due to conditions at the shoals one-half mile below. The highway bridge built a short distance below the gage in September, 1911, materially affected the conditions of flow and necessitated a new discharge rating.

Cooperation.—Since July 1, 1910, the gage heights have been furnished by the United States Weather Bureau.

The following discharge measurement was made by W. E. Hall:

August 24, 1912, gage height, 0.93 foot; discharge, 650 second-feet.

An additional measurement made early in 1913 was used in determining the discharge rating for 1912.

Daily gage height, in feet, of Flint River near Woodbury, Ga., for 1912.

[E. T. Riggins, observer.]

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.5	5.7	2.4	3.9	2.4	1.3	1.5	0.8	0.5	1.5	0.75	0.9
2	2.3	4.3	2.1	3.1	2.3	1.0	1.4	.8	.4	1.1	.7	.9
3	2.4	3.1	1.8	2.5	2.1	1.0	1.4	.6	.4	1.0	7	.9
4	2.3	2.2	2.4	2.3	2.0	.9	1.6	.8	.3	1.1	.7	.9
5	2.1	1.8	2.3	1.8	3.2	1.5	1.8	.7	1.9	1.4	.7	1.0
6	1.8	1.6	3.5	1.7	4.4	1.3	1.9	.7	1.2	2.1	.75	1.55
7	1.7	1.5	3.7	1.6	4.5	2.6	1.5	.6	.9	2.0	1.2	1.6
8	1.7	1.4	3.6	1.6	4.4	2.9	1.3	1.5	.6	1.8	1.6	1.5
9	3.5	1.4	3.1	1.6	5.5	2.5	1.6	3.1	.5	1.35	1.25	1.4
10	3.6	1.4	2.7	1.5	4.0	2.0	2.4	2.1	.5	.9	1.1	1.4
11	3.3	1.6	2.3	1.6	2.9	1.8	2.2	1.8	.5	.8	1.05	1.3
12	2.8	1.7	2.6	1.5	2.1	1.6	2.1	1.9	.7	.8	1.0	1.1
13	2.2	1.7	2.8	1.5	2.0	1.1	2.1	1.7	.8	.75	.9	1.0
14	2.0	1.5	2.5	1.5	1.8	1.7	3.3	1.2	.7	.85	.85	1.0
15	1.7	3.1	6.9	1.5	1.5	3.8	2.0	1.1	.9	.9	.85	1.0
16	1.6	3.8	13.1	1.8	1.5	5.3	1.7	.9	.8	.85	.9	.9
17	1.4	4.2	12.9	3.6	1.6	4.4	1.6	.8	.7	.9	.8	.9
18	1.3	3.9	10.1	5.9	1.4	3.0	2.6	1.1	.7	.85	.8	.95
19	1.8	3.3	6.9	6.1	1.3	1.7	3.7	1.3	.8	1.2	.8	1.0
20	1.9	2.5	3.5	5.8	1.3	1.3	2.7	1.3	.7	1.65	.8	1.05
21	1.7	2.8	2.5	6.5	1.1	1.1	2.0	1.2	.7	1.5	.8	1.0
22	1.6	4.8	2.2	6.0	1.1	1.0	1.8	1.1	.8	1.25	.8	1.0
23	1.4	4.4	2.0	8.5	1.1	.9	1.6	.8	1.2	1.1	.8	1.25
24	1.3	4.0	2.5	6.6	1.0	.9	1.1	.8	1.7	1.0	.8	2.4
25	1.3	5.0	3.9	5.3	1.0	1.3	1.0	1.0	1.5	.9	.8	2.4
26	1.3	4.8	3.5	3.8	.9	3.4	1.0	.7	1.2	.8	.8	2.2
27	1.2	4.6	3.1	2.7	.9	4.4	1.0	.7	.9	.75	.8	2.0
28	1.2	3.7	2.5	2.2	1.2	4.3	.9	.8	.8	.7	.8	1.9
29	2.2	3.0	4.7	2.0	1.0	3.4	.8	.7	1.0	.7	.9	1.65
30	6.4	.....	5.6	2.7	1.3	2.0	.7	.6	1.2	.7	.9	1.5
31	6.3	.....	4.9	.....	1.4	.....	.7	.5	.....	.7	.....	1.5

Daily discharge, in second-feet, of Flint River near Woodbury, Ga., for 1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	2,310	7,550	2,180	4,350	2,180	1,040	1,220	620	424	1,220	584	700
2	2,050	4,980	1,810	3,150	2,050	785	1,130	620	371	870	548	700
3	2,180	3,150	1,490	2,310	1,810	785	1,130	483	371	785	548	700
4	2,050	1,930	2,180	2,050	1,700	700	1,310	620	323	870	548	700
5	1,810	1,490	2,050	1,490	3,300	1,220	1,490	548	1,590	1,130	548	785
6	1,490	1,310	3,750	1,400	5,150	1,040	1,590	548	955	1,810	584	1,260
7	1,400	1,220	4,050	1,310	5,320	2,440	1,220	483	700	1,700	955	1,310
8	1,400	1,130	3,900	1,310	5,150	2,860	1,040	1,220	483	1,490	1,310	1,220
9	3,750	1,130	3,150	1,310	7,150	2,310	1,310	3,150	424	1,080	998	1,130
10	3,900	1,130	2,580	1,220	4,500	1,700	2,180	1,810	424	700	870	1,130
11	3,450	1,310	2,050	1,310	2,860	1,490	1,930	1,490	424	620	828	1,040
12	2,720	1,400	2,440	1,220	1,810	1,310	1,810	1,590	548	620	785	870
13	1,930	1,400	2,720	1,220	1,700	870	1,810	1,400	620	584	700	785
14	1,700	1,220	2,310	1,220	1,490	1,400	3,450	955	548	660	660	785
15	1,400	3,150	10,100	1,220	1,220	4,200	1,700	870	700	700	660	785
16	1,310	4,200	26,300	1,490	1,220	6,770	1,400	700	620	660	700	700
17	1,130	4,820	25,700	3,900	1,310	5,150	1,310	620	548	700	620	700
18	1,040	4,350	18,000	7,950	1,130	3,000	2,440	870	548	660	620	742
19	1,490	3,450	10,100	8,360	1,040	1,400	4,050	1,040	620	955	620	785
20	1,590	2,310	3,750	7,750	1,040	1,040	2,580	1,040	548	1,360	620	828
21	1,400	2,720	2,310	9,200	870	870	1,700	955	548	1,220	620	785
22	1,310	5,840	1,930	8,150	870	785	1,490	870	620	998	620	785
23	1,130	5,150	1,700	13,800	870	700	1,310	620	955	870	620	998
24	1,040	4,500	2,310	9,420	785	700	870	620	1,400	785	620	2,180
25	1,040	6,200	4,350	6,770	785	1,040	785	785	1,220	700	620	2,180
26	1,040	5,840	3,750	4,200	700	3,600	785	548	955	620	620	1,930
27	955	5,490	3,150	2,580	700	5,150	785	548	700	584	620	1,700
28	955	4,050	2,310	1,930	955	4,980	700	620	620	548	620	1,590
29	1,930	3,000	5,660	1,700	785	3,600	620	548	785	548	700	1,360
30	8,990	.....	7,350	2,580	1,040	1,700	548	483	955	548	700	1,220
31	8,780	.....	6,020	.....	1,130	.....	548	424	.....	548	.....	1,220

NOTE.—Daily discharge computed from a rating curve fairly well defined between 200 and 24,000 second-feet.

Monthly discharge of Flint River near Woodbury, Ga., for 1912.

[Drainage area, 1,090 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
January	8,990	955	2,220	2.04	2.35	A.
February	7,550	1,130	3,290	3.02	3.26	A.
March	26,300	1,490	5,530	5.07	5.84	A.
April	13,800	1,220	3,860	3.54	3.95	A.
May	7,150	700	2,020	1.85	2.13	A.
June	6,770	700	2,150	1.97	2.20	A.
July	4,050	548	1,490	1.37	1.58	A.
August	3,150	424	893	.819	.94	A.
September	1,590	323	685	.628	.70	A.
October	1,810	548	876	.804	.93	A.
November	1,310	548	689	.632	.71	A.
December	2,180	700	1,080	.991	1.14	A.
The year	26,300	323	2,060	1.89	25.73	

FLINT RIVER NEAR CULLODEN, GA.

Location.—At Grays Ferry, 14 miles southwest of Culloden, Ga., 1½ miles above the mouth of Auchumpkee Creek, and about 3 miles above the old gage near Musella, Ga., which was read for a short time in 1907.

Records available.—July 1 to December 31, 1912.

Drainage area.—2,000 square miles.

Gage.—Vertical timber attached to a willow stump on the left bank just below the ferry landing; datum unchanged.

Channel.—Sandy and likely to shift at the station, but a rock ledge one-half mile below will probably give a permanent control.

Discharge measurements.—Made from the ferryboat.

Discharge measurements of Flint River near Culloden, Ga., in 1912.

Date.	Hydrographer.	Gage height.	Discharge.
		Feet.	*Sec.-ft.*
May 17	W. E. Hall	3.49	2,060
Aug. 23	do	2.57	1,260

Daily gage height, in feet, of Flint River near Culloden, Ga., for 1912.

[Walter Blasingame, observer.]

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	6.6	8.4	4.9	6.6	4.4	3.4	3.6	2.25	2.1	3.5	2.3	2.5
2	5.1	7.0	4.4	5.8	4.3	3.2	3.2	2.2	2.05	3.1	2.2	2.4
3	5.0	6.2	4.3	5.0	4.2	3.1	3.4	2.1	2.0	2.8	2.2	2.4
4	5.1	4.9	5.7	4.8	4.0	3.4	3.5	2.4	2.0	2.6	2.15	2.4
5	4.5	4.0	5.0	4.0	6.0	4.0	3.4	2.45	2.4	3.4	2.1	2.5
6	4.1	3.8	9.0	3.9	7.4	3.7	3.8	2.4	3.4	3.6	2.1	2.95
7	3.9	3.6	7.3	3.8	6.9	7.1	3.3	2.3	2.9	3.8	2.6	3.2
8	5.6	3.4	6.3	3.7	6.8	6.1	3.2	4.9	2.7	3.5	2.8	3.2
9	8.5	3.4	5.7	3.6	6.6	5.6	3.3	6.4	2.05	3.2	3.0	3.0
10	7.2	3.2	5.4	3.6	6.1	4.0	3.5	6.1	2.05	2.9	2.8	2.8
11	6.0	3.5	5.0	3.7	5.7	3.9	4.3	5.9	2.25	2.45	2.65	2.7
12	5.1	3.6	7.0	3.6	4.1	3.5	4.0	5.2	2.85	2.3	2.5	2.6
13	4.7	3.5	6.1	3.5	3.9	3.1	5.2	4.3	2.5	2.2	2.4	2.5
14	4.3	4.0	5.3	3.5	3.8	2.9	5.4	3.3	2.25	2.45	2.3	2.5
15	4.2	5.3	.....	3.4	3.8	2.75	5.1	4.0	2.4	2.5	2.3	2.4
16	3.6	6.1	.....	4.3	3.6	7.0	3.6	3.0	2.25	2.6	2.3	2.3
17	3.6	6.5	.....	8.3	3.5	6.5	4.1	2.8	2.2	2.5	2.3	2.3
18	3.5	6.2	.....	9.5	3.4	6.0	4.9	3.2	2.2	2.4	2.3	2.3
19	3.4	5.5	.....	9.4	3.2	4.3	6.0	3.3	2.2	3.4	2.3	2.3
20	3.9	5.0	7.6	9.0	3.2	3.7	5.4	4.1	2.1	4.0	2.3	2.3
21	3.8	4.8	5.5	.....	3.0	2.9	4.2	3.8	2.1	3.5	2.3	2.3
22	3.8	8.3	4.9	.....	2.9	2.85	3.9	3.6	2.2	3.0	2.3	2.4
23	3.4	7.4	4.2	.....	2.9	2.3	3.2	2.6	3.8	2.85	2.3	2.5
24	3.4	6.8	5.9	.....	2.85	2.25	2.9	2.6	4.0	2.6	2.3	6.3
25	3.1	9.0	7.9	8.6	2.8	4.5	2.9	3.5	3.6	2.45	2.2	6.0
26	3.0	8.3	6.6	7.7	2.75	5.6	2.85	2.7	3.1	2.4	2.2	5.1
27	3.0	7.7	5.7	5.8	2.6	6.4	2.8	2.6	2.65	2.4	2.2	4.3
28	2.9	6.7	4.9	5.1	2.6	6.6	2.7	2.8	2.5	2.3	2.3	4.1
29	3.4	5.6	9.4	4.9	3.0	6.5	2.5	2.8	2.6	2.2	2.4	3.8
30	9.0	.....	9.0	4.6	3.2	4.2	2.45	2.3	2.75	2.2	2.55	3.8
31	9.6	.....	6.8	.....	3.4	.....	2.3	2.2	.....	2.2	.....	3.6

NOTE.—The maximum gage height reading obtainable from gage is 10 feet. Water was over top of gage Mar. 15 to 19 and Apr. 21 to 24.

Daily discharge, in second-feet, of Flint River near Culloden, Ga., for 1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	6,760	10,500	3,910	6,760	3,220	2,010	2,230	930	810	2,120	970	1,130
2	4,200	7,520	3,220	5,340	3,090	1,790	1,790	890	772	1,690	890	1,050
3	4,050	6,040	3,090	4,050	2,960	1,690	2,010	810	735	1,400	890	1,050
4	4,200	3,910	5,170	3,770	2,700	2,010	2,120	1,050	735	1,220	850	1,050
5	3,350	2,700	4,050	2,700	5,680	2,700	2,010	1,090	1,050	2,010	810	1,130
6	2,830	2,460	12,000	2,580	8,320	2,340	2,460	1,050	2,010	2,230	810	1,540
7	2,580	2,230	8,120	2,460	7,330	7,720	1,900	970	1,490	2,460	1,220	1,790
8	5,000	2,010	6,220	2,340	7,140	5,860	1,790	3,910	1,310	2,120	1,400	1,790
9	10,800	2,010	5,170	2,230	6,760	5,000	1,900	6,400	772	1,790	1,590	1,590
10	7,920	1,790	4,670	2,230	5,860	2,700	2,120	5,860	772	1,490	1,400	1,400
11	5,680	2,120	4,050	2,340	5,170	2,580	3,090	5,510	930	1,090	1,260	1,310
12	4,200	2,230	7,520	2,230	2,830	2,120	2,700	4,350	1,440	970	1,130	1,220
13	3,630	2,120	5,860	2,120	2,580	1,690	4,350	3,090	1,130	890	1,050	1,130
14	3,090	2,700	4,510	2,120	2,460	1,490	4,670	1,900	930	1,090	970	1,130
15	2,960	4,510	(a)	2,010	2,460	1,360	4,200	2,700	1,050	1,130	970	1,050
16	2,230	5,860	(a)	3,090	2,230	7,520	2,230	1,590	930	1,220	970	970
17	2,230	6,580	(a)	10,300	2,120	6,580	2,830	1,400	890	1,130	970	970
18	2,120	6,040	(a)	13,200	2,010	5,680	3,910	1,290	890	1,050	970	970
19	2,010	4,830	(a)	13,000	1,790	3,090	5,680	1,900	890	2,010	970	970
20	2,580	4,050	8,740	12,000	1,790	2,340	4,670	2,830	810	2,700	970	970
21	2,460	3,770	4,830	(b)	1,590	1,490	2,960	2,460	810	2,120	970	970
22	2,460	10,300	3,910	(b)	1,490	1,440	2,580	2,230	890	1,590	970	1,050
23	2,010	8,230	2,960	(b)	1,490	970	1,790	1,220	2,460	1,440	970	1,130
24	2,010	7,140	5,510	(b)	1,440	930	1,490	1,220	2,700	1,220	970	6,220
25	1,600	12,000	9,390	11,000	1,400	3,350	1,490	2,120	2,230	1,090	890	5,680
26	1,590	10,300	6,760	8,950	1,360	5,000	1,440	1,310	1,690	1,050	890	4,200
27	1,590	8,950	5,170	5,340	1,220	6,400	1,400	1,220	1,260	1,050	890	3,090
28	1,490	6,950	3,910	4,200	1,220	6,760	1,310	1,400	1,139	970	970	2,830
29	2,010	5,000	13,000	3,910	1,590	6,580	1,130	1,400	1,220	890	1,050	2,460
30	12,000	.....	12,000	3,490	1,790	2,960	1,090	970	1,360	890	1,180	2,460
31	13,500	.....	7,140	.....	2,010	.....	970	890	.....	890	.....	2,230

a Average daily discharge, Mar. 15–19, estimated at 16,000 second-feet. (Determined from observer's notes and by comparison with other Flint River stations.)

b Average daily discharge, Apr. 21–24, estimated at 14,000 second-feet. (Determined from observer's notes and by comparison with other Flint River stations.)

NOTE.—Daily discharge computed from a rating curve fairly well defined below 2,700 second-feet. Above 6,000 second-feet the estimates are only approximate.

Monthly discharge of Flint River near Culloden, Ga., for 1912.

[Drainage area, 2,000 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
January	13,500	1,490	4,040	2.02	2.33	C.
February	12,000	1,790	5,340	2.67	2.88	D.
March	.....	2,960	7,770	3.88	4.47	D.
April	.....	2,010	5,890	2.94	3.28	D.
May	8,320	1,220	3,070	1.54	1.78	C.
June	7,720	930	3,470	1.74	1.94	C.
July	5,680	970	2,460	1.23	1.42	C.
August	6,400	810	2,140	1.07	1.23	C.
September	2,700	735	1,200	.600	.67	B.
October	2,700	890	1,450	.725	.84	B.
November	1,590	810	1,030	.515	.57	A.
December	6,220	970	1,820	.910	1.05	C.
The year	.....	735	3,300	1.65	22.46	

FLINT RIVER NEAR MONTEZUMA, GA.

Location.—At the iron highway bridge about 1 mile west of Montezuma. This is the second or upper wagon bridge. It is above the mouth of Bucks Creel.

Records available.—October 1, 1904, to December 31, 1912.

Drainage area.—2,700 square miles.

Gage.—Chain gage attached to the upstream side of the bridge; datum unchanged.

Channel.—The right bank will overflow for a great distance at a stage of about 12 feet. The overflowed portion is largely covered with a dense growth of brush. The left bank is not liable to overflow. The current toward the left bank becomes sluggish at low stages, and at times there is considerable back current near the bank. The bottom is somewhat shifting.

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

Artificial control.—The flow is not appreciably affected by artificial control.

Accuracy.—A fairly good rating has been developed, but the gage heights are very uncertain and the data should be used with caution.

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

The following discharge measurement was made by W. E. Hall:

April 27, 1912, gage height, 13.84 feet; discharge, 10,500 second-feet.

Daily gage height, in feet, of Flint River near Montezuma, Ga., for 1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	8.0	10.8	12.6	12.7	14.0	5.7	10.6	3.8	3.6	4.9	3.4	3.9
2	9.2	12.6	11.6	13.0	13.3	5.5	9.2	3.7	3.2	5.0	3.4	3.9
3	10.7	13.3	9.9	12.4	11.0	5.0	6.8	3.7	3.1	5.5	3.4	3.8
4	11.2	12.9	8.7	11.3	11.8	5.4	6.8	3.7	3.0	4.9	3.3	3.8
5	10.6	11.8	9.1	10.0	12.0	6.5	6.8	4.7	2.9	4.3	3.3	3.8
6	10.2	9.6	10.7	8.8	11.8	7.6	6.5	4.1	2.9	4.4	3.3	4.0
7	9.2	7.3	11.5	7.8	12.0	8.6	6.4	4.1	4.7	4.8	4.5	4.5
8	8.1	6.3	12.4	7.3	12.2	11.4	6.1	3.9	4.8	5.4	5.4	5.2
9	9.1	6.0	13.1	7.1	12.3	12.4	5.8	5.9	4.0	5.9	5.8	5.2
10	10.4	5.8	12.6	7.0	12.0	13.2	5.8	8.2	3.4	5.2	5.7	5.0
11	11.7	5.6	11.8	7.0	12.5	12.1	6.2	9.7	3.4	4.6	5.1	4.7
12	12.7	5.7	11.6	7.1	9.8	9.8	7.3	10.1	3.7	3.9	4.4	4.4
13	12.6	6.0	11.3	7.2	9.3	7.4	7.9	9.9	3.8	3.6	4.0	4.3
14	11.5	5.9	11.3	7.0	8.4	6.4	8.6	9.4	3.9	3.8	3.8	4.1
15	10.1	6.8	12.3	6.8	7.5	5.9	8.9	7.3	3.7	4.6	3.7	4.0
16	8.6	8.3	12.9	6.6	6.9	7.0	9.0	5.6	3.7	5.1	3.7	3.8
17	7.6	9.6	18.1	7.5	6.5	8.4	8.6	5.1	3.7	4.7	3.5	3.8
18	6.8	10.4	20.6	10.0	6.0	9.6	8.1	4.9	3.5	4.4	3.6	3.8
19	6.3	10.7	19.4	11.7	5.7	10.4	8.9	4.9	3.3	4.0	3.5	4.3
20	6.4	10.7	17.9	13.5	6.3	9.8	9.5	5.6	3.3	5.1	3.5	4.1
21	7.1	10.4	16.0	15.0	6.0	7.1	9.8	6.2	3.4	6.6	3.5	4.0
22	7.3	10.2	13.9	15.9	5.3	5.5	9.4	6.2	3.3	6.3	3.5	4.0
23	6.9	10.5	12.1	17.4	5.7	5.0	7.7	5.4	3.4	5.5	3.5	3.9
24	6.4	11.8	10.4	17.1	5.2	4.7	6.5	4.8	4.9	5.0	3.5	5.8
25	5.8	12.8	9.6	17.2	6.0	4.6	5.4	4.6	7.4	4.5	3.5	8.4
26	5.6	12.9	10.7	15.9	6.2	6.7	5.1	5.3	7.7	4.1	3.5	9.6
27	5.4	13.3	12.3	14.2	5.2	8.6	4.9	5.2	6.5	3.9	3.4	10.3
28	5.2	13.7	12.5	12.9	5.5	9.7	4.8	4.7	4.9	3.7	3.5	9.6
29	5.2	13.3	11.8	11.7	6.0	10.4	4.5	4.3	4.3	3.5	3.7	8.5
30	6.3	.....	10.9	10.2	6.3	10.6	4.3	4.3	4.2	3.5	3.9	7.8
31	8.8	.....	11.2	.....	6.7	.....	4.0	3.7	.....	3.4	.....	6.9

Daily discharge, in second-feet, of Flint River near Montezuma, Ga., for 1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	5,000	7,460	9,250	9,350	10,600	3,270	7,270	2,090	1,980	2,740	1,880	2,140
2	6,000	9,250	8,250	9,650	9,950	3,140	6,000	2,040	1,780	2,810	1,880	2,140
3	7,360	9,950	6,610	9,050	7,650	2,810	4,060	2,040	1,730	3,140	1,880	2,090
4	7,850	9,550	5,570	7,950	8,450	3,070	4,060	2,040	1,680	2,740	1,830	2,090
5	7,270	8,450	5,910	6,700	8,650	3,840	4,060	2,620	1,630	2,380	1,830	2,090
6	6,890	6,340	7,360	5,660	8,450	4,680	3,840	2,260	1,630	2,440	1,830	2,200
7	6,000	4,440	8,150	4,840	8,650	5,480	3,760	2,260	2,620	2,680	2,500	2,500
8	5,080	3,690	9,050	4,440	8,850	8,050	3,550	2,140	2,680	3,070	3,070	2,940
9	5,910	3,480	9,750	4,280	8,950	9,050	3,340	3,410	2,200	3,410	3,340	2,940
10	7,080	3,340	9,250	4,210	8,650	9,850	3,340	5,160	1,880	2,940	3,270	2,810
11	8,350	3,200	8,450	4,210	9,150	8,750	3,620	6,430	1,880	2,560	2,880	2,620
12	9,350	3,270	8,250	4,280	6,520	6,520	4,440	6,800	2,040	2,140	2,440	2,440
13	9,250	3,480	7,950	4,360	6,080	4,520	4,920	6,610	2,090	1,980	2,200	2,380
14	8,150	3,410	7,950	4,210	5,320	3,760	5,480	6,160	2,140	2,090	2,090	2,260
15	6,800	4,060	8,950	4,060	4,600	3,410	5,740	4,440	2,040	2,560	2,040	2,200
16	5,480	5,240	9,550	3,910	4,140	4,210	5,820	3,200	2,040	2,880	2,040	2,090
17	4,680	6,340	15,100	4,600	3,840	5,320	5,480	2,880	2,040	2,620	1,930	2,090
18	4,060	7,080	17,900	6,700	3,480	6,340	5,080	2,740	1,930	2,440	1,980	2,090
19	3,690	7,360	16,500	8,350	3,270	7,080	5,740	2,740	1,830	2,200	1,930	2,380
20	3,760	7,360	14,900	10,200	3,690	6,520	6,250	3,200	1,830	2,880	1,930	2,260
21	4,280	7,080	12,800	11,700	3,480	4,280	6,520	3,620	1,880	3,910	1,930	2,200
22	4,440	6,890	10,600	12,700	3,000	3,140	6,160	3,620	1,830	3,690	1,930	2,200
23	4,140	7,180	8,750	14,300	3,270	2,810	4,760	3,070	1,880	3,140	1,930	2,140
24	3,760	8,450	7,080	14,000	2,940	2,620	3,840	2,680	2,740	2,810	1,930	3,340
25	3,340	9,450	6,340	14,100	3,480	2,560	3,070	2,560	4,520	2,500	1,930	5,320
26	3,200	9,550	7,360	12,700	3,620	3,980	2,880	3,000	4,760	2,260	1,930	6,340
27	3,070	9,950	8,950	10,800	2,940	5,480	2,740	2,940	3,840	2,140	1,880	6,980
28	2,940	10,400	9,150	9,550	3,140	6,430	2,680	2,620	2,740	2,040	1,930	6,340
29	2,940	9,950	8,450	8,350	3,480	7,080	2,500	2,380	2,380	1,930	2,040	5,400
30	3,690	.....	7,560	6,890	3,690	7,270	2,380	2,380	2,320	1,930	2,140	4,840
31	5,660	.....	7,850	.....	3,980	.....	2,200	2,040	.....	1,880	.....	4,140

NOTE.—Daily discharge computed from a rating curve fairly well defined above 1,000 second-feet.

Monthly discharge of Flint River near Montezuma, Ga., for 1912.

[Drainage area, 2,700 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
January	9,350	2,940	5,470	2.03	2.34	B.
February	10,400	3,200	6,750	2.50	2.70	B.
March	17,900	5,570	9,340	3.46	3.99	C.
April	14,300	3,910	7,870	2.91	3.25	C.
May	10,600	2,940	5,680	2.10	2.42	B.
June	9,850	2,560	5,180	1.92	2.14	B.
July	7,270	2,200	4,370	1.62	1.87	B.
August	6,800	2,040	3,300	1.22	1.41	B.
September	4,760	1,630	2,290	.848	.95	B.
October	3,910	1,880	2,610	.967	1.11	B.
November	3,340	1,830	2,140	.793	.88	B.
December	6,980	2,090	3,100	1.15	1.33	B.
The year	17,900	1,630	4,840	1.79	24.39	

FLINT RIVER AT ALBANY, GA.

Location.—At the Dougherty County highway bridge in the city of Albany, 700 feet below the Atlantic Coast Line Railroad bridge.

Records available.—April 10, 1893, to December 31, 1912. (United States Weather Bureau gage heights.) Discharge measurements were begun by the Geological Survey in 1901, and estimates of daily discharge have been made from January 1, 1902, to December 31, 1912.

Drainage area.—5,000 square miles.

Gage.—Standard chain gage installed at the bridge by the United States Geological Survey April 20, 1904. The original staff gage was washed out in 1898. It was again injured in 1902, and on June 18, 1902, a new gage was installed by the United States Weather Bureau at a datum 0.75 foot lower than that of the former gage. The 1902 gage heights, as published by the United States Weather Bureau and the United States Geological Survey, all refer to the new gage datum. The present standard chain gage has the same datum as and reads in conformity with the United States Weather Bureau gage.

Channel.—The channel at and below the gage may shift slightly but the control is such that conditions of flow are practically permanent. The river overflows both banks but only under the approaches to the bridge.

Discharge measurements.—Fairly accurate measurements can be made at the section at the Atlantic Coast Line bridge, although it is very rough, and train switching in the railroad yard interferes with the work. The section at the Georgia Northern Railway bridge, 1 mile above, at which measurements are sometimes made, is considered better, especially for medium and low stages.

Artificial control.—Power developments on Muckalee Creek, which joins Flint River about 2 miles above the station, cause considerable diurnal fluctuation, especially at low stages. It is probable that the flow is also affected by other power plants farther up the river.

Accuracy.—As the records are based on one gage reading a day, made at 7 a. m., it is probable that the estimates of daily discharge are somewhat in error, especially at low stages. The actual daily discharge is probably greater than that indicated by the 7 a. m. reading.

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

Discharge measurements of Flint River at Albany, Ga., in 1912.

Date.	Hydrographer.	Gage height.	Discharge.
		Feet.	*Sec.-ft.*
Apr. 26	W. E. Hall	27.30	46,100
Nov. 12	.....do	6.89	9,390

Daily gage height, in feet, of Flint River at Albany, Ga., for 1912.

[D. W. Brosnan, observer.]

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	13.6	9.9	16.5	13.8	17.7	4.2	7.1	2.2	2.8	4.2	2.6	3.5
2	12.1	10.0	15.7	13.3	14.4	4.5	7.2	2.3	2.4	4.5	2.8	3.7
3	11.1	10.3	14.0	13.0	10.4	4.2	7.4	2.0	2.1	5.1	2.8	3.5
4	10.7	11.4	13.3	13.0	9.9	4.0	6.8	2.8	1.9	5.5	2.6	3.2
5	11.4	12.1	11.5	12.9	9.4	3.6	5.4	4.1	1.5	4.5	2.5	3.7
6	11.9	12.5	10.8	10.9	9.4	3.4	5.6	4.6	1.4	3.4	2.5	4.1
7	11.5	12.1	12.3	9.8	9.2	4.6	5.3	4.4	1.4	3.0	3.6	4.3
8	11.7	9.7	13.9	9.3	10.9	7.3	4.8	3.7	1.8	3.0	8.5	4.8
9	17.8	7.4	14.2	7.1	11.9	9.5	4.4	3.8	2.4	3.2	11.9	4.9
10	22.9	6.0	14.5	6.4	13.2	10.6	4.2	4.4	2.6	3.7	11.6	4.9
11	24.4	5.6	14.3	6.4	13.3	11.2	4.2	5.8	2.3	3.4	9.0	4.8
12	22.4	5.6	14.9	6.1	12.1	10.9	4.4	7.4	1.8	3.0	7.4	4.3
13	19.9	5.3	15.7	6.3	10.3	10.1	5.1	8.7	2.6	3.2	6.0	4.0
14	18.1	5.6	16.3	6.3	9.4	10.3	5.4	8.5	2.9	4.4	5.1	3.7
15	17.2	6.9	16.2	6.5	8.4	8.8	5.8	8.1	2.8	4.4	4.4	3.4
16	16.3	7.8	19.9	6.1	7.6	6.5	6.4	7.2	2.7	5.7	4.2	3.3
17	14.5	8.8	22.5	6.1	6.4	5.6	7.3	5.4	2.6	8.1	3.5	3.3
18	12.1	9.1	22.2	7.6	5.9	6.0	8.5	4.5	2.4	7.5	2.9	3.3
19	9.9	9.4	21.6	10.8	5.5	6.3	9.2	3.8	2.3	6.4	2.7	3.3
20	8.9	9.7	23.5	13.0	5.2	6.6	9.2	3.8	2.6	5.8	2.7	3.2
21	8.4	10.0	25.7	18.7	4.9	7.0	8.7	4.2	2.8	5.8	3.3	3.6
22	8.2	11.9	26.2	24.2	4.5	6.6	8.0	4.7	2.9	6.4	3.2	3.6
23	7.3	13.5	25.2	29.6	4.1	4.6	7.5	5.2	2.3	6.6	3.0	3.6
24	7.2	13.7	23.0	30.1	4.0	3.5	6.6	5.4	2.8	6.1	3.0	4.4
25	7.1	14.2	21.3	29.1	3.7	3.3	5.4	4.8	4.2	5.8	3.2	6.2
26	6.4	15.5	18.2	27.6	3.5	3.2	4.2	4.1	5.6	4.7	3.0	7.3
27	6.2	16.6	15.3	26.3	3.5	3.9	3.5	3.4	6.2	3.4	2.8	8.6
28	5.6	16.8	12.9	24.5	3.2	4.8	2.9	3.8	5.9	3.0	2.8	9.6
29	5.3	16.6	12.6	23.0	3.2	6.1	2.5	4.2	4.9	2.9	2.7	9.9
30	6.5	.....	13.2	20.7	3.6	6.9	2.5	3.9	4.3	2.8	3.0	9.5
31	9.7	.....	13.5	.....	4.0	.....	2.4	3.4	.....	2.6	.....	8.3

Daily discharge, in second-feet, of Flint River at Albany, Ga., for 1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	18,000	13,000	22,600	18,300	24,700	6,020	9,540	3,770	4,410	6,020	4,190	5,210
2	15,900	13,200	21,300	17,600	19,200	6,360	9,670	3,870	3,980	6,360	4,410	5,440
3	14,600	13,500	18,600	17,200	13,700	6,020	9,920	3,570	3,670	7,060	4,410	5,210
4	14,000	14,900	17,600	17,200	13,000	5,780	9,170	4,410	3,480	7,540	4,190	4,860
5	14,900	15,900	15,100	17,000	12,400	5,320	7,420	5,900	3,110	6,360	4,080	5,440
6	15,600	16,400	14,200	14,300	12,400	5,100	7,670	6,480	3,020	5,100	4,080	5,900
7	15,100	15,900	16,200	12,900	12,200	6,480	7,300	6,240	3,020	4,640	5,320	6,130
8	15,300	12,800	18,500	12,300	14,300	9,800	6,700	5,440	3,380	4,640	11,300	6,700
9	24,900	9,920	18,900	9,540	15,600	12,500	6,240	5,560	3,980	4,860	15,600	6,820
10	35,500	8,170	19,400	8,670	17,400	13,900	6,020	6,240	4,190	5,440	15,200	6,820
11	39,000	7,670	19,100	8,670	17,600	14,700	6,020	7,920	3,870	5,100	11,900	6,700
12	34,800	7,670	20,000	8,300	15,900	14,300	6,240	9,920	3,380	4,640	9,920	6,130
13	28,800	7,300	21,300	8,540	13,500	13,300	7,060	11,500	4,190	4,860	8,170	5,780
14	25,400	7,670	22,300	8,540	12,400	13,500	7,420	11,300	4,520	6,240	7,060	5,440
15	23,800	9,300	22,100	8,800	11,200	11,700	7,920	10,800	4,410	6,240	6,240	5,100
16	22,300	10,400	28,800	8,300	10,200	8,800	8,670	9,670	4,300	7,800	6,020	4,980
17	19,400	11,700	34,600	8,300	8,670	7,670	9,800	7,420	4,190	10,800	5,210	4,980
18	15,900	12,000	33,900	10,200	8,040	8,170	11,300	6,360	3,980	10,000	4,520	4,980
19	13,000	12,400	32,500	14,200	7,540	8,540	12,200	5,560	3,870	8,670	4,300	4,980
20	11,800	12,800	36,800	17,200	7,180	8,920	12,200	5,560	4,190	7,920	4,300	4,860
21	11,200	13,200	42,100	26,500	6,820	9,420	11,500	6,020	4,410	7,920	4,980	5,320
22	10,900	15,600	43,300	38,500	6,360	8,920	10,700	6,590	4,520	8,670	4,860	5,230
23	9,800	17,900	40,900	51,900	5,900	6,480	10,000	7,180	3,870	8,920	4,640	5,320
24	9,670	18,200	35,700	53,200	5,780	5,210	8,920	7,420	4,410	8,300	4,640	6,240
25	9,540	18,900	31,900	50,600	5,440	4,980	7,420	6,700	6,020	7,920	4,860	8,420
26	8,670	21,000	25,600	46,700	5,210	4,860	6,020	5,900	7,670	6,590	4,640	9,800
27	8,420	22,800	20,600	43,500	5,210	5,670	5,210	5,100	8,420	5,100	4,410	11,400
28	7,670	23,200	17,000	39,200	4,860	6,700	4,520	5,560	8,040	4,640	4,410	12,700
29	7,300	22,800	16,600	35,700	4,860	8,300	4,080	6,020	6,820	4,520	4,300	13,000
30	8,800	.....	17,400	30,500	5,320	9,300	4,080	5,670	6,130	4,410	4,640	12,500
31	12,800	.....	17,900	.....	5,780	.....	3,980	5,100	.....	4,190	.....	11,000

NOTE.—Daily discharge computed from a rating curve well defined between 2,000 and 24,000 second-feet and fairly well defined below 48,000 second-feet.

Monthly discharge of Flint River at Albany, Ga., for 1912.

[Drainage area, 5,000 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
January	39,000	7,300	16,800	3.36	3.87	B.
February	23,200	7,300	14,000	2.80	3.02	A.
March	43,300	14,200	24,600	4.92	5.67	B.
April	53,200	8,300	22,100	4.42	4.93	B.
May	24,700	4,860	10,600	2.12	2.44	A.
June	14,700	4,860	8,560	1.71	1.91	A.
July	12,200	3,980	7,900	1.58	1.82	A.
August	11,500	3,570	6,600	1.32	1.52	A.
September	8,420	3,020	4,580	.916	1.02	A.
October	10,800	4,190	6,500	1.30	1.50	A.
November	15,600	4,080	6,230	1.25	1.40	A.
December	13,000	4,860	6,890	1.38	1.59	A.
The year	53,200	3,020	11,300	2.26	30.69	

FLINT RIVER AT BAINBRIDGE, GA.

Location.—At the county wagon bridge half a mile from Bainbridge and about 25 miles above the confluence of Flint and Chattahoochee rivers.

Records available.—October 7, 1904, to December 8, 1912. (Weather Bureau gage-height readings.) Discharge measurements were begun by the Geological Survey June 11, 1908, and estimates of daily discharge have been made from January 1, 1908, to December 31, 1912.

Drainage area.—7,410 square miles. (United States Weather Bureau.)

Gage.—Standard chain gage attached to the highway bridge. The datum has not been changed since June 11, 1908, at which time it was adjusted to its original datum. During part of the time prior to this date the chain was wrongly adjusted. Gage heights for 1908 were all corrected before publication in Water-Supply Paper 242.

Channel.—Bed is soft and likely to shift, but appears to have remained fairly permanent, as indicated by constancy of discharge ratings.

Accuracy.—It is possible that daily discharge as determined by one gage-height reading a day may be somewhat in error for individual days, otherwise the accuracy is good for low and medium stages.

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

The following discharge measurement was made by W. E. Hall:

November 13, 1912, gage height, 11.57 feet; discharge, 14,000 second-feet.

Daily gage height, in feet, of Flint River at Bainbridge, Ga., for 1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	18.3	11.8	26.0	18.8	27.1	9.8	11.4	8.0	8.2	10.1	7.1	7.7
2	18.0	12.9	20.0	18.8	25.1	9.7	12.0	7.8	7.9	9.6	7.0	7.7
3	16.5	13.5	19.2	18.7	22.7	10.0	12.1	7.4	7.5	9.3	6.9	7.8
4	16.1	14.1	18.8	18.4	20.1	9.9	12.2	8.4	7.2	9.0	6.8	7.9
5	15.7	14.7	18.3	18.3	18.2	9.5	11.7	8.1	6.9	9.0	6.7	7.8
6	15.3	15.1	16.2	17.8	17.6	9.7	11.1	9.1	6.6	8.9	6.9	7.7
7	15.4	14.9	16.3	17.4	17.4	10.0	11.1	9.6	6.5	8.6	7.0	7.6
8	15.5	14.7	16.3	16.0	17.6	10.9	10.6	10.1	6.3	8.5	9.1	7.5
9	16.1	14.5	17.0	14.7	18.0	11.9	10.2	9.7	6.4	7.1	10.2	7.4
10	19.0	13.6	17.4	13.4	18.3	12.5	10.0	9.5	6.5	7.6	12.8	7.2

Daily gage height, in feet, of Flint River at Bainbridge, Ga., for 1912—Continued.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
11	22.5	12.7	18.1	13.0	18.9	12.9	9.8	10.2	6.7	7.5	13.9	7.3
12	25.0	11.4	18.2	12.7	19.0	13.7	10.0	10.9	6.9	7.5	13.6	7.2
13	26.0	10.3	18.5	12.6	18.4	14.8	10.0	11.7	7.2	7.5	12.2	7.3
14	25.0	10.8	18.9	12.6	17.3	14.9	10.0	12.2	7.3	7.7	10.0	7.3
15	24.5	11.0	19.7	12.6	16.1	13.7	10.8	12.3	7.3	7.9	10.1	7.2
16	24.1	11.2	20.5	12.5	15.3	12.5	11.2	11.9	7.6	8.2	9.4	7.4
17	23.5	12.1	23.0	12.3	14.1	11.3	11.8	11.4	7.4	8.8	8.9	7.6
18	21.0	12.9	24.0	12.4	13.4	11.2	12.2	10.5	7.2	9.7	8.4	7.8
19	18.6	13.7	25.2	13.5	13.0	11.3	12.7	9.5	7.0	11.2	8.2	7.9
20	16.5	13.5	25.5	15.3	12.5	11.4	13.0	9.2	6.8	10.6	8.1	7.7
21	15.9	13.9	25.3	18.1	12.1	11.5	13.8	9.0	7.0	10.4	8.0	7.6
22	14.7	14.6	25.7	20.8	12.0	11.6	13.3	9.1	7.1	10.4	8.0	7.5
23	13.3	15.8	26.3	23.9	11.2	11.2	12.9	9.5	7.2	10.3	8.0	7.3
24	13.4	16.4	27.0	27.0	11.2	10.1	12.1	9.6	7.4	10.2	8.2	7.1
25	13.4	17.2	26.4	31.8	11.1	9.5	11.5	9.7	8.1	10.0	8.4	6.9
26	13.2	18.2	25.3	33.5	10.3	9.9	10.6	9.9	8.5	9.4	8.4	6.7
27	12.6	19.1	24.0	33.4	10.0	10.1	9.4	9.6	8.9	8.9	8.3	6.6
28	11.8	19.9	22.0	32.5	9.9	10.5	8.9	9.5	9.6	8.6	8.3	8.1
29	11.5	20.2	20.2	30.9	9.5	10.6	8.6	9.3	10.2	8.1	8.2	10.6
30	11.4	.....	19.3	29.9	9.4	10.8	8.2	9.3	10.8	7.4	7.8	12.8
31	11.3	.....	19.0	.....	9.6	.....	8.0	8.8	.....	7.2	.....	12.2

Daily discharge, in second-feet, of Flint River at Bainbridge, Ga., for 1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	.....	14,300	.....	.....	.....	10,400	13,500	7,830	8,070	11,000	6,860	7,480
2	.....	.....	.....	.....	.....	10,300	14,700	7,590	7,710	10,100	6,770	7,480
3	.....	.....	.....	.....	.....	10,800	15,000	7,160	7,260	9,620	6,680	7,590
4	.....	.....	.....	.....	.....	10,600	15,200	8,330	6,960	9,160	6,590	7,710
5	.....	.....	.....	.....	.....	9,940	14,100	7,950	6,680	9,160	6,500	7,590
6	.....	.....	.....	.....	.....	10,300	12,900	9,310	6,410	9,020	6,680	7,480
7	.....	.....	.....	.....	.....	10,800	12,900	10,100	6,320	8,600	6,770	7,370
8	.....	.....	.....	.....	.....	12,500	11,900	11,000	6,140	8,460	9,310	7,260
9	.....	.....	.....	.....	.....	14,500	11,200	10,300	6,230	6,860	11,200	7,160
10	.....	.....	.....	.....	.....	15,800	10,800	9,940	6,320	7,370	.....	6,960
11	.....	.....	.....	.....	.....	.....	10,400	11,200	6,500	7,260	.....	7,060
12	.....	13,500	.....	.....	.....	.....	10,800	12,500	6,680	7,260	.....	6,960
13	.....	11,300	.....	.....	.....	.....	10,800	14,100	6,960	7,260	15,200	7,060
14	.....	12,300	.....	.....	.....	.....	10,800	15,200	7,060	7,480	10,800	7,060
15	.....	12,700	.....	.....	.....	.....	12,300	15,400	7,060	7,710	11,000	6,960
16	.....	13,100	.....	15,800	.....	15,800	13,100	14,500	7,370	8,070	9,780	7,160
17	.....	15,000	.....	15,400	.....	13,300	14,300	13,500	7,160	8,880	[illegible]	7,370
18	.....	.....	.....	15,600	.....	13,100	15,200	11,700	6,960	10,300	[illegible]	7,590
19	.....	.....	.....	.....	.....	13,300	.....	9,940	6,770	13,100	8,070	7,710
20	.....	.....	.....	.....	15,800	13,500	.....	9,460	6,590	11,900	7,950	7,480
21	.....	.....	.....	.....	15,000	13,700	.....	9,160	6,770	11,500	7,830	7,370
22	.....	.....	.....	.....	14,700	13,900	.....	9,310	6,860	11,500	7,830	7,260
23	.....	.....	.....	.....	13,100	13,100	.....	9,940	6,960	11,300	7,830	7,060
24	.....	.....	.....	.....	13,100	11,000	15,000	10,100	7,160	11,200	8,070	6,860
25	.....	.....	.....	.....	12,900	9,940	13,700	10,300	7,950	10,800	8,330	6,680
26	.....	.....	.....	.....	11,300	10,600	11,900	10,600	8,460	9,780	8,330	6,500
27	.....	.....	.....	.....	10,800	11,000	9,780	10,100	9,020	9,020	8,200	6,410
28	14,300	.....	.....	.....	10,600	11,700	9,020	9,940	10,100	8,600	8,200	7,950
29	13,700	.....	.....	.....	9,940	11,900	8,600	9,620	11,200	7,950	8,070	11,900
30	13,500	.....	.....	.....	9,780	12,300	8,070	9,620	12,300	7,160	7,590	.....
31	13,300	.....	.....	.....	10,100	.....	7,830	8,880	.....	6,960	.....	15,200

NOTE.—Daily discharge computed from a rating curve fairly well defined between 3,000 and 15,000 second-feet. The discharge exceeded 16,000 second-feet on days for which estimates are not given.

CHIPOLA RIVER NEAR ALTHA, FLA.

Location.—About 3½ miles west of Altha, Fla., 3 miles above the mouth of Tenmile Creek and 1 mile above Luck and Tremble Shoals at head of navigation.

Records available.—November 21 to December 31, 1912.

Drainage area.—740 square miles.

Gage.—Vertical staff gage spiked to cedar stump on left bank; gage is temporary and is to be replaced by a permanent gage at same place.

Channel.—Rough, with bottom of soft limestone; both banks are steep and rarely overflow.

Discharge measurements.—From low stages up to gage height about 12 feet, measurements can be made from downstream side of single span steel highway bridge known as Willis Bridge.

Artificial control.—None.

Accuracy.—Conditions favor a high degree of accuracy for all stages that can be covered by discharge measurement.

The following discharge measurement was made by W. E. Hall:
November 22, 1912, gage height, 10.49 feet; discharge, 1,480 second-feet.

Daily gage height, in feet, of Chipola River near Altha, Fla., for 1912.

[D. L. Carroll, observer.]

Day.	Nov.	Dec.	Day.	Nov.	Dec.	Day.	Nov.	Dec.
1		10.0	11		10.25	21	10.6	10.1
2		9.95	12		10.2	22	10.45	10.2
3		10.0	13		10.1	23	10.3	10.25
4		10.0	14		10.15	24	10.2	10.25
5		10.05	15		10.2	25	10.1	10.2
6		10.05	16		10.25	26	10.0	10.1
7		10.0	17		10.2	27	10.0	10.2
8		10.1	18		10.15	28	10.25	10.45
9		10.35	19		10.2	29	10.2	10.4
10		10.15	20		10.15	30	10.1	11.05
						31		11.25

CHOCTAWHATCHEE RIVER BASIN.

CHOCTAWHATCHEE RIVER NEAR NEWTON, ALA.

Location.—At the wagon bridge 1 mile west of Newton, Ala., and 1 mile below the railroad crossing at Elba Junction, Ala., about 5 miles below the mouth of West Choctawhatchee River.

Records available.—June 11 to October 13, 1906; April 22, 1907, to August 22, 1908; October 20, 1911, to August 3, 1912.

Drainage area.—Not determined.

Gage.—Standard chain gage attached to the downstream side of the wagon bridge; datum unchanged. The gage heights during 1906 were taken from a vertical gage near Elba Junction, but they were reduced to agree with the chain gage.

Channel.—Both banks are high and not likely to overflow. Conditions of flow may possibly be affected by dredging of channel.

Discharge measurements.—Made from the wagon bridge.

Artificial control.—Probably some effect from small power plant above.

Accuracy.—No rating was developed for the changed conditions of section in 1911–12. No discharge measurements were made at this station during 1912.

Daily gage height, in feet, of Choctawhatchee River near Newton, Ala., for 1912.

[J. M. Hodge, observer.]

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	8.0	5.0	6.0	5.8	5.2	5.4	2.6	3.3	.....	.....	.....	.....
2	10.0	5.0	5.8	5.7	5.2	5.9	3.7	3.2	.....	.....	.....	.....
3	9.0	4.0	4.8	5.1	5.1	5.7	3.8	4.0	.....	.....	.....	.....
4	8.5	3.9	4.6	5.2	5.0	5.5	3.9	.....	.....	.....	.....	.....
5	7.0	3.8	4.5	5.4	5.0	4.4	4.4	.....	.....	.....	.....	.....
6	7.0	3.6	6.6	5.6	4.8	4.3	4.6	.....	.....	.....	.....	.....
7	12.0	3.4	6.1	5.6	4.6	4.0	4.6	.....	.....	.....	.....	.....
8	19.1	3.2	6.0	5.8	4.5	4.6	4.5	.....	.....	.....	.....	.....
9	20.0	5.0	5.4	5.9	5.0	4.8	4.4	.....	.....	.....	.....	.....
10	16.0	6.0	5.0	6.0	5.0	5.2	4.4	.....	.....	.....	.....	.....
11	10.0	6.3	8.0	6.2	4.8	5.3	4.6	.....	.....	.....	.....	.....
12	8.0	6.5	10.0	6.9	4.4	5.0	4.6	.....	.....	.....	.....	.....
13	7.6	6.6	13.6	11.0	4.2	4.9	4.7	.....	.....	.....	.....	.....
14	7.0	7.6	16.0	13.0	3.6	4.7	4.8	.....	.....	.....	.....	.....
15	6.5	5.6	16.0	21.6	3.4	4.4	4.5	.....	.....	.....	.....	.....
16	5.6	5.0	15.5	21.6	3.3	4.0	3.9	.....	.....	.....	.....	.....
17	5.4	5.0	10.4	15.6	3.0	3.9	3.4	.....	.....	.....	.....	.....
18	5.0	4.8	8.0	10.0	3.4	3.4	4.0	.....	.....	.....	.....	.....
19	4.8	4.6	6.8	8.0	4.0	3.3	3.8	.....	.....	.....	.....	.....
20	4.7	4.5	5.8	6.0	4.3	3.2	3.6	.....	.....	.....	.....	.....
21	4.2	5.7	5.4	5.8	5.2	3.1	3.4	.....	.....	.....	.....	.....
22	4.0	6.5	5.2	5.6	6.0	3.1	3.2	.....	.....	.....	.....	.....
23	3.7	7.0	5.8	5.3	6.2	3.0	3.2	.....	.....	.....	.....	.....
24	3.6	8.0	5.8	5.0	5.4	3.0	3.1	.....	.....	.....	.....	.....
25	3.4	8.6	6.0	5.4	5.0	2.9	3.1	.....	.....	.....	.....	.....
26	3.3	9.0	5.4	5.6	5.0	2.8	3.2	.....	.....	.....	.....	.....
27	3.4	10.0	5.2	5.8	5.8	2.7	3.2	.....	.....	.....	.....	.....
28	3.6	9.0	5.2	6.0	5.4	2.7	3.1	.....	.....	.....	.....	.....
29	4.0	9.0	5.0	6.2	5.4	2.5	3.0	.....	.....	.....	.....	.....
30	6.9	.....	5.4	5.8	5.5	2.5	3.0	.....	.....	.....	.....	.....
31	6.0	.....	5.6	.....	5.3	.....	3.2	.....	.....	.....	.....	.....

PEA RIVER AT PERA, ALA.

Location.—At the Elton wagon bridge half a mile west of Pera, Ala., about 10 miles above the mouth of Flat Creek; no tributary streams except very small ones come in nearer the station.

Records available.—August 27, 1904, to December 31, 1912.

Drainage area.—1,180 square miles.

Gage.—Standard chain gage attached to the bridge; datum unchanged.

Channel.—In soft rock; nearly permanent.

Discharge measurements.—Made from the downstream side of the wagon bridge to which the gage is attached.

Artificial control.—Power plants on Whitewater Creek, a tributary stream above the station, cause diurnal fluctuations in the low-water flow. The gage is read twice a day to lessen the effect of such fluctuations.

Accuracy.—The estimates of daily discharge may be considerably in error for individual days due to the operation of the power plants above the station. No discharge measurements were made at this station during 1912.

Daily gage height, in feet, of Pea River at Pera, Ala., for 1912.

[W. G. Early, observer.]

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	20.0	15.0	14.4	12.0	12.8	4.8	5.2	3.4	4.0	8.7	5.8	6.6
2	15.9	15.2	12.2	11.2	13.8	5.4	5.8	4.6	3.7	9.0	5.6	6.6
3	14.6	16.4	10.7	11.2	14.0	10.6	5.8	5.7	3.6	7.8	5.7	6.4
4	16.1	13.8	10.4	10.6	13.8	7.1	6.7	6.1	3.4	7.4	5.4	6.8
5	14.2	10.4	14.4	9.5	12.4	6.2	7.2	7.0	3.4	7.2	5.2	14.5
6	12.0	9.3	13.6	8.8	11.8	5.6	6.6	5.9	3.5	6.0	6.0	13.9
7	12.2	8.6	12.2	8.4	12.4	7.2	6.0	5.2	3.4	5.6	19.2	12.0
8	16.2	8.0	11.1	8.0	13.4	9.3	5.6	5.6	3.3	5.2	23.6	11.7
9	24.0	7.8	10.8	7.8	11.4	8.2	6.4	5.8	3.0	4.8	21.6	10.3
10	22.7	7.6	12.2	7.6	10.2	7.2	6.6	6.4	3.2	4.6	16.8	9.3
11	21.0	10.0	11.8	9.7	9.8	7.6	6.2	7.6	3.4	4.4	14.3	8.8
12	17.3	8.5	15.0	10.2	9.5	6.8	6.0	6.8	3.5	4.2	13.2	8.4
13	15.3	7.2	17.3	10.3	8.6	6.1	5.8	6.0	3.4	4.1	11.0	8.4
14	14.0	9.1	15.6	11.4	8.2	6.0	6.1	5.6	4.3	5.8	10.2	8.0
15	12.0	12.4	22.0	10.2	8.0	6.0	5.7	5.2	7.5	10.9	9.4	8.0
16	10.8	11.1	27.4	9.2	7.7	5.7	5.4	5.0	7.4	10.0	8.4	7.6
17	9.8	11.0	28.1	12.2	7.4	5.6	5.0	5.0	7.2	8.4	8.0	7.2
18	9.1	12.0	28.8	19.6	7.2	5.6	4.5	5.5	5.4	9.2	7.4	7.0
19	9.0	10.7	29.4	18.8	6.7	5.4	4.7	5.7	5.3	14.2	7.2	6.6
20	9.0	10.1	24.7	18.6	6.3	4.9	5.2	9.0	6.2	18.4	7.0	6.6
21	8.6	13.2	20.1	27.4	6.1	4.6	5.4	7.2	7.6	18.6	6.9	6.6
22	8.1	19.0	15.0	30.1	6.0	4.4	5.2	6.2	7.0	15.4	6.7	6.4
23	7.8	17.8	12.2	31.4	5.8	4.4	4.8	7.2	7.8	12.2	6.8	7.0
24	7.6	16.4	12.6	32.8	5.7	4.1	4.4	8.5	9.7	10.6	6.6	15.5
25	7.6	19.0	15.8	32.1	5.6	4.2	4.2	6.2	8.9	9.6	6.4	17.6
26	7.4	19.1	13.4	28.7	5.4	4.9	3.8	5.8	8.4	8.6	6.2	16.0
27	7.2	18.2	12.5	24.8	5.2	5.8	3.8	5.6	8.2	7.6	6.2	15.7
28	7.0	17.2	11.7	19.5	5.1	5.0	3.4	5.6	8.2	6.6	6.6	17.4
29	8.7	16.2	12.6	14.2	5.0	5.0	3.4	4.7	6.8	6.3	7.2	16.2
30	15.6	.....	14.2	12.3	4.9	5.3	3.3	4.4	7.1	6.0	6.7	13.1
31	16.0	.....	12.8	.....	4.8	.....	3.2	4.4	.....	5.8	.....	12.2

Daily discharge, in second-feet, of Pea River at Pera, Ala., for 1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	7,350	5,050	4,770	3,670	4,040	794	906	476	600	2,180	1,090	1,360
2	5,460	5,140	3,760	3,300	4,500	965	1,090	741	535	2,310	1,030	1,360
3	4,870	5,690	3,070	3,300	4,590	3,030	1,090	1,060	515	1,820	1,060	1,290
4	5,560	4,500	2,930	3,030	4,500	1,550	1,400	1,190	476	1,660	965	1,430
5	4,680	2,930	4,770	2,530	3,850	1,220	1,590	1,510	476	1,590	906	4,820
6	3,670	2,440	4,410	2,230	3,580	1,030	1,360	1,120	495	1,160	1,160	4,540
7	3,760	2,140	3,760	2,060	3,850	1,590	1,160	906	476	1,030	6,980	3,670
8	5,600	1,900	3,260	1,900	4,310	2,440	1,030	1,030	457	906	9,010	3,530
9	9,190	1,820	3,120	1,820	3,390	1,980	1,290	1,090	400	794	8,090	2,890
10	8,590	1,740	3,760	1,740	2,840	1,590	1,360	1,290	438	741	5,880	2,440
11	7,810	2,750	3,580	2,620	2,660	1,740	1,220	1,740	476	691	4,730	2,230
12	6,110	2,100	5,050	2,840	2,530	1,430	1,160	1,430	495	644	4,220	2,060
13	5,190	1,590	6,110	2,890	2,140	1,190	1,090	1,160	476	622	3,210	2,060
14	4,590	2,350	5,330	3,390	1,980	1,160	1,190	1,030	667	1,090	2,840	1,900
15	3,670	3,850	8,270	2,840	1,900	1,160	1,060	906	1,700	3,160	2,490	1,900
16	3,120	3,260	10,800	2,400	1,780	1,060	965	850	1,660	2,750	2,060	1,740
17	2,660	3,210	11,100	3,760	1,660	1,030	850	850	1,590	2,060	1,900	1,590
18	2,350	3,670	11,400	7,170	1,590	1,030	715	995	965	2,400	1,660	1,510
19	2,310	3,070	11,700	6,800	1,400	965	767	1,060	935	4,680	1,590	1,360
20	2,310	2,800	9,510	6,710	1,260	822	906	2,310	1,220	6,610	1,510	1,360
21	2,140	4,220	7,400	10,800	1,190	741	965	1,590	1,740	6,710	1,470	1,360
22	1,940	6,890	5,050	12,000	1,160	691	906	1,220	1,510	5,230	1,400	1,290
23	1,820	6,340	3,760	12,600	1,090	691	794	1,590	1,820	3,760	1,430	1,510
24	1,740	5,690	3,950	13,200	1,060	622	691	2,100	2,620	3,030	1,360	5,280
25	1,740	6,890	5,420	12,900	1,030	644	644	1,220	2,270	2,570	1,290	6,250

Daily discharge, in second-feet, of Pea River at Pera, Ala., for 1912—Continued.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
26	1,660	6,940	4,310	11,400	965	822	556	1,090	2,060	2,140	1,220	5,510
27	1,590	6,520	3,900	9,560	906	1,090	556	1,030	1,980	1,740	1,220	5,370
28	1,510	6,060	3,530	7,120	878	850	476	1,030	1,980	1,360	1,360	6,150
29	2,180	5,600	3,950	4,680	850	850	476	767	1,430	1,260	1,590	5,600
30	5,330	.....	4,680	3,810	822	935	457	691	1,550	1,160	1,400	4,180
31	5,510	.....	4,040	.....	794	.....	438	691	.....	1,090	.....	3,760

NOTE.—Daily discharge computed from a well defined rating curve.

Monthly discharge of Pea River at Pera, Ala., for 1912.

[Drainage area, 1,180 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).
	Maximum.	Minimum.	Mean.	Per square mile.	
January	9,190	1,510	4,060	3.44	3.97
February	6,940	1,590	4,040	3.42	3.69
March	11,700	2,930	5,500	4.66	5.37
April	13,200	1,740	5,500	4,66	5.20
May	4,590	794	2,230	1.89	2.18
June	3,030	622	1,190	1.01	1.13
July	1,590	438	941	.797	.92
August	2,310	476	1,150	.975	1.12
September	2,620	400	1,130	.958	1.07
October	6,710	622	2,220	1.88	2.17
November	9,010	906	2,540	2.15	2.40
December	6,250	1,290	2,950	2.50	2.88
The year	13,200	400	2,780	2.36	32.10

ESCAMBIA RIVER BASIN.

CONECUH RIVER AT BECK, ALA.

Location.—At Simmons Bridge at Beck, about 12 miles below the mouth of Patsaliga Creek, 8 miles west of Andalusia, Ala., a station on the Central of Georgia and Louisville & Nashville railroads.

Records available.—August 24, 1904, to December 31, 1912.

Drainage area.—1,290 square miles.

Gage.—Standard chain gage attached to the upstream side of the wagon bridge; datum unchanged.

Channel.—In soft bed rock and practically permanent. Both banks are subject to overflow at high stages.

Discharge measurements.—Made from the wagon bridge. No discharge measurements were made at this station during 1912.

Artificial control.—The flow is probably not affected by artificial control, but at times may be affected by logging operations.

Accuracy.—Conditions of flow at this station are practically permanent and a good rating has been developed in previous years. Estimates for 1912 are based on 1911 rating.

Daily gage height, in feet, of Conecuh River at Beck, Ala., for 1912.

[J. F. Hicks, observer.]

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	.....	16.3	14.1	13.1	12.2	3.1	4.2	2.2	.....	6.6	3.7	.....
2	7.8	14.8	13.3	11.9	10.9	.....	5.6	3.3	.....	6.6	3.6	4.4
3	10.7	16.4	.....	11.3	11.5	3.8	5.7	2.5	2.5	6.4	.....	4.5
4	10.8	.....	10.2	11.4	10.4	3.3	.....	.....	2.3	6.4	3.5	4.5
5	10.1	16.9	8.8	10.3	.....	3.6	5.3	4.9	2.2	6.0	3.4	7.5
6	9.3	13.3	10.5	8.7	10.5	3.3	5.6	3.7	2.2	.....	4.3	8.0
7	.....	9.8	10.3	.....	11.5	4.5	.....	2.9	2.2	5.5	18.3	8.2
8	12.5	8.0	9.3	7.0	10.6	4.7	4.6	3.0	.....	4.5	15.7	.....
9	16.3	7.1	9.2	6.3	9.2	.....	4.3	4.1	2.0	3.9	14.7	7.6
10	15.4	6.6	.....	6.1	8.3	5.0	4.1	4.0	2.0	3.4	.....	7.4
11	14.9	.....	9.0	7.8	8.0	4.5	3.9	.....	2.3	3.2	10.9	7.2
12	13.0	6.9	14.3	7.9	.....	3.9	4.2	6.0	2.3	3.0	11.5	7.0
13	10.8	6.6	13.1	8.2	7.0	3.6	4.6	6.3	2.3	.....	12.5	7.0
14	.....	7.7	12.4	.....	6.5	4.9	.....	5.9	2.4	8.9	11.9	6.4
15	10.0	10.6	17.0	7.7	5.9	4.3	3.8	4.6	.....	8.3	8.9	.....
16	9.5	11.0	18.2	7.1	5.5	.....	3.3	3.5	3.3	6.7	5.5	5.7
17	8.1	10.9	.....	13.1	5.1	4.3	3.3	3.2	3.7	5.2	.....	5.3
18	7.2	.....	22.5	13.4	4.9	3.9	3.2	.....	3.7	5.2	5.3	5.3
19	6.7	10.6	26.6	13.9	.....	3.6	3.0	3.0	4.0	9.7	5.2	5.0
20	6.1	16.0	26.5	21.1	4.5	3.3	3.3	3.7	3.9	.....	5.1	4.9
21	.....	17.0	22.4	.....	4.3	3.1	.....	5.0	4.0	8.9	5.0	4.8
22	5.3	.....	17.3	31.6	4.1	3.0	3.2	4.7	.....	7.7	4.9	.....
23	5.2	16.0	12.7	31.1	4.0	.....	3.2	4.9	4.3	7.2	4.8	7.1
24	5.0	16.6	.....	29.8	3.9	2.7	3.1	5.0	4.4	6.7	.....	11.2
25	4.8	17.8	12.4	29.6	3.8	2.6	2.8	.....	4.1	6.4	4.6	13.0
26	4.7	18.6	12.0	28.6	.....	2.5	2.6	4.0	4.4	5.9	4.5	13.0
27	4.5	17.5	12.3	28.6	3.6	2.5	2.4	4.0	5.0	.....	4.4	12.2
28	.....	15.8	12.2	.....	3.4	2.4	.....	4.0	4.2	4.9	.....	12.1
29	13.4	.....	14.8	17.0	3.4	2.5	2.2	4.2	.....	4.3	4.4	.....
30	16.2	.....	14.9	14.5	.....	.....	2.1	4.2	4.9	4.0	4.6	15.5
31	16.4	.....	.....	.....	3.2	.....	2.0	3.1	.....	3.8	.....	14.8

Daily discharge, in second-feet, of Conecuh River at Beck, Ala., for 1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	a2,570	7,830	6,580	6,010	5,490	720	1,170	443	a 655	2,370	955	a1,300
2	3,020	6,980	6,120	5,320	4,750	a 858	1,830	795	a 589	2,370	914	1,260
3	4,640	7,890	a 5,240	4,980	5,100	996	1,890	524	524	2,270	a 894	1,300
4	4,700	a8,030	4,360	5,040	4,470	795	a1,780	a1,010	469	2,270	874	1,300
5	4,310	8,170	3,580	4,420	a4,500	914	1,680	1,490	443	2,050	834	2,860
6	3,860	6,120	4,530	3,520	4,530	795	1,830	955	443	a1,920	1,210	3,130
7	a4,760	4,140	4,420	a 3,060	5,100	1,300	a1,590	650	443	1,780	8,970	3,240
8	5,660	3,130	3,860	2,590	4,590	1,400	1,350	684	a 419	1,300	7,490	a3,080
9	7,830	2,640	3,800	2,210	3,800	a1,470	1,210	1,120	395	1,040	6,920	2,910
10	7,320	2,370	a 3,740	2,100	3,300	1,540	1,120	1,080	395	834	d5,840	2,810
11	7,030	a2,460	3,690	3,020	3,130	1,300	1,040	a1,560	469	757	4,750	2,700
12	5,950	2,540	6,690	3,080	a2,860	1,040	1,170	2,050	469	684	5,100	2,590
13	4,700	2,370	6,010	3,240	2,590	914	1,350	2,210	469	a2,160	5,660	2,590
14	a4,480	2,970	5,610	a 3,100	2,320	1,490	a1,170	2,000	496	3,630	5,320	2,270
15	4,250	4,590	8,230	2,970	2,000	1,210	996	1,350	a 646	3,300	3,630	a2,080
16	3,970	4,810	8,910	2,640	1,780	a1,210	795	874	795	2,430	1,780	1,890
17	3,190	4,750	a10,200	6,010	1,590	1,210	795	757	955	1,640	a1,730	1,680
18	2,700	a4,670	11,400	6,180	1,490	1,040	757	a 720	955	1,640	1,680	1,680
19	2,430	4,590	13,700	6,460	a1,400	914	684	684	1,080	4,080	1,640	1,540
20	2,100	7,660	13,600	10,600	1,300	795	795	955	1,040	a3,860	1,590	1,490
21	a1,890	8,230	11,300	a13,600	1,210	720	a 776	1,540	1,080	3,630	1,540	1,440
22	1,680	a7,940	8,400	16,600	1,120	684	757	1,400	a1,140	2,970	1,490	a2,040
23	1,640	7,660	5,880	16,300	1,080	a 634	757	1,490	1,210	2,700	1,440	2,640
24	1,540	8,000	a 5,740	15,500	1,040	585	720	1,540	1,260	2,430	a1,400	4,920
25	1,440	8,690	5,610	15,400	996	554	617	a1,310	1,120	2,270	1,350	5,950
26	1,400	9,140	5,380	14,800	a 955	524	554	1,080	1,260	2,000	1,300	5,950
27	1,300	8,520	5,550	14,800	914	524	496	1,080	1,540	a1,750	1,260	5,490
28	a3,740	7,550	5,490	a11,500	834	496	a 470	1,080	1,170	1,490	a1,260	5,440
29	6,180	a7,060	6,980	8,230	834	524	443	1,170	a1,330	1,210	1,260	a6,410
30	7,770	.....	7,030	6,800	a 796	a 847	418	1,170	1,490	1,080	1,350	7,380
31	7,890	.....	a 6,520	.....	757	.....	395	720	.....	996	.....	6,980

a Discharge interpolated.

NOTE.—Daily discharge computed from a rating curve fairly well defined below 7,000 second-feet.

Monthly discharge of Conecuh River at Beck, Ala., for 1912.

[Drainage area, 1,290 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).
	Maximum.	Minimum.	Mean.	Per square mile.	
January	7,890	1,300	4,060	3.15	3.63
February	9,140	2,370	5,910	4.58	4.94
March	13,700	3,580	6,710	5.20	6.00
April	16,600	2,100	7,340	5.69	6.35
May	5,490	757	2,470	1.91	2.20
June	1,540	496	933	.723	.81
July	1,890	395	1,010	.783	.90
August	2,210	443	1,140	.884	1.02
September	1,540	395	825	.640	.71
October	4,080	684	2,090	1.62	1.87
November	8,970	834	2,710	2.10	2.34
December	7,380	1,260	3,170	2.46	2.84
The year	16,600	395	3,190	2.47	33.61

MOBILE RIVER BASIN.

OOSTANAULA RIVER AT RESACA, GA.

Location.—At the Western & Atlantic Railroad bridge in Resaca, Ga., 3 miles below the junction of Conasauga and Coosawattee rivers and 1 mile above the mouth of Camp Creek.

Records available.—1891 to 1898 (gage heights by the United States Weather Bureau and discharge measurements and gage heights by the United States Geological Survey); 1899 to 1904 partial records of gage heights; continuous records January 1, 1905, to December 31, 1912.

Drainage area.—1,610 square miles.

Gage.—Heavy vertical timber attached to the downstream side of the bridge pier in the middle of the river; datum unchanged.

Channel.—Slightly shifting at and below the station. The left bank is low and overflows during high water for 480 feet.

Discharge measurements.—Usually made from the downstream side of the railroad bridge but at times from a boat at the ferry, about 200 feet above, where the section is somewhat better. No discharge measurements were made at this station during 1912.

Artificial control.—Except on the smaller tributaries there are very few milldams, and these have little or no effect on the flow at the station. The channel is sometimes obstructed by logs under the left span of the bridge.

Accuracy.—A good rating has been developed in previous years for low and medium stages.

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

Daily gage height, in feet, of Oostanaula River at Resaca, Ga., for 1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	9.2	10.2	8.7	23.5	11.2	7.2	4.2	4.0	2.5	2.6	2.2	1.8
2	8.8	5.6	7.0	19.4	8.6	6.2	5.0	4.6	2.4	2.4	3.0	1.8
3	7.8	5.0	6.3	13.7	7.6	5.0	6.0	4.2	2.4	2.4	2.6	1.8
4	7.0	4.8	6.0	8.6	7.4	7.4	5.6	4.0	2.4	2.4	2.4	3.0
5	6.2	4.6	6.8	7.0	6.8	5.4	6.0	3.8	2.5	3.4	2.3	7.0
6	5.3	4.6	9.2	7.0	7.0	5.4	11.5	3.8	2.6	2.8	2.2	7.5
7	4.5	4.5	9.0	6.8	7.6	5.5	8.6	3.4	2.5	2.4	3.5	7.5
8	4.8	4.4	8.6	6.7	11.0	5.4	6.4	4.0	2.4	2.4	3.5	5.6
9	8.2	4.3	8.0	6.5	9.4	5.2	5.0	6.0	2.2	2.4	3.4	4.0
10	7.2	4.2	8.8	6.2	7.6	5.0	4.6	9.9	2.2	2.4	3.2	2.9
11	6.0	4.2	8.2	6.0	6.0	4.7	5.6	8.2	2.1	2.2	3.0	2.5
12	5.5	4.1	7.5	5.8	6.0	4.5	6.0	6.1	2.1	2.2	2.8	2.3
13	5.2	4.0	7.0	5.6	5.8	4.4	6.4	5.0	2.0	2.0	2.7	2.3
14	4.7	4.2	7.1	5.6	5.6	4.8	5.2	4.6	2.0	2.2	2.5	2.3
15	4.4	13.4	14.4	5.8	5.6	7.0	5.0	4.4	2.0	3.6	2.5	2.3
16	4.2	17.4	19.2	7.8	5.7	7.0	4.6	4.0	2.0	3.0	2.5	2.5
17	3.8	15.0	17.0	10.3	5.6	6.1	4.4	4.0	2.0	2.4	2.5	3.5
18	3.4	12.3	13.3	9.2	5.4	6.4	4.4	5.2	2.0	2.4	2.4	3.2
19	5.7	10.0	8.2	8.5	5.4	5.0	4.9	5.0	3.0	2.8	2.4	3.0
20	5.2	9.2	7.2	7.6	5.2	4.2	4.8	4.5	3.6	6.8	2.4	3.0
21	4.7	8.2	6.5	7.0	5.0	4.0	4.6	4.2	3.6	5.0	2.3	3.0
22	4.0	14.0	6.0	7.0	4.8	4.0	4.6	4.0	3.6	3.2	2.3	3.2
23	4.0	12.0	6.0	16.0	4.6	3.8	4.6	3.8	5.4	3.0	2.3	3.6
24	3.4	9.5	13.2	10.2	4.5	3.8	4.6	3.8	9.0	3.0	2.2	4.6
25	3.4	15.5	16.2	8.3	4.4	5.0	4.4	3.6	5.7	2.8	2.2	5.6
26	3.4	19.5	15.0	7.0	4.2	9.2	4.4	3.6	4.2	2.6	2.1	5.0
27	3.5	14.5	10.0	7.2	4.1	10.0	4.6	3.2	3.0	2.4	2.0	4.8
28	3.5	9.5	8.0	14.0	4.0	7.8	4.4	3.0	2.6	2.2	2.0	4.2
29	10.0	9.3	19.7	13.0	6.7	5.6	4.2	2.6	2.4	2.1	2.0	4.2
30	15.5	.....	23.2	14.4	14.3	4.8	4.2	2.6	2.4	2.1	2.0	4.0
31	12.2	.....	25.0	.....	9.0	.....	4.3	2.6	.....	2.0	.....	7.0

Daily discharge, in second-feet, of Oostanaula River at Resaca, Ga., for 1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	6,050	6,970	5,600	20,100	7,920	4,280	1,900	1,760	870	920	726	560
2	5,690	2,960	4,110	16,000	5,510	3,430	2,500	2,200	820	820	1,140	560
3	4,800	2,500	3,510	10,300	3,630	2,500	3,270	1,900	820	820	920	560
4	4,110	2,350	3,270	5,510	4,450	4,450	2,960	1,760	820	820	820	1,140
5	3,430	2,200	3,940	4,110	3,940	2,800	3,270	1,630	870	1,380	772	4,110
6	2,730	2,200	6,050	4,110	4,110	2,800	8,210	1,630	920	1,030	726	4,540
7	2,120	2,120	5,870	3,940	4,630	2,880	5,510	1,380	870	820	1,440	4,540
8	2,350	2,040	5,510	3,850	7,730	2,800	3,600	1,760	820	820	1,440	2,960
9	5,160	1,970	4,980	3,680	6,230	2,650	2,500	3,270	726	820	1,380	1,760
10	4,280	1,900	5,690	3,430	4,630	2,500	2,200	6,690	726	820	1,260	1,080
11	3,270	1,900	5,160	3,270	3,270	2,270	2,960	5,160	682	726	1,140	870
12	2,880	1,830	4,540	3,110	3,270	2,120	3,270	3,350	682	726	1,030	772
13	2,650	1,760	4,110	2,960	3,110	2,040	3,600	2,500	640	640	972	772
14	2,270	1,900	4,200	2,960	2,960	2,350	2,650	2,200	640	726	870	772
15	2,040	10,100	11,000	3,110	2,960	4,110	2,500	2,040	640	1,500	870	772
16	1,900	14,000	15,800	4,800	3,040	4,110	2,200	1,760	640	1,140	870	870
17	1,630	11,600	13,600	7,060	2,960	3,350	2,040	1,760	640	820	870	1,440
18	1,380	8,980	9,950	6,050	2,800	3,600	2,040	2,650	640	820	820	1,260
19	3,040	6,780	5,160	5,420	2,800	2,500	2,420	2,500	1,140	1,030	820	1,140
20	2,650	6,050	4,280	4,630	2,650	1,900	2,350	2,120	1,500	3,940	820	1,140
21	2,270	5,160	3,680	4,110	2,500	1,760	2,200	1,900	1,500	2,500	772	1,140
22	1,760	10,600	3,270	4,110	2,350	1,760	2,200	1,760	1,500	1,260	772	1,260
23	1,760	8,690	3,270	12,600	2,200	1,630	2,200	1,630	2,800	1,140	772	1,500
24	1,380	6,320	9,860	6,970	2,120	1,630	2,200	1,630	5,870	1,140	726	2,200
25	1,380	12,100	12,800	5,240	2,040	2,500	2,040	1,500	3,040	1,030	726	2,960
26	1,380	16,100	11,600	4,110	1,900	6,050	2,040	1,500	1,900	920	682	2,500
27	1,440	11,100	6,780	4,280	1,830	6,780	2,200	1,260	1,140	820	640	2,350
28	1,440	6,320	4,980	10,600	1,760	4,800	2,040	1,140	920	726	640	1,900
29	6,780	6,140	16,300	9,660	3,850	2,960	1,900	920	820	682	640	1,900
30	12,100	.....	19,800	11,000	10,900	2,350	1,900	920	820	682	640	1,760
31	8,880	.....	21,600	.....	5,870	.....	1,970	920	.....	640	.....	4,110

NOTE.—Daily discharge computed from a rating curve well defined below 7,700 second-feet.

Monthly discharge of Oostanaula River at Resaca, Ga., for 1912.

[Drainage area, 1,610 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).
	Maximum.	Minimum.	Mean.	Per square mile.	
January	12,100	1,380	3,390	2.11	2.43
February	16,100	1,760	6,020	3.74	4.03
March	21,600	3,270	7,750	4.81	5.54
April	20,100	2,960	6,370	3.96	4.42
May	10,900	1,760	3,900	2.42	2.79
June	6,780	1,630	3,060	1.90	2.12
July	8,210	1,900	2,740	1.70	1.96
August	6,690	920	2,100	1.30	1.50
September	5,870	640	1,210	.752	.84
October	3,940	640	1,050	.652	.75
November	1,440	640	891	.553	.62
December	4,540	560	1,780	1.11	1.28
The year	21,600	560	3,350	2.08	28.28

COOSA RIVER AT RIVERSIDE, ALA.

Location.—At the Southern Railway bridge at Riverside, Ala., 1 mile above the mouth of Blue Eye Creek and about 7 miles above Choccolocco Creek.

Records available.—September 25, 1896, to December 31, 1912.

Drainage area.—7,060 square miles.

Gage.—Standard chain gage attached to the right-bank end of the downstream side of the railroad bridge. The original wire gage was located on the downstream side of the bridge near the middle of the river. The gage datum has not been changed since the station was established.

Channel.—For a part of the width the current is broken by a ledge above. Both banks are high and do not overflow, and the bed of the stream is rocky and permanent.

Discharge measurements.—Made from the downstream side of the railroad bridge. No discharge measurements were made at this station during 1912.

Artificial control.—The flow is not noticeably affected by artificial control at the comparatively few dams above. Four navigation locks have been constructed, the nearest of which is Lock 4, about 4 miles above the station.

Daily gage height, in feet, of Coosa River at Riverside, Ala., for 1912.

[J. E. Whitehead, observer.]

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	9.0	11.6	13.6	16.5	11.2	9.0	4.2	2.5	2.0	2.0	1.7	1.5
2	8.3	11.3	13.2	16.5	10.4	7.8	4.2	2.5	2.0	1.9	1.7	1.5
3	7.8	10.0	11.6	16.0	9.3	5.3	4.3	2.5	1.8	1.8	1.7	1.5
4	7.2	8.0	9.7	15.5	8.0	4.2	4.8	2.5	1.8	2.2	1.6	1.5
5	6.3	6.0	7.2	14.5	6.8	4.0	5.4	2.5	1.8	2.0	1.6	1.8
6	5.3	4.8	7.6	13.6	6.4	4.0	5.0	2.3	1.8	2.6	1.6	4.0
7	4.6	4.4	8.2	11.4	6.4	4.0	7.0	2.2	1.8	3.0	1.6	4.7
8	5.5	4.0	8.6	8.2	7.3	3.8	7.4	2.2	1.8	3.2	1.6	4.7
9	7.6	3.8	9.0	6.0	8.2	3.7	6.5	2.4	1.8	2.4	1.6	4.4
10	8.0	3.8	8.6	5.6	8.3	3.6	5.0	3.6	1.8	2.0	2.4	4.0
11	7.8	4.0	8.0	5.4	7.3	3.3	4.7	6.6	1.8	1.8	2.6	3.4
12	6.9	4.0	7.6	5.2	6.1	3.0	5.6	7.5	1.8	1.7	2.3	3.0
13	6.0	4.0	7.0	5.0	5.4	3.0	6.9	6.5	1.7	1.8	2.0	2.6
14	5.0	4.2	6.6	5.0	5.0	3.5	7.6	5.0	1.7	2.0	1.8	2.0
15	4.6	6.2	11.6	4.8	4.8	4.2	7.0	3.6	1.6	2.2	1.7	2.0
16	4.2	8.8	14.2	6.0	4.4	6.8	5.8	3.0	1.6	2.0	1.7	2.0
17	3.8	10.8	14.3	9.0	4.2	7.8	5.0	3.0	1.6	1.9	1.7	2.0
18	3.5	11.3	14.0	9.4	4.0	6.8	4.8	4.0	2.0	1.8	1.7	2.1
19	3.4	11.2	13.6	9.2	3.8	5.6	4.6	3.8	2.3	2.7	1.6	2.3
20	3.4	10.4	12.0	8.6	3.7	4.0	4.5	3.6	2.2	2.8	1.6	2.6
21	4.0	9.0	10.0	7.6	3.5	3.2	5.2	3.4	2.0	3.8	1.6	2.5
22	4.0	9.0	8.8	10.6	3.4	3.0	5.8	3.4	2.0	4.8	1.6	2.6
23	3.8	9.6	8.6	12.6	3.3	3.0	4.4	3.2	2.3	4.4	1.6	2.8
24	3.5	11.0	10.3	12.5	3.0	3.0	4.0	3.0	2.4	3.0	1.6	3.6
25	3.2	11.6	12.2	11.8	2.8	3.0	3.5	3.0	4.3	2.8	1.6	4.0
26	3.0	12.6	12.4	10.8	2.8	3.2	3.4	3.0	5.3	2.2	1.5	4.3
27	3.0	14.3	12.0	10.0	2.8	4.0	3.4	3.0	4.8	2.0	1.5	4.5
28	3.2	14.2	11.6	10.5	2.9	5.8	3.0	2.8	3.3	2.0	1.5	4.2
29	6.3	13.9	15.0	10.7	3.0	6.9	2.8	2.6	2.6	1.8	1.5	3.7
30	9.2	.....	16.0	12.0	5.4	5.9	2.6	2.2	2.0	1.8	1.5	3.7
31	11.4	.....	16.0	.....	8.0	.....	2.5	2.2	.....	1.7	.....	3.8

Daily discharge, in second-feet, of Coosa River at Riverside, Ala., for 1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	29,800	40,900	49,400	61,800	39,200	29,800	11,000	5,700	4,380	4,380	3,660	3,220
2	26,900	39,600	47,700	61,800	35,800	24,800	11,000	5,700	4,380	4,130	3,660	3,220
3	24,800	34,100	40,900	59,600	31,100	14,900	11,300	5,700	3,890	3,890	3,660	3,220
4	22,300	25,600	32,800	57,500	25,600	11,000	13,100	5,700	3,890	4,900	3,430	3,220
5	18,700	17,500	22,300	53,200	20,600	10,300	15,300	5,700	3,890	4,380	3,430	3,890
6	14,900	13,100	23,900	49,400	19,000	10,300	13,800	5,160	3,890	5,970	3,430	10,300
7	12,400	11,700	26,400	40,000	19,000	10,300	21,400	4,900	3,890	7,140	3,430	12,700
8	15,600	10,300	28,100	26,400	22,700	9,660	23,100	4,900	3,890	7,750	3,430	12,700
9	23,900	9,660	29,800	17,500	26,400	9,340	19,400	5,420	3,890	5,420	3,430	11,700
10	25,600	9,660	28,100	16,000	26,900	9,020	13,800	9,020	3,890	4,380	5,420	10,300
11	24,800	10,300	25,600	15,300	22,700	8,060	12,700	19,800	3,890	3,890	5,970	8,380
12	21,000	10,300	23,900	14,500	17,900	7,140	16,000	23,500	3,890	3,660	5,160	7,140
13	17,500	10,300	21,400	13,800	15,300	7,140	21,000	19,400	3,660	3,890	4,380	5,970
14	13,800	11,000	19,800	13,800	13,800	8,700	23,900	13,800	3,660	4,380	3,890	4,380
15	12,400	18,300	48,900	13,100	13,100	11,000	21,400	9,020	3,430	4,900	3,660	4,380
16	11,000	29,000	52,000	17,500	11,700	20,600	16,800	7,140	3,430	4,380	3,660	4,380
17	9,660	37,500	52,400	29,800	11,000	24,800	13,800	7,140	3,430	4,130	3,660	4,380
18	8,700	39,600	51,100	31,500	10,300	20,600	13,100	10,300	4,380	3,890	3,660	4,640
19	8,380	39,200	49,400	30,700	9,660	16,000	12,400	9,660	5,160	6,250	3,430	5,160
20	8,380	35,800	42,600	28,100	9,340	10,300	12,000	9,020	4,900	6,540	3,430	5,970
21	10,300	29,800	34,100	23,900	8,700	7,750	14,500	8,380	4,380	9,660	3,430	5,700
22	10,300	29,800	29,000	36,600	8,380	7,140	16,800	8,380	4,380	13,100	3,430	5,970
23	9,660	32,400	28,100	45,100	8,060	7,140	11,700	7,750	5,160	11,700	3,430	6,540
24	8,700	38,300	35,300	44,700	7,140	7,140	10,300	7,140	5,420	7,140	3,430	9,020
25	7,750	40,900	43,400	41,700	6,540	7,140	8,700	7,140	11,300	6,540	3,430	10,300
26	7,140	45,100	44,300	37,500	6,540	7,750	8,380	7,140	14,900	4,900	3,220	11,300
27	7,140	52,400	42,600	34,100	6,540	10,300	8,380	7,140	13,100	4,380	3,220	12,000
28	7,750	52,000	40,900	36,200	6,840	16,800	7,140	6,540	8,060	4,380	3,220	11,000
29	18,700	50,700	55,400	37,000	7,140	21,000	6,540	5,970	5,970	3,890	3,220	9,340
30	30,700	.....	59,600	42,600	15,300	17,100	5,970	4,900	4,380	3,890	3,220	9,340
31	40,000	.....	59,600	.....	25,600	.....	5,700	4,900	.....	3,660	.....	9,660

NOTE.—Daily discharge computed from a well-defined rating curve.

Monthly discharge of Coosa River at Riverside, Ala., for 1912.

[Drainage area, 7,060 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).
	Maximum.	Minimum.	Mean.	Per square mile.	
January	40,000	7,140	16,400	2.32	2.68
February	52,400	9,660	28,400	4.02	4.34
March	59,600	19,800	38,300	5.42	6.25
April	61,800	13,100	34,400	4.87	5.43
May	39,200	6,540	16,400	2.32	2.68
June	29,800	7,140	12,800	1.81	2.02
July	23,900	5,700	13,600	1.93	2.22
August	23,500	4,900	8,450	1.20	1.38
September	14,900	3,430	5,230	.741	.83
October	13,100	3,660	5,530	.783	.90
November	5,970	3,220	3,700	.524	.58
December	12,700	3,220	7,400	1.05	1.21
The year	61,800	3,220	15,800	2.24	30.52

ALABAMA RIVER AT SELMA, ALA.

Location.—At the highway bridge in Selma, Ala.

Records available.—January 1, 1899, to December 31, 1912. The station was originally established by the United States Army Engineer Corps but in 1890 gage height records were begun by the United States Weather Bureau. Although it is not thought that the discharge rating can be accurately applied farther back than 1899, flow estimates based on earlier gage heights will probably be of some value.

Drainage area.—15,400 square miles.

Gage.—Standard chain gage was installed by the United States Geological Survey March 22, 1906, on the downstream side of the highway bridge. The United States Weather Bureau gage formerly used was in two sections—the low-water portion, reading from —3 to +5.1 feet, being fastened to the lower side of the cofferdam on the second pier, and the upper portion, reading from 5.1 to 55 feet, being fastened to the draw pier. All gages have had the same datum, but the bad condition of a short low-water section caused some error in the low-water readings prior to 1906, especially those of the year 1904.

Channel.—In soft limestone, deep, with swift current, and difficult to sound even at ordinary stages. Both banks are high, but the left is subject to overflow at extreme high water.

Discharge measurements.—Made from the highway bridge to which the gage is attached. No discharge measurements were made at this station during 1912.

Accuracy.—Conditions of flow are somewhat changeable, but a fairly good rating has been developed for recent years.

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

Daily gage height, in feet, of Alabama River at Selma, Ala., for 1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	22.9	40.0	36.1	40.4	34.1	7.1	12.5	5.1	4.6	7.4	2.7	2.0
2	23.6	42.1	34.1	41.7	33.0	10.3	12.5	4.6	4.1	6.6	2.4	1.7
3	23.9	42.5	32.4	41.8	31.3	13.4	11.6	4.5	3.6	5.2	2.2	1.8
4	23.5	40.1	28.4	41.1	28.6	13.3	11.4	4.6	3.3	4.2	2.1	2.0
5	22.5	37.1	26.6	39.7	25.1	11.5	10.6	5.3	3.1	3.7	2.1	4.0
6	20.8	29.2	25.3	37.6	22.4	9.4	10.8	6.0	3.0	3.6	2.1	6.5
7	18.1	21.5	24.3	34.9	20.5	8.7	11.5	5.5	2.8	3.6	2.6	9.6
8	15.5	14.7	24.2	32.3	18.7	8.9	10.8	5.0	2.6	4.4	4.0	11.3
9	17.5	11.3	24.8	28.6	18.4	9.0	10.5	5.4	2.5	5.5	5.0	12.0
10	23.2	10.4	23.2	23.1	19.7	9.0	12.4	8.3	2.4	5.7	5.1	11.7
11	27.0	9.5	22.6	17.8	20.1	8.1	13.4	10.3	2.2	4.9	4.8	10.2
12	27.8	10.2	22.9	15.0	20.0	7.5	12.4	11.5	2.2	3.9	4.3	8.7
13	26.1	11.5	24.2	14.1	20.8	7.0	11.0	14.9	2.2	3.1	4.0	7.6
14	22.4	11.6	24.9	14.3	22.1	7.5	10.6	16.8	2.2	2.7	3.9	6.6
15	17.8	13.9	28.9	15.7	19.5	10.5	11.9	15.0	2.4	2.5	3.5	5.5
16	13.8	17.9	35.4	17.5	16.2	16.4	13.5	11.5	3.4	2.4	3.0	5.0
17	11.3	20.3	40.7	25.2	13.5	17.6	13.6	8.7	5.6	2.5	2.6	4.5
18	9.7	21.9	44.2	35.9	12.1	15.9	13.5	7.6	6.5	3.0	2.4	4.4
19	8.9	23.0	46.2	41.8	11.2	14.7	16.8	9.2	5.3	6.4	2.2	4.3
20	8.8	23.1	46.4	44.2	10.5	13.4	17.6	9.8	4.4	6.3	2.2	4.5
21	10.2	22.5	45.1	46.2	10.0	11.1	14.8	9.0	4.0	8.1	2.3	4.7
22	10.9	22.7	42.5	47.3	9.5	9.1	12.8	7.6	4.2	9.4	2.2	4.6
23	9.6	24.0	39.0	48.4	9.2	7.6	10.8	6.9	4.3	9.0	2.1	4.5
24	8.9	25.5	35.5	48.6	8.9	6.7	10.8	6.9	4.6	7.9	1.9	8.0
25	8.2	28.5	34.2	48.6	8.5	6.2	9.9	6.8	8.0	7.7	1.9	13.3
26	7.6	31.8	35.6	48.2	8.2	6.8	8.4	6.6	9.7	6.8	1.9	17.3
27	7.0	36.0	37.0	46.8	8.0	6.9	7.4	6.8	8.5	5.4	1.8	17.9
28	6.6	37.0	37.0	43.9	7.7	7.1	6.6	7.1	8.7	4.4	1.8	16.7
29	11.4	37.0	37.0	39.8	7.4	8.1	6.3	6.9	8.8	3.7	1.9	15.0
30	25.3	.....	37.1	36.3	7.2	10.3	5.8	6.2	8.1	3.2	1.9	13.5
31	33.9	.....	38.5	.....	7.1	.....	5.5	5.5	.....	3.0	.....	11.8

Daily discharge, in second-feet, of Alabama River at Selma, Ala., for 1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	59,600	108,000	96,300	109,000	90,700	19,800	32,200	15,600	14,600	20,500	10,900	9,600
2	61,500	114,000	90,700	113,000	87,600	27,000	32,200	14,600	13,600	18,800	10,400	9,060
3	62,300	115,000	85,900	113,000	82,800	34,400	30,000	14,400	12,600	15,800	9,980	9,240
4	61,200	108,000	74,700	111,000	75,300	34,200	29,600	14,600	12,100	13,800	9,790	9,600
5	58,600	99,200	69,700	107,000	65,600	29,800	27,700	16,000	11,700	12,800	9,790	13,400
6	54,000	77,000	66,100	101,000	58,300	24,900	28,100	17,500	11,500	12,600	9,790	18,600
7	46,700	55,800	63,400	92,900	53,200	23,300	29,800	16,400	11,100	12,600	10,700	25,400
8	39,900	37,800	63,100	85,600	48,300	23,800	28,100	15,400	10,700	14,200	13,400	29,300
9	45,100	29,300	64,800	75,300	47,500	24,000	27,400	16,200	10,600	16,400	15,400	31,000
10	60,400	27,200	60,400	60,200	51,000	24,000	32,000	22,500	10,400	16,900	15,600	30,300
11	70,800	25,200	58,800	45,900	52,100	22,000	34,400	27,000	9,980	15,200	15,000	26,800
12	73,000	26,800	59,600	38,600	51,800	20,700	32,000	29,800	9,980	13,200	14,000	23,300
13	68,300	29,800	63,100	36,300	54,000	19,600	28,600	38,300	9,980	11,700	13,400	20,900
14	58,300	30,000	65,000	36,800	57,500	20,700	27,700	43,300	9,980	10,900	13,200	18,800
15	45,900	35,700	76,100	40,400	50,400	27,400	30,800	38,600	10,400	10,600	12,400	16,400
16	35,500	46,100	94,300	45,100	41,700	42,200	34,700	29,800	12,300	10,400	11,500	15,400
17	29,300	52,600	110,000	65,800	34,700	45,400	35,000	23,300	16,700	10,600	10,700	14,400
18	25,600	56,900	120,000	95,700	31,200	40,900	34,700	20,900	18,600	11,500	10,400	14,200
19	23,800	59,900	126,000	113,000	29,100	37,800	43,300	24,500	16,000	18,300	9,980	14,000
20	23,600	60,200	126,000	120,000	27,400	34,400	45,400	25,800	14,200	18,100	9,980	14,400
21	26,800	58,600	122,000	126,000	26,300	28,800	38,100	24,000	13,400	22,000	10,200	14,800
22	28,400	59,100	115,000	129,000	25,200	24,200	33,000	20,900	13,800	24,900	9,980	14,600
23	25,400	62,600	105,000	132,000	24,500	20,900	28,100	19,400	14,000	24,000	9,790	14,400
24	23,800	66,600	94,600	133,000	23,800	19,000	28,100	19,400	14,600	21,600	9,420	21,800
25	22,200	75,000	91,000	133,000	22,900	17,900	26,100	19,200	21,800	21,100	9,420	34,200
26	20,900	84,200	94,900	132,000	22,200	19,200	22,700	18,800	25,600	19,200	9,420	44,600
27	19,600	96,000	98,900	127,000	21,800	19,400	20,500	19,200	22,900	16,200	9,240	46,100
28	18,800	98,900	98,900	119,000	21,100	19,800	18,800	19,800	23,300	14,200	9,240	43,000
29	29,600	98,900	98,900	107,000	20,500	22,000	18,100	19,400	23,600	12,800	9,420	38,600
30	66,100	.....	99,200	96,900	20,000	27,000	17,100	17,900	22,000	11,900	9,420	34,700
31	90,100	.....	103,000	.....	19,800	.....	16,400	16,400	.....	11,500	.....	30,500

NOTE.—Daily discharge computed from a well-defined rating curve.

Monthly discharge of Alabama River at Selma, Ala., for 1912.

[Drainage area, 15,400 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).
	Maximum.	Minimum.	Mean.	Per square mile.	
January	90,100	18,800	44,400	2.88	3.32
February	115,000	25,200	65,300	4.24	4.57
March	126,000	58,800	88,900	5.77	6.65
April	133,000	36,300	94,700	6.15	6.86
May	90,700	19,800	43,200	2.81	3.24
June	45,400	17,900	26,500	1.72	1.92
July	45,400	16,400	29,400	1.91	2.20
August	43,300	14,400	21,900	1.42	1.64
September	25,600	9,980	14,700	.955	1.07
October	24,900	10,400	15,600	1.01	1.16
November	15,600	9,240	11,100	.721	.80
December	46,100	9,060	22,600	1.47	1.70
The year	133,000	9,060	39,700	2.58	35.13

ETOWAH RIVER NEAR BALL GROUND, GA.

Location.—At the iron wagon bridge about 3 miles southeast of Ball Ground, Ga., and one-fourth mile below the mouth of Longswamp Creek.

Records available.—May 16, 1907, to December 31, 1912.

Drainage area.—466 square miles.

Gage.—A standard chain gage, attached to the upstream side of the bridge, was installed August 18, 1908, replacing the vertical staff gage, located 75 feet below the bridge. The chain gage was set to read with the vertical staff at low stages and will differ only very slightly at other stages.

Channel.—The left bank does not overflow, but the right bank overflows about 500 feet beyond the end of the bridge approach at high stages. The current is somewhat broken and is disturbed by a rough, rocky bed and curved channel above.

Discharge measurements.—Made from the upstream side of the wagon bridge. No discharge measurements were made at this station during 1912.

Artificial control.—The operation of a number of mills above may cause slight variations in flow. On this account the gage is read twice a day.

Accuracy.—The rating is somewhat affected by shifting of the stream bed some distance below the station.

Daily gage height, in feet, of Etowah River near Ball Ground, Ga., for 1912.

[R. O. Ellis, observer.]

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	5.5	4.6	5.0	6.2	5.6	4.2	4.1	4.2	3.2	3.3	3.3	2.95
2	4.5	4.2	4.8	6.0	5.3	4.1	4.0	3.8	3.1	3.2	3.3	3.0
3	4.4	4.0	4.8	5.8	5.2	4.3	6.3	3.7	3.1	3.1	3.1	3.2
4	4.0	4.0	5.3	5.5	5.3	5.3	4.9	3.7	3.4	6.0	3.1	3.3
5	3.8	3.8	5.2	5.4	5.1	4.2	5.1	3.7	3.5	4.5	3.0	3.4
6	3.6	3.7	6.8	5.3	5.1	4.3	4.7	3.6	4.3	3.7	3.1	3.9
7	3.5	3.6	5.6	5.3	6.2	4.6	4.2	3.5	3.3	3.4	4.2	3.6
8	3.7	3.5	5.2	5.2	5.4	4.4	4.1	4.0	3.6	3.2	3.6	3.3
9	4.5	3.5	5.4	5.1	5.1	4.1	4.2	7.0	3.2	3.2	3.4	3.2
10	4.0	3.7	5.1	5.0	4.9	3.9	4.9	5.6	3.1	3.1	3.3	3.1
11	3.8	3.7	4.8	5.0	4.9	3.9	9.3	4.3	3.1	3.1	3.2	3.1
12	3.8	3.6	5.0	4.9	4.8	3.8	7.2	4.0	2.8	3.1	3.1	3.0
13	3.7	3.5	5.0	4.9	4.7	3.8	5.4	3.8	3.0	3.0	3.2	3.0
14	3.6	3.7	4.8	4.9	4.6	9.1	5.4	3.7	3.2	3.5	3.4	3.0
15	3.5	8.2	18.4	5.8	4.6	6.6	5.0	3.6	4.8	3.4	3.3	2.9
16	3.4	6.6	11.2	6.9	4.6	5.6	4.5	4.0	3.9	3.2	3.2	2.95
17	3.3	5.2	7.2	6.4	4.4	4.7	4.5	4.8	3.3	3.1	3.1	3.0
18	3.4	5.2	5.7	5.6	4.4	4.4	5.5	4.4	3.2	3.1	3.1	3.3
19	4.1	4.8	5.5	5.2	4.3	4.2	5.6	4.0	3.1	8.3	3.0	3.2
20	3.6	4.9	5.3	5.4	4.3	4.0	4.8	3.6	3.0	5.9	3.0	3.1
21	3.4	8.0	5.2	5.2	4.2	3.9	5.1	3.5	2.95	4.1	3.0	3.0
22	3.3	6.4	5.0	8.6	4.2	3.9	4.5	3.6	3.7	3.8	3.0	3.0
23	3.3	5.0	5.4	7.5	4.2	3.8	4.7	3.6	8.0	3.6	3.0	3.5
24	3.3	5.4	8.6	5.7	4.2	4.6	4.6	3.7	5.1	3.5	2.95	4.5
25	3.3	10.7	6.7	5.4	4.1	6.8	4.2	3.7	3.9	3.4	2.95	3.6
26	3.2	9.3	5.7	5.2	4.0	7.2	4.0	3.6	3,6	3.3	2.95	3.4
27	3.2	7.7	5.4	6.4	4.2	5.0	3.8	3.4	3.5	3.2	2.9	3.6
28	3.3	6.0	6.3	5.6	4.9	4.4	3.8	3.3	3.5	3.2	3.0	3.4
29	10.0	5.4	15.4	6.1	7.9	4.2	3.8	3.3	3.5	3.2	3.0	3.3
30	9.0	.....	8.2	6.5	5.2	4.1	3.7	3.2	3.4	3.1	2.95	3.6
31	5.7	.....	6.6	.....	4.4	.....	3.7	3.2	.....	3.1	.....	3.9

Daily discharge, in second-feet, of Etowah River near Ball Ground, Ga., for 1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	2,020	1,430	1,680	2,520	2,090	1,200	1,140	1,200	690	735	735	580
2	1,370	1,200	1,550	2,370	1,880	1,140	1,080	980	645	690	735	600
3	1,310	1,080	1,550	2,230	1,810	1,250	2,600	930	645	645	645	690
4	1,080	1,080	1,880	2,020	1,880	1,880	1,620	930	780	2,370	645	735
5	980	980	1,810	1,950	1,740	1,200	1,740	930	830	1,370	600	780
6	880	930	2,970	1,880	1,740	1,250	1,490	880	1,250	930	645	1,030
7	830	880	2,090	1,880	2,520	1,430	1,200	830	735	780	1,200	880
8	930	830	1,810	1,810	1,950	1,310	1,140	1,080	880	690	880	735
9	1,370	830	1,950	1,740	1,740	1,240	1,200	3,130	690	690	780	690
10	1,080	930	1,740	1,680	1,620	1,030	1,620	2,090	645	645	735	645
11	980	930	1,550	1,680	1,620	1,030	5,050	1,250	645	645	690	645
12	980	880	1,680	1,620	1,550	980	3,290	1,080	520	645	645	600
13	930	830	1,680	1,620	1,490	980	1,950	980	600	600	690	600
14	880	930	1,550	1,620	1,430	4,870	1,950	930	690	830	780	600
15	830	4,100	14,300	2,230	1,430	2,820	1,680	880	1,550	780	735	560
16	780	2,820	6,820	3,050	1,430	2,090	1,370	1,080	1,030	690	690	580
17	735	1,810	3,290	2,670	1,310	1,490	1,370	1,550	735	645	645	600
18	780	1,810	2,160	2,090	1,310	1,310	2,020	1,310	690	645	645	735
19	1,140	1,550	2,020	1,810	1,250	1,200	2,090	1,080	645	4,180	600	690
20	880	1,620	1,880	1,950	1,250	1,080	1,550	880	600	2,300	600	645
21	780	3,930	1,810	1,810	1,200	1,030	1,740	830	580	1,140	600	600
22	735	2,670	1,680	4,440	1,200	1,030	1,370	880	930	980	600	600
23	735	1,680	1,950	3,530	1,200	980	1,490	880	3,930	880	600	830
24	735	1,950	4,440	2,160	1,200	1,430	1,430	930	1,740	830	580	1,370
25	735	6,340	2,900	1,950	1,140	2,970	1,200	930	1,030	780	580	880
26	690	5,050	2,160	1,810	1,080	3,290	1,080	880	880	735	580	780
27	690	3,690	1,950	2,670	1,200	1,680	980	780	830	690	560	880
28	735	2,370	2,600	2,090	1,620	1,310	980	735	830	690	600	780
29	5,680	1,950	11,000	2,440	3,850	1,200	980	735	830	690	600	735
30	4,780	.....	4,100	2,740	1,810	1,140	930	690	780	645	580	886
31	2,160	.....	2,820	.....	1,310	.....	930	690	.....	645	.....	1,030

NOTE.—Daily discharge computed from a well-defined rating curve.

Monthly discharge of Etowah River near Ball Ground, Ga., for 1912.

[Drainage area, 466 square miles.]

Month.	Discharge in second-feet.				Run-off on drainage area (depth in inches).
	Maximum.	Minimum.	Mean.	Per square mile.	
January	5,680	690	1,270	2.73	3.15
February	6,340	830	1,970	4.23	4.56
March	14,300	1,550	3,010	6.46	7.45
April	4,440	1,620	2,200	4.72	5.27
May	3,850	1,080	1,610	3.45	3.98
June	4,870	980	1,560	3.35	3.74
July	5,050	930	1,620	3.48	4.01
August	3,130	690	1,060	2.27	2.62
September	3,930	520	928	1.99	2.22
October	4,180	600	975	2.09	2.41
November	1,200	560	673	1.44	1.61
December	1,370	560	741	1.59	1.83
The year	14,300	520	1,470	3.15	42.85

ETOWAH RIVER NEAR ROME, GA.

Location.—At Freemans Ferry, 5 miles above Rome, Ga., where Etowah and Oostanaula rivers unite to form Coosa River; 1 mile below mouth of Dikes Creek.

Records available.—August 17, 1904, to December 31, 1912.

Drainage area.—1,800 square miles.

Gage.—Vertical gage in three sections, on left bank 250 feet below the ferry; datum unchanged.

Channel.—Both banks are subject to overflow during high water.

Discharge measurements.—Made from the ferryboat or from a small boat held in place by the ferry cable. No measurements can be made at high stages. No discharge measurements were made at this station during 1912.

Artificial control.—The operation of the few milldams above will seldom affect the flow, but to provide for possible daily fluctuations the gage is read twice a day.

Accuracy.—Conditions of flow are probably permanent, and an excellent rating has been developed in previous years for low and medium stages.

Daily gage height, in feet, of Etowah River near Rome, Ga., for 1912.

[R. M. Pattillo, observer.]

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	4.7	4.9	4.6	8.9	5.4	3.5	3.6	3.3	2.5	2.5	2.5	2.3
2	4.4	4.0	4.1	7.6	4.8	3.3	4.2	3.0	2.45	2.5	2.4	2.6
3	4.3	3.6	4.0	5.9	4.3	3.2	4.2	2.9	2.4	2.45	2.4	2.6
4	4.1	3.4	4.3	4.5	5.0	4.0	4.0	2.8	2.4	3.4	2.4	2.35
5	3.4	3.2	4.6	4.4	4.5	3.9	5.0	2.8	2.4	5.4	2.3	2.6
6	3.0	3.1	6.7	4.3	4.2	3.6	4.4	2.8	2.7	4.0	2.35	2.8
7	2.7	3.0	6.1	4.2	7.2	3.4	3.9	2.7	2.8	2.8	2.6	2.9
8	2.5	3.0	4.8	4.2	7.4	3.8	3.8	2.9	2.5	2.6	3.0	2.6
9	4.4	2.8	4.8	4.1	5.2	4.0	4.7	9.5	2.45	2.6	2.8	2.6
10	3.8	2.8	4.6	4.0	4.4	3.6	6.0	6.5	2.4	2.5	2.6	2.5
11	3.4	2.9	4.2	4.0	4.3	3.2	7.3	4.2	2.4	2.5	2.6	2.5
12	3.2	3.0	4.0	3.9	4.2	3.0	8.4	3.5	2.3	2.45	2.5	2.5
13	3.1	2.9	4.2	3.9	4.0	3.4	6.8	3.2	2.3	2.4	2.6	2.45
14	3.0	3.1	4.0	3.8	3.9	10.1	5.1	3.1	2.25	2.35	2.8	2.4
15	2.9	9.1	13.6	3.6	3.8	8.6	4.6	3.0	3.0	2.8	2.8	2.4

Daily gage height, in feet, of Etowah River near Rome, Ga., for 1912—Continued.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
16	2.8	10.4	19.2	5.0	3.7	6.5	4.1	2.9	3.0	2.7	2.6	2.35
17	2.8	6.0	14.4	6.3	3.6	5.5	3.7	3.0	2.7	2.6	2.5	2.7
18	2.7	4.6	7.2	5.4	3.5	4.2	4.1	5.0	2.5	2.5	2.5	2.6
19	2.8	4.4	5.0	4.6	3.4	3.6	4.4	4.2	2.4	3.2	2.4	2.6
20	3.2	4.0	4.6	4.7	3.4	3.4	4.7	3.2	2.3	5.6	2.4	2.5
21	3.0	7.0	4.4	4.8	3.3	3.2	3.9	3.0	2.3	4.1	2.4	2.5
22	3.0	9.0	4.2	7.2	3.2	3.1	3.6	2.9	2.6	3.4	2.35	2.4
23	3.0	5.8	4.3	11.4	3.2	3.0	3.4	2.8	7.0	3.0	2.3	2.45
24	2.9	4.9	7.0	8.5	3.2	3.3	3.2	2.8	7.8	2.8	2.3	3.8
25	2.8	9.3	5.6	4.8	3.2	3.9	3.1	2.7	4.8	2.7	2.25	3.4
26	2.6	14.6	5.0	4.4	3.3	6.0	3.2	2.8	3.0	2.7	2.2	3.1
27	2.45	11.8	4.7	4.6	3.3	7.9	3.2	2.9	2.8	2.6	2.15	2.8
28	2.4	7.5	5.2	6.0	3.2	4.5	3.0	2.7	2.6	2.6	2.4	2.8
29	5.2	5.4	19.2	5.8	8.0	3.6	2.9	2.6	2.6	2.6	2.4	2.7
30	11.9	.....	20.2	6.6	9.4	3.5	2.8	2.6	2.5	2.5	2.3	2.7
31	8.8	.....	12.6	.....	4.4	.....	3.1	2.5	.....	2.4	.....	2.5

Daily discharge, in second-feet, of Etowah River near Rome, Ga., for 1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	5,260	5,620	5,080	12,800	6,520	3,130	3,300	2,800	1,660	1,660	1,660	1,420
2	4,720	4,000	4,180	10,500	5,440	2,800	4,360	2,340	1,600	1,660	1,540	1,790
3	4,540	3,300	4,000	7,420	4,540	2,640	4,360	2,200	1,540	1,600	1,540	1,790
4	4,180	2,960	4,540	4,900	5,800	4,000	4,000	2,060	1,540	2,960	1,540	1,480
5	2,960	2,640	5,080	4,720	4,900	3,820	5,800	2,060	1,540	6,520	1,420	1,790
6	2,340	2,490	8,860	4,540	4,360	3,300	4,720	2,060	1,920	4,000	1,480	2,060
7	1,920	2,340	7,780	4,360	9,760	2,960	3,820	1,920	2,060	2,060	1,790	2,200
8	1,660	2,340	5,440	4,360	10,100	3,640	3,640	2,200	1,660	1,790	2,340	1,790
9	4,720	2,060	5,440	4,180	6,160	4,000	5,260	13,900	1,600	1,790	2,060	1,790
10	3,640	2,060	5,080	4,000	4,720	3,300	7,600	8,500	1,540	1,660	1,790	1,660
11	2,960	2,200	4,360	4,000	4,540	2,640	9,940	4,360	1,540	1,660	1,790	1,660
12	2,640	2,340	4,000	3,820	4,360	2,340	11,900	3,130	1,420	1,600	1,660	1,660
13	2,490	2,200	4,360	3,820	4,000	2,960	9,040	2,640	1,420	1,540	1,790	1,600
14	2,340	2,490	4,000	3,640	3,820	15,000	5,980	2,490	1,360	1,480	2,060	1,540
15	2,200	13,200	21,300	3,300	3,640	12,300	5,080	2,340	2,340	2,060	2,060	1,540
16	2,060	15,500	31,400	5,800	3,470	8,500	4,180	2,200	2,340	1,920	1,790	1,480
17	2,060	7,600	22,700	8,140	3,300	6,700	3,470	2,340	1,920	1,790	1,660	1,920
18	1,920	5,080	9,760	6,520	3,130	4,360	4,180	5,800	1,660	1,660	1,660	1,790
19	2,060	4,720	5,800	5,080	2,960	3,300	4,720	4,360	1,540	2,640	1,540	1,790
20	2,640	4,000	5,080	5,260	2,960	2,960	5,260	2,640	1,420	6,880	1,540	1,660
21	2,340	9,400	4,720	5,440	2,800	2,640	3,820	2,340	1,420	4,180	1,540	1,660
22	2,340	13,000	4,360	9,760	2,640	2,490	3,300	2,200	1,790	2,960	1,480	1,540
23	2,340	7,240	4,540	17,300	2,640	2,340	2,960	2,060	9,400	2,340	1,420	1,600
24	2,200	5,620	9,400	12,100	2,640	2,800	2,640	2,060	10,800	2,060	1,420	3,640
25	2,060	13,500	6,880	5,440	2,640	3,820	2,490	1,920	5,440	1,920	1,360	2,960
26	1,790	23,100	5,800	4,720	2,800	7,600	2,640	2,060	2,340	1,920	1,300	2,490
27	1,600	18,000	5,260	5,080	2,800	11,000	2,640	2,200	2,060	1,790	1,250	2,060
28	1,540	10,300	6,160	7,600	2,640	4,900	2,340	1,920	1,790	1,790	1,540	2,060
29	6,160	6,520	31,400	7,240	11,200	3,300	2,200	1,790	1,790	1,790	1,540	1,920
30	18,200	.....	33,200	8,680	13,700	3,130	2,060	1,790	1,660	1,660	1,420	1,920
31	12,600	.....	19,500	.....	4,720	.....	2,490	1,660	.....	1,540	.....	1,660

NOTE.—Daily discharge computed from a rating curve well defined below 4,000 second-feet. Above 10,000 second-feet the estimates are only approximate.

Monthly discharge of Etowah River near Rome, Ga., for 1912.

[Drainage area, 1,800 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).
	Maximum.	Minimum.	Mean.	Per square mile.	
January	18,200	1,540	3,630	2.02	2.33
February	23,100	2,060	6,750	3.75	4.04
March	33,200	4,000	9,660	5.37	6.19
April	17,300	3,300	6,480	3.60	4.02
May	13,700	2,640	4,830	2.68	3.09
June	15,000	2,340	4,620	2.57	2.87
July	11,900	2,060	4,520	2.51	2.89
August	13,900	1,660	3,040	1.69	1.95
September	10,800	1,360	2,400	1.33	1.48
October	6,880	1,480	2,350	1.31	1.51
November	2,340	1,250	1,630	.906	1.01
December	3,640	1,420	1,870	1.04	1.20
The year	33,200	1,250	4,310	2.39	32.58

AMICALOLA RIVER NEAR POTTS MOUNTAIN, GA.

Location.—At a covered wagon bridge, known as Steeles Bridge, 2 miles east of Potts Mountain post office and one-fourth mile above the mouth of Holley Creek; 15 miles from Ball Ground, Ga., which is the nearest railroad station.

Records available.—June 21, 1907, to December 31, 1908; June 7, 1910, to December 31, 1912.

Drainage area.—80 square miles.

Gage.—Vertical staff attached to a tree on the left bank 30 feet below the bridge; datum unchanged.

Channel.—Rocky and permanent at station, but may shift at a bar of small bowlders a short distance below.

Discharge measurements.—Made from the wagon bridge or by wading at low stages. No discharge measurements were made at this station during 1912.

Accuracy.—Published data considered good.

Daily gage height, in feet, of Amicalola River near Potts Mountain, Ga., for 1912.

[J. A. Whitmore, observer.]

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.8	2.1	2.3	3.0	2.5	1.9	1.85	1.7	1.55	1.5	1.5	1.5
2	1.8	2.0	2.3	2.9	2.4	1.9	1.9	1.7	1.5	1.5	1.5	1.5
3	1.9	1.9	2.2	2.8	2.4	1.9	2.0	1.7	1.5	1.5	1.5	1.6
4	1.8	1.9	2.2	2.75	2.3	2.1	1.9	1.7	1.5	1.9	1.5	1.6
5	1.8	1.85	2.1	2.7	2.3	2.0	1.9	1.7	1.7	1.6	1.5	1.5
6	1.8	1.8	3.2	2.7	2.3	1.95	2.1	1.7	1.55	1.5	1.5	1.5
7	1.9	1.8	2.5	2.5	3.0	1.95	1.9	1.7	1.5	1.5	1.6	1.5
8	2.0	1.8	2.4	2.4	2.4	1.95	1.85	1.9	1.55	1.5	1.55	1.5
9	2.0	1.8	2.4	2.3	2.3	1.9	1.9	2.0	1.5	1.5	1.5	1.5
10	1.95	1.8	2.4	2.25	2.3	1.85	1.9	2.1	1.5	1.45	1.5	1.5
11	1.95	1.85	2.35	2.2	2.25	1.85	6.4	2.0	1.5	1.45	1.5	1.5
12	2.0	1.85	2.3	2.2	2.25	1.8	2.9	1.9	1.5	1.45	1.55	1.5
13	1.9	1.85	2.2	2.2	2.2	1.8	2.5	1.9	1.55	1.45	1.5	1.5
14	1.85	1.95	2.2	2.2	2.2	1.75	2.2	1.8	1.5	1.6	1.5	1.5
15	1.8	3.0	10.5	2.2	2.1	3.5	2.2	1.75	1.5	1.5	1.5	1.5

Daily gage height, in feet, of Amicalola River near Potts Mountain, Ga., for 1912—Con.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
16	1.8	2.5	3.7	2.5	2.1	2.0	2.1	1.75	1.5	1.5	1.5	1.5
17	1.75	2.4	2.7	2.4	2.1	1.9	2.1	1.75	1.5	1.5	1.5	1.5
18	1.75	2.2	2.6	2.35	2.1	1.85	2.0	2.0	1.5	1.45	1.5	1.5
19	1.7	2.1	2.5	2.35	2.1	1.8	2.0	1.8	1.45	4.0	1.45	1.6
20	1.7	2.25	2.45	2.3	2.0	1.8	1.9	1.8	1.45	1.8	1.45	1.6
21	1.7	2.1	2.35	2.3	2.0	1.8	1.9	1.75	1.5	1.6	1.45	1.55
22	1.7	2.1	2.3	6.0	1.95	1.75	1.9	1.75	1.5	1.55	1.45	1.55
23	1.7	2.1	2.25	2.7	1.95	1.75	1.9	1.7	3.9	1.55	1.45	1.6
24	1.7	2.2	3.5	2.5	1.95	1.75	1.85	1.65	2.3	1.5	1.45	1.6
25	1.65	2.3	2.7	2.4	1.9	2.4	1.85	1.65	1.9	1.5	1.45	1.6
26	1.65	3.8	2.6	2.3	1.9	2.8	1.85	1.65	1.6	1.5	1.45	1.55
27	1.65	3.5	2.6	2.3	1.9	2.0	1.8	1.6	1.5	1.5	1.5	1.55
28	1.65	2.5	2.7	2.4	2.0	1.9	1.8	1.6	1.5	1.5	1.5	1.5
29	4.8	2.4	12.0	2.9	2.0	1.85	1.75	1.55	1.5	1.5	1.5	1.5
30	3.0	.....	3.7	2.6	1.95	1.85	1.75	1.55	1.5	1.45	1.5	1.5
31	2.4	.....	3.5	.....	1.95	.....	1.7	1.55	.....	1.45	.....	1.5

Daily discharge, in second-feet, of Amicalola River near Potts Mountain, Ga., for 1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	226	334	420	760	510	260	243	194	152	138	138	138
2	226	296	420	710	465	260	260	194	138	138	138	138
3	260	260	375	660	465	260	296	194	138	138	138	165
4	226	260	375	635	420	334	260	194	138	260	138	165
5	226	243	334	610	420	296	260	194	194	165	138	138
6	226	226	860	610	420	278	334	194	152	138	138	138
7	260	226	510	510	760	278	260	194	138	138	165	138
8	296	226	465	465	465	278	243	260	152	138	152	138
9	296	226	465	420	420	260	260	296	138	138	138	138
10	278	226	465	398	420	243	260	334	138	126	138	138
11	278	243	442	375	398	243	2,690	296	138	126	138	138
12	296	243	420	375	398	226	710	260	138	126	152	138
13	260	243	375	375	375	226	510	260	152	126	138	138
14	243	278	375	375	375	210	375	226	138	165	138	138
15	226	760	5,150	375	334	1,020	375	210	138	138	138	138
16	226	510	1,140	510	334	296	334	210	138	138	138	138
17	210	465	610	465	334	260	334	210	138	138	138	138
18	210	375	560	442	334	243	296	296	138	126	138	138
19	194	334	510	442	334	226	296	226	126	1,300	126	165
20	194	398	488	420	296	226	260	226	126	226	126	165
21	194	334	442	420	296	226	260	210	138	165	126	152
22	194	334	420	2,450	278	210	260	210	138	152	126	152
23	194	334	398	610	278	210	260	194	1,250	152	126	165
24	194	375	1,020	510	278	210	243	180	420	138	126	165
25	180	420	610	465	260	465	243	180	260	138	126	165
26	180	1,190	560	420	260	660	243	180	165	138	126	152
27	180	1,020	560	420	260	296	226	165	138	138	138	152
28	180	510	610	465	296	260	226	165	138	138	138	138
29	1,740	465	6,050	710	296	243	210	152	138	138	138	138
30	760	.....	1,140	560	278	243	210	152	138	126	138	138
31	465	.....	1,020	.....	278	.....	194	152	.....	126	.....	138

NOTE.—Daily discharge computed from a rating curve fairly well defined below 300 second-feet.

Monthly discharge of Amicalola River near Potts Mountain, Ga., for 1912.

[Drainage area, 80 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).
	Maximum.	Minimum.	Mean.	Per square mile.	
January	1,740	180	301	3.76	4.34
February	1,190	226	392	4.90	5.28
March	6,050	334	890	11.1	12.80
April	2,450	375	565	7.06	7.88
May	760	260	366	4.58	5.28
June	1,020	210	298	3.72	4.15
July	2,690	194	369	4.61	5.32
August	334	152	213	2.66	3.07
September	1,250	126	192	2.40	2.68
October	1,300	126	183	2.29	2.64
November	165	126	137	1.71	1.91
December	165	138	146	1.82	2.10
The year	6,050	126	338	4.22	57.45

TALLAPOOSA RIVER AT STURDEVANT, ALA.

Location.—At the Central of Georgia Railway bridge, one-fourth mile west of Sturdevant, Ala., and 5 miles below the mouth of Hillabee Creek.

Records available.—July 19, 1900, to December 31, 1912.

Drainage area.—2,460 square miles.

Gage.—A vertical staff gage on the right bank of the river about 2,000 feet above the bridge. The original gage was a staff in two sections attached to the pier of the railroad bridge. A standard chain gage, installed July 10, 1905, was read until the summer of 1906, when the present gage was installed. The readings of the new staff gage are all corrected to agree with the readings of the standard chain gage, referred to its original datum at the railroad bridge.

Channel.—Rocky and permanent; one side deep and sluggish at low stages. Both banks overflow for about 200 feet at extreme high stages.

Discharge measurements.—Made from a plank walk resting on the lower members of the decked railroad bridge. Some low-water measurements made from boat. No discharge measurements were made at this station during 1912.

Artificial control.—The flow is under no artificial control except at a number of small mills a great distance upstream.

Accuracy.—A good rating has been developed in previous years and excellent results are obtained from this station. Estimates for 1912 are based on 1911 rating.

Daily gage height, in feet, of Tallapoosa River at Sturdevant, Ala., for 1912.

[C. J. Stowe, observer.]

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	5.0	6.7	4.8	8.5	6.1	3.4	3.2	2.3	2.1	2.3	2.0	1.9
2	4.7	5.6	4.5	6.1	5.4	3.2	4.0	2.2	2.0	2.2	1.9	1.9
3	4.3	4.3	4.5	5.4	4.9	3.3	3.3	2.4	2.0	2.2	1.9	2.0
4	4.0	4.0	4.9	5.0	4.8	3.0	3.9	3.2	1.9	2.2	1.8	3.1
5	3.8	3.9	5.6	4.9	5.2	4.0	4.1	3.0	1.9	3.9	1.8	4.4
6	3.6	3.8	7.1	4.7	4.5	4.0	4.0	2.7	1.9	5.8	1.9	4.2
7	4.3	3.6	6.6	4.6	5.8	4.5	4.3	5.6	1.8	4.0	1.8	3.8
8	9.8	3.5	5.8	4.6	7.1	4.1	3.6	5.0	1.8	3.0	1.8	3.6
9	7.2	3.4	5.6	4.5	6.5	3.7	5.2	5.5	1.7	2.4	1.7	3.3
10	5.9	3.6	5.1	4.4	5.4	3.3	5.2	6.1	1.6	2.2	1.7	3.2

Daily gage height, in feet, of Tallapoosa River at Sturdevant, Ala, for 1912—Contd.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
11	4.9	4.7	5.0	4.5	5.0	3.0	4.9	6.5	1.6	2.1	1.8	3.0
12	4.3	4.4	5.8	4.3	5.4	2.9	4.0	5.1	1.6	2.1	1.9	2.9
13	4.0	4.1	5.2	6.0	5.0	3.7	4.9	4.0	1.7	2.0	2.0	2.7
14	3.6	5.0	5.9	4.9	4.6	13.1	4.9	3.2	1.8	2.0	2.0	2.5
15	3.4	6.0	20.3	4.8	4.3	10.0	4.1	3.1	2.3	2.1	2.1	2.3
16	3.2	7.0	17.1	5.7	4.1	6.8	4.5	3.2	2.7	2.1	2.0	2.3
17	3.0	6.3	10.5	12.1	4.0	5.2	6.3	3.7	2.4	2.1	1.9	2.3
18	3.0	5.4	8.3	9.6	3.9	4.1	4.7	4.0	2.2	2.1	1.9	3.0
19	3.4	4.7	6.1	6.8	3.8	3.6	4.1	3.3	2.2	3.8	1.9	2.9
20	3.8	4.2	5.4	7.9	3.7	3.4	3.6	3.0	2.0	4.5	1.9	2.9
21	3.6	6.0	5.0	9.4	3.6	3.2	3.3	2.8	1.9	4.0	1.9	2.7
22	3.2	7.2	4.8	11.5	3.6	3.0	3.0	2.9	1.8	3.2	1.9	2.6
23	3.0	6.7	4.7	12.7	3.5	2.9	2.9	4.7	6.8	2.9	1.9	3.4
24	2.9	8.3	8.6	8.8	3.4	2.7	2.9	3.0	6.0	2.5	1.9	6.0
25	2.9	9.2	8.7	7.2	3.3	3.0	2.7	3.2	4.5	2.3	1.8	5.3
26	2.8	7.8	6.8	5.8	3.3	4.1	3.4	3.4	3.8	2.2	1.8	4.3
27	2.8	7.3	5.8	5.2	3.2	5.0	2.9	3.0	3.0	2.2	1.8	4.0
28	3.7	6.0	5.4	6.1	3.2	4.4	2.6	2.9	2.5	2.0	1.8	3.8
29	17.5	5.3	12.4	7.6	3.2	4.0	2.5	2.5	3.0	2.0	1.9	3.6
30	15.6	.....	11.9	6.8	3.4	3.6	2.3	2.3	2.6	1.9	1.9	3.4
31	9.6	.....	9.8	.....	3.5	.....	2.2	2.2	.....	2.0	.....	3.4

Daily discharge, in second-feet, of Tallapoosa River at Sturdevant, Ala., for 1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	6,760	11,400	6,250	17,200	9,720	3,430	3,110	1,900	1,670	1,900	1,560	1,460
2	6,010	8,330	5,550	9,720	7,800	3,110	4,510	1,780	1,560	1,780	1,460	1,460
3	5,120	5,120	5,550	7,800	6,500	3,270	3,270	2,020	1,560	1,780	1,460	1,560
4	4,510	4,510	6,500	6,760	6,250	2,810	4,320	3,110	1,460	1,780	1,360	2,960
5	4,130	4,320	8,330	6,500	7,280	4,510	4,710	2,810	1,460	4,320	1,360	5,330
6	3,770	4,130	12,700	6,010	5,550	4,510	4,510	2,400	1,460	8,880	1,460	4,910
7	5,120	3,770	11,100	5,770	8,880	5,550	5,120	8,330	1,360	4,510	1,360	4,130
8	21,300	3,600	8,880	5,770	12,700	4,710	3,770	6,760	1,360	2,810	1,360	3,770
9	13,000	3,430	8,330	5,550	10,800	3,950	7,280	8,060	1,270	2,020	1,270	3,270
10	9,160	3,770	7,020	5,330	7,800	3,270	7,280	9,720	1,180	1,780	1,270	3,110
11	6,500	6,010	6,760	5,550	6,760	2,810	6,500	10,800	1,180	1,670	1,360	2,810
12	5,120	5,330	8,880	5,120	7,800	2,670	4,510	7,020	1,180	1,670	1,460	2,670
13	4,510	4,710	7,280	9,440	6,760	3,950	6,500	4,510	1,270	1,560	1,560	2,400
14	3,770	6,760	9,160	6,500	5,770	31,900	6,500	3,110	1,360	1,560	1,560	2,140
15	3,430	9,440	54,400	6,250	5,120	22,000	4,710	2,960	1,900	1,670	1,670	1,900
16	3,110	12,400	44,700	8,600	4,710	11,700	5,550	3,110	2,400	1,670	1,560	1,900
17	2,810	10,300	23,600	28,700	4,510	7,280	10,300	3,950	2,020	1,670	1,460	1,900
18	2,810	7,800	16,500	20,700	4,320	4,710	6,010	4,510	1,780	1,670	1,460	2,810
19	3,430	6,010	9,720	11,700	4,130	3,770	4,710	3,270	1,780	4,130	1,460	2,670
20	4,130	4,910	7,800	15,200	3,950	3,430	3,770	2,810	1,560	5,550	1,460	2,670
21	3,770	9,440	6,760	20,000	3,770	3,110	3,270	2,530	1,460	4,510	1,460	2,400
22	3,110	13,000	6,250	26,800	3,770	2,810	2,810	2,670	1,360	3,110	1,460	2,270
23	2,810	11,400	6,010	30,600	3,600	2,670	2,670	6,010	11,700	2,670	1,460	3,430
24	2,670	16,500	17,500	18,100	3,430	2,400	2,670	2,810	9,440	2,140	1,460	9,440
25	2,670	19,400	17,800	13,000	3,270	2,810	2,400	3,110	5,550	1,900	1,360	7,540
26	2,530	14,900	11,700	8,880	3,270	4,710	3,430	3,430	4,130	1,780	1,360	5,120
27	2,530	13,300	8,880	7,280	3,110	6,760	2,670	2,810	2,810	1,780	1,360	4,510
28	3,950	9,440	7,800	9,720	3,110	5,330	2,270	2,670	2,140	1,560	1,360	4,130
29	46,000	7,540	29,600	14,300	3,110	4,510	2,140	2,140	2,810	1,560	1,460	3,770
30	39,900	.....	28,000	11,700	3,430	3,770	1,900	1,900	2,270	1,460	1,460	3,430
31	20,700	.....	21,300	.....	3,600	.....	1,780	1,780	.....	1,560	.....	3,430

NOTE.—Daily discharge computed from a well-defined rating curve.

Monthly discharge of Tallapoosa River at Sturdevant, Ala., for 1912.

[Drainage area, 2,500 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).
	Maximum.	Minimum.	Mean.	Per square mile.	
January	46,000	2,530	8,040	3.22	3.71
February	19,400	3,430	8,310	3.32	3.58
March	54,400	5,550	13,900	5.56	6.41
April	30,600	5,120	11,800	4.72	5.27
May	12,700	3,110	5,630	2.25	2.59
June	31,900	2,400	5,740	2.30	2.57
July	10,300	1,780	4,350	1.74	2.01
August	10,800	1,780	4,030	1.61	1.86
September	11,700	1,180	2,480	.992	1.11
October	8,880	1,460	2,530	1.01	1.16
November	1,670	1,270	1,440	.576	.64
December	9,440	1,460	3,400	1.36	1.57
The year	54,400	1,180	5,960	2.38	32.48

TOMBIGBEE RIVER AT COLUMBUS, MISS.

Location.—At the county highway bridge at Columbus, Miss., 2 miles above the mouth of Luxapallila Creek and about 6 miles below the mouth of Tibbee River.

Records available.—July 13, 1905, to December 31, 1912. Also for 1900 to 1904, using the gage heights furnished by the United States Weather Bureau, some of which, especially for low stages, were very greatly in error.

Drainage area.—4,440 square miles.

Gage.—Chain gage was installed by the United States Geological Survey on July 13, 1905, at the highway bridge 1,000 feet above the original site of the gage of the United States Weather Bureau. The new gage was set to read the same as the first United States Weather Bureau gage at low water, which makes it practically on the same datum, as the low-water surface is almost level.

Channel.—The right bank is high and seldom overflows. The left bank overflows only under the bridge approach at a gage height of about 20 feet. The bed of the stream is of soft limestone or chalk and conditions of flow are somewhat changeable at low stages.

Discharge measurements.—Made from the wagon bridge.

Accuracy.—Estimates may be somewhat in error at low stages, due to changes at controlling section.

The following discharge measurement was made by W. E. Hall:
April 8, 1912, gage height, 17.78 feet; discharge, 24,500 second-feet.

Daily gage height, in feet, of Tombigbee River at Columbus, Miss., for 1912.

[C. R. Shackelford, observer.]

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	19.0	13.8	15.8	22.8	18.1	−0.8	5.1	−2.0	−2.1	−0.5	−2.4	−2.5
2	19.1	14.9	14.6	25.4	19.9	− .9	8.3	−2.1	−2.4	−1.0	−2.5	−2.4
3	19.4	14.8	11.4	26.5	21.5	− .8	8.9	−2.2	−2.5	−1.4	−2.5	− .2
4	20.4	12.0	9.3	27.0	21.3	− .5	8.2	−2.2	−2.6	−1.8	−2.5	3.2
5	20.9	8.5	8.5	26.2	19.4	− .2	7.1	−1.7	−2.7	−2.2	−2.0	6.5
6	20.5	6.0	11.1	24.2	16.2	.1	5.4	−1.7	−2.8	−2.3	−2.0	11.4
7	18.9	4.3	11.2	21.6	14.3	.0	4.7	−2.2	−2.9	−2.4	−2.1	13.2
8	16.1	3.0	11.6	18.9	14.4	− .5	3.4	−1.8	−3.0	−2.7	−2.1	13.7
9	14.9	2.2	13.7	16.3	13.9	− .8	3.3	−1.8	−3.0	−2.8	−2.0	14.8
10	13.6	2.1	14.0	14.4	13.8	−1.1	4.5	.9	−3.0	−2.9	−1.9	15.5

Daily gage height, in feet, of Tombigbee River at Columbus, Miss., for 1912—Contd.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
11	12.3	2.1	14.1	12.9	13.4	−1.4	4.5	2.0	−3.1	−2.9	−1.9	14.7
12	11.8	2.2	15.7	11.4	12.3	−1.7	3.7	1.8	−3.1	−2.9	−2.1	13.0
13	11.0	2.2	17.4	10.3	10.1	−1.9	3.7	1.3	−3.1	−3.0	−2.3	11.0
14	9.5	2.3	17.2	11.4	8.3	−2.0	3.1	1.8	−3.2	−3.1	−2.4	9.3
15	7.7	2.4	18.5	11.1	7.1	−2.0	1.8	1.8	−3.0	−3.1	−2.3	7.8
16	5.8	2.4	19.7	14.8	6.0	−2.0	1.0	1.3	−1.0	−3.2	−2.3	5.4
17	4.5	2.2	19.5	20.7	4.8	−1.6	.4	.4	.1	−3.2	−2.1	3.0
18	3.4	2.0	19.3	23.8	4.0	−1.0	1.8	.9	1.3	−3.0	−2.3	2.2
19	7.2	1.7	19.0	26.1	2.8	−1.5	4.4	.0	.9	−2.7	−2.4	2.6
20	10.1	1.3	17.9	26.7	1.8	−1.9	5.0	−.7	.6	3.2	−2.5	2.7
21	10.7	4.7	15.5	26.2	1.2	−2.0	5.0	−.8	.5	3.4	−2.5	2.4
22	11.1	7.8	12.6	25.1	.8	−2.0	4.1	−1.3	.7	2.7	−2.5	1.5
23	11.2	8.4	10.4	25.1	.4	−2.2	2.8	−1.3	1.0	1.3	−2.6	2.2
24	9.4	9.2	11.2	24.3	.1	−2.1	1.2	1.2	1.2	1.7	−2.6	6.9
25	6.5	11.0	12.5	22.4	−.1	−2.0	.0	1.7	.5	1.0	−2.6	8.8
26	4.5	13.0	13.3	20.2	−.4	−.8	−.6	1.3	−.4	.2	−2.6	9.3
27	3.5	13.8	14.8	16.8	−.4	.8	−.9	.0	−1.3	−.6	−2.6	10.0
28	2.9	14.6	16.8	16.0	.0	2.7	−1.4	−.5	−1.8	−1.3	−2.6	9.9
29	8.5	15.5	19.4	16.0	.3	2.9	−1.6	−1.0	−.3	−1.7	−2.6	8.4
30	12.4	.....	20.8	16.6	−.4	2.8	−1.7	−1.5	−.2	−2.0	−2.5	7.7
31	12.8	.....	21.1	.....	−.7	.....	−1.8	−1.8	.....	−2.2	.....	8.3

Daily discharge, in second-feet, of Tombigbee River at Columbus, Miss., for 1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	28,900	19,700	23,000	38,000	27,100	1,940	7,720	1,130	1,070	2,170	895	840
2	29,100	21,500	21,000	44,500	30,900	1,870	11,700	1,070	895	1,800	840	895
3	29,700	21,300	16,000	47,200	34,800	1,940	12,500	1,010	840	1,520	840	2,410
4	32,100	16,900	13,000	48,500	34,200	2,170	11,600	1,010	785	1,260	840	5,620
5	33,300	12,000	12,000	46,500	29,700	2,410	10,100	1,320	735	1,010	1,130	9,400
6	32,300	8,800	15,600	41,500	23,700	2,670	8,080	1,320	685	950	1,130	16,000
7	28,700	6,810	15,700	35,000	20,500	2,580	7,250	1,010	635	895	1,070	18,800
8	23,500	5,420	16,300	28,700	20,700	2,170	5,820	1,260	590	735	1,070	19,600
9	21,500	4,620	19,600	23,900	19,900	1,940	5,720	1,260	590	685	1,130	21,300
10	19,400	4,520	20,100	20,700	19,700	1,730	7,030	3,390	590	635	1,200	22,500
11	17,400	4,520	20,200	18,300	19,100	1,520	7,030	4,420	545	635	1,200	21,200
12	16,600	4,620	22,800	16,000	17,400	1,320	6,150	4,230	545	635	1,070	18,500
13	15,400	4,620	25,800	14,400	14,100	1,200	6,150	3,760	545	590	950	15,400
14	13,300	4,720	25,500	16,000	11,700	1,130	5,520	4,230	500	545	895	13,000
15	10,900	4,820	27,900	15,600	10,100	1,130	4,230	4,230	590	545	950	11,000
16	8,560	4,820	30,400	21,300	8,800	1,130	3,480	3,760	1,800	500	950	8,080
17	7,030	4,620	30,000	32,800	7,360	1,390	2,940	2,940	2,670	500	1,070	5,420
18	5,820	4,420	29,500	40,500	6,480	1,800	4,230	3,390	3,760	590	950	4,620
19	10,300	4,140	28,900	46,200	5,220	1,460	6,920	2,580	3,390	735	895	5,020
20	14,100	3,760	26,700	47,800	4,230	1,200	7,600	2,020	3,120	5,620	840	5,120
21	15,000	7,250	22,500	46,500	3,660	1,130	7,600	1,940	3,030	5,820	840	4,820
22	15,600	11,000	17,800	43,800	3,300	1,130	6,590	1,590	3,210	5,120	840	3,940
23	15,700	11,800	14,600	43,800	2,940	1,010	5,220	1,590	3,480	3,760	785	4,620
24	13,200	12,900	15,700	41,800	2,670	1,070	3,660	3,660	3,660	4,140	785	9,880
25	9,400	15,400	17,700	37,000	2,500	1,130	2,580	4,140	3,030	3,480	785	12,300
26	7,030	18,500	18,900	31,600	2,250	1,940	2,090	3,760	2,250	2,760	785	13,000
27	5,930	19,700	21,300	24,700	2,250	3,300	1,870	2,580	1,590	2,090	785	14,000
28	5,320	21,000	24,700	23,400	2,580	5,120	1,520	2,170	1,260	1,590	785	13,900
29	12,000	22,500	29,700	23,400	2,850	5,320	1,390	1,800	2,330	1,320	785	11,800
30	17,500	.....	33,000	24,400	2,250	5,220	1,320	1,460	2,410	1,130	840	10,900
31	18,100	.....	33,800	.....	2,020	.....	1,260	1,260	.....	1,010	.....	11,700

NOTE.—Daily discharge computed from a rating curve well defined below 4,000 second-feet and fairly well defined below 32,000 second-feet.

Monthly discharge of Tombigbee River at Columbus, Miss., for 1912.

[Drainage area, 4,440 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
January	33,300	5,320	17,200	3.87	4.46	B.
February	22,500	3,760	10,600	2.39	2.58	B.
March	33,800	12,000	25,500	5.74	6.62	B.
April	48,500	14,400	32,800	7.39	8.24	C.
May	34,800	2,020	12,700	2.86	3.30	B.
June	5,320	1,010	2,040	.459	.51	A.
July	12,500	1,260	5,710	1.29	1.49	B.
August	4,420	1,010	2,430	.547	.63	A.
September	3,760	500	1,700	.383	.43	A.
October	5,820	500	1,770	.399	.46	A.
November	1,200	785	931	.210	.23	A.
December	22,500	840	10,800	2.43	2.80	B.
The year	48,500	500	10,400	2.34	31.75	

TOMBIGBEE RIVER AT EPES, ALA.

Location.—At the Alabama Great Southern Railroad bridge just below the mouth of Jones Creek, about half a mile from Epes, Ala.

Records available.—1900 and 1901 (discharge measurements were made by the United States Geological Survey and a rating was developed for these years); November 29, 1904, to December 31, 1912. A record of approximate gage heights, based on a gage painted on one of the bridge piers, has been kept by the Alabama Great Southern Railroad for a number of years.

Drainage area.—8,830 square miles.

Gage.—Standard chain gage attached to the railroad bridge; datum unchanged.

Channel.—At flood stages—gage heights of 38 feet and over—the left bank overflows for about seven-eighths of a mile under the trestle approach to the bridge. Some changes in section have probably occurred since the station was established.

Discharge measurements.—Made from the downstream side of the railroad bridge. No discharge measurements were made at this station during 1912.

Accuracy.—Good results have been obtained at this station in the years when sufficient discharge measurements were made to fix the rating curve.

Daily gage height, in feet, of Tombigbee River at Epes, Ala., for 1912.

[George Haven, observer.]

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	38.7	28.2	29.6	43.8	45.1	4.8	9.9	3.4	3.4	4.4	2.8	2.3
2	39.4	28.4	30.0	44.1	44.2	5.6	11.8	3.1	2.5	4.2	2.6	2.4
3	39.8	28.6	30.7	44.4	43.2	7.6	15.2	2.9	2.6	4.0	2.5	2.9
4	40.0	28.9	31.2	44.7	42.4	7.0	16.7	2.8	2.7	3.8	2.4	6.7
5	40.1	28.8	29.8	45.2	41.7	6.8	16.4	2.7	2.6	3.7	2.4	12.6
6	39.8	27.4	28.1	45.6	41.8	6.4	15.8	2.8	2.4	3.4	2.5	17.1
7	39.8	23.8	26.6	46.0	41.8	7.2	14.7	3.4	2.4	3.1	2.8	19.6
8	39.6	18.4	26.8	46.4	41.8	7.7	13.1	3.0	2.0	2.8	2.8	22.1
9	39.9	13.8	28.6	46.5	41.4	6.0	11.3	2.9	2.0	2.4	2.9	23.2
10	39.8	12.2	29.2	46.4	40.4	5.1	10.4	3.6	1.8	2.2	3.0	23.9
11	39.4	12.4	29.4	45.9	39.2	4.6	11.3	8.0	1.8	2.1	3.2	24.4
12	38.4	11.6	32.6	45.1	37.4	4.0	11.6	10.8	1.7	2.0	3.2	25.2
13	36.6	10.8	33.8	44.1	35.6	4.5	10.7	10.6	1.7	2.2	3.0	24.8
14	34.5	11.8	34.5	42.6	33.8	8.6	9.9	9.4	1.7	2.3	3.0	23.8
15	31.7	13.3	37.8	41.2	30.8	8.0	9.4	8.7	2.4	1.8	2.8	21.2

Daily gage height, in feet, of Tombigbee River at Epes, Ala., for 1912—Continued.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
16	27.2	12.4	38.8	42.1	26.2	5.2	8.3	8.9	2.6	1.8	2.7	18.0
17	22.8	11.5	39.6	44.2	20.2	4.3	7.3	8.2	2.5	1.8	2.8	14.5
18	17.6	10.9	40.0	45.2	15.1	4.2	7.3	7.2	5.2	1.8	2.7	11.0
19	15.6	10.2	40.2	46.2	11.9	4.3	9.0	6.7	6.4	2.0	2.7	9.0
20	17.5	9.6	40.4	47.5	10.0	4.1	12.5	6.0	6.0	2.1	2.6	8.6
21	20.0	12.8	40.4	48.4	8.8	3.6	13.4	5.0	5.4	5.7	2.5	8.4
22	20.9	18.4	40.2	49.1	7.8	3.3	12.4	4.4	5.4	7.6	2.4	8.2
23	21.0	21.0	40.3	49.5	7.2	3.1	11.5	4.0	5.6	7.6	2.4	9.0
24	21.0	22.6	41.2	49.2	6.7	3.0	9.5	4.4	5.8	6.8	2.3	14.2
25	24.0	25.0	40.6	48.8	6.2	2.9	7.6	5.8	5.8	6.5	2.3	17.0
26	18.0	26.8	40.2	48.3	5.8	3.0	6.4	6.6	6.0	6.2	2.3	18.7
27	14.0	28.4	39.1	47.8	5.5	3.6	5.4	6.4	5.4	5.6	2.2	19.4
28	11.9	29.2	39.0	47.2	5.3	5.0	5.0	5.9	4.6	5.0	2.2	19.6
29	22.6	29.4	41.0	46.7	5.4	7.0	4.6	5.0	3.8	4.2	2.3	19.4
30	25.9	.....	43.0	46.0	5.6	9.1	4.0	4.4	3.4	3.5	2.3	19.0
31	27.6	.....	43.5	.....	5.2	.....	3.6	3.9	.....	3.0	.....	18.8

Daily discharge, in second-feet, of Tombigbee River at Epes, Ala., for 1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	39,100	28,100	29,600	44,400	45,700	4,130	9,120	2,860	2,860	3,760	2,330	1,920
2	39,800	28,400	30,000	44,700	44,800	4,890	11,100	2,590	2,080	3,580	2,160	2,000
3	40,200	28,600	30,700	45,000	43,700	6,800	14,600	2,420	2,160	3,400	2,080	2,420
4	40,400	28,900	31,300	45,300	42,900	6,220	16,200	2,330	2,240	3,220	2,000	5,940
5	40,500	28,800	29,800	45,800	42,200	6,030	15,900	2,240	2,160	3,130	2,000	11,900
6	40,200	27,300	28,000	46,200	42,300	5,650	15,300	2,330	2,000	2,860	2,080	16,600
7	40,200	23,600	26,500	46,700	42,300	6,410	14,100	2,860	2,000	2,590	2,330	17,200
8	40,000	18,000	26,700	47,100	42,300	6,900	12,400	2,500	1,680	2,330	2,330	21,800
9	40,300	13,200	28,600	47,200	41,900	5,270	10,600	2,420	1,680	2,000	2,420	22,900
10	40,200	11,500	29,200	47,100	40,800	4,420	9,640	3,040	1,530	1,840	2,500	23,700
11	39,800	11,700	29,400	46,600	39,600	3,940	10,600	7,200	1,530	1,760	2,680	24,200
12	38,800	10,900	32,700	45,700	37,700	3,400	10,900	10,100	1,460	1,680	2,680	25,000
13	36,900	10,100	34,000	44,700	35,800	3,850	9,950	9,840	1,460	1,840	2,500	24,600
14	34,700	11,100	34,700	43,100	34,000	7,800	9,120	8,600	1,460	1,920	2,500	23,600
15	31,800	12,700	38,100	41,700	30,900	7,200	8,600	7,900	2,000	1,530	2,330	20,900
16	27,100	11,700	39,200	42,600	26,100	4,510	7,500	8,100	2,160	1,530	2,240	17,500
17	22,500	10,800	40,000	44,800	19,800	3,670	6,500	7,400	2,080	1,530	2,330	13,900
18	17,100	10,200	40,400	45,800	14,500	3,580	6,500	6,410	4,510	1,530	2,240	10,300
19	15,000	9,430	40,600	46,900	11,200	3,670	8,200	5,940	5,650	1,680	2,240	8,200
20	17,000	8,800	40,800	48,200	9,220	3,490	11,800	5,270	5,270	1,760	2,160	7,800
21	19,600	12,100	40,800	49,200	8,000	3,040	12,800	4,320	4,700	4,980	2,080	7,600
22	20,600	18,000	40,600	49,900	7,000	2,770	11,700	3,760	4,700	6,800	2,000	7,400
23	20,700	20,700	40,700	50,300	6,410	2,590	10,800	3,400	4,890	6,800	2,000	8,200
24	20,700	22,300	41,700	50,000	5,940	2,500	8,700	3,760	5,080	6,030	1,920	13,600
25	23,800	24,800	41,000	49,600	5,460	2,420	6,800	5,080	5,080	5,740	1,920	16,500
26	17,500	26,700	40,600	49,100	5,080	2,500	5,650	5,840	5,270	5,460	1,920	18,300
27	13,400	28,400	39,500	48,500	4,800	3,040	4,700	5,650	4,700	4,890	1,840	17,000
28	11,200	29,200	39,400	47,900	4,600	4,320	4,320	5,180	3,940	4,320	1,840	17,200
29	22,300	29,400	41,500	47,400	4,700	6,220	3,940	4,320	3,220	3,580	1,920	17,000
30	25,800	.....	43,500	46,700	4,890	8,300	3,400	3,760	2,860	2,950	1,920	18,600
31	27,500	.....	44,100	.....	4,510	.....	3,040	3,310	.....	2,500	.....	18,400

NOTE.—Daily discharge computed from a rating curve fairly well defined below 16,000 second-feet.

Monthly discharge of Tombigbee River at Epes, Ala., for 1912.

[Drainage area, 8,830 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).
	Maximum.	Minimum.	Mean.	Per square mile.	
January	40,500	11,200	29,200	3.31	3.82
February	29,400	8,800	19,200	2.17	2.34
March	44,100	26,500	35,900	4.07	4.69
April	50,300	41,700	46,600	5.28	5.89
May	45,700	4,510	24,200	2.74	3.16
June	8,300	2,420	4,650	.527	.59
July	16,200	3,040	9,500	1.08	1.24
August	10,100	2,240	4,860	.550	.63
September	5,650	1,460	3,080	.349	.39
October	6,800	1,530	3,210	.364	.42
November	2,680	1,840	2,180	.247	.28
December	25,000	1,920	14,900	1.69	1.95
The year	50,300	1,460	16,500	1.87	25.40

BLACK WARRIOR RIVER NEAR CORDOVA, ALA.

Location.—At the Kansas City, Memphis & Birmingham Railroad bridge 1 mile east of Cordova and just below the mouth of Cane Creek; 12 miles below junction of Mulberry and Sipsey forks and 6 miles below the mouth of Blackwater Creek.

Records available.—May 21, 1900, to December 31, 1912.

Drainage area.—1,900 square miles.

Gage.—Staff gage in three sections, the lower one being a sloping timber bolted to bed rock, graduated from —0.6 to 10.0 feet; the other two sections are vertical timbers. All the sections are on the right bank near the railroad bridge. The datum of the gage has not been changed, but several gages at slightly different sites have been used.

Channel.—The bed is rocky with a fair current except at low stages; at high stages the left bank overflows under the bridge.

Discharge measurements.—Made from the railroad bridge. Some of the low-water measurements have been made by wading or from a boat at other sections near by. No discharge measurements were made at this station during 1912.

Accuracy.—The minimum flow is especially low per square mile of drainage area, and the rating at this stage is subject to considerable change.

Cooperation.—Gage heights furnished by the United States Engineer Corps.

Daily gage height, in feet, of Black Warrior River near Cordova, Ala., for 1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	18.0	9.5	6.5	19.6	9.0	—0.3	1.5	0.0	0.0	0.0	0.0	0.0
2	13.0	6.5	5.0	18.7	6.0	— .2	1.5	.0	.0	.0	.0	.0
3	8.7	5.1	4.5	13.0	5.0	— .8	1.0	.0	.0	.0	.0	.0
4	7.3	4.2	5.5	9.5	4.6	— .4	.8	.0	.0	.0	.0	.3
5	3.1	3.5	5.0	7.2	3.5	— .8	.0	.0	.0	.0	.0	1.0
6	4.7	2.8	8.0	5.7	3.0	— .4	.0	.0	.0	.0	.0	5.5
7	3.8	2.7	8.5	5.0	5.0	.0	6.0	.0	.0	.0	.8	4.5
8	3.7	2.0	7.0	5.5	5.5	— .3	4.5	.0	.0	.0	.7	3.6
9	13.5	2.0	9.0	4.5	4.5	— .4	4.4	2.0	.0	.0	.7	2.6
10	13.8	2.0	9.8	4.0	3.5	— .8	4.5	2.8	.0	.0	.6	2.0
11	8.5	1.8	8.0	4.7	3.0	.0	3.6	4.0	.0	.0	.4	1.0
12	6.5	1.6	7.5	4.5	2.5	.0	2.0	2.0	.0	.0	.4	1.2
13	5.2	1.6	7.4	4.5	3.5	.0	2.0	1.0	.0	.0	.4	1.2
14	4.2	1.7	6.1	4.0	2.0	.0	1.5	3.0	.0	.0	.4	1.0
15	3.6	5.0	12.0	3.5	1.5	5.0	1.0	1.0	.0	.0	.4	1.0

Daily gage height, in feet, of Black Warrior River near Cordova, Ala., for 1912—Contd.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
16	3.2	5.6	24.0	9.0	1.5	2.0	1.0	.5	.0	.0	.0	1.0
17	2.6	4.9	16.0	24.0	1.5	1.0	.5	1.0	.0	.0	.0	1.0
18	1.5	4.3	10.0	28.0	1.5	.8	2.0	1.0	.0	.0	.0	1.3
19	2.3	3.6	7.0	18.0	.0	.0	2.8	.5	— .5	.0	.0	1.3
20	4.5	3.6	5.7	10.6	— .2	.0	3.0	.0	— .3	.8	.0	1.0
21	3.7	9.6	5.0	8.0	.6	.0	3.0	.0	.0	.7	.0	1.0
22	3.0	16.6	4.0	7.0	.7	.0	2.0	.0	— .3	.6	.0	1.0
23	2.4	11.3	4.0	23.0	.0	.0	1.0	.5	.0	.5	.0	1.7
24	2.3	7.5	11.0	24.0	.0	.0	.5	.6	.0	.4	.0	3.4
25	2.7	8.7	18.0	8.5	.0	.0	.0	1.0	.0	.3	.0	3.5
26	2.0	19.0	11.0	6.2	.0	.0	.0	.5	.0	.0	.0	2.3
27	1.7	19.5	8.0	5.0	.0	.0	.0	.6	.0	.0	.0	2.8
28	1.5	13.0	6.0	13.5	.0	.0	.0	.7	.0	.0	.0	2.4
29	11.0	8.7	22.0	13.5	.0	3.0	.0	.3	.0	.0	.0	2.0
30	19.3	.....	27.0	10.0	.0	1.0	.0	.0	.0	.0	.0	2.8
31	13.0	.....	19.0	.....	— .6	.....	.0	.0	.....	.0	.....	6.0

Daily discharge, in second-feet, of Black Warrior River near Cordova, Ala., for 1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	25,200	12,400	8,130	27,600	11,600	415	1,850	605	605	605	605	605
2	17,600	8,130	6,080	26,200	7,430	475	1,850	605	605	605	605	605
3	11,200	6,210	5,430	17,600	6,080	165	1,360	605	605	605	605	605
4	9,250	5,040	6,730	12,400	5,560	355	1,190	605	605	605	605	810
5	3,640	4,130	6,080	9,110	4,130	165	605	605	605	605	605	1,360
6	5,690	3,290	10,200	7,010	3,520	355	605	605	605	605	605	6,730
7	4,520	3,180	10,900	6,080	6,080	605	7,430	605	605	605	1,190	5,430
8	4,390	2,380	8,830	6,730	6,730	415	5,430	605	605	605	1,110	4,260
9	18,400	2,380	11,600	5,430	5,430	355	5,300	2,380	605	605	1,110	3,060
10	18,800	2,380	12,800	4,780	4,130	165	5,430	3,290	605	605	1,030	2,380
11	10,900	2,160	10,200	5,690	3,520	605	4,260	4,780	605	605	880	1,360
12	8,130	1,960	9,530	5,430	2,940	605	2,380	2,380	605	605	880	1,560
13	6,340	1,960	9,390	5,430	4,130	605	2,380	1,360	605	605	880	1,560
14	5,040	2,060	7,570	4,780	2,380	605	1,850	3,520	605	605	880	1,360
15	4,260	6,080	16,200	4,130	1,850	6,080	1,360	1,360	605	605	880	1,360
16	3,760	6,870	34,200	11,600	1,850	2,380	1,360	955	605	605	605	1,360
17	3,060	5,950	22,200	34,200	1,850	1,360	955	1,360	605	605	605	1,360
18	1,850	5,170	13,200	40,200	1,850	1,190	2,380	1,360	605	605	605	1,650
19	2,720	4,260	8,830	25,200	605	605	3,290	955	300	605	605	1,650
20	5,430	4,260	7,010	14,000	475	605	3,520	605	415	1,190	605	1,360
21	4,390	12,600	6,080	10,200	1,030	605	3,520	605	605	1,110	605	1,360
22	3,520	23,000	4,780	8,830	1,110	605	2,380	605	415	1,030	605	1,360
23	2,830	15,100	4,780	32,600	605	605	1,360	955	605	955	605	2,060
24	2,720	9,530	14,700	34,200	605	605	955	1,030	605	880	605	4,000
25	3,180	11,200	25,200	10,900	605	605	605	1,360	605	810	605	4,130
26	2,380	26,600	14,600	7,710	605	605	605	955	605	605	605	2,720
27	2,060	27,400	10,200	6,080	605	605	605	1,030	605	605	605	3,290
28	1,850	17,600	7,430	18,400	605	605	605	1,110	605	605	605	2,830
29	14,600	11,200	31,200	18,400	605	3,520	605	810	605	605	605	2,380
30	27,100	.....	38,600	13,200	605	1,360	605	605	605	605	605	3,290
31	17,600	.....	26,600	.....	250	.....	605	605	.....	605	.....	7,430

NOTE.—Daily discharge computed from a rating curve fairly well defined between 1,400 and 19,000 second-feet. Low-water estimates below 1,000 second-feet are very uncertain.

Monthly discharge of Black Warrior River near Cordova, Ala., for 1912.

[Drainage area, 1,900 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).
	Maximum.	Minimum.	Mean.	Per square mile.	
January	27,100	1,850	8,140	4.28	4.93
February	27,400	1,960	8,430	4.44	4.79
March	38,600	4,780	13,200	6.95	8.01
April	40,200	4,130	14,500	7.63	8.51
May	11,600	250	2,880	1.52	1.75
June	6,080	165	928	.488	.54
July	7,430	605	2,170	1.14	1.31
August	4,780	605	1,250	.658	.76
September	605	300	582	.306	.34
October	1,190	605	681	.358	.41
November	1,190	605	718	.378	.42
December	7,430	605	2,430	1.28	1.48
The year	40,200	165	4,640	2.44	33.25

PEARL RIVER BASIN.

PEARL RIVER AT JACKSON, MISS.

Location.—At the county highway bridge at Jackson, one-eighth mile above the Alabama & Vicksburg Railway bridge, about 5 miles above the mouth of Richland Creek.

Records available.—June 24, 1901, to December 31, 1912.

Drainage area.—3,120 square miles.

Gage.—Standard chain gage attached to the highway bridge; datum unchanged.

Channel.—The channel is somewhat obstructed by old piles. The right bank is high and does not overflow. The left bank is of clear ground and overflows for several hundred feet at a stage of about 20 feet.

Discharge measurements.—Made from the highway bridge. No discharge measurements were made at this station during 1912.

Artificial control.—The flow is subject to little or no artificial control above or near the station.

Accuracy.—Some slight changes in the controlling section may affect the accuracy of low-water estimates.

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

Daily gage height, in feet, of Pearl River at Jackson, Miss., for 1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	19.5	13.5	14.9	27.4	25.6	9.4	3.6	7.4	4.4	3.2	1.6	1.1
2	20.0	13.1	15.0	27.5	24.5	8.0	3.5	5.7	4.2	3.1	1.4	1.2
3	20.4	12.6	15.0	27.6	23.5	7.3	3.8	4.9	3.8	2.9	1.4	1.3
4	20.6	12.1	14.8	27.9	22.0	6.2	4.2	4.5	3.3	2.7	1.2	2.1
5	20.7	12.4	14.5	28.2	20.3	6.2	4.8	4.2	3.0	2.5	1.2	3.3
6	20.5	12.2	14.2	28.2	19.3	6.2	5.4	4.4	2.6	2.3	1.2	7.4
7	20.4	12.3	13.9	28.1	18.1	6.1	5.9	4.6	2.4	2.1	1.2	7.1
8	20.6	11.9	13.9	27.9	16.8	6.3	7.3	4.4	2.2	1.9	1.2	8.5
9	20.7	11.0	15.6	27.4	15.8	6.6	7.9	3.6	2.0	1.7	1.2	9.2
10	20.5	11.2	16.5	26.7	15.0	7.0	9.7	3.4	1.9	1.6	1.2	9.8
11	20.2	11.0	16.9	26.2	14.4	7.2	10.1	5.6	1.7	1.5	1.2	10.0
12	19.7	11.0	19.2	25.4	13.8	6.8	11.0	8.5	1.6	1.4	1.2	11.1
13	18.0	11.0	20.8	25.4	13.8	6.3	11.4	8.8	1.6	1.3	1.3	11.7
14	17.3	10.6	21.5	25.0	14.1	5.7	11.4	9.5	1.5	1.1	1.3	12.1
15	16.0	10.5	23.1	24.3	14.1	5.0	10.7	9.5	1.4	1.1	1.3	12.5

Daily gage height, in feet, of Pearl River at Jackson, Miss, for 1912—Continued.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
16	14.7	10.1	24.0	26.1	14.0	5.6	9.4	9.7	1.3	1.1	1.2	12.7
17	13.5	10.2	24.4	27.1	13.5	4.5	7.9	9.8	1.3	1.1	1.2	12.7
18	12.3	10.2	24.7	28.0	12.9	3.8	7.1	10.1	1.3	1.1	1.2	12.6
19	11.7	9.9	24.8	28.7	12.9	3.8	9.2	10.1	1.2	1.1	1.2	11.9
20	12.7	9.5	24.8	29.3	10.9	3.8	12.2	9.8	2.3	1.3	1.3	10.8
21	11.9	11.7	24.8	30.1	9.7	3.7	14.4	9.0	2.7	1.3	1.3	9.7
22	11.4	13.3	24.7	31.0	8.6	3.4	16.3	8.2	2.9	1.4	1.3	9.7
23	11.2	13.5	25.1	31.7	7.5	3.1	18.0	7.5	3.3	2.1	1.2	11.6
24	11.2	13.5	26.0	31.5	6.5	2.9	19.0	6.6	3.2	2.5	1.2	15.6
25	11.0	13.4	26.1	31.0	5.6	2.7	19.7	5.7	3.3	2.7	1.1	16.0
26	10.9	14.1	26.1	30.1	4.9	2.5	19.9	4.8	3.8	2.5	1.1	16.1
27	10.5	14.9	26.0	29.2	4.5	2.3	19.5	5.0	3.8	2.4	1.1	16.5
28	9.9	15.0	25.6	28.2	4.0	2.6	18.8	4.3	3.5	2.3	1.1	16.7
29	10.4	14.9	26.7	27.3	4.5	3.5	16.3	3.4	3.3	2.1	1.2	16.3
30	13.6	.....	26.9	26.5	6.4	2.6	13.1	3.5	3.2	2.0	1.1	16.2
31	13.6	.....	27.1	.....	8.7	.....	9.6	4.2	.....	1.8	.....	17.0

Daily discharge, in second-feet, of Pearl River at Jackson, Miss., for 1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	11,600	6,950	7,930	21,500	18,400	4,280	1,140	3,080	1,500	955	350	220
2	12,000	6,670	8,000	21,600	16,800	3,440	1,090	2,140	1,400	910	290	240
3	12,400	6,320	8,000	21,800	15,600	3,020	1,220	1,720	1,220	830	290	265
4	12,500	6,000	7,860	22,400	13,900	2,420	1,400	1,540	1,000	750	240	520
5	12,600	6,200	7,650	23,000	12,300	2,420	1,680	1,400	870	670	240	1,000
6	12,400	6,060	7,440	23,000	11,400	2,420	1,980	1,500	710	590	240	3,080
7	12,400	6,130	7,230	22,800	10,400	2,360	2,260	1,580	630	520	240	2,920
8	12,500	5,870	7,230	22,400	9,340	2,480	3,020	1,500	555	450	240	3,740
9	12,600	5,280	8,420	21,500	8,560	2,640	3,380	1,140	485	380	240	4,160
10	12,400	5,420	9,100	20,200	8,000	2,860	4,460	1,040	450	350	240	4,520
11	12,200	5,280	9,420	19,300	7,580	2,970	4,700	2,090	380	320	240	4,640
12	11,700	5,280	11,300	18,100	7,160	2,750	5,280	3,740	350	290	240	5,350
13	10,300	5,280	12,700	18,100	7,160	2,480	5,540	3,920	350	265	265	5,740
14	9,740	5,020	13,400	17,500	7,370	2,140	5,540	4,340	320	220	265	6,000
15	8,700	4,960	15,100	16,600	7,370	1,770	5,090	4,340	290	220	265	6,260
16	7,790	4,700	16,200	19,200	7,300	2,090	4,280	4,460	265	220	240	6,390
17	6,950	4,760	16,700	20,900	6,950	1,540	3,380	4,520	265	220	240	6,390
18	6,130	4,760	17,100	22,600	6,530	1,220	2,920	4,700	265	220	240	6,320
19	5,740	4,580	17,200	23,900	6,530	1,220	4,160	4,700	240	220	240	5,870
20	6,390	4,340	17,200	25,100	5,220	1,220	6,060	4,520	590	265	265	5,160
21	5,870	5,740	17,200	26,600	4,460	1,180	7,580	4,040	750	265	265	4,460
22	5,540	6,810	17,100	28,300	3,800	1,040	8,940	3,560	830	290	265	4,460
23	5,420	6,950	17,600	29,600	3,140	910	10,300	3,140	1,000	520	240	5,680
24	5,420	6,950	19,000	29,200	2,580	830	11,100	2,640	955	670	240	8,420
25	5,280	6,880	19,200	28,300	2,090	750	11,700	2,140	1,000	750	220	8,700
26	5,220	7,370	19,200	26,600	1,720	670	11,900	1,680	1,220	670	220	8,780
27	4,960	7,930	19,000	24,900	1,540	590	11,600	1,770	1,220	630	220	9,100
28	4,580	8,000	18,400	23,000	1,320	710	10,900	1,450	1,090	590	220	9,260
29	4,900	7,930	20,200	21,300	1,540	1,090	8,940	1,040	1,000	520	240	8,940
30	7,020	.....	20,500	19,800	2,530	710	6,670	1,090	955	485	220	8,860
31	7,020	.....	20,900	.....	3,860	.....	4,400	1,400	.....	415	.....	9,500

NOTE.—Daily discharge computed from a fairly well defined rating curve.

Monthly discharge of Pearl River at Jackson, Miss., for 1912.

[Drainage area, 3,120 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).
	Maximum.	Minimum.	Mean.	Per square mile.	
January	12,600	4,580	8,720	2.79	3.22
February	8,000	4,340	6,010	1.93	2.08
March	20,900	7,230	14,000	4.49	5.18
April	29,600	16,600	22,600	7.24	8.08
May	18,400	1,320	7,180	2.30	2.65
June	4,280	590	1,870	.599	.67
July	11,900	1,090	5,570	1.79	2.06
August	4,700	1,040	2,640	.846	.98
September	1,500	240	738	.237	.26
October	955	220	473	.152	.18
November	350	220	249	.080	.09
December	9,500	220	5,320	1.71	1.97
The year	29,600	220	6,280	2.01	27.42

MISCELLANEOUS MEASUREMENTS.

The following miscellaneous discharge measurements were made in south Atlantic coast and eastern Gulf of Mexico drainage basins during 1912:

Miscellaneous measurements in Apalachicola River drainage basin in 1912.

Date.	Stream.	Tributary to—	Locality.	Gage height.	Discharge.
				Feet.	*Sec.-ft.*
Jan. 26	Chattahoochee	Apalachicola	Franklin, Ga	4.4	3,020
Nov. 20	Chipola	do	Clarkesville, Fla	8.3	1,720

Miscellaneous measurements in Mobile River drainage basin in 1912.

Date.	Stream.	Tributary to—	Locality	Discharge.
				Sec.-ft.
June 29	Shoal Creek	Etowah River	Waleska, Ga	36
29	Reinhardt Creek	Shoal Creek	do	3

Miscellaneous measurements in south Atlantic coast and eastern Gulf of Mexico drainage basins in 1912.

Date.	Stream.	Locality.	Gage height.[a]	Discharge.
			Feet.	*Sec.-ft.*
Nov. 19	East flume of Dunlop Mills	South Richmond, Va	21.7	158
19	West flume of Dunlop Mills	do	22.6	171

[a] Total head. Effective head not determined.

SUMMARY OF DISCHARGE PER SQUARE MILE.

The following summary of discharge per square mile is given to allow ready comparison of relative rates of run-off from different areas in the south Atlantic coast and eastern Gulf of Mexico drainage basins. It shows in a general way the seasonal distribution of run-off and the effect of snow, ground, surface, and artificial storage. But the most important fact worth noting is the almost entire lack of uniformity or agreement between any two stations. It indicates that the discharge of each stream is a law unto itself and that all projects dependent upon stream flow, if they are to be developed along the safest and most economical lines, must be based on records of stream flow collected with great care over a long series of years as near the location of the project under consideration as possible.

Summary of discharge, in second-feet per square mile, of south Atlantic coast and eastern Gulf of Mexico drainage basins for 1912.

	Drainage area (square miles).	Jan.	Feb.	Mar.	Apr.	May.	June.
James River at Buchanan, Va.	2,060	1.28	1.98	4.75	1.98	2.77	0.519
James River at Cartersville, Va.	6,230	1.49	1.78	4.06	1.85	2.79	.634
Roanoke River at Roanoke, Va.	388	.840	1.60	4.48	1.65	3.32	.814
Roanoke River at Old Gaston, N. C.	8,350	.880	1.75	4.55	1.49	2.02	.722
Yadkin River near Salisbury, N. C.	3,400	1.04	1.72	4.09	1.77	2.51	1.04
Tallulah River at Tallulah Falls, Ga.	191	3.36	4.34	6.81	5.24	4.19	3.45
Broad River (of Georgia) near Carlton, Ga.	762	1.22	2.66	5.55	2.02	1.48	3.86
Ocmulgee River near Jackson, Ga.	1,400	1.77	2.75	4.99	3.21	1.94	3.21
Oconee River near Greensboro, Ga	1,100	1.59	2.95	4.25	2.62	1.59	3.18
Oconee River at Fraley's Ferry, near Milledgeville, Ga	2,840	1.50	2.38	3.59	2.77	1.43	2.63
Oconee River at Dublin, Ga.	4,180	2.33	2.92	5.10	3.78	1.80	3.11
Chattahoochee River near Norcross, Ga.	1,170	2.48	3.45	5.22	3.83	2.58	3.20
Chattahoochee River at West Point, Ga.	3,300	2.51	3.33	5.55	3.97	2.01	3.45
Flint River near Woodbury, Ga.	1,090	2.04	3.02	5.07	3.54	1.85	1.97
Flint River near Culloden, Ga.	2,000	2.02	2.67	3.88	2.94	1.54	1.74
Flint River near Montezuma, Ga.	2,700	2.03	2.50	3.46	2.91	2.10	1.92
Flint River at Albany, Ga.	5,000	3.36	2.80	4.92	4.42	2.12	1.71
Pea River at Pera, Ala.	1,180	3.44	3.42	4.66	4.66	1.89	1.01
Conecuh River at Beck, Ala.	1,290	3.15	4.58	5.20	5.69	1.91	.723
Oostanaula River at Resaca, Ga.	1,610	2.11	3.74	4.81	3.96	2.42	1.90
Coosa River at Riverside, Ala.	7,060	2.32	4.02	5.42	4.87	2.32	1.81
Alabama River at Selma, Ala.	15,400	2.88	4.24	5.77	6.15	2.81	1.72
Etowah River near Ball Ground, Ga.	466	2.73	4.23	6.46	4.72	3.45	3.35
Etowah River near Rome, Ga.	1,800	2.02	3.75	5.37	3.60	2.68	2.57
Amicalola River near Potts Mountain, Ga.	80	3.76	4.90	11.1	7.06	4.58	3.72
Talapoosa River at Sturdevant, Ala.	2,500	3.22	3.32	5.56	4.72	2.25	2.30
Tombigbee River at Columbus, Miss.	4,440	3.87	2.39	5.74	7.39	2.86	.459
Tombigbee River at Epes, Ala.	8,830	3.31	2.17	4.07	5.28	2.74	.527
Black Warrior River near Cordova, Ala.	1,900	4.28	4.44	6.95	7.63	1.52	.488
Pearl River at Jackson, Miss.	3,120	2.79	1.93	4.49	7.24	2.30	.599

Summary of discharge, in second-feet per square mile, of south Atlantic coast and eastern Gulf of Mexico drainage basins for 1912—Continued.

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
James River at Buchanan, Va	0.539	0.207	0.269	0.217	0.500	0.386	1.28
James River at Cartersville, Va	.514	.239	.727	.334	.735	.457	1.30
Roanoke River at Roanoke, Va	.912	.394	.686	.330	.487	.523	1.34
Roanoke River at Old Gaston, N. C	.650	.284	.551	.327	.641	.434	1.19
Yadkin River near Salisbury, N. C	1.23	.641	1.21	.656	.868	.685	1.46
Tallulah River at Tallulah Falls, Ga	4.73	2.86	3.39	.....	.....	.....	.....
Broad River (of Georgia) near Carlton, Ga	2.26	1.40	1.64	1.36	.967	.958	2.11
Ocmulgee River near Jackson, Ga	2.01	1.04	.871	1.25	.971	1.04	2.09
Oconee River near Greensboro, Ga	2.52	1.15	1.38	.955	.955	.877	2.00
Oconee River at Fraleys Ferry, near Milledgeville, Ga	1.71	.923	.915	.813	.827	.856	1.69
Oconee River at Dublin, Ga	1.99	.907	.907	.746	1.02	1.03	2.13
Chattahoochee River near Norcross, Ga	2.65	1.70	1.47	1.68	1.26	1.32	2.56
Chattahoochee River at West Point, Ga	2.13	1.31	.991	1.29	.909	1.22	2.38
Flint River near Woodbury, Ga	1.37	.819	.628	.804	.632	.991	1.89
Flint River near Culloden, Ga	1.23	1.07	.600	.725	.515	.910	1.65
Flint River near Montezuma, Ga	1.62	1.22	.848	.967	.793	1.15	1.79
Flint River at Albany, Ga	1.58	1.32	.916	1.30	1.25	1.38	2.26
Pea River at Pera, Ala	.797	.975	.958	1.88	2.15	2.50	2.36
Conecuh River at Beck, Ala	.783	.884	.640	1.62	2.10	2.46	2.47
Oostanaula River at Resaca, Ga	1.70	1.30	.752	.652	.553	1.11	2.08
Coosa River at Riverside, Ala	1.93	1.20	.741	.783	.524	1.05	2.24
Alabama River at Selma, Ala	1.91	1.42	.955	1.01	.721	1.47	2.58
Etowah River near Ball Ground, Ga	3.48	2.27	1.99	2.09	1.44	1.59	3.15
Etowah River near Rome, Ga	2.51	1.69	1.33	1.31	.906	1.04	2.39
Amicalola River near Potts Mountain, Ga	4.61	2.66	2.40	2.29	1.71	1.82	4.22
Tallapoosa River at Sturdevant, Ala	1.74	1.61	.992	1.01	.576	1.36	2.38
Tombigbee River at Columbus, Miss	1.29	.547	.383	.399	.210	2.43	2.34
Tombigbee River at Epes, Ala	1.08	.550	.349	.364	.247	1.69	1.87
Black Warrior River near Cordova, Ala	1.14	.658	.306	.358	.378	1.28	2.44
Pearl River at Jackson, Miss	1.79	.846	.237	.152	.080	1.71	2.01

INDEX.