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

WATER-SUPPLY PAPER 302

SURFACE WATER SUPPLY OF THE UNITED STATES

1911

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

PREPARED UNDER THE DIRECTION OF M. O. LEIGHTON

BY

M. R. HALL AND C. H. PIERCE

WASHINGTON
GOVERNMENT PRINTING OFFICE
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SURFACE WATER SUPPLY OF THE SOUTH ATLANTIC COAST AND EASTERN GULF OF MEXICO DRAINAGE BASINS, 1911.

By M. R. HALL and C. H. PIERCE.

AUTHORITY FOR THE WORK.

This volume is Part II of a series of 12 reports presenting results of measurements of flow made on certain streams in the United States during the calendar year 1911. The reports are listed in the following table:

Papers on surface water supply of the United States, 1911.

Part.[a]	No.	Title.
I	301	North Atlantic coast.
II	302	South Atlantic coast and eastern Gulf of Mexico.
III	303	Ohio River basin.
IV	304	St. Lawrence River basin.
V	305	Upper Mississippi River and Hudson Bay basins.
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VII	307	Lower Mississippi River basin.
VIII	308	Western Gulf of Mexico.
IX	309	Colorado River basin.
X	310	Great Basin.
XI	311	Pacific coast in California.
XII	312	North Pacific coast.

[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 been divided into 12 parts, whose boundaries coincide with natural drainage lines indicated by the parts of the report.

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. Acknowledgments for such cooperation are made on page 13 and also in connection with the description of each station affected by the cooperative work.

PUBLICATIONS.

Measurements of stream flow have been made at nearly 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 1911 gaging stations were maintained by the Survey and the cooperating organizations at about 1,500 points in the United States, 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 surface water supply papers from time to time. A complete list of the gaging stations maintained by the Survey to and including 1910, and a list of the papers relating to the water supply of the country, have been published by the Survey as Water-Supply Paper 280. An index to the reports containing stream-flow measurements prior to 1904 has been published as Water-Supply Paper 119.

For each calendar year there has been prepared a report embodying the stream-flow data collected during that year, which has been published either as a part of the annual report of the Director, as a bulletin, or as a water-supply paper, as shown by 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	Descriptive 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	Complete data, except descriptions	1906.
WS 241 to 252	Complete data	1907–8.
WS 261 to 272	do	1909.
WS 281 to 292	do	1910.
WS 301 to 312	do	1911.

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 Machias River at Whitneyville, Me., 1903 to 1911, are published in Water-Supply Papers 97, 124, 165, 201, 241, 261, 281, and 301, which contain records for the New England streams from 1903 to 1911.

Numbers of water-supply papers containing results of stream measurements, 1899–1911.

	1899 [a]	1900 [b]	1901	1902	1903	1904
North Atlantic coast (St. John River to York River)	35	47, [c] 48	65, 75	82	97	[d] 124, [e] 125, [f] 126
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
Ohio River basin	36	48, [h] 49	65, 75	83	98	128
St. Lawrence River and Great Lakes	36	49	65, 75	[i] 82, 83	97	129
Hudson Bay and upper Mississippi River	36	49	[j] 65, 66, 75	[j] 83, 85	[j] 98, 99, [k] 100	[j] 128, 130
Missouri River	[l] 36, 37	49, [m] 50	66, 75	84	99	130, [n] 131
Lower Mississippi River	37	50	[j] 65, 66, 75	[j] 83, 84	[j] 98, 99	[j] 128, 131
Western Gulf of Mexico	37	50	66, 75	84	99	132
Colorado River	[o] 37, 38	50	66, 75	85	100	133
Great Basin	38, [p] 39	51	66, 75	85	100	133, [q] 134
Pacific coast in California	38, [r] 39	51	66, 75	85	100	134
North Pacific coast	38	51	66, 75	85	100	135

	1905	1906	1907–8	1909	1910	1911
North Atlantic coast (St. John River to York River)	[d] 165, [e] 166, [f] 167	[d] 201, [e] 202, [f] 203	241	261	281	301
South Atlantic coast and eastern Gulf of Mexico (James River to the Mississippi)	[f] 167, 168	[f] 203, 204	242	262	282	302
Ohio River basin	169	205	243	263	283	303
St. Lawrence River and Great Lakes	170	206	244	264	284	304
Hudson Bay and upper Mississippi River	171	207	245	265	285	305
Missouri River	172	208	246	266	286	306
Lower Mississippi River	[j] 169, 173	[j] 205, 209	247	267	287	307
Western Gulf of Mexico	174	210	248	268	288	308
Colorado River	175, [s] 177	211	249	269	289	309
Great Basin	176, [q] 177	212, [q] 213	250, [q] 251	270, [q] 271	290	310
Pacific coast in California	177	213	251	271	291	311
North Pacific coast	[t] 177, 178	214	252	272	292	312

[a] Rating tables and index to Water-Supply Papers 35–39 continued in Water-Supply Paper 39.
[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.
[c] Wissahickon and Schuylkill rivers to James River.
[d] New England rivers only.
[e] Hudson River to Delaware River, inclusive.
[f] Susquehanna River to Yadkin River, inclusive.
[g] James River only.
[h] Scioto River.
[i] Lake Ontario and tributaries to St. Lawrence River proper.
[j] Tributaries of Mississippi from east.
[k] Hudson Bay only.
[l] Gallatin River.
[m] Loup and Platte rivers near Columbus, Nebr., and all tributaries below junction with Platte.
[n] Platte and Kansas rivers.
[o] Green and Gunnison rivers and Grand River above junction with Gunnison.
[p] Mohave River only.
[q] Great Basin in California, excepting Truckee and Carson drainage basins.
[r] Kings and Kern rivers and south Pacific coast drainage basins.
[s] Below junction with Gila.
[t] Rogue, Umpqua, and Siletz rivers only.

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 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 per 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 work.

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.

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

NOTE.—For 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.

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

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

1 second-foot equals 40 California miner's inches (law of Mar. 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 1 day.
1,000,000,000 cubic feet equals 414 second-feet for one 28-day month.
1,000,000,000 cubic feet equals 399 second-feet for one 29-day month.
1,000,000,000 cubic feet equals 386 second-feet for one 30-day month.
1,000,000,000 cubic feet equals 373 second-feet for one 31-day month.
100 California miner's inches equals 18.7 United States gallons per second.
100 California miner's inches for one day equals 4.96 acre-feet.
100 Colorado miner's inches equals 2.60 second-feet.
100 Colorado miner's inches equals 19.5 United States gallons per second.
100 Colorado miner's inches for one day equals 5.17 acre-feet.
100 United States gallons per minute equals 0.223 second-foot.
100 United States gallons per minute for one day equals 0.442 acre-foot.
1,000,000 United States gallons per day equals 1.55 second-feet.
1,000,000 United States gallons equals 3.07 acre-feet.
1,000,000 cubic feet equals 22.95 acre-feet.
1 acre-foot equals 325,850 gallons.
1 inch deep on 1 square mile equals 2,323,200 cubic feet.
1 inch deep on 1 square mile equals 0.0737 second-foot per year.
1 foot equals 0.3048 meter.
1 mile equals 1.60935 kilometers.
1 mile equals 5,280 feet.
1 acre equals 0.4047 hectare.
1 acre equals 43,560 square feet.
1 acre equals 209 feet square, nearly.
1 square mile equals 2.59 square kilometers.
1 cubic foot equals 0.0283 cubic meter.
1 cubic foot of water weighs 62.5 pounds.
1 cubic meter per minute equals 0.5886 second-foot.
1 horsepower equals 550 foot-pounds per second.
1 horsepower equals 76.0 kilogram-meters per second.
1 horsepower equals 746 watts.
1 horsepower equals 1 second-foot falling 8.80 feet.
1⅓ horsepower equals 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 discharges 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 that 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, as follows:

First plot the discharge measurements for the current and earlier years on cross-section paper, with gage heights in feet as ordinates and discharge in second-feet as abscissas. Then tabulate a number of gage heights taken from the daily gage-height table for the complete range of stage given and the corresponding discharges for the days selected from the daily discharge table and plot the values on cross-section paper. The last points plotted will define the rating curve used and will lie among the plotted discharge measurements. After drawing the rating curve a table can be developed by scaling off the discharge in second-feet for each tenth foot of gage height. These values should be so adjusted that the first differences shall always be increasing or constant, except for known backwater periods.

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 of "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 8–9, are based.

The field methods used in the collection of the data presented in this series of reports are described in the introductory sections of Water-Supply Papers 261 to 272, inclusive, "Surface water supply of the United States, 1909." Plates I and II show the average precipitation and run-off in the United States, as determined from the measurements of stream flow made by the Geological Survey and records of rainfall collected by the Weather Bureau. Plate III shows typical gaging stations. Plate IV shows current meters[1] used in the work.

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

[1] See Hoyt, J. C., and others, Use and care of current meter as practiced by the United States Geological Survey: Trans. Am. Soc. Civil Eng., vol. 66, 1910, p. 70.

ENGRAVED AND PRINTED BY THE U.S. GEOLOGICAL SURVEY

MAP OF UNITED STATES, SHOWING MEAN ANNUAL PRECIPITATION

Blue lines and figures indicate average annual precipitation in depth in inches

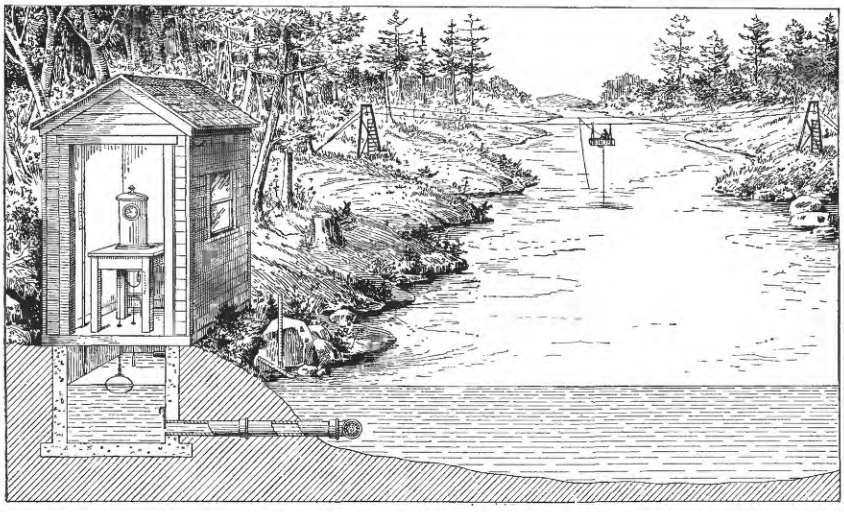
Prepared by Henry Gannett
mainly from data of the
United States Geological Survey
and United States Weather Bureau

ENGRAVED AND PRINTED BY THE U.S. GEOLOGICAL SURVEY

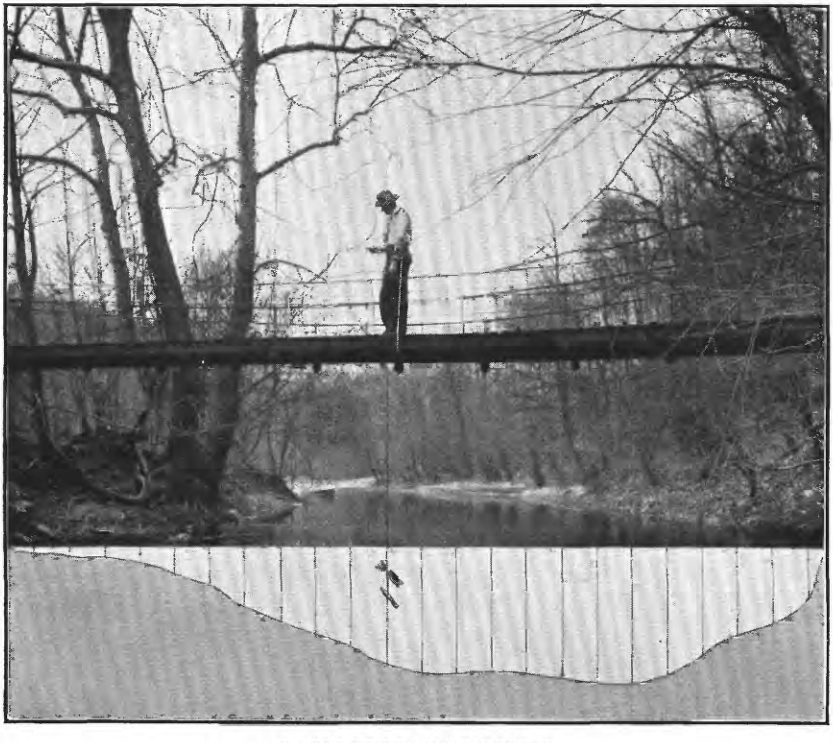
MAP OF UNITED STATES, SHOWING MEAN ANNUAL RUN-OFF

Blue lines and figures indicate average annual run-off in depth in inches

Prepared by Henry Gannett
mainly from data of the
United States Geological Survey

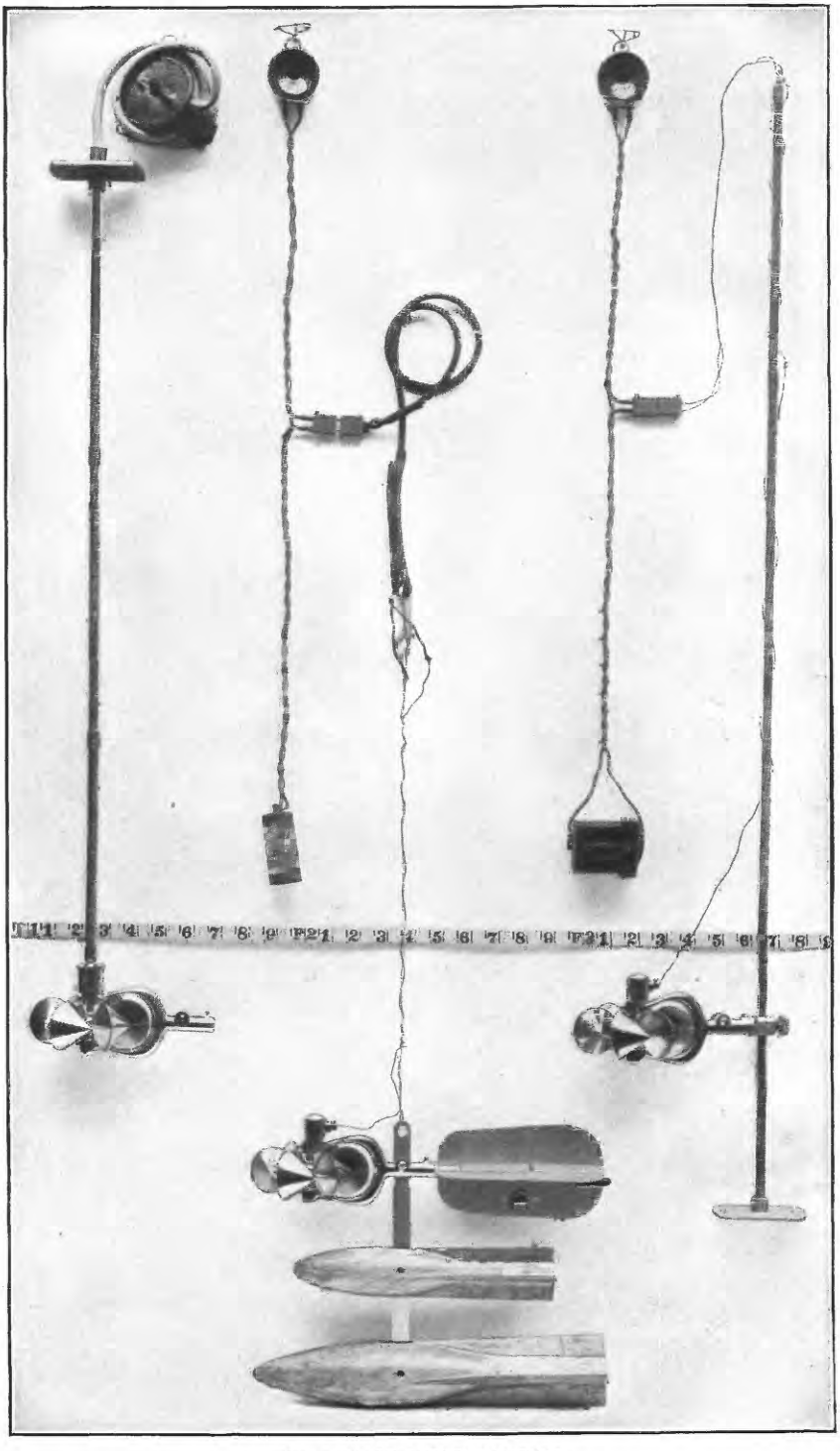


A. CABLE STATION WITH AUTOMATIC GAGE.



B. FOR BRIDGE MEASUREMENT.

TYPICAL GAGING STATIONS.



SMALL PRICE CURRENT METERS.

probably accurate within 5 per cent; B, within 10 per cent; C, within 15 per cent; D, within 25 per cent. Special conditions are covered by footnotes.

Even though the monthly means for any station may represent with a high degree of accuracy the quantity of water flowing past the gage, the figures showing discharge per square mile and depth of run-off in inches may be subject to gross errors which result from including in the measured drainage area large noncontributing districts or omitting estimates of water diverted for irrigation or other use, 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 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 AND ACKNOWLEDGMENTS.

Special acknowledgments are due for assistance rendered or records furnished by the United States Engineer Corps, United States Weather Bureau, North Georgia Electric Co., Central Georgia Power Co., Geological Survey of Alabama, Wilson Aluminum Co., Roanoke Railway & Electric Co., Rockingham Power Co., Northern Contracting Co., and North Carolina Electric & Power 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, assisted by H. J. Jackson, J. G. Mathers, and H. J. Dean.

The field data for all drainage basins south of Roanoke River were collected by M. R. Hall, district engineer, assisted by R. E. Robertson.

The ratings, special estimates, and studies of the completed data were made by M. R. Hall, C. H. Pierce, and A. H. Tuttle.

The computations were made and the data were prepared for publication by C. H. Pierce, A. H. Tuttle, J. G. Mathers, H. J. Dean, C. L. Batchelder, W. R. King, M. I. Walters, and G. A. Wallace.

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

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, 1911.

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 heavy 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 Mathers and Dean:
July 28, 1911: Gage height, 1.88 feet; discharge, 421 second-feet.

Daily gage height, in feet, of James River, at Buchanan, Va., for 1911.

[D. D. Booze, observer.]

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	4.0	7.5	3.0	5.2	3.6	2.5	2.1	1.8	4.8	2.0	2.6	3.0
2	6.6	5.6	3.0	5.0	3.6	2.5	2.1	1.8	4.4	2.0	2.5	2.9
3	9.0	4.8	3.0	5.0	3.5	2.4	2.1	1.8	3.4	2.1	2.4	2.8
4	11.0	4.0	3.0	5.9	3.4	2.4	2.1	1.8	2.9	2.1	2.4	2.7
5	6.7	3.8	2.9	8.0	3.3	2.5	2.1	1.9	2.7	2.1	2.3	2.7
6	5.7	3.5	2.9	9.6	3.2	2.5	2.1	2.2	2.5	2.1	2.3	2.6
7	4.5	3.3	6.5	8.2	3.2	3.1	2.1	2.2	2.3	2.0	3.9	2.6
8	3.9	4.3	5.1	8.2	3.1	3.2	2.7	2.0	2.3	2.0	3.7	2.6
9	3.6	4.6	4.3	8.0	3.1	3.0	2.7	2.0	2.2	2.0	4.5	2.5
10	3.3	5.2	5.5	7.8	3.0	2.9	2.5	1.9	2.2	2.0	4.0	2.5
11	3.1	5.1	7.0	7.6	3.0	2.8	2.5	1.9	2.4	2.0	3.8	2.5
12	3.0	4.6	6.1	7.6	2.9	2.7	2.5	1.9	2.9	2.3	3.6	2.5
13	3.0	4.2	5.4	7.0	2.8	2.6	2.4	1.9	2.9	2.3	3.5	2.5
14	2.9	4.0	5.1	7.2	2.8	2.5	2.4	1.8	2.6	2.3	3.5	2.4
15	2.9	3.8	5.3	6.9	2.7	2.4	2.4	1.8	2.4	2.3	3.5	2.4
16	2.9	3.6	5.0	6.4	2.7	2.4	2.3	2.4	2.3	2.3	3.4	2.5
17	3.0	3.3	5.0	6.0	2.7	2.3	2.3	2.1	2.4	2.4	3.4	3.1
18	3.3	3.2	5.0	5.5	2.6	2.2	2.2	2.0	2.5	6.5	3.4	3.1
19	3.1	3.1	5.0	4.8	2.6	2.2	2.2	2.0	2.4	7.0	3.3	3.0
20	2.9	3.3	4.9	5.0	2.5	2.2	2.1	1.9	2.3	6.5	3.3	3.0
21	2.8	3.6	4.8	5.6	2.5	2.2	2.1	1.9	2.3	6.0	3.5	3.0
22	2.8	3.2	4.6	5.1	2.4	2.2	2.0	1.9	2.2	5.0	3.3	2.9
23	3.0	3.2	4.2	4.9	2.4	2.2	2.0	1.9	2.2	5.0	3.3	5.0
24	5.4	3.1	4.0	4.5	2.4	2.1	2.0	1.9	2.1	4.4	3.2	6.5
25	4.8	3.1	3.7	4.2	2.4	2.1	2.0	1.8	2.0	3.9	3.2	5.7
26	4.1	3.0	3.7	4.0	2.4	2.1	1.9	1.8	2.0	3.6	3.1	5.5
27	3.5	3.0	4.2	3.9	2.4	2.1	1.9	2.0	2.0	3.3	3.1	5.0
28	3.3	3.0	4.7	3.7	2.5	2.1	1.9	2.0	2.0	3.1	3.1	4.7
29	3.2	.....	4.7	3.6	2.5	2.1	1.9	2.1	2.0	2.9	3.1	4.6
30	7.2	.....	5.0	3.6	2.5	2.1	1.8	4.0	2.0	2.7	3.1	4.5
31	10.6	.....	.....	.....	2.4	.....	1.8	4.9	.....	2.6	.....	4.6

Daily discharge, in second-feet, of James River at Buchanan, Va., for 1911.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	3,040	11,600	1,480	5,560	2,340	930	585	385	4,660	515	1,030	1,480
2	9,030	6,480	1,480	5,100	2,340	930	585	385	3,820	515	930	1,360
3	16,500	4,660	1,480	5,100	2,180	835	585	385	2,030	585	835	1,240
4	24,400	3,040	1,480	7,210	2,030	835	585	385	1,360	585	835	1,140
5	9,300	2,680	1,360	13,100	1,880	930	585	450	1,140	585	745	1,140
6	6,720	2,180	1,360	18,700	1,740	930	585	660	930	585	745	1,030
7	4,030	1,880	8,760	13,800	1,740	1,610	585	660	745	515	2,860	1,030
8	2,860	3,620	5,330	13,800	1,610	1,740	1,140	515	745	515	2,500	1,030
9	2,340	4,240	3,620	13,100	1,610	1,480	1,140	515	660	515	4,030	930
10	1,880	5,560	6,250	12,500	1,480	1,360	930	450	660	515	3,040	930
11	1,610	5,330	10,100	11,900	1,480	1,240	930	450	835	515	2,680	930
12	1,480	4,240	7,720	11,900	1,360	1,140	930	450	1,360	745	2,340	930
13	1,480	3,430	6,020	10,100	1,240	1,030	835	450	1,360	745	2,180	930
14	1,360	3,040	5,330	10,700	1,240	930	835	385	1,030	745	2,180	835
15	1,360	2,680	5,780	9,850	1,140	835	835	385	835	745	2,180	835
16	1,360	2,340	5,100	8,500	1,140	835	745	835	745	745	2,030	930
17	1,480	1,880	5,100	7,460	1,140	745	745	585	835	835	2,030	1,610
18	1,880	1,740	5,100	6,250	1,030	660	660	515	930	8,760	2,030	1,610
19	1,610	1,610	5,100	4,660	1,030	660	660	515	835	10,100	1,880	1,480
20	1,360	1,880	4,880	5,100	930	660	585	450	745	8,760	1,880	1,480
21	1,240	2,340	4,660	6,480	930	660	585	450	745	7,460	2,180	1,480
22	1,240	1,740	4,240	5,330	835	660	515	450	660	5,100	1,880	1,360
23	1,480	1,740	3,430	4,880	835	660	515	450	660	5,100	1,880	5,100
24	6,020	1,610	3,040	4,030	835	585	515	450	585	3,820	1,740	8,760
25	4,660	1,610	2,500	3,430	835	585	515	385	515	2,860	1,740	6,720
26	3,240	1,480	2,500	3,040	835	585	450	385	515	2,340	1,610	6,250
27	2,180	1,480	3,430	2,860	835	585	450	515	515	1,880	1,610	5,100
28	1,880	1,480	4,450	2,500	930	585	450	515	515	1,610	1,610	4,450
29	1,740	.....	4,450	2,340	930	585	450	585	515	1,360	1,610	4,240
30	10,700	.....	5,100	2,340	930	585	385	3,040	515	1,140	1,610	4,030
31	22,700	.....	5,330	.....	835	.....	385	4,880	.....	1,030	.....	4,240

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 1911.

[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	24,400	1,240	4,910	2.38	2.74	A.
February	11,600	1,480	3,130	1.52	1.58	A.
March	10,100	1,360	4,390	2.13	2.46	A.
April	18,700	2,340	7,720	3.75	4.18	A.
May	2,340	835	1,300	.631	.73	A.
June	1,740	585	880	.427	.48	A.
July	1,140	385	654	.317	.37	A.
August	4,880	385	707	.343	.40	A.
September	4,660	515	1,070	.519	.58	A.
October	10,100	515	2,320	1.13	1.30	A.
November	4,030	745	1,880	.913	1.02	A.
December	8,760	835	2,410	1.17	1.35	A.
The year	24,400	385	2,610	1.27	17.19	

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, 1911.

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 1911.

[J. H. Webb, observer.]

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	5.1	6.3	1.9	4.25	2.4	1.45	1.15	0.7	4.85	0.95	1.45	1.8
2	6.2	4.8	1.9	3.65	2.45	1.4	.9	.8	3.45	.9	1.4	1.7
3	8.5	4.2	1.9	3.5	2.45	1.2	.85	.75	2.35	1.0	1.4	1.65
4	11.0	3.7	1.9	3.9	2.4	1.2	.95	1.1	1.9	1.1	1.25	1.7
5	7.5	3.1	1.6	7.55	2.2	1.25	1.15	1.05	1.65	1.25	1.3	1.65
6	4.8	3.0	2.0	9.55	2.2	1.5	1.75	1.15	1.4	.9	1.3	1.6
7	3.6	2.8	4.0	7.65	1.95	1.7	1.2	1.0	1.3	.95	3.65	1.5
8	2.8	2.6	3.9	6.4	2.05	1.8	1.5	1.0	1.2	1.05	5.4	1.4
9	2.6	2.8	3.2	6.3	1.9	2.45	1.4	.9	1.2	1.0	3.65	1.4
10	2.2	4.3	3.4	6.1	2.0	1.8	1.35	1.05	1.1	1.1	2.95	1.4
11	2.1	4.4	6.3	5.1	2.0	1.25	1.2	.9	1.25	1.15	2.65	1.4
12	2.1	3.5	5.8	4.55	1.8	1.5	1.4	.85	1.25	1.2	2.45	1.3
13	2.0	3.2	4.6	4.0	1.75	1.4	1.4	.65	1.3	1.25	2.35	1.3
14	2.2	3.0	4.2	3.9	1.3	1.3	1.4	1.25	1.5	1.0	2.4	1.3
15	2.3	2.8	4.4	5.1	1.75	1.25	1.7	1.35	1.45	1.3	2.4	1.4
16	2.4	2.6	4.1	6.05	1.5	1.15	1.4	1.4	1.3	1.25	2.3	2.1
17	2.2	2.4	3.6	5.55	1.5	1.15	1.25	1.3	1.15	1.7	2.3	2.4
18	2.2	2.3	3.2	4.65	1.5	1.0	1.15	1.15	1.2	6.85	2.1	2.4
19	2.0	2.0	2.9	4.15	1.5	1.2	1.1	1.1	1.35	8.35	2.1	2.25
20	1.9	2.4	3.2	4.0	1.35	1.25	.95	.85	1.3	4.25	2.55	2.1
21	1.9	2.4	3.9	4.4	1.2	1.2	.65	.8	1.3	3.05	2.6	1.8
22	1.9	2.4	3.6	4.25	1.4	1.2	1.0	1.0	1.2	2.55	2.5	1.8
23	3.6	2.3	3.2	3.7	1.05	1.2	.95	.8	1.2	2.45	2.1	4.15
24	4.6	2.2	3.0	3.65	1.3	1.2	.8	.75	.85	2.3	2.1	6.3
25	3.6	2.2	2.6	3.25	1.3	1.2	.7	.85	1.1	2.3	1.9	5.55
26	3.1	1.9	2.4	2.9	1.25	1.3	.7	.75	1.05	2.15	1.9	5.15
27	2.7	2.0	3.0	2.75	1.35	1.2	.8	1.0	.9	2.05	1.9	5.15
28	2.8	2.0	4.0	2.55	1.3	1.2	.7	.95	.7	1.9	1.9	5.35
29	2.7	.....	3.8	3.25	1.4	1.15	.7	1.0	1.1	1.7	1.8	4.65
30	5.4	.....	3.9	2.3	1.45	1.1	.7	1.65	.9	1.7	1.8	4.0
31	10.5	.....	4.5	.....	1.2	.....	.95	4.4	.....	1.7	.....	3.5

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, 1911.

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.

The following discharge measurement was made by Mathers and Dean:
July 30, 1911: Gage height, 0.65 foot; discharge, 1,020 second-feet.

Daily gage height, in feet, of James River at Cartersville, Va., for 1911.

[B. W. Palmore, observer.]

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.6	11.3	2.4	5.0	3.4	1.35	.....	0.50	7.6	0.74	1.7	2.7
2	7.7	8.0	2.3	4.9	3.2	1.25	0.92	.50	5.4	.69	1.6	2.6
3	8.9	6.7	2.3	4.4	3.1	1.1	.84	.66	4.6	.62	1.5	2.4
4	16.2	5.4	2.2	4.5	3.0	1.1	.76	.61	3.5	.78	1.45	2.1
5	13.0	4.8	2.1	7.0	2.8	1.45	.82	.59	3.0	.92	1.35	2.2
6	9.2	3.9	2.1	11.8	2.8	1.8	.74	.58	2.5	.79	1.35	2.0
7	8.2	3.7	2.2	10.7	2.7	1.6	.74	1.15	2.6	.82	2.0	1.9
8	6.0	3.7	2.8	9.3	2.6	1.7	1.7	1.0	1.35	.80	3.0	1.9
9	4.2	3.6	4.8	8.9	2.6	1.9	2.8	1.0	1.1	.82	6.3	1.8
10	4.0	4.2	4.4	8.0	2.6	1.9	2.2	.78	1.1	.89	4.8	1.7
11	3.2	3.7	5.1	7.2	2.5	1.9	1.35	.80	1.1	1.1	3.8	1.6
12	2.9	4.0	5.7	6.6	2.4	1.7	1.25	.76	1.4	.98	3.4	1.5
13	2.8	4.6	6.3	6.0	2.3	1.45	1.1	.72	1.3	1.0	3.0	1.6
14	2.7	4.1	5.6	5.2	2.2	1.4	1.45	.80	1.3	1.1	2.9	1.6
15	2.6	3.7	5.1	5.1	2.1	1.3	1.3	.79	1.1	1.0	2.7	1.6
16	2.6	3.3	4.9	5.6	1.9	1.2	1.2	1.7	1.4	.99	2.7	2.8
17	2.9	3.2	4.7	7.2	2.0	1.2	1.15	1.5	1.5	1.1	2.8	7.4
18	2.8	3.1	4.2	6.6	1.9	1.15	1.3	1.4	1.15	3.6	2.7	4.9
19	2.6	3.4	4.0	5.8	1.7	1.1	.91	.90	1.1	6.8	2.8	4.1
20	2.5	2.8	3.6	6.0	1.6	1.1	.86	.88	1.1	8.8	2.8	3.2
21	2.4	2.7	3.8	5.7	1.6	1.15	.88	.88	1.3	5.0	2.8	3.0
22	2.5	3.1	4.2	5.5	1.5	1.1	.69	.72	1.1	4.8	3.0	3.1
23	2.9	3.0	4.2	5.4	1.35	1.05	.71	.50	1.15	4.2	2.8	7.4
24	3.7	2.9	4.0	5.0	1.5	.98	.62	.54	1.1	3.7	2.7	8.2
25	5.0	2.7	3.5	4.6	1.4	1.3	.58	.52	.98	3.0	2.6	9.2
26	4.5	2.6	3.4	4.2	1.35	1.7	.72	.72	.81	2.7	2.5	7.7
27	4.1	2.5	3.7	3.9	1.3	1.5	.59	.74	.84	2.4	2.4	7.5
28	3.6	2.4	4.2	3.7	1.3	1.2	.57	.76	.80	2.2	2.8	7.0
29	3.5	.....	4.4	3.5	1.25	1.1	.61	.90	.78	2.0	4.0	6.6
30	3.6	.....	4.8	3.5	1.2	.98	.58	1.2	.78	1.8	3.2	5.8
31	5.4	.....	4.6	.....	1.2	.....	.62	2.2	.....	1.7	.....	.....

Daily discharge, in second-feet, of James River at Cartersville, Va., for 1911.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	6,900	30,300	4,280	10,300	6,440	2,260	1,590	900	17,700	1,260	2,900	4,910
2	18,000	19,000	4,080	10,000	5,990	2,080	1,540	900	11,400	1,180	2,710	4,700
3	22,000	15,000	4,080	8,790	5,770	1,830	1,420	1,140	9,280	1,080	2,530	4,280
4	49,400	11,400	3,880	9,030	5,550	1,830	1,290	1,060	6,670	1,320	2,440	3,680
5	36,700	9,780	3,680	15,900	5,120	2,440	1,390	1,040	5,550	1,540	2,260	3,880
6	23,000	7,590	3,680	32,200	5,120	3,090	1,260	1,020	4,490	1,340	2,260	3,480
7	19,600	7,130	3,880	28,200	4,910	2,710	1,260	1,920	4,700	1,390	3,480	3,280
8	13,000	7,130	5,120	23,300	4,700	2,900	2,900	1,670	2,260	1,360	5,550	3,280
9	8,310	6,900	9,780	22,000	4,700	3,280	5,120	1,670	1,830	1,390	13,800	3,090
10	7,830	8,310	8,790	19,000	4,700	3,280	3,880	1,320	1,830	1,490	9,780	2,900
11	5,990	7,130	10,600	16,500	4,490	3,280	2,260	1,360	1,830	1,830	7,360	2,710
12	5,330	7,830	12,200	14,700	4,280	2,900	2,080	1,290	2,350	1,640	6,440	2,530
13	5,120	9,280	13,800	13,000	4,080	2,440	1,830	1,230	2,170	1,670	5,550	2,710
14	4,910	8,070	11,900	10,800	3,880	2,350	2,440	1,360	2,170	1,830	5,330	2,710
15	4,700	7,130	10,600	10,600	3,680	2,170	2,170	1,340	1,830	1,670	4,910	2,710
16	4,700	6,210	10,000	11,900	3,280	2,000	2,000	2,900	2,350	1,650	4,910	5,120
17	5,330	5,990	9,530	16,500	3,480	2,000	1,920	2,530	2,530	1,830	5,120	17,100
18	5,120	5,770	8,310	14,700	3,280	1,920	2,170	2,350	1,920	6,900	4,910	10,000
19	4,700	6,440	7,830	12,400	2,900	1,830	1,530	1,510	1,830	15,300	5,120	8,070
20	4,490	5,120	6,900	13,000	2,710	1,830	1,450	1,480	1,830	21,600	5,120	5,990
21	4,280	4,910	7,360	12,200	2,710	1,920	1,480	1,480	2,170	10,300	5,120	5,550
22	4,490	5,770	8,310	11,600	2,530	1,830	1,180	1,230	1,830	9,780	5,550	5,770
23	5,330	5,550	8,310	11,400	2,260	1,750	1,220	900	1,920	8,310	5,120	17,100
24	7,130	5,330	7,830	10,300	2,530	1,640	1,080	960	1,830	7,130	4,910	19,600
25	10,300	4,910	6,670	9,280	2,350	2,170	1,020	930	1,640	5,550	4,700	23,000
26	9,030	4,700	6,440	8,310	2,260	2,900	1,230	1,230	1,370	4,910	4,490	18,000
27	8,070	4,490	7,130	7,590	2,170	2,530	1,040	1,260	1,420	4,280	4,280	17,400
28	6,900	4,280	8,310	7,130	2,170	2,000	1,000	1,290	1,360	3,880	5,120	15,900
29	6,670	.....	8,790	6,670	2,080	1,830	1,060	1,510	1,320	3,480	7,830	14,700
30	6,900	.....	9,780	6,670	2,000	1,640	1,020	2,000	1,320	3,090	5,990	12,400
31	11,400	.....	9,280	.....	2,000	.....	1,080	3,880	.....	2,900	.....	12,000

NOTE.—Daily discharge computed from a rating curve, well defined below 10,000 second-feet and fairly well defined below 25,000 second-feet. Discharge July 1 and Dec. 31 interpolated.

Monthly discharge of James River at Cartersville, Va., for 1911.

[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	49,400	4,280	10,800	1.73	1.99	A.
February	30,300	4,280	8,270	1.33	1.38	A.
March	13,800	3,680	7,780	1.25	1.44	A.
April	32,200	6,670	13,500	2.17	2.42	A.
May	6,440	2,000	3,680	.591	.68	A.
June	3,280	1,640	2,290	.368	.41	A.
July	5,120	1,000	1,740	.279	.32	A.
August	3,880	900	1,510	.242	.28	A.
September	17,700	1,320	3,420	.549	.61	A.
October	21,600	1,080	4,290	.689	.79	A.
November	13,800	2,260	5,190	.833	.93	A.
December	23,000	2,530	8,340	1.34	1.54	A.
The year	49,400	900	5,880	.944	12.79	

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, 1911.

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, with a width of 160 feet between bridge abutments broken by one pier. The bed of the stream is composed of coarse gravel and small bowlder. 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 to the Geological Survey through the courtesy of the Roanoke Railway & Electric Co.

Discharge measurements of Roanoke River at Roanoke, Va., in 1911.

Date.	Hydrographer.	Gage height.	Discharge.
July 27	J. G. Mathers	0.68	[a]82.5
27	Mathers and Dean	.69	79.8
27	.....do	.71	88.9

[a] Measurement made at Jefferson Street Bridge.

Daily gage height, in feet, of Roanoke River at Roanoke, Va., for 1911.

[G. W. Hogshead, observer.]

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.9	2.0	1.2	1.75	1.55	1.0	0.9	0.68	1.2	0.68	0.8	1.0
2	2.75	1.8	1.15	1.65	1.5	1.0	.9	.68	1.0	.68	.8	.9
3	2.9	1.6	1.15	1.65	1.35	1.0	.85	.68	.95	.68	.8	.9
4	3.2	1.45	1.1	2.5	1.3	1.0	.85	.75	.85	.65	.8	.9
5	2.2	1.4	1.1	4.0	1.3	1.7	1.8	1.1	.8	.65	.8	.9
6	1.9	1.3	2.45	4.0	1.25	1.2	1.0	1.2	.75	.65	.8	.9
7	1.65	1.3	2.7	3.8	1.25	1.1	.9	.8	.75	.7	1.8	.9
8	1.5	1.3	2.2	3.3	1.25	1.7	2.4	.75	.7	.75	1.2	.9
9	1.4	1.3	2.0	2.7	1.25	1.3	1.6	.7	.7	.75	1.3	.9
10	1.35	2.6	3.1	2.5	1.25	1.2	1.2	.68	.7	.75	1.3	.75
11	1.3	2.0	2.9	2.3	1.2	1.1	1.2	.68	.8	.85	1.4	.75
12	1.25	1.85	2.8	2.1	1.2	1.05	1.2	.68	1.0	.8	1.3	.75
13	1.15	1.75	2.6	2.3	1.15	1.0	1.2	.9	.9	.75	1.2	.75
14	1.1	1.6	2.2	2.65	1.15	1.0	1.2	.8	.9	.7	1.2	.75
15	1.05	1.5	2.1	2.5	1.1	1.2	1.0	.75	.85	.7	1.2	1.0
16	1.0	1.4	2.0	2.45	1.1	1.1	.95	.7	.85	.7	1.2	1.4
17	1.0	1.4	1.9	2.4	1.1	1.0	.9	.68	.8	.7	1.2	2.0
18	1.0	1.4	1.9	2.1	1.05	1.0	.9	.67	.75	3.75	1.2	1.7
19	1.0	1.4	1.8	2.0	1.05	1.0	.9	.65	.75	1.5	1.2	1.5
20	1.0	1.5	1.8	2.0	1.0	1.0	.85	.65	.75	1.2	1.2	1.4
21	1.0	1.5	1.8	1.95	1.0	.95	.85	.65	.7	1.1	1.2	1.3
22	1.0	1.45	1.7	1.85	1.0	.9	.8	.62	.7	1.1	1.1	1.3
23	2.0	1.4	1.55	1.8	1.0	.9	.75	.62	.75	1.2	1.1	2.9
24	1.9	1.4	1.5	1.7	1.0	.9	.75	.6	.75	1.1	1.1	2.9
25	1.8	1.35	1.4	1.65	1.0	.9	.75	.6	.7	1.05	1.1	2.9
26	1.5	1.3	1.4	1.55	.95	1.2	.7	.6	.7	1.0	1.0	2.9
27	1.4	1.25	1.6	1.5	.95	1.1	.7	.6	.7	1.0	1.0	3.0
28	1.4	1.2	1.6	1.5	.95	1.0	.7	.6	.68	.9	1.0	2.9
29	1.4	.....	1.55	1.5	.95	.9	.7	.7	.68	.9	1.0	2.6
30	2.5	.....	1.65	1.5	1.0	.9	.7	1.5	.68	.85	1.0	2.0
31	2.2	.....	1.85	.....	1.0	.....	.7	1.2	.....	.85	.....	1.9

Daily discharge, in second-feet, of Roanoke River at Roanoke, Va., for 1911.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug	Sept.	Oct.	Nov.	Dec.
1	620	690	237	519	403	166	136	82	237	82	110	166
2	1,380	550	218	459	376	166	136	82	166	82	110	136
3	1,540	430	218	459	302	166	123	82	151	82	110	136
4	1,900	351	200	1,130	279	166	123	98	123	76	110	136
5	850	326	200	2,900	279	488	550	200	110	76	110	136
6	620	279	1,080	2,900	258	237	166	237	98	76	110	136
7	459	279	1,330	2,640	258	200	136	110	98	86	550	136
8	376	279	850	2,020	258	488	1,030	98	86	98	237	136
9	326	279	690	1,330	258	279	430	86	86	98	279	136
10	302	1,230	1,780	1,130	258	237	237	82	86	98	279	98
11	279	690	1,540	940	237	200	237	82	110	123	326	98
12	258	585	1,440	770	237	183	237	82	166	110	279	98
13	218	519	1,230	940	218	166	237	136	136	98	237	98
14	200	430	850	1,280	218	166	237	110	136	86	237	98
15	183	376	770	1,130	200	237	166	98	123	86	237	166
16	166	326	690	1,080	200	200	151	86	123	86	237	326
17	166	326	620	1,030	200	166	136	82	110	86	237	690
18	166	326	620	770	183	166	136	80	98	2,580	237	488
19	166	326	550	690	183	166	136	76	98	376	237	376
20	166	376	550	690	166	166	123	76	98	237	237	326
21	166	376	550	655	166	151	123	76	86	200	237	279
22	166	351	488	585	166	136	110	69	86	200	200	279
23	690	326	403	550	166	136	98	69	98	237	200	1,540
24	620	326	376	488	166	136	98	65	98	200	200	1,540
25	550	302	326	459	166	136	98	65	86	183	200	1,540
26	376	279	326	403	151	237	86	65	86	166	166	1,540
27	326	258	430	376	151	200	86	65	86	166	166	1,660
28	326	237	430	376	151	166	86	65	82	136	166	1,540
29	326	.....	403	376	151	136	86	86	82	136	166	1,230
30	1,130	.....	459	376	166	136	86	376	82	123	166	690
31	850	.....	585	.....	166	.....	86	237	.....	123	.....	620

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

Monthly discharge of Roanoke River at Roanoke, Va., for 1911.

[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	1,900	166	512	1.32	1.52	A.
February	1,230	237	408	1.05	1.09	A.
March	1,780	200	659	1.70	1.96	A.
April	2,900	376	982	2.53	2.82	A.
May	403	151	217	.559	.64	A.
June	488	136	199	.513	.57	A.
July	1,030	86	191	.492	.57	A.
August	376	65	107	.276	.32	A.
September	237	82	110	.284	.32	A.
October	2,580	76	213	.549	.63	A.
November	550	110	212	.546	.61	A.
December	1,660	98	535	1.38	1.59	A.
The year	2,580	65	362	.933	12.64	

ROANOKE RIVER AT OLD GASTON, N. C.

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

Records available.—December 7 to 31, 1911.

Drainage area.—8,350 square miles.

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

Winter flow.—Ice sometimes forms to considerable thickness at this station. Relation of gage height to discharge probably not affected by ice during December, 1911.

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.

Cooperation.—Station maintained in cooperation with the Virginia-Carolina Power Co., William C. Whitner, president.

The following discharge measurement was made by H. J. Jackson:

December 8, 1911: Gage height, 1.95 feet; discharge, 3,590 second-feet.

Additional measurements made in 1912 were used in determining the rating.

See also discharge measurement of Roanoke River at Weldon, N. C., made December 10, 1911, given under miscellaneous measurements, page 84.

Daily gage height, in feet, and discharge, in second-feet, of Roanoke River at Old Gaston, N. C., for 1911.

[R. A. Howell, observer.]

Day.	December.		Day.	December.		Day.	December.	
	Gage height.	Discharge.		Gage height.	Discharge.		Gage height.	Discharge.
1			11	1.8	3,160	21	3.5	9,500
2			12	1.8	3,160	22	4.6	15,400
3			13	1.6	[a] 2,610	23	4.6	15,400
4			14	1.9	3,450	24	6.9	32,400
5			15	2.5	5,400	25	7.5	37,800
6			16	2.2	4,380	26	6.1	25,900
7	2.0	3,750	17	4.6	15,400	27	5.8	[a] 23,600
8	1.9	3,450	18	6.3	27,400	28	5.0	17,900
9	1.8	3,160	19	5.4	20,700	29	4.4	14,200
10	1.7	2,880	20	4.0	[a] 12,000	30	3.9	11,500
						31	3.5	9,500

[a] Wednesday; see "Artificial control."

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.

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, 1911.

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 at this station.

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

Cooperation.—Maintained in cooperation with the North Carolina Electric & Power Co.

Discharge measurements of Yadkin River near Salisbury, N. C., in 1911.

Date.	Hydrographer.	Gage height.	Discharge.
		Feet.	*Sec.-ft.*
Sept. 20	R. E. Robertson	1.75	1,290
21	do	1.78	1,290
21	do	1.82	1.410

Daily gage height, in feet, of Yadkin River near Salisbury, N. C., for 1911.

[J. T. Yarbrough, observer.]

Day.	Sept.	Oct.	Nov.	Dec.	Day.	Sept.	Oct.	Nov.	Dec.
1	2.95	1.9	2.2	2.5	16	2.0	1.93	2.5	2.55
2	2.9	1.9	2.15	2.3	17	1.75	1.98	2.5	4.1
3	2.25	1.85	1.83	2.25	18	1.8	5.8	2.45	3.5
4	2.15	1.92	1.95	2.35	19	1.75	7.6	3.1	2.85
5	2.05	1.85	1.95	2.2	20	1.75	4.1	2.85	2.6
6	2.6	1.87	2.15	2.15	21	1.8	3.1	2.6	2.9
7	2.9	1.85	2.4	2.2	22	3.5	2.75	2.45	3.6
8	2.45	1.75	3.0	2.15	23	4.2	5.7	2.35	6.1
9	2.05	1.8	3.1	2.15	24	2.8	5.0	2.35	6.0
10	1.85	1.85	3.4	2.2	25	2.45	3.3	2.25	5.0
11	2.2	2.15	3.1	2.25	26	2.15	2.8	2.35	4.1
12	2.4	2.35	2.75	2.1	27	2.2	2.55	2.3	3.8
13	2.1	2.35	2.95	2.15	28	2.0	2.4	2.3	3.8
14	1.95	2.1	3.2	2.2	29	2.0	2.35	2.75	3.3
15	1.9	1.8	2.75	2.15	30	2.1	2.3	2.8	3.0
					31	.....	2.2	.....	3.0

Daily discharge, in second-feet, of Yadkin River near Salisbury, N. C., for 1911.

Day.	Sept.	Oct.	Nov.	Dec.	Day.	Sept.	Oct.	Nov.	Dec.
1	4,240	1,530	2,170	2,930	16	1,730	1,590	2,930	3,070
2	4,090	1,530	2,060	2,410	17	1,250	1,690	2,930	8,370
3	2,290	1,440	1,400	2,290	18	1,340	15,800	2,800	6,100
4	2,060	1,570	1,630	2,540	19	1,250	24,800	4,720	3,940
5	1,840	1,440	1,630	2,170	20	1,250	8,370	3,940	3,210
6	3,210	1,470	2,060	2,060	21	1,340	4,720	3,210	4,090
7	4,090	1,440	2,660	2,170	22	6,100	3,640	2,800	6,460
8	2,800	1,250	4,400	2,060	23	8,770	15,300	2,540	17,200
9	1,840	1,340	4,720	2,060	24	3,790	12,200	2,540	16,800
10	1,440	1,440	5,740	2,170	25	2,800	5,390	2,290	12,200
11	2,170	2,060	4,720	2,290	26	2,060	3,790	2,540	8,370
12	2,660	2,540	3,640	1,940	27	2,170	3,070	2,410	7,210
13	1,940	2,540	4,240	2,060	28	1,730	2,660	2,410	7,210
14	1,630	1,940	5,050	2,170	29	1,730	2,540	3,640	5,390
15	1,530	1,340	3,640	2,060	30	1,940	2,410	3,790	4,400
					31	.....	2,170	.....	4,400

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 1911.

[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.		
September	8,770	1,250	2,570	0.756	0.84	A.
October	24,800	1,250	4,360	1.28	1.48	B.
November	5,740	1,400	3,180	.935	1.04	A.
December	17,200	1,940	4,900	1.44	1.66	B.

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 Smiths Creek, and 1 mile above Partridge Creek.

Records available.—August 9, 1906, to December 31, 1911.

Drainage area.—Not determined.

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

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

Discharge measurements.—Made from the ferry boat.

Artificial control.—The large water-power plants just above the station and at Whitney, N. C., about 40 miles above, are nearly completed, and when put in operation will cause very great fluctuation at the gage. The tailrace of the Rockingham Power Co.'s plant empties into the river below the gage, so there will be no flow past the gage at times when this plant is using all the flow of the river. Up to the end of 1911 there has not been much artificial regulation of the flow.

Accuracy.—Records unreliable at low stages.

Cooperation.—All gage heights have been furnished the Geological Survey by the engineers of the Rockingham Power Co., who have also made some of the discharge measurements.

Discharge measurements of Yadkin River near Peedee, N. C., in 1911.

Date.	Hydrographer.	Gage height.	Discharge.
		Feet.	*Sec.-ft.*
Sept. 26	R. E. Robertson	87.92	4,350
27	do	87.58	3,900

Daily gage height, in feet, of Yadkin River near Peedee, N. C., for 1911.

[W. S. Ide, observer.]

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	88.6	87.65	87.65	.....	88.1	87.0	87.5	86.4	91.88	87.05	87.45	88.7
2	88.65	87.65	87.7	.....	88.15	86.95	87.1	86.4	89.35	86.98	87.4	88.2
3	90.35	87.65	87.8	88.1	88.2	86.9	86.95	86.45	88.55	86.8	87.25	87.9
4	97.0	87.65	87.85	88.05	88.05	87.0	86.7	86.75	87.8	86.85	87.2	87.8
5	95.5	87.5	87.7	87.95	87.85	87.05	86.7	87.2	88.45	86.82	87.25	87.7
6	92.35	87.55	87.6	88.55	87.75	86.95	86.75	87.1	90.2	86.8	87.35	87.6
7	90.3	87.7	87.7	92.05	87.7	87.1	86.9	88.4	90.25	86.8	87.4	87.5
8	89.4	87.6	87.45	91.85	87.7	88.35	86.75	87.75	89.1	86.75	88.05	87.35
9	88.95	87.85	90.0	94.4	87.8	88.1	86.8	87.65	88.15	86.75	91.1	87.3
10	88.65	92.85	89.95	92.55	87.65	88.6	87.1	87.15	87.6	86.75	94.0	87.45
11	88.35	91.85	89.25	90.65	87.7	87.35	87.25	86.8	87.05	86.85	91.15	87.35
12	88.2	90.6	88.8	89.65	87.6	87.6	87.05	86.6	86.9	86.9	90.1	87.35
13	88.1	90.25	88.55	89.25	87.75	87.4	86.9	86.6	87.35	87.35	88.9	87.45
14	88.0	89.7	90.05	89.05	88.1	87.4	86.9	86.6	87.25	87.65	88.82	87.35
15	87.95	89.1	90.55	89.2	88.1	87.15	87.0	86.55	87.0	87.6	88.88	87.5
16	87.8	88.75	90.15	92.7	88.45	87.0	89.3	87.3	86.75	87.1	88.52	89.8
17	87.75	88.5	89.1	91.9	88.08	86.8	88.3	87.0	86.7	86.85	88.2	93.65
18	87.7	88.3	89.0	90.45	87.75	86.9	87.5	86.7	86.7	89.7	87.95	92.5
19	87.75	88.2	88.3	89.65	87.6	87.95	87.2	86.85	86.58	95.0	88.55	90.45
20	87.85	88.1	.....	89.4	87.45	87.85	87.0	87.05	86.6	93.8	89.05	89.25
21	87.85	88.25	90.15	89.65	87.3	87.6	86.9	87.5	86.95	90.2	88.72	89.65
22	87.8	88.25	89.2	89.5	87.25	87.4	86.8	86.75	87.78	88.8	88.25	92.7
23	87.8	88.1	88.55	89.05	87.35	87.2	86.8	86.5	88.32	88.6	87.95	95.4
24	87.75	87.95	88.25	88.75	87.3	.....	86.7	86.5	90.28	92.4	87.75	98.55
25	87.8	87.8	88.05	88.55	87.35	87.1	86.65	86.5	88.7	92.1	87.65	96.2
26	87.75	87.75	.....	88.45	87.25	87.2	86.65	86.4	87.98	89.4	87.7	94.35
27	87.7	87.7	88.15	88.3	87.1	87.2	86.65	86.48	87.48	88.5	87.7	92.15
28	87.7	87.7	89.5	88.2	87.05	87.1	86.6	86.68	87.25	88.1	87.7	91.1
29	87.65	.....	89.7	88.1	86.95	86.9	86.55	87.4	87.18	88.0	87.65	90.55
30	87.6	.....	89.2	88.08	86.95	87.35	86.45	88.05	87.08	87.6	89.55	89.85
31	87.6	.....	88.9	.....	87.05	.....	86.45	92.55	.....	87.65	.....	89.3

Daily discharge, in second-feet, of Yadkin River near Peedee, N. C., for 1911.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	5,930	3,820	3,820	.....	4,790	2,510	3,500	.....	14,400	2,600	3,400	6,160
2	6,040	3,820	3,920	.....	4,900	.....	2,700	.....	7,720	.....	3,300	5,010
3	10,300	3,820	4,130	4,790	5,010	.....	.....	.....	5,820	.....	3,000	4,350
4	.....	3,820	4,240	4,680	4,680	2,510	.....	.....	4,130	.....	2,900	4,130
5	.....	3,500	3,920	4,460	4,240	2,600	.....	2,900	5,580	.....	3,000	3,920
6	.....	3,600	3,710	5,820	4,020	.....	.....	2,700	9,900	.....	3,200	3,710
7	10,200	3,920	3,920	.....	3,920	2,700	.....	5,470	10,000	.....	3,300	3,500
8	7,850	3,710	3,400	14,300	3,920	5,360	.....	4,020	7,120	.....	4,680	3,200
9	6,760	4,240	9,380	.....	4,130	4,790	.....	3,820	4,900	.....	12,300	3,100
10	6,040	.....	9,250	.....	3,820	5,930	2,700	2,800	3,710	.....	.....	3,400
11	5,360	14,300	7,480	11,100	3,920	3,200	3,000	.....	2,600	.....	12,400	3,200
12	5,010	10,900	6,400	8,480	3,710	3,710	2,600	.....	.....	.....	9,604	3,200
13	4,790	10,000	5,820	7,480	4,020	3,300	.....	.....	3,200	3,200	6,640	3,400
14	4,570	8,600	9,510	7,000	4,790	3,300	.....	.....	3,000	3,820	6,450	3,200
15	4,460	7,120	10,800	7,360	4,790	2,800	2,510	.....	2,510	3,710	6,590	3,500
16	4,130	6,280	9,770	.....	5,580	2,510	7,600	3,100	.....	2,700	5,750	8,860
17	4,020	5,700	7,120	14,400	4,750	.....	5,240	2,510	.....	.....	5,010	.....
18	3,920	5,240	6,880	10,600	4,020	.....	3,500	.....	.....	8,600	4,460	.....
19	4,020	5,010	5,240	8,480	3,710	4,460	2,900	.....	.....	.....	5,820	10,600
20	4,240	4,790	.....	7,850	3,400	4,240	2,510	2,600	.....	.....	7,000	7,480
21	4,240	5,120	9,770	8,480	3,100	3,710	.....	3,500	.....	9,900	6,210	8,480
22	4,130	5,120	7,360	8,100	3,000	3,330	.....	.....	4,090	6,400	5,120	.....
23	4,130	4,790	5,820	7,000	3,200	2,900	.....	.....	5,290	5,930	4,460	.....
24	4,020	4,460	5,120	6,280	3,100	.....	.....	.....	10,100	.....	4,020	.....
25	4,130	4,130	4,680	5,820	3,200	2,700	.....	.....	6,160	.....	3,820	.....
26	4,020	4,020	.....	5,580	3,000	2,900	.....	.....	4,530	7,850	3,920	.....
27	3,920	3,920	4,900	5,240	2,700	2,900	.....	.....	3,460	5,700	3,920	.....
28	3,920	3,920	8,100	5,010	2,600	2,700	.....	.....	3,000	4,790	3,920	12,300
29	3,820	.....	8,600	4,790	.....	.....	.....	3,300	2,860	4,570	3,820	10,800
30	3,710	.....	7,480	4,750	.....	3,200	.....	4,680	2,660	3,710	8,220	8,990
31	3,710	.....	6,640	.....	2,600	.....	.....	.....	.....	3,820	.....	7,600

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, and November 2, 1909, to December 31, 1911.

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.—Probably does not seriously affect the 1911 records, but will greatly affect future records when the power plants near Rockingham, N. C., and Whitney, N. C., are in operation.

Accuracy.—The rating is not yet developed for high stages.

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

Discharge measurements of Peedee River at Cheraw, S. C., in 1911.

Date.	Hydrographer.	Gage height.	Discharge.
		Feet.	*Sec.-ft.*
Sept. 23	R. E. Robertson	1.97	3,270
25	do	6.16	8,120
25	do	5.87	7,750

Daily gage height, in feet, of Peedee River at Cheraw, S. C., for 1911.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.9	2.3	2.5	4.2	2.9	1.4	1.5	1.0	22.4	1.8	2.8	5.8
2	4.2	2.2	2.5	3.9	2.8	1.4	1.5	1.0	16.4	1.7	2.2	5.1
3	4.5	2.3	2.7	3.7	2.7	1.5	1.4	.9	10.6	1.6	2.1	3.9
4	20.2	2.3	2.7	3.4	2.9	1.4	1.4	1.1	7.5	1.5	1.9	3.1
5	25.4	2.3	2.6	3.1	3.1	1.3	1.3	1.8	4.2	1.4	1.8	2.9
6	21.3	2.2	2.5	2.8	2.9	1.3	1.3	1.8	2.6	1.3	1.7	2.7
7	14.2	2.1	2.5	2.6	2.6	1.4	1.3	1.6	4.6	1.3	1.7	2.6
8	8.5	2.1	2.7	9.8	2.4	1.6	1.3	1.6	10.8	1.2	2.3	2.4
9	5.8	2.2	6.1	17.8	2.3	3.2	1.2	2.8	6.8	1.2	6.0	2.4
10	4.7	2.3	7.3	18.5	2.3	3.4	1.2	2.5	3.9	1.2	19.0	2.1
11	4.2	14.2	5.9	13.3	2.2	2.6	1.2	2.1	2.3	1.2	18.4	1.9
12	3.9	11.0	5.0	8.5	2.1	2.0	1.1	1.8	2.0	1.4	11.3	1.7
13	3.7	8.7	4.3	6.4	2.0	2.7	1.1	1.5	1.8	1.8	6.1	1.6
14	3.5	6.2	4.0	4.8	3.3	3.1	1.3	1.3	1.7	1.6	5.8	1.5
15	3.2	7.4	8.9	5.1	3.1	2.3	1.3	1.2	1.6	1.4	4.6	1.4
16	3.0	5.5	9.1	11.2	2.9	1.9	3.0	1.1	1.5	1.3	4.2	5.0
17	2.9	4.1	6.7	14.8	2.7	1.9	4.6	1.1	1.5	1.2	4.6	16.0
18	2.8	3.2	5.2	10.9	3.2	1.8	3.9	1.0	1.4	2.0	3.8	19.3
19	3.9	3.4	4.1	8.1	2.9	1.7	3.1	1.4	1.3	14.0	3.5	14.7
20	4.0	3.3	3.3	6.0	2.2	1.9	2.1	1.5	1.2	22.2	3.0	8.4
21	3.7	3.1	3.1	4.8	2.0	2.2	1.8	1.8	1.1	15.3	2.8	5.6
22	3.2	3.1	7.4	6.1	1.9	2.4	1.6	2.9	1.1	8.0	2.5	13.1
23	2.9	2.9	6.5	5.6	1.8	2.1	1.5	2.1	2.8	4.4	3.7	20.0
24	2.8	3.1	4.3	4.7	1.7	1.9	1.5	1.8	5.6	8.1	3.0	30.4
25	2.6	3.1	3.2	4.1	1.6	1.7	1.4	1.6	9.5	13.5	2.8	29.5
26	2.5	2.9	2.9	3.7	1.6	1.6	1.3	1.4	6.3	10.3	2.8	26.6
27	2.5	2.7	2.9	3.4	1.6	2.0	1.3	1.3	3.4	6.2	2.7	22.4
28	2.4	2.6	4.1	3.1	1.6	1.8	1.2	1.3	2.2	4.0	2.6	17.2
29	2.3	.....	6.9	3.0	1.5	1.7	1.2	1.8	1.9	4.2	3.0	12.7
30	2.2	.....	7.1	3.0	1.5	1.6	1.1	2.8	1.9	4.0	3.7	9.5
31	2.2	.....	5.8	.....	1.5	.....	1.1	9.0	.....	3.2	.....	7.3

Daily discharge, in second-feet, of Peedee River at Cheraw, S. C., for 1909–1911.

Day.	Nov.	Dec.	Day.	Nov.	Dec.
1909.			1909.		
1	.....	3,210	16	3,580	13,800
2	.....	3,210	17	3,580	8,320
3	3,880	3,300	18	3,480	6,360
4	3,680	3,480	19	3,390	4,850
5	3,580	3,300	20	3,390	5,290
6	3,480	3,120	21	3,390	4,740
7	3,390	3,120	22	3,300	4,300
8	5,290	3,210	23	3,210	4,190
9	4,190	3,480	24	3,210	4,080
10	3,780	3,210	25	3,480	3,880
11	3,680	4,080	26	3,300	4,080
12	3,480	3,780	27	3,210	4,300
13	3,580	4,080	28	3,210	4,630
14	4,190	4,850	29	3,300	4,410
15	3,780	9,300	30	3,210	4,080
			31	.....	3,980

Daily discharge, in second-feet, of Peedee River at Cheraw, S. C., for 1909–1911—Con.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1910.												
1	3,780	15,500	9,450	3,980	4,080	3,300	3,780	3,300	4,520	2,940	2,940	2,940
2	3,580	10,400	.....	3,980	3,980	3,210	3,580	3,120	7,640	3,120	2,940	2,850
3	3,390	7,380	.....	3,880	3,780	2,940	3,780	3,300	.....	3,120	2,850	2,760
4	3,210	6,600	.....	3,780	3,680	2,760	3,880	3,210	.....	2,940	2,940	2,760
5	4,080	6,860	.....	3,780	3,680	2,600	3,680	3,030	.....	2,850	3,120	2,850
6	4,520	6,480	17,600	3,880	3,480	3,300	3,390	3,030	.....	2,850	3,300	3,120
7	4,080	5,640	11,100	3,080	3,300	4,080	3,300	5,760	13,400	2,940	3,210	3,390
8	3,680	5,290	12,100	4,080	3,300	4,410	3,300	9,300	9,900	3,120	3,210	5,760
9	3,980	4,630	10,800	3,980	12,400	3,980	5,070	7,900	6,600	8,600	3,120	10,000
10	4,520	4,960	7,770	3,880	.....	4,630	5,400	5,640	5,180	.....	3,120	8,180
11	6,240	6,240	6,120	3,780	14,500	6,990	5,520	4,740	5,880	.....	3,030	5,180
12	4,740	13,600	6,480	3,680	9,020	9,300	6,120	4,080	6,000	13,900	2,940	3,980
13	4,080	.....	10,500	3,580	6,240	14,500	7,200	3,780	5,400	7,900	2,940	3,580
14	3,680	17,000	11,900	3,580	4,850	.....	6,360	3,390	4,520	5,640	2,850	3,480
15	3,580	13,800	10,200	3,780	4,410	.....	6,860	3,780	4,190	4,630	2,850	3,390
16	3,680	8,880	7,120	3,880	4,190	.....	12,600	3,480	3,880	4,080	2,850	3,300
17	3,780	6,600	6,360	3,980	4,080	.....	.....	3,300	3,680	3,780	2,760	3,210
18	3,580	9,750	5,400	4,740	3,980	.....	10,000	3,480	3,480	3,580	2,760	3,120
19	3,680	.....	5,290	9,600	3,780	.....	6,860	3,300	3,390	3,390	2,760	3,300
20	3,780	.....	5,180	8,460	3,680	12,600	5,880	3,120	3,300	4,190	2,760	3,580
21	3,880	.....	5,070	6,480	3,580	7,900	7,900	3,030	3,210	5,640	2,680	3,480
22	8,460	17,400	4,960	5,400	3,980	8,180	5,640	3,030	3,120	5,400	2,680	3,390
23	.....	.....	4,850	4,740	4,080	6,600	4,630	2,940	3,030	4,740	2,680	3,300
24	17,800	.....	4,850	4,300	3,880	5,290	3,880	2,940	3,030	4,740	2,680	3,300
25	10,200	13,900	4,740	4,190	3,880	4,740	3,480	2,850	2,940	4,190	2,600	4,520
26	8,600	14,100	4,630	4,080	4,080	4,630	3,300	5,760	2,940	3,980	2,600	6,120
27	7,120	12,100	4,410	3,980	4,300	4,410	3,300	4,520	2,940	3,780	2,600	5,880
28	6,240	10,800	4,300	4,190	3,980	4,190	3,580	4,080	2,850	3,480	2,600	6,240
29	10,500	.....	4,190	4,190	3,680	3,880	4,850	3,780	2,850	3,210	2,760	6,000
30	.....	.....	4,080	3,980	3,580	3,680	4,410	3,480	2,760	3,120	3,030	4,520
31	.....	.....	4,080	.....	3,390	.....	3,390	3,880	.....	3,030	.....	4,850
1911.												
1	5,290	3,580	3,780	5,640	4,190	2,760	2,850	2,440	.....	3,120	4,080	7,640
2	5,640	3,480	3,780	5,290	4,080	2,760	2,850	2,440	.....	3,030	3,480	6,730
3	6,000	3,580	3,980	5,070	3,980	2,850	2,760	2,360	15,200	2,940	3,390	5,290
4	.....	3,580	3,980	4,740	4,190	2,760	2,760	2,520	10,000	2,850	3,210	4,410
5	.....	3,580	3,880	4,410	4,410	2,680	2,680	3,120	5,640	2,760	3,120	4,190
6	.....	3,480	3,780	4,080	4,190	2,680	2,680	3,120	3,880	2,680	3,030	3,980
7	.....	3,390	3,780	3,880	3,880	2,760	2,680	2,940	6,120	2,680	3,030	3,880
8	11,600	3,390	3,980	13,800	3,680	2,940	2,680	2,940	15,500	2,600	3,580	3,680
9	7,640	3,480	8,040	.....	3,580	4,520	2,600	4,080	9,020	2,600	7,900	3,680
10	6,240	3,580	9,750	.....	3,580	4,740	2,600	3,780	5,290	2,600	.....	3,390
11	5,640	.....	7,770	.....	3,480	3,880	2,600	3,390	3,580	2,600	.....	3,210
12	5,290	15,900	6,600	11,600	3,390	3,300	2,520	3,120	3,300	2,760	16,500	3,030
13	5,070	11,900	5,760	8,460	3,300	3,980	2,520	2,850	3,120	3,120	8,040	2,940
14	4,850	8,180	5,400	6,360	4,630	4,410	2,680	2,680	3,030	2,940	7,640	2,850
15	4,520	9,900	12,200	6,730	4,410	3,580	2,680	2,600	2,940	2,760	6,120	2,760
16	4,300	7,250	12,600	16,300	4,190	3,210	4,300	2,520	2,850	2,680	5,640	6,600
17	4,190	5,520	8,880	.....	3,980	3,210	6,120	2,520	2,850	2,600	6,120	.....
18	4,080	4,520	6,860	15,700	4,520	3,120	5,290	2,440	2,760	3,300	5,180	.....
19	5,290	4,740	5,520	11,000	4,190	3,030	4,410	2,760	2,680	.....	4,850	.....
20	5,400	4,630	4,630	7,900	3,480	3,210	3,390	2,850	2,600	.....	4,300	11,400
21	5,070	4,410	4,410	6,360	3,300	3,480	3,120	3,120	2,520	.....	4,080	7,380
22	4,520	4,410	9,900	8,040	3,210	3,680	2,940	4,190	2,520	10,800	3,780	.....
23	4,190	4,190	8,600	7,380	3,120	3,390	2,850	3,390	4,080	5,880	5,070	.....
24	4,080	4,410	5,760	6,240	3,030	3,210	2,850	3,120	7,380	11,000	4,300	.....
25	3,880	4,410	4,520	5,520	2,940	3,030	2,760	2,940	13,200	.....	4,080	.....
26	3,780	4,190	4,190	5,070	2,940	2,940	2,680	2,760	8,320	14,600	4,080	.....
27	3,780	3,980	4,190	4,740	2,940	3,300	2,680	2,680	4,740	8,180	3,980	.....
28	3,680	3,880	5,520	4,410	2,940	3,120	2,600	2,680	3,480	5,400	3,880	.....
29	3,580	.....	9,160	4,300	2,850	3,030	2,600	3,120	3,210	5,640	4,300	.....
30	3,480	.....	9,450	4,300	2,850	2,940	2,520	4,080	3,210	5,400	5,070	13,200
31	3,480	.....	7,640	.....	2,850	.....	2,520	12,400	.....	4,520	.....	9,750

NOTE.—Daily discharge computed from a rating curve that is fairly well defined between 3,000 and 14,000 second-feet. On days for which no discharge is given it was greater than 17,800 second-feet.

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 December 31, 1911.

Drainage area.—191 square miles.

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

Channel.—Rocky bed, 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 shallow, rocky crest a short distance below.

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

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

Cooperation.—Station maintained in cooperation with the Northern Contracting Co.

Discharge measurements of Tallulah River at Tallulah Falls, Ga., in 1911.

Date.	Hydrographer.	Gage height.	Discharge.
		Feet.	*Sec.-ft.*
Mar. 14	M. R. Hall	1.35	352
14	do	1.34	353
Dec. 13	R. E. Robertson	1.21	308
13	do	1.21	311

Daily gage height, in feet, of Tallulah River at Tallulah Falls, Ga., for 1911.

[Wiley Pitts, observer.]

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.0	1.4	1.65	1.5	2.5	1.55	1.0	1.15	1.05	0.8	1.05	1.5
2	3.6	1.3	1.6	1.5	2.35	1.4	1.05	1.4	.9	.8	.97	1.4
3	4.3	1.25	1.5	1.5	2.2	1.4	1.0	2.3	.9	.8	.97	1.3
4	3.2	1.45	1.45	1.85	2.1	1.5	1.05	2.2	.95	.75	.97	1.25
5	2.4	1.4	1.4	5.8	2.1	1.4	1.1	1.7	.9	.75	1.05	1.25
6	2.1	1.4	1.4	3.7	2.05	1.4	1.05	1.55	1.55	.7	1.4	1.3
7	2.0	1.4	1.4	3.2	2.0	1.4	1.0	1.4	1.2	.7	1.55	1.25
8	1.9	1.6	1.45	3.2	2.0	1.45	1.05	1.45	1.0	.7	1.5	1.25
9	1.75	2.2	1.4	3.2	2.0	1.7	1.35	1.3	.95	.75	2.6	1.17
10	1.7	2.05	1.4	2.75	1.9	1.4	1.1	1.15	1.0	.8	1.8	1.2
11	1.6	1.8	1.4	2.7	1.9	1.3	1.05	1.1	1.25	2.6	1.6	1.3
12	1.55	1.9	1.4	4.0	1.8	1.3	1.15	1.05	.95	1.8	1.55	1.3
13	1.5	1.8	1.35	3.8	1.8	1.2	1.2	1.0	.9	1.3	1.6	1.25
14	1.5	1.75	1.35	3.6	1.8	1.2	1.2	1.05	.8	1.1	1.5	1.2
15	1.4	1.7	1.35	3.3	1.8	1.2	1.15	1.05	.78	.95	1.45	1.3
16	1.4	1.6	1.3	2.95	1.7	1.2	1.35	1.05	1.0	.95	1.45	2.0
17	1.4	1.6	1.3	2.75	1.7	1.2	2.5	1.0	.9	3.4	1.4	1.65
18	1.45	1.55	1.3	2.65	1.7	1.2	1.3	1.0	.9	2.8	1.9	1.55
19	1.45	1.5	1.4	2.8	1.7	1.35	1.2	.95	.85	1.9	1.6	1.45
20	1.4	1.95	1.6	2.85	1.7	1.35	1.1	.9	.78	1.65	1.45	1.5
21	1.4	1.65	1.4	2.6	2.4	1.35	1.3	.85	1.05	1.5	1.4	2.7
22	1.4	1.55	1.3	2.45	1.8	1.2	1.35	.78	1.0	1.65	1.35	3.0
23	1.35	1.5	1.3	2.4	1.85	1.4	1.1	.78	2.2	1.4	1.4	3.0
24	1.3	1.45	1.3	2.3	2.05	1.2	1.1	.78	1.45	1.3	1.5	2.5
25	1.25	1.4	1.3	2.25	1.75	1.15	1.3	.78	1.3	1.2	1.35	2.2
26	1.35	1.4	1.9	2.2	1.7	1.1	1.0	.78	1.1	1.2	1.3	2.3
27	1.4	1.5	2.35	2.15	1.6	1.1	1.0	.78	.95	1.2	1.3	3.2
28	1.3	1.4	1.85	2.2	1.6	1.1	1.0	.80	.95	1.15	1.95	2.6
29	1.3	.....	1.8	2.3	1.6	1.1	.95	.78	.9	1.15	1.7	2.2
30	1.4	.....	1.7	2.25	1.5	1.15	.88	1.55	.9	1.1	1.5	2.1
31	1.4	.....	1.6	.....	1.55	.....	.88	1.35	.....	1.1	.....	3.3

Daily discharge, in second-feet, of Tallulah River at Tallulah Falls, Ga., for 1911.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	610	365	460	400	850	420	237	280	251	189	251	400
2	1,730	330	440	400	775	365	251	365	212	189	230	365
3	2,580	312	400	400	700	365	237	750	212	189	230	330
4	1,330	382	382	542	655	400	251	700	224	178	230	312
5	800	365	365	4,730	655	365	265	480	212	178	251	312
6	655	365	365	1,840	632	365	251	420	420	168	365	330
7	610	365	365	1,330	610	365	237	365	295	168	420	312
8	565	440	382	1,330	610	382	251	382	237	168	400	312
9	500	700	365	1,330	610	480	348	330	224	178	910	286
10	480	632	365	1,000	565	365	265	280	237	189	520	295
11	440	520	365	970	565	330	251	265	312	910	440	330
12	420	565	365	2,200	520	330	280	251	224	520	420	330
13	400	520	348	1,960	520	295	295	237	212	330	440	312
14	400	500	348	1,730	520	295	295	251	189	265	400	295
15	365	480	348	1,420	520	295	280	251	185	224	382	330
16	365	440	330	1,140	480	295	348	251	237	224	382	610
17	365	440	330	1,000	480	295	850	237	212	1,520	365	460
18	382	420	330	940	480	295	330	237	212	1,030	565	420
19	382	400	365	1,030	480	348	295	224	200	565	440	382
20	365	588	440	1,060	480	348	265	212	185	460	382	400
21	365	460	365	910	800	348	330	200	251	400	365	970
22	365	420	330	825	520	295	348	185	237	460	348	1,170
23	348	400	330	800	542	365	265	185	700	365	365	1,170
24	330	382	330	750	632	295	265	185	382	330	400	850
25	312	365	330	725	500	280	330	185	330	295	348	700
26	348	365	565	700	480	265	237	185	265	295	330	750
27	365	400	775	678	440	265	237	185	224	295	330	1,330
28	330	365	542	700	440	265	237	189	224	280	588	910
29	330	.....	520	750	440	265	224	185	212	280	480	700
30	365	.....	480	725	400	280	207	420	212	265	400	655
31	365	.....	440	.....	420	.....	207	348	.....	265	.....	1,420

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

Monthly discharge of Tallulah River at Tallulah Falls, Ga., for 1911.

[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	2,580	312	567	2.97	3.42	A.
February	700	312	439	2.30	2.40	A.
March	775	330	402	2.10	2.42	A.
April	4,730	400	1,140	5.97	6.66	B.
May	850	400	559	2.93	3.38	A.
June	480	265	331	1.73	1.93	A.
July	850	207	289	1.51	1.74	A.
August	750	185	297	1.55	1.79	A.
September	700	185	258	1.35	1.51	A.
October	1,520	168	367	1.92	2.21	A.
November	910	230	399	2.09	2.33	A.
December	1,420	295	573	3.00	3.46	A.
The year	4,730	168	468	2.45	33.25	

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 of Broad River.
Records available.—May 27, 1897, to December 31, 1911.
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.
Artificial control.—The flow is affected little or not at all by artificial control.
Cooperation.—Gage heights are furnished by the United States Weather Bureau.

No discharge measurements were made at this station during 1911.

Daily gage height, in feet, of Broad River (of Georgia) near Carlton, Ga., for 1911.

[M. C. Power, observer.]

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.0	2.5	2.5	2.3	2.6	2.2	2.2	2.3	2.4	2.3	2.4	2.3
2	3.5	2.2	2.2	2.5	2.4	2.4	2.5	2.5	2.2	2.1	2.6	2.0
3	4.6	2.4	2.4	2.2	2.2	2.2	2.3	2.9	2.2	2.4	2.3	2.0
4	4.9	2.7	2.1	2.7	2.0	2.1	2.2	4.1	2.5	2.2	2.1	2.2
5	4.6	2.4	2.6	3.2	2.3	2.2	2.4	3.5	2.7	2.0	2.2	1.9
6	3.5	2.2	2.4	4.6	2.5	2.4	2.2	2.3	5.6	2.1	2.0	2.1
7	3.1	2.3	2.1	3.9	2.3	2.2	2.0	2.1	4.8	1.8	4.5	2.3
8	2.7	2.6	2.3	7.2	2.5	2.3	2.2	2.3	4.0	2.2	4.0	2.1
9	2.4	2.9	2.5	6.4	2.3	2.0	2.3	2.5	2.6	2.4	6.5	2.3
10	2.6	3.4	2.2	5.5	2.0	2.2	2.5	2.2	2.1	2.2	5.0	2.2
11	2.3	3.0	2.4	3.4	2.2	2.3	2.2	2.3	2.3	2.7	3.9	2.0
12	2.5	4.0	2.2	4.4	2.4	2.2	2.3	2.1	2.4	2.5	2.8	1.9
13	2.3	2.9	2.5	5.5	2.2	2.0	2.5	2.2	2.2	2.3	2.4	2.1
14	2.0	2.6	2.7	5.2	2.3	2.1	4.5	2.9	2.6	2.1	2.2	2.2
15	2.3	3.0	2.4	4.6	2.5	2.2	2.5	2.2	2.4	1.9	2.4	2.4
16	2.1	2.7	2.2	4.2	2.3	2.0	3.0	2.4	2.1	2.2	2.1	2.8
17	2.3	2.4	2.4	3.5	2.1	1.8	2.5	2.2	2.3	2.4	2.3	2.3
18	2.5	2.1	2.3	3.3	2.4	2.0	2.2	2.1	2.0	4.4	2.0	3.2
19	2.3	2.5	2.3	3.0	2.2	2.2	2.4	2.4	2.2	3.5	2.3	2.7
20	2.2	2.8	2.5	2.5	2.5	5.8	2.6	2.3	2.5	2.5	2.1	3.0
21	2.4	3.5	2.2	2.9	2.3	3.8	2.3	2.1	2.3	2.7	2.2	4.0
22	2.5	2.9	2.5	2.4	2.6	3.4	2.5	2.2	2.5	4.5	2.4	6.9
23	2.3	2.6	2.3	2.7	2.3	2.3	2.2	2.4	2.2	5.1	2.2	13.9
24	2.4	2.3	2.1	2.4	2.9	2.0	2.4	2.2	2.2	4.3	2.0	8.9
25	2.2	2.1	2.3	2.2	2.6	2.1	3.0	2.4	2.4	3.2	2.3	6.5
26	2.4	2.6	2.5	2.5	2.4	2.2	2.5	2.3	2.2	2.8	2.3	3.5
27	2.7	2.4	3.0	2.3	2.1	2.4	2.1	2.4	2.4	2.5	2.1	2.5
28	2.4	2.1	4.2	2.5	2.2	2.2	2.3	2.2	2.3	2.0	2.0	2.7
29	2.3	.....	3.9	2.8	2.4	2.0	2.0	2.5	2.1	2.4	2.2	2.3
30	2.5	.....	3.5	2.5	2.2	2.4	2.2	2.3	2.3	2.1	2.4	2.5
31	2.2	.....	2.7	.....	2.5	.....	2.0	2.6	.....	2.3	.....	2.9

Daily discharge, in second-feet, of Broad River (of Georgia) near Carlton, Ga., for 1911.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,070	750	750	645	805	595	595	645	695	645	695	645
2	1,450	595	595	750	695	695	750	750	595	545	805	500
3	2,450	695	695	595	595	595	645	1,000	595	695	645	500
4	2,770	865	545	865	500	545	595	1,970	750	595	545	595
5	2,450	695	805	1,220	645	595	695	1,450	865	500	595	460
6	1,450	595	695	2,450	750	695	595	645	3,560	545	500	545
7	1,140	645	545	1,790	645	595	500	545	2,660	420	2,350	645
8	865	805	645	5,640	750	645	595	645	1,880	595	1,880	545
9	695	1,000	750	4,560	645	500	645	750	805	695	4,690	645
10	805	1,370	595	3,440	500	595	750	595	545	595	2,880	595
11	645	1,070	695	1,370	595	645	595	645	645	865	1,790	500
12	750	1,880	595	2,260	695	595	645	545	695	750	930	460
13	645	1,000	750	3,440	595	500	750	595	595	645	695	545
14	500	805	865	3,100	645	545	2,350	1,000	805	545	595	595
15	645	1,070	695	2,450	750	595	750	595	695	460	695	695
16	545	865	595	2,060	645	500	1,070	695	545	595	545	930
17	645	695	695	1,450	545	420	750	595	645	695	645	645
18	750	545	645	1,290	695	500	595	545	500	2,260	500	1,220
19	645	750	645	1,070	595	595	695	695	595	1,450	645	865
20	595	930	750	750	750	3,800	805	645	750	750	545	1,070
21	695	1,450	595	1,000	645	1,700	645	545	645	865	595	1,880
22	750	1,000	750	695	805	1,370	750	595	750	2,350	695	5,220
23	645	805	645	865	645	645	595	695	595	2,990	595	16,200
24	695	645	545	695	1,000	500	695	595	595	2,160	500	8,070
25	595	545	645	595	805	545	1,070	695	695	1,220	645	4,690
26	695	805	750	750	695	595	750	645	595	930	645	1,450
27	865	695	1,070	645	545	695	545	695	695	750	545	750
28	695	545	2,060	750	595	595	645	595	645	500	500	865
29	645	.....	1,790	930	695	500	500	750	545	695	595	645
30	750	.....	1,450	750	595	695	595	645	645	545	695	750
31	595	.....	865	.....	750	.....	500	805	.....	645	.....	1,000

NOTE.—Daily discharge computed from the rating curve used from 1906 to 1910, the curve being well defined below 9,800 second-feet. As the station was not visited during 1911 it is not known what conditions may have affected the rating, therefore the above estimates should be used with caution.

Monthly discharge of Broad River (of Georgia) near Carlton, Ga., for 1911.

[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	2,770	500	940	1.23	1.42
February	1,880	545	861	1.13	1.18
March	2,060	545	797	1.05	1.21
April	5,640	595	1,630	2.14	2.39
May	1,000	500	671	.881	1.02
June	3,800	420	753	.988	1.10
July	2,350	500	731	.959	1.11
August	1,970	545	736	.966	1.12
September	3,560	500	861	1.13	1.26
October	2,990	420	919	1.21	1.40
November	4,690	500	973	1.28	1.43
December	16,200	460	1,770	2.32	2.68
The year	16,200	420	970	1.27	17.32

NOTE.—See note to daily-discharge table.

ALTAMAHA RIVER BASIN.

OCMULGEE RIVER NEAR JACKSON, GA.

Location.—At Pittman's 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, 1911.

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 ferry boat or a small boat held in place by the ferry cable.

Artificial control.—During 1911, since the power plant of the Central Georgia Power Co. has been in operation, the artificial regulation has very greatly affected the distribution of the flow at low stages.

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.

Cooperation.—Gage observer paid by the Central Georgia Power Co.

The following discharge measurement was made by R. E. Robertson:
October 3, 1911: Gage height, 4.09 feet; discharge, 552 second-feet.

Daily gage height, in feet, of Ocmulgee River near Jackson, Ga., for 1911.

[C. A. Pittman, observer.]

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	4.35	4.5	4.7	4.15	4.6	4.15	4.05	4.2	3.92	3.95	4.85	4.42
2	4.35	4.6	4.65	4.0	4.6	4.1	3.98	5.0	3.95	4.0	4.85	4.38
3	4.65	4.65	4.6	4.0	4.55	4.1	4.0	6.8	3.95	4.0	4.65	4.35
4	4.6	4.55	4.7	4.35	4.5	4.05	3.95	7.3	3.98	4.0	4.6	4.35
5	4.5	4.55	4.7	4.5	4.45	4.0	4.0	6.0	3.95	3.98	4.4	4.4
6	4.0	4.7	4.7	4.5	4.35	4.0	4.0	5.6	3.98	3.95	4.5	4.35
7	3.62	4.7	4.7	4.4	4.35	4.0	3.95	5.1	4.05	4.0	5.0	4.35
8	3.62	4.8	4.7	4.45	4.3	4.0	4.05	4.65	4.02	3.95	5.3	4.3
9	3.65	4.6	4.7	5.45	4.25	4.0	3.95	4.45	3.98	4.02	6.8	4.3
10	3.52	4.7	4.7	6.2	4.3	3.95	4.4	4.48	3.95	4.08	7.5	4.12
11	3.5	4.75	4.7	6.2	4.35	3.92	4.6	4.38	4.0	4.05	6.4	4.25
12	3.5	4.75	4.7	6.6	4.35	3.95	4.45	4.32	3.95	4.05	5.7	4.28
13	3.35	4.8	4.8	6.3	4.1	4.0	4.5	4.18	4.0	4.02	5.3	4.25
14	4.1	4.7	4.8	6.0	4.65	3.95	4.6	4.18	4.0	4.02	5.05	4.22
15	4.1	4.7	4.7	5.6	4.45	3.9	4.6	4.15	4.02	4.0	4.8	4.38
16	4.1	4.7	4.6	5.35	4.35	3.9	5.1	4.2	3.95	4.08	4.7	4.5
17	4.1	4.6	4.8	5.25	4.3	3.8	5.6	4.15	3.88	4.1	4.6	4.5
18	4.15	4.6	4.8	5.05	4.3	3.95	5.5	4.2	4.0	4.65	4.6	5.1
19	4.15	4.6	4.7	5.0	4.2	3.92	5.1	4.2	4.05	5.1	4.6	4.6
20	4.1	4.6	4.75	5.0	4.25	4.0	4.9	4.2	4.05	4.9	4.6	4.8
21	4.5	4.6	4.75	4.9	4.3	4.3	4.65	4.15	4.05	4.75	4.5	5.3
22	4.65	4.6	4.75	4.8	4.35	4.4	4.6	4.2	4.02	5.45	4.5	7.0
23	4.6	4.8	4.7	4.8	4.45	4.35	4.48	4.12	3.98	5.5	4.5	9.3
24	4.6	4.65	4.7	4.6	4.6	4.25	4.42	4.0	3.92	5.15	4.55	9.0
25	4.6	4.8	4.7	4.6	4.9	4.05	4.45	4.02	3.98	4.8	4.48	8.1
26	4.6	4.8	4.35	4.5	4.75	4.05	4.48	3.9	4.0	4.65	4.38	6.4
27	4.6	4.8	4.1	4.5	4.65	4.15	4.45	4.02	3.98	4.9	4.48	6.2
28	4.6	4.8	4.0	4.55	4.45	4.2	4.38	4.15	4.05	7.8	4.6	6.0
29	4.6	.....	3.98	4.6	4.45	4.15	4.28	4.12	4.0	6.2	4.45	5.6
30	4.6	.....	4.0	4.5	4.3	4.05	4.15	4.02	3.98	5.7	4.42	5.4
31	4.5	.....	4.2	.....	4.2	.....	4.15	4.0	.....	4.95	.....	5.25

Daily discharge, in second-feet, of Ocmulgee River near Jackson, Ga., for 1911.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	730	925	1,240	518	1,080	518	430	565	334	355	1,520	817
2	730	1,080	1,160	390	1,080	470	376	1,820	355	390	1,520	766
3	1,160	1,160	1,080	390	1,000	470	390	5,510	355	390	1,160	730
4	1,080	1,000	1,240	730	925	430	355	6,540	376	390	1,080	730
5	925	1,000	1,240	925	858	390	390	3,870	355	376	790	790
6	390	1,240	1,240	925	730	390	390	3,050	376	355	925	730
7	178	1,240	1,240	790	730	390	355	2,020	430	390	1,820	730
8	178	1,420	1,240	858	670	390	430	1,160	406	376	2,440	670
9	190	1,080	1,240	2,740	618	390	355	858	376	406	5,510	670
10	146	1,240	1,240	4,280	670	355	790	898	355	454	6,940	489
11	140	1,330	1,240	4,280	730	334	1,080	766	390	430	4,690	618
12	140	1,330	1,240	5,100	730	355	858	694	355	430	3,260	649
13	105	1,420	1,420	4,480	470	390	925	546	390	406	2,440	618
14	470	1,240	1,420	3,870	1,160	355	1,080	546	390	406	1,920	586
15	470	1,240	1,240	3,050	858	320	1,080	518	406	390	1,420	766
16	470	1,240	1,080	2,540	730	320	2,020	565	355	454	1,240	925
17	470	1,080	1,420	2,330	670	260	3,050	518	308	470	1,080	925
18	518	1,080	1,420	1,920	670	355	2,840	565	390	1,160	1,080	2,020
19	518	1,080	1,240	1,820	565	334	2,020	565	430	2,020	1,080	1,080
20	470	1,080	1,330	1,820	618	390	1,620	565	430	1,620	1,080	1,420
21	925	1,080	1,330	1,620	670	670	1,160	518	430	1,330	925	2,440
22	1,160	1,080	1,330	1,420	730	790	1,080	565	406	2,740	925	5,920
23	1,080	1,420	1,240	1,420	858	730	898	489	376	2,840	925	10,600
24	1,080	1,160	1,240	1,080	1,080	618	817	390	334	2,130	1,000	10,000
25	1,080	1,420	1,240	1,080	1,620	430	858	406	376	1,420	898	8,180
26	1,080	1,420	730	925	1,330	430	898	320	390	1,160	766	4,690
27	1,080	1,420	470	925	1,160	520	858	406	376	1,620	898	4,280
28	1,080	1,420	390	1,000	858	565	766	518	430	7,560	1,080	3,870
29	1,080	.....	376	1,080	858	520	649	489	390	4,280	858	3,050
30	1,080	.....	390	925	670	430	518	406	376	3,260	817	2,640
31	925	.....	565	.....	565	.....	518	390	.....	1,720	.....	2,330

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

Monthly discharge of Ocmulgee River near Jackson, Ga., for 1911.

[Drainage area, 1,400 square miles.]

Month.	Discharge, in second-feet.				Run-off (depth in inches on drainage area).
	Maximum.	Minimum.	Mean.	Per square mile.	
January	1,160	105	682	0.487	0.56
February	1,420	925	1,210	.864	.90
March	1,420	376	1,110	.793	.91
April	5,100	390	1,840	1.32	1.47
May	1,620	470	837	.598	.69
June	790	260	444	.317	.35
July	3,050	355	963	.688	.79
August	6,540	320	1,190	.850	.98
September	430	334	382	.273	.30
October	7,560	355	1,350	.964	1.11
November	6,940	766	1,740	1.24	1.38
December	10,600	489	2,410	1.72	1.98
The year	10,600	260	1,180	.843	11.42

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, 1911.

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. These gages have been referred to the same datum and have given practically the same readings, varying slightly owing to surface slope between locations.

Channel.—Both banks are high and neither is subject to overflow. The bed of the river is soft and shifting, and a great amount of 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 large power dam near Jackson, Ga., put into operation late in 1910, is likely to cause considerable irregularity in the low-water flow at Macon.

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.

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 1911.

Date.	Hydrographer.	Gage height.	Discharge.
		Feet.	*Sec.-ft.*
July 27	R. E. Robertson	2.16	1,180
27	.....do	2.40	1,320
Sept. 14	.....do	.66	590
14	.....do	.58	543

Daily gage height, in feet, of Ocmulgee River at Macon, Ga., for 1911.

[W. A. Mitchell, observer.]

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.4	2.3	3.0	1.6	2.4	1.4	1.0	0.9	0.5	0.7	4.4	2.1
2	2.0	2.3	3.0	1.5	3.0	1.4	.8	1.4	.5	.7	3.7	2.0
3	6.1	2.5	2.6	1.4	3.1	1.2	.5	5.2	.4	.2	3.5	1.9
4	9.4	2.7	2.5	1.2	2.8	1.0	.4	10.3	1.1	.7	3.1	1.6
5	5.3	2.5	2.5	1.4	2.3	1.0	.7	12.1	.5	.7	2.6	1.6
6	3.9	2.3	2.5	3.3	2.2	1.0	.6	9.2	.7	.8	2.0	1.7
7	2.9	2.7	2.6	3.3	2.0	1.0	1.0	6.3	1.0	.8	3.1	1.7
8	1.6	2.7	2.6	2.6	1.7	1.0	.8	4.4	.8	.7	4.3	1.6
9	1.4	2.9	2.7	3.5	1.6	.9	.8	2.9	.8	.7	8.0	1.5
10	1.3	2.9	2.7	6.5	1.6	.9	.8	3.1	.8	.7	12.0	1.4
11	1.0	3.0	2.6	8.4	1.6	.9	.7	2.5	.6	4.5	12.3	1.3
12	1.0	5.2	2.6	9.0	1.6	.6	2.2	2.0	.4	2.6	9.6	1.3
13	.9	4.8	2.6	11.4	1.5	.6	2.0	2.0	.6	1.1	7.0	1.5
14	.9	4.4	2.8	10.2	1.5	.8	2.7	1.5	.7	1.0	5.8	1.5
15	1.4	3.6	2.8	8.7	2.5	.8	8.8	1.4	.6	.8	4.6	1.5
16	1.4	3.1	2.7	7.2	2.0	.8	5.4	1.2	.8	.7	3.8	4.6
17	1.6	3.2	2.2	5.7	1.8	.7	8.6	2.0	.8	1.6	3.3	3.5
18	1.5	2.9	2.6	5.4	1.6	.8	7.3	1.7	.7	3.9	3.1	2.9
19	1.5	2.8	2.7	4.8	1.4	.8	6.2	4.8	.7	3.8	3.2	3.0
20	1.5	2.8	2.5	5.5	1.4	.8	4.4	1.5	.9	4.2	2.5	2.6
21	1.5	3.3	2.5	4.9	1.5	2.8	3.5	1.4	.8	3.5	2.7	10.0
22	2.1	3.0	2.5	4.3	1.5	1.5	3.0	1.0	.8	7.7	2.5	9.5
23	2.5	2.8	2.4	3.7	2.5	1.4	2.7	1.0	.8	14.3	2.3	17.5
24	2.5	2.8	2.3	3.2	5.4	2.0	2.2	.9	1.7	8.8	2.1	16.4
25	2.6	3.1	2.3	3.1	4.1	1.4	1.9	.8	1.0	5.4	2.0	14.8
26	2.6	3.0	2.6	2.7	3.7	.9	1.9	.8	.5	4.2	2.1	12.4
27	2.5	2.8	6.0	2.6	3.0	.8	1.9	1.0	.8	3.8	1.7	10.8
28	2.5	2.8	4.5	2.6	2.4	1.0	2.0	1.0	.8	11.9	2.2	10.3
29	2.5	.....	2.9	2.6	2.0	1.3	1.6	.8	.8	12.8	2.3	8.9
30	2.4	.....	2.1	2.5	1.8	1.2	1.3	.8	.8	7.8	2.2	7.4
31	2.4	.....	1.8	.....	1.6	.....	1.0	.8	.....	6.0	.....	.....

Daily discharge, in second-feet, of Ocmulgee River at Macon, Ga., for 1911.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,280	1,240	1,550	940	1,280	860	700	665	525	595	2,290	1,140
2	1,100	1,240	1,550	900	1,550	860	630	860	525	595	1,900	1,100
3	3,310	1,320	1,370	860	1,600	780	525	2,770	490	420	1,800	1,060
4	5,760	1,420	1,320	780	1,460	700	490	6,610	740	595	1,600	940
5	2,830	1,320	1,320	860	1,240	700	595	8,940	525	595	1,370	940
6	2,000	1,240	1,320	1,700	1,190	700	560	5,580	595	630	1,100	980
7	1,500	1,420	1,370	1,700	1,100	700	700	3,430	700	630	1,600	980
8	940	1,420	1,370	1,370	980	700	630	2,290	630	595	2,230	940
9	860	1,500	1,420	1,800	940	665	630	1,500	630	595	4,600	900
10	820	1,500	1,420	3,550	940	665	630	1,600	630	595	8,800	860
11	700	1,550	1,370	4,920	940	665	595	1,320	560	2,350	9,220	820
12	700	2,770	1,370	5,400	940	560	1,190	1,100	490	1,370	5,940	820
13	665	2,530	1,370	7,980	900	560	1,100	1,100	560	740	3,900	900
14	665	2,290	1,460	6,500	900	630	1,420	900	595	700	3,130	900
15	860	1,850	1,460	5,160	1,320	630	5,240	860	560	630	2,410	900
16	860	1,600	1,420	4,040	1,100	630	2,890	780	630	595	1,950	2,410
17	940	1,650	1,190	3,070	1,020	595	5,080	1,100	630	940	1,700	1,800
18	900	1,500	1,370	2,890	940	630	4,110	980	595	2,000	1,600	1,500
19	900	1,460	1,420	2,530	860	630	3,370	2,530	595	1,950	1,650	1,550
20	900	1,460	1,320	2,950	860	630	2,290	900	665	2,170	1,320	1,370
21	900	1,700	1,320	2,590	900	1,460	1,800	860	630	1,800	1,420	6,300
22	1,140	1,550	1,320	2,230	900	900	1,550	700	630	4,390	1,320	5,850
23	1,320	1,460	1,280	1,900	1,320	860	1,420	700	630	12,600	1,240	19,800
24	1,320	1,460	1,240	1,650	2,890	1,100	1,190	665	980	5,240	1,140	17,200
25	1,370	1,600	1,240	1,600	2,110	860	1,060	630	700	2,890	1,100	13,700
26	1,370	1,550	1,370	1,420	1,900	665	1,060	630	525	2,170	1,140	9,370
27	1,320	1,460	3,250	1,370	1,550	630	1,060	700	630	1,950	980	7,200
28	1,320	1,460	2,350	1,370	1,280	700	1,100	700	630	8,660	1,190	6,610
29	1,320	.....	1,500	1,370	1,100	820	940	630	630	9,980	1,240	5,320
30	1,280	.....	1,140	1,320	1,020	780	820	630	630	4,460	1,190	4,180
31	1,280	.....	1,020	.....	940	.....	700	630	.....	3,250	.....	3,370

NOTE.—Daily discharge computed from a rating curve fairly well defined below 8,000 second-feet. For stages above 10,000 second-feet the rating is very uncertain.

Monthly discharge of Ocmulgee River at Macon, Ga., for 1911.

[Drainage area, 2,420 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).
	Maximum.	Minimum.	Mean.	Per square mile.	
January	5,760	665	1,370	0.566	0.65
February	2,770	1,240	1,590	.657	.68
March	3,250	1,020	1,440	.595	.69
April	7,980	780	2,560	1.06	1.18
May	2,890	860	1,220	.504	.58
June	1,460	560	742	.307	.34
July	5,240	490	1,490	.616	.71
August	8,940	630	1,720	.711	.82
September	980	490	616	.255	.28
October	12,600	420	2,470	1.02	1.18
November	9,220	980	2,400	.992	1.11
December	19,800	820	3,930	1.62	1.87
The year	19,800	420	1,800	.744	10.09

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, 1911.

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.

Cooperation.—Gage observer paid by the Central Georgia Power Co.

Discharge measurements of Oconee River near Greensboro, Ga., in 1911.

Date.	Hydrographer.	Gage height.	Discharge.
		Feet.	*Sec.-ft.*
Sept. 12	R. E. Robertson	1.16	3.66
12	.....do	1.12	3.56

Daily gage height, in feet, of Oconee River near Greensboro, Ga., for 1911.

[A. M. Thurmond, observer.]

Day.	Jan.	Feb.	Mar.	Ap	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.5	2.1	2.55	2.85	2.95	1.45	1.4	1.8	1.6	1.0	3.4	2.2
2	2.6	2.0	2.55	2.45	3.05	1.45	1.4	10.3	1.4	.6	2.8	2.2
3	3.1	2.1	2.55	2.45	2.8	1.4	1.4	10.4	1.3	1.3	2.5	2.2
4	7.4	2.05	2.35	2.7	2.55	1.4	1.6	10.6	1.9	1.3	2.1	2.0
5	5.8	2.15	2.25	3.65	2.45	1.45	5.3	11.4	1.9	.9	1.85	1.8
6	3.75	2.1	2.25	6.0	2.45	1.3	5.2	9.7	2.2	.65	2.5	1.8
7	3.15	2.35	2.3	5.0	2.35	1.35	4.0	6.2	1.8	.45	8.2	1.8
8	3.05	2.45	1.55	5.2	2.3	1.3	3.3	4.8	1.6	.35	8.8	1.8
9	2.95	2.9	1.3	10.4	2.25	1.35	2.7	3.7	1.4	2.0	11.8	1.8
10	2.8	3.75	2.4	10.8	2.1	1.25	2.0	3.0	1.2	3.4	11.8	1.8
11	2.75	3.55	2.3	7.9	1.95	1.05	1.9	2.4	1.2	1.8	9.6	2.0
12	2.65	5.6	2.2	8.0	1.95	1.2	1.4	2.1	1.3	2.7	4.9	1.8
13	2.55	5.0	2.25	8.2	2.05	1.25	5.9	1.8	1.4	2.0	3.4	2.1
14	2.45	3.95	2.25	7.6	3.2	1.25	9.3	2.0	1.4	1.8	3.4	2.4
15	2.4	3.5	2.1	7.1	2.1	1.15	6.6	2.0	1.4	1.2	2.6	2.5
16	2.35	3.25	2.05	5.8	1.85	.9	9.6	3.6	1.4	1.4	2.8	2.6
17	2.35	3.05	2.0	4.7	1.85	.95	10.2	2.9	1.3	2.2	2.8	3.0
18	2.25	2.85	1.85	3.85	1.85	.9	8.7	3.4	.35	8.2	2.8	3.2
19	2.15	2.75	1.95	3.75	1.85	2.15	4.8	3.6	1.4	6.0	2.3	3.5
20	2.15	3.25	2.25	3.65	1.85	3.35	3.8	2.6	1.4	4.0	2.0	4.3
21	2.05	3.35	2.55	3.55	1.9	2.55	4.4	1.9	1.4	3.3	2.4	6.4
22	2.05	3.4	2.35	3.45	1.9	2.25	5.2	1.6	1.6	5.8	2.2	10.2
23	2.3	3.05	2.05	3.25	2.15	2.1	3.4	1.4	1.8	7.4	2.2	15.2
24	2.1	2.8	1.95	3.0	3.9	1.45	3.3	1.5	2.0	5.0	2.2	16.6
25	2.15	2.65	1.9	2.85	4.0	1.35	4.0	1.4	1.3	3.0	2.2	14.7
26	2.15	2.45	2.2	2.85	3.3	1.45	4.4	1.6	1.4	2.4	2.2	11.0
27	2.15	2.55	6.6	2.8	2.15	1.8	2.7	2.0	1.4	4.8	2.2	8.6
28	2.1	2.55	5.3	2.9	2.05	1.3	2.0	1.6	1.4	6.4	2.2	6.8
29	2.05	.....	3.9	2.95	1.95	1.25	1.8	1.6	1.4	3.4	2.4	5.0
30	2.15	.....	3.4	2.95	1.85	1.35	1.6	1.6	1.2	2.5	2.4	5.4
31	2.1	.....	2.95	.....	1.45	.....	1.6	1.6	.....	2.6	.....	5.6

Daily discharge, in second-feet, of Oconee River near Greensboro, Ga., for 1911.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	785	647	802	908	942	446	432	550	490	326	1,110	680
2	820	614	802	768	978	446	432	4,940	432	228	890	680
3	995	647	802	768	890	432	432	5,000	404	404	785	680
4	3,110	630	732	855	802	432	490	5,130	582	404	647	614
5	2,220	664	698	1,210	768	446	1,980	5,690	582	301	566	550
6	1,250	647	698	2,330	768	404	1,920	4,540	680	240	785	550
7	1,010	732	715	1,820	732	418	1,360	2,440	550	194	3,590	550
8	978	768	475	1,920	715	404	1,070	1,720	490	172	3,960	550
9	942	925	404	5,000	698	418	855	1,230	432	614	5,970	550
10	890	1,250	750	5,270	647	391	614	960	378	1,110	5,970	550
11	872	1,170	715	3,410	598	339	582	750	378	550	4,480	614
12	838	2,120	680	3,470	598	378	432	647	404	855	1,780	550
13	802	1,820	698	3,590	630	391	2,280	550	432	614	1,110	647
14	768	1,340	698	3,230	1,030	391	4,280	614	432	550	1,110	750
15	750	1,150	647	2,940	647	365	2,660	614	432	378	820	785
16	732	1,050	630	2,220	566	301	4,480	1,190	432	432	890	820
17	732	978	614	1,680	566	314	4,870	925	404	680	890	960
18	698	908	566	1,300	566	301	3,900	1,110	172	3,590	890	1,030
19	664	872	598	1,250	566	664	1,720	1,190	432	2,330	715	1,150
20	664	1,050	698	1,210	566	1,090	1,280	820	432	1,360	614	1,500
21	630	1,090	802	1,170	582	802	1,540	582	432	1,070	750	2,550
22	630	1,110	732	1,130	582	698	1,920	490	490	2,220	680	4,870
23	715	978	630	1,050	664	647	1,110	432	550	3,110	680	8,480
24	647	890	598	960	1,320	446	1,070	460	614	1,820	680	9,530
25	664	838	582	908	1,360	418	1,360	432	404	960	680	8,100
26	664	768	680	908	1,070	446	1,540	490	432	750	680	5,410
27	664	802	2,660	890	664	550	855	614	432	1,720	680	3,830
28	647	802	1,980	925	630	404	614	490	432	2,550	680	2,770
29	630	.....	1,320	942	598	391	550	490	432	1,110	750	1,820
30	664	.....	1,110	942	566	418	490	490	378	785	750	2,020
31	647	.....	942	.....	446	.....	490	490	.....	820	.....	2,120

NOTE.—Daily discharge computed from a rating curve fairly well defined below 6,000 second-feet. Water was being stored at dams above the station on days when the discharge was less than 400 second-feet.

Monthly discharge of Oconee River near Greensboro, Ga., for 1911.

[Drainage area, 1,100 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
January	3,110	630	894	0.813	0.94	A.
February	2,120	614	974	.885	.92	A.
March	2,660	404	821	.746	.86	A.
April	5,270	768	1,830	1.66	1.85	A.
May	1,360	446	734	.667	.77	A.
June	1,090	301	466	.424	.47	A.
July	4,870	432	1,540	1.40	1.61	A.
August	5,690	432	1,490	1.35	1.56	A.
September	680	172	452	.411	.46	A.
October	3,590	172	1,040	.945	1.09	A.
November	5,970	566	1,490	1.35	1.51	A.
December	9,530	550	2,140	1.95	2.25	A.
The year	9,530	172	1,160	1.05	14.29	

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, 1911.

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 ferryboat.

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

Accuracy.—Records excellent, except for high stages which can not be measured.

Cooperation.—Gage observer paid by the Central Georgia Power Co.

The following discharge measurement was made by R. E. Robertson:
September 13, 1911: Gage height, 4.86 feet; discharge, 872 second-feet.

Daily gage height, in feet, of Oconee River at Fraleys Ferry, near Milledgeville, Ga., for 1911.

[H. A. Taylor, observer.]

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	5.7	5.5	5.7	5.95	5.9	5.0	4.75	4.9	5.3	4.55	6.0	5.8
2	5.85	5.5	5.7	5.9	5.9	4.9	4.7	6.6	5.15	4.55	6.4	5.6
3	8.0	5.5	5.7	5.8	5.95	4.9	5.0	8.4	5.0	4.5	6.0	5.5
4	9.0	5.5	5.7	5.7	5.8	4.8	5.05	8.3	4.75	4.55	5.8	5.5
5	8.5	5.5	5.6	5.75	5.65	6.25	4.9	8.5	5.25	4.55	5.6	5.45
6	7.0	5.6	5.6	6.8	5.6	6.7	6.8	8.8	5.6	4.5	5.6	5.4
7	6.55	5.6	5.6	7.2	5.5	5.15	6.1	7.5	5.5	4.3	6.6	5.4
8	6.3	5.6	5.6	6.75	5.5	5.0	5.5	6.2	5.35	4.2	7.8	5.4
9	6.1	5.65	5.35	7.8	5.5	4.85	5.1	5.7	5.2	4.2	9.2	5.4
10	6.0	6.0	5.4	8.6	5.5	4.85	5.3	6.0	4.8	5.2	10.4	5.4
11	5.9	6.3	5.6	8.4	5.4	4.9	5.35	6.0	4.8	7.0	9.8	5.4
12	5.8	6.85	5.6	8.0	5.3	4.75	5.15	5.5	4.7	5.8	7.5	5.4
13	5.8	7.4	5.6	8.9	5.3	4.8	4.9	5.6	4.75	5.8	6.7	5.4
14	5.8	6.95	5.6	8.4	5.4	4.8	8.8	5.35	4.7	5.2	6.3	5.4
15	5.8	6.45	5.6	7.9	5.9	4.7	8.8	5.05	4.75	4.95	6.2	5.8
16	5.7	6.3	5.5	7.4	5.45	4.65	7.2	5.2	4.55	4.85	6.0	6.9
17	5.7	6.2	5.4	6.9	5.3	4.6	8.0	5.35	4.5	4.9	5.9	6.4
18	5.7	6.05	5.4	6.55	5.2	4.55	7.8	5.4	4.45	6.6	6.0	6.2
19	5.6	5.9	5.4	6.4	5.2	4.7	7.2	6.1	4.9	7.6	6.2	6.0
20	5.6	5.95	5.4	6.6	5.2	5.05	6.0	6.2	4.85	6.9	5.8	6.3
21	5.6	6.3	5.6	6.45	5.3	5.65	5.6	5.45	5.1	6.0	5.8	8.1
22	5.6	6.2	5.6	6.15	5.35	5.55	6.1	5.15	5.0	6.8	5.6	10.0
23	5.6	6.05	5.6	6.0	5.5	5.3	6.4	5.05	4.85	9.5	5.6	14.4
24	5.6	5.9	5.4	5.9	5.65	5.3	5.8	4.9	5.2	7.8	5.5	13.5
25	5.5	5.8	5.4	5.8	6.3	5.05	5.6	4.95	5.1	6.6	5.6	13.0
26	5.5	5.7	5.85	5.8	6.1	4.9	6.3	5.15	4.9	5.8	5.5	11.5
27	5.5	5.7	8.7	5.7	5.5	5.15	6.0	5.45	4.8	6.2	5.5	9.5
28	5.5	5.7	8.2	5.8	5.25	5.05	5.4	6.6	4.7	11.2	5.7	8.4
29	5.5	.....	7.0	5.85	5.1	4.85	5.1	5.35	4.65	11.0	5.9	8.0
30	5.5	.....	6.4	5.9	5.1	4.75	4.95	4.9	4.6	6.8	5.9	7.4
31	5.5	.....	6.15	.....	5.0	.....	4.9	5.05	.....	6.0	.....	8.4

Daily discharge, in second-feet, of Oconee River at Fraleys Ferry, near Milledgeville, Ga., for 1911.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,740	1,490	1,740	2,080	2,010	990	795	910	1,270	660	2,150	1,870
2	1,940	1,490	1,740	2,010	2,010	910	760	3,080	1,120	660	2,760	1,610
3	5,650	1,490	1,740	1,870	2,080	910	990	6,450	990	630	2,150	1,490
4	7,650	1,490	1,740	1,740	1,870	830	1,040	6,250	795	660	1,870	1,490
5	6,650	1,490	1,610	1,800	1,680	2,520	910	6,650	1,220	660	1,610	1,440
6	3,770	1,610	1,610	3,420	1,610	3,250	3,420	7,250	1,610	630	1,610	1,380
7	3,000	1,610	1,610	4,130	1,490	1,120	2,300	4,690	1,490	520	3,080	1,380
8	2,000	1,610	1,610	3,340	1,490	990	1,490	2,450	1,320	470	5,260	1,380
9	2,300	1,680	1,320	5,260	1,490	870	1,080	1,740	1,170	470	8,070	1,380
10	2,150	2,150	1,380	6,850	1,490	870	1,270	2,150	830	1,170	10,700	1,380
11	2,010	2,600	1,610	6,450	1,380	910	1,320	2,150	830	3,770	9,340	1,380
12	1,870	3,500	1,610	5,650	1,270	795	1,120	1,490	760	1,870	4,690	1,380
13	1,870	4,500	1,610	7,450	1,270	830	910	1,610	795	1,870	3,250	1,380
14	1,870	3,680	1,610	6,450	1,380	830	7,250	1,320	760	1,170	2,600	1,380
15	1,870	2,840	1,610	5,450	2,010	760	7,250	1,040	795	950	2,450	1,870
16	1,740	2,600	1,490	4,500	1,440	725	4,130	1,170	660	870	2,150	3,590
17	1,740	2,450	1,380	3,590	1,270	690	5,650	1,320	630	910	2,010	2,760
18	1,740	2,220	1,380	3,000	1,170	660	5,260	1,380	600	3,080	2,150	2,450
19	1,610	2,010	1,380	2,760	1,170	760	4,130	2,300	910	4,880	2,450	2,150
20	1,610	2,080	1,380	3,080	1,170	1,040	2,150	2,450	870	3,590	1,870	2,600
21	1,610	2,600	1,610	2,840	1,270	1,680	1,610	1,440	1,080	2,150	1,870	5,850
22	1,610	2,450	1,610	2,380	1,320	1,550	2,300	1,120	990	3,420	1,610	9,780
23	1,610	2,220	1,610	2,150	1,490	1,270	2,760	1,040	870	8,700	1,610	21,100
24	1,610	2,010	1,380	2,010	1,680	1,270	1,870	910	1,170	5,260	1,490	18,600
25	1,490	1,870	1,380	1,870	2,600	1,040	1,610	950	1,080	3,080	1,610	17,200
26	1,490	1,740	1,940	1,870	2,300	910	2,600	1,120	910	1,870	1,490	13,200
27	1,490	1,740	7,050	1,740	1,490	1,120	2,150	1,440	830	2,450	1,490	8,700
28	1,490	1,740	6,050	1,870	1,220	1,040	1,380	3,080	760	12,500	1,740	6,450
29	1,490	.....	3,770	1,940	1,080	870	1,080	1,320	725	12,000	2,010	5,650
30	1,490	.....	2,760	2,010	1,080	795	950	910	690	3,420	2,010	4,500
31	1,490	.....	2,380	.....	990	.....	910	1,040	.....	2,150	.....	6,450

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

Monthly discharge of Oconee River at Frayleys Ferry, near Milledgeville, Ga., for 1911.

[Drainage area, 2,840 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
January	7,650	1,490	2,330	0.820	0.95	A.
February	4,500	1,490	2,180	.768	.80	A.
March	7,050	1,320	2,020	.711	.82	A.
April	7,450	1,740	3,390	1.19	1.33	A.
May	2,600	990	1,520	.535	.62	A.
June	3,250	660	1,090	.384	.43	A.
July	7,250	760	2,340	.824	.95	A.
August	7,250	910	2,330	.820	.95	A.
September	1,610	600	951	.335	.37	A.
October	12,500	470	2,790	.982	1.13	A.
November	10,700	1,490	2,970	1.05	1.17	A.
December	21,100	1,380	4,940	1.74	2.01	B.
The year	21,100	470	2,410	.849	11.53	

OCONEE RIVER AT DUBLIN, GA.

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

Records available.—February 11, 1898, to December 31, 1911; fragmentary records prior to 1898.

Drainage area.—4,180 square miles.

Gage.—Vertical timber attached to the downstream side of the central or turnspan 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.

Discharge measurements of Oconee River at Dublin, Ga., in 1911.

Date.	Hydrographer.	Gage height.	Discharge.
		Feet.	*Sec.-ft.*
July 28	R. E. Robertson	1.70	3,020
28	do	1.50	2,820

Daily gage height, in feet, of Oconee River at Dublin, Ga., for 1911.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.7	0.6	1.0	3.6	1.0	−0.4	−0.7	−0.3	2.1	−1.0	7.8	2.4
2	1.4	6	.9	2.4	1.1	− .4	− .9	− .5	3.6	−1.0	4.8	2.3
3	1.7	.6	.9	1.8	1.2	− .6	−1.0	− .3	2.4	−1.1	2.4	1.8
4	3.6	.6	.9	1.6	1.4	− .8	−1.0	4.9	1.8	−1.1	1.9	1.4
5	6.5	.6	.9	1.4	1.2	− .9	− .9	6.7	1.4	−1.1	1.5	1.2
6	7.0	.6	.9	1.8	.9	− .9	− .2	6.6	− .2	−1.2	1.2	.9
7	7.4	.6	.8	2.1	.8	2.0	− .2	6.6	− .4	−1.2	1.8	.7
8	4.4	.7	.8	3.3	.2	2.1	1.8	6.6	1.4	−1.3	1.2	.7
9	3.7	.9	.7	4.2	.1	.4	.9	5.5	1.5	−1.3	4.2	.4
10	2.5	.9	.7	4.0	.2	.3	.4	5.0	− .2	−1.4	6.0	.3
11	2.2	1.0	.7	5.9	.1	− .1	.3	1.1	− .5	−1.4	6.9	.3
12	1.8	1.2	.6	7.6	− .2	− .3	.3	1.6	− .5	1.4	7.7	.3
13	1.5	2.9	.6	7.5	− .2	− .4	.3	.9	− .6	1.4	8.5	.3
14	1.5	5.1	.9	7.6	− .2	− .4	.4	.8	− .7	1.4	9.0	.3
15	1.5	5.2	.7	7.8	− .3	− .5	2.2	.8	− .7	1.3	6.5	.3
16	1.4	4.1	.7	8.1	− .1	− .6	6.6	.0	− .8	− .1	6.3	.8
17	1.4	3.1	.7	8.2	.3	− .6	6.8	− .2	− .8	− .2	2.3	5.9
18	1.3	2.7	.7	7.2	.2	− .5	6.4	− .3	− .8	− .2	1.5	7.0
19	1.0	2.4	.6	4.9	− .2	− .5	6.4	− .1	− .8	.9	1.2	7.4
20	1.0	1.0	.4	4.5	− .3	− .5	6.0	.7	− .8	3.9	1.3	4.7
21	.9	.7	.4	4.3	− .3	− .5	4.1	2.4	− .5	5.3	1.6	4.1
22	.9	1.9	.4	3.3	− .4	− .2	1.7	1.2	− .4	3.4	1.4	5.8
23	.7	2.2	.6	2.7	− .4	.3	.9	.2	.1	2.8	.9	9.9
24	.4	2.1	.5	1.9	− .3	.4	1.8	− .1	.5	3.9	.8	11.6
25	.7	1.8	.4	2.4	− .2	.4	1.9	− .5	.1	6.0	.3	15.3
26	.9	1.7	.6	1.8	− .1	.3	.9	− .8	.2	6.4	.4	19.0
27	.8	1.2	1.7	1.3	1.5	− .4	.4	− .9	− .1	3.2	.3	19.9
28	.7	1.1	5.4	1.1	1.0	− .5	1.8	− .9	− .2	2.4	.3	17.9
29	.6	.....	7.0	1.0	.9	− .2	.7	.9	− .4	4.2	.4	15.8
30	.6	.....	7.3	1.0	.1	− .4	.1	1.7	− .6	6.6	.9	15.1
31	.6	.....	5.9	.....	.4	.....	.1	.7	.....	7.2	.....	13.1

Daily discharge, in second-feet, of Oconee River at Dublin, Ga., for 1911.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	2,180	2,100	2,420	4,720	2,420	1,400	1,220	1,460	3,310	1,040	9,660	3,580
2	2,740	2,100	2,340	3,580	2,500	1,400	1,100	1,340	4,720	1,040	5,980	3,490
3	2,980	2,100	2,340	3,060	2,580	1,280	1,040	1,460	3,580	980	3,580	3,060
4	4,720	2,100	2,340	2,900	2,740	1,160	1,040	6,090	3,060	980	3,140	2,740
5	7,960	2,100	2,340	2,740	2,580	1,100	1,100	8,210	2,740	980	2,820	2,580
6	8,600	2,100	2,340	3,060	2,340	1,100	1,530	8,080	1,530	920	2,580	2,340
7	9,120	2,100	2,260	3,310	2,260	3,220	1,530	8,080	1,400	920	3,060	2,180
8	5,540	2,180	2,260	4,420	1,810	3,310	3,060	8,080	2,740	860	2,580	2,180
9	4,820	2,340	2,180	5,320	1,740	1,950	2,340	6,760	2,820	860	5,320	1,950
10	3,670	2,340	2,180	5,120	1,810	1,880	1,950	6,200	1,530	800	7,360	1,880
11	3,400	2,420	2,180	7,240	1,740	1,600	1,880	2,500	1,340	800	8,470	1,880
12	3,060	2,580	2,100	9,380	1,530	1,460	1,880	2,900	1,340	2,740	9,520	1,880
13	2,820	4,030	2,100	9,250	1,530	1,400	1,880	2,340	1,280	2,740	10,600	1,880
14	2,820	6,310	2,340	9,380	1,530	1,400	1,950	2,260	1,220	2,740	11,400	1,880
15	2,820	6,420	2,180	9,660	1,460	1,340	3,400	2,260	1,220	2,660	7,960	1,880
16	2,740	5,220	2,180	10,100	1,600	1,280	8,080	1,670	1,160	1,600	7,720	2,260
17	2,740	4,220	2,180	10,200	1,880	1,280	8,340	1,530	1,160	1,530	3,490	7,240
18	2,660	3,850	2,180	8,860	1,810	1,340	7,840	1,460	1,160	1,530	2,820	8,600
19	2,420	3,580	2,100	6,090	1,530	1,340	7,840	1,600	1,160	2,340	2,580	9,120
20	2,420	2,420	1,950	5,650	1,460	1,340	7,360	2,180	1,160	5,020	2,660	5,870
21	2,340	2,180	1,950	5,430	1,460	1,340	5,220	3,580	1,340	6,530	2,900	5,220
22	2,340	3,140	1,950	4,420	1,400	1,530	2,980	2,580	1,400	4,520	2,740	7,120
23	2,180	3,400	2,100	3,850	1,400	1,880	2,340	1,810	1,740	3,940	2,340	12,800
24	1,950	3,310	2,020	3,140	1,460	1,950	3,060	1,600	2,020	5,020	2,260	15,700
25	2,180	3,060	1,950	3,580	1,530	1,950	3,140	1,340	1,740	7,360	1,880	22,600
26	2,340	2,980	2,100	3,060	1,600	1,880	2,340	1,160	1,810	7,840	1,950	30,200
27	2,260	2,580	2,980	2,660	2,820	1,400	1,950	1,100	1,600	4,320	1,880	32,100
28	2,180	2,500	6,640	2,500	2,420	1,340	3,060	1,100	1,530	3,580	1,880	27,900
29	2,100	.....	8,600	2,420	2,340	1,530	2,180	2,340	1,400	5,320	1,950	23,600
30	2,100	.....	8,990	2,420	1,740	1,400	1,740	2,980	1,280	8,080	2,340	22,200
31	2,100	.....	7,240	.....	1,950	.....	1,740	2,180	.....	8,860	.....	18,400

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 1911.

[Drainage area, 4,180 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
January	9,120	1,950	3,360	0.804	0.93	A.
February	6,420	2,100	3,060	.732	.76	A.
March	8,990	1,950	2,940	.703	.81	A.
April	10,200	2,420	5,250	1.26	1.41	A.
May	2,820	1,400	1,900	.455	.52	B.
June	3,310	1,100	1,590	.380	.42	B.
July	8,340	1,040	3,100	.742	.86	B.
August	8,210	1,100	3,170	.758	.87	B.
September	4,720	1,160	1,850	.443	.49	B.
October	8,860	800	3,180	.761	.88	B.
November	11,400	1,880	4,510	1.08	1.20	A.
December	32,100	1,880	9,240	2.21	2.55	B.
The year	32,100	800	3,600	.861	11.70	

EASTERN GULF OF MEXICO DRAINAGE BASINS.

APALACHICOLA RIVER BASIN.

CHATTAHOOCHEE RIVER NEAR NORCROSS, GA.

Location.—At Medlocks 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, 1911.

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 the 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.

Discharge measurements of Chattahoochee River near Norcross, Ga., in 1911.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Mar. 15	M. R. Hall	2.36	1,340	Sept. 29	M. R. Hall	1.68	767
Apr. 13	do	6.36	5,360	29	R. E. Robertson	1.68	803
13	do	6.30	5,370				

Daily gage height, in feet, of Chattahoochee River near Norcross, Ga., for 1911.

[W. O. Medlock, observer.]

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.4	2.4	2.5	2.6	3.3	2.45	2.0	2.0	1.9	1.25	2.2	2.5
2	3.0	2.45	2.6	2.55	3.35	2.35	2.2	2.6	1.8	1.02	2.2	2.4
3	7.8	2.3	2.55	2.5	3.55	2.3	1.85	2.9	1.55	1.45	2.0	2.3
4	9.4	2.3	2.25	2.5	3.2	2.3	1.95	5.6	1.6	1.3	2.0	2.3
5	5.2	2.25	2.3	5.6	3.05	2.2	3.0	5.2	1.8	1.8	1.52	2.4
6	3.8	1.8	2.3	11.0	3.05	2.2	2.3	3.2	2.5	1.35	1.9	2.3
7	3.4	2.45	2.35	6.4	3.0	2.2	2.1	2.6	3.4	1.4	5.0	2.4
8	3.15	2.35	2.4	8.6	2.9	2.2	2.4	2.5	2.2	1.35	3.8	2.4
9	3.1	2.65	2.3	8.6	2.85	2.2	2.5	2.2	2.0	1.2	6.9	2.0
10	3.0	2.8	2.3	6.2	2.85	2.15	2.0	2.0	1.85	2.8	6.0	2.1
11	2.7	2.8	2.3	4.8	2.75	2.1	2.6	1.9	1.5	6.6	3.6	1.7
12	2.7	3.0	2.2	5.1	2.75	2.05	2.4	1.9	1.9	3.3	3.0	2.3
13	2.6	2.95	2.2	6.4	2.65	2.0	2.2	1.7	1.9	2.6	2.9	2.2
14	2.5	2.8	2.2	5.8	2.6	1.95	2.4	1.8	1.8	2.2	2.9	2.1
15	2.45	2.75	2.2	5.6	2.6	1.95	3.0	1.9	1.7	1.95	2.7	2.4
16	2.4	2.7	2.15	4.8	2.6	1.9	3.4	1.85	1.55	1.55	2.6	2.5
17	2.4	2.55	2.2	4.3	2.55	1.88	4.0	1.9	1.6	3.9	2.5	2.7
18	2.4	2.6	2.15	4.0	2.5	1.95	3.8	1.85	1.35	7.4	2.6	2.7
19	2.5	2.3	2.1	3.8	2.55	2.5	2.5	1.95	1.4	4.3	2.7	2.6
20	2.4	3.1	2.8	4.4	2.55	2.95	2.2	1.9	1.6	2.9	2.7	2.5
21	2.3	3.2	2.85	4.0	2.8	2.4	2.2	1.7	1.6	2.6	2.5	2.9
22	2.3	2.9	2.45	3.65	3.0	2.4	2.2	1.75	1.7	2.5	2.4	5.4
23	2.35	2.8	2.3	3.5	3.3	2.15	2.2	1.65	1.7	2.5	2.3	11.2
24	2.3	2.55	2.25	3.35	3.5	2.05	2.3	1.65	1.6	2.6	2.3	6.4
25	2.35	2.5	2.2	3.25	3.25	2.1	2.6	1.7	1.35	2.3	2.5	4.8
26	2.3	2.25	2.5	3.15	2.8	2.0	2.5	1.6	1.55	2.1	2.3	4.2
27	2.3	2.3	4.4	3.15	2.6	1.95	2.0	1.55	1.65	2.1	2.2	5.0
28	2.15	2.5	4.3	3.2	2.5	1.88	1.9	1.48	1.75	2.2	2.4	5.6
29	2.1	.....	3.2	3.4	2.6	2.1	1.85	1.7	1.55	2.0	2.7	4.0
30	2.2	.....	3.0	3.55	2.6	1.98	1.72	1.75	1.22	1.5	2.8	3.6
31	2.4	.....	2.8	.....	2.5	.....	1.8	1.8	.....	1.9	.....	4.0

Daily discharge, in second-feet, of Chattahoochee River near Norcross, Ga., for 1911.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,320	1,320	1,400	1,480	2,070	1,360	1,000	1,000	925	455	1,160	1,400
2	1,800	1,360	1,480	1,440	2,120	1,280	1,160	1,480	850	294	1,160	1,320
3	7,370	1,240	1,440	1,400	2,300	1,240	888	1,720	665	595	1,000	1,240
4	9,700	1,240	1,200	1,400	1,980	1,240	962	4,470	700	490	1,000	1,240
5	3,990	1,200	1,240	4,470	1,840	1,160	1,800	3,990	850	850	644	1,320
6	2,520	850	1,240	12,100	1,840	1,160	1,240	1,980	1,400	525	925	1,240
7	2,160	1,360	1,280	5,470	1,800	1,160	1,080	1,480	2,160	560	3,750	1,320
8	1,940	1,280	1,320	8,500	1,720	1,160	1,320	1,400	1,160	525	2,520	1,320
9	1,890	1,520	1,240	8,500	1,680	1,160	1,400	1,160	1,000	420	6,120	1,000
10	1,800	1,640	1,240	5,210	1,680	1,120	1,000	1,000	888	1,640	4,950	1,080
11	1,560	1,640	1,240	3,530	1,600	1,080	1,480	925	630	5,730	2,340	775
12	1,560	1,800	1,160	3,870	1,600	1,040	1,320	925	925	2,070	1,800	1,240
13	1,480	1,760	1,160	5,470	1,520	1,000	1,160	775	925	1,480	1,720	1,160
14	1,400	1,640	1,160	4,710	1,480	962	1,320	850	850	1,160	1,720	1,080
15	1,360	1,600	1,160	4,470	1,480	962	1,800	925	775	962	1,560	1,320
16	1,320	1,560	1,120	3,530	1,480	925	2,160	888	665	665	1,480	1,400
17	1,320	1,440	1,160	3,000	1,440	910	2,700	925	700	2,610	1,400	1,560
18	1,320	1,480	1,120	2,700	1,400	962	2,520	888	525	6,810	1,480	1,560
19	1,400	1,240	1,080	2,520	1,440	1,400	1,400	962	560	3,000	1,560	1,480
20	1,320	1,890	1,640	3,100	1,440	1,760	1,160	925	700	1,720	1,560	1,400
21	1,240	1,980	1,680	2,700	1,640	1,320	1,160	775	700	1,480	1,400	1,720
22	1,240	1,720	1,360	2,380	1,800	1,320	1,160	812	775	1,400	1,320	4,230
23	1,280	1,640	1,240	2,250	2,070	1,120	1,160	738	775	1,400	1,240	12,400
24	1,240	1,440	1,200	2,120	2,250	1,040	1,240	738	700	1,480	1,240	5,470
25	1,280	1,400	1,160	2,020	2,020	1,080	1,480	775	525	1,240	1,400	3,530
26	1,240	1,200	1,400	1,940	1,640	1,000	1,400	700	665	1,080	1,240	2,900
27	1,240	1,240	3,100	1,940	1,480	962	1,000	665	738	1,080	1,160	3,750
28	1,120	1,400	3,000	1,980	1,400	910	925	616	812	1,160	1,320	4,470
29	1,080	.....	1,980	2,160	1,480	1,080	888	775	665	1,000	1,560	2,700
30	1,160	.....	1,800	2,300	1,480	985	790	812	434	630	1,640	2,340
31	1,320	.....	1,640	.....	1,400	.....	850	850	.....	925	.....	2,700

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 at Norcross, Ga., for 1911.

[Drainage area, 1,170 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
January	9,700	1,080	2,000	1.71	1.97	A.
February	1,980	850	1,470	1.26	1.31	A.
March	3,100	1,080	1,440	1.23	1.42	A.
April	12,100	1,400	3,620	3.09	3.45	A.
May	2,300	1,400	1,700	1.45	1.67	A.
June	1,760	910	1,130	.966	1.08	A.
July	2,700	790	1,320	1.13	1.30	A.
August	4,470	616	1,190	1.02	1.18	A.
September	2,160	434	821	.702	.78	A.
October	6,810	294	1,470	1.26	1.45	A.
November	6,120	644	1,780	1.52	1.70	A.
December	12,400	775	2,310	1.97	2.27	A.
The year	12,400	294	1,690	1.44	19.58	

CHATTAHOOCHEE RIVER AT WEST POINT, GA.

Location.—At the Montgomery Street Bridge, West Point, Ga., half a mile below the mouth of Oseligee Creek and about 3 miles above Long Cane Creek.

Records available.—July 30, 1896, to December 31, 1911.

Drainage area.—3,300 square miles.

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

Channel.—Deep; current sluggish at low stages. Bottom shifts considerably, but the shifting does not affect discharge rating. The right bank is high and overflows only at high water, when most of the town is flooded; the left bank is somewhat lower and overflows for about 800 feet at a gage height of 20 feet.

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

Artificial control.—Some fluctuations are caused by the operation of power plants above, mainly the Bull Sluice plant near Atlanta, Ga., but these are of little consequence compared to the backwater from the Langdale Dam 4 miles below. The height of the dam was raised in 1909, but the effect was fairly well cared for in the records of 1909 and 1910. During the low water of 1911, however, with increased height of flashboards, the backwater effect, varying with the use of water at Langdale, was so great that reasonably good estimates of flow can not be made.

Accuracy.—Discharge rating is not reliable (see "Artificial control") and no discharge estimates are given for 1911.

Discharge measurements of Chattahoochee River at West Point, Ga., in 1911.

Date.	Hydrographer.	Gage height.	Discharge.
		Feet.	*Sec.-ft.*
Feb. 18	M. R. Hall	3.58	4,190
18	....do	3.57	3,980
Apr. 6	....do	8.18	14,100
7	....do	8.49	15,100

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 half a 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, 1911.

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.

Accuracy.—No rating has yet been developed.

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

The following discharge measurement was made by R. E. Robertson:
October 21, 1911: Gage height, 2.33 feet; discharge, 4,780 second-feet.

Daily gage height, in feet, of Chattahoochee River at Alaga, Ala., for 1911.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	4.0	3.4	3.9	6.5	4.6	2.2	2.1	1.4	0.9	0.4	3.0	2.9
2	4.4	3.3	3.7	5.4	4.8	2.0	1.9	1.1	.8	.5	2.3	3.0
3	4.7	3.3	3.5	4.4	5.4	1.8	1.8	2.5	.8	.1	1.5	2.6
4	11.9	3.3	3.4	3.9	6.9	1.7	1.7	8.1	.7	— .4	1.8	2.8
5	18.2	3.0	3.3	3.7	5.7	1.7	1.8	10.1	1.1	— .1	1.6	2.4
6	18.5	3.0	3.3	5.5	4.9	1.6	2.0	6.8	1.3	.2	1.6	2.1
7	16.1	3.1	3.3	8.2	4.4	1.8	2.3	5.5	2.4	.1	1.2	2.1
8	13.2	3.6	3.4	12.8	4.0	1.8	3.0	4.5	2.8	— .3	1.4	2.1
9	9.8	4.6	3.1	13.7	3.6	1.4	2.8	5.3	2.5	— .6	2.1	2.0
10	7.4	5.2	3.2	15.3	3.6	1.2	2.7	4.2	2.4	— .6	3.2	1.7
11	6.8	4.6	3.1	15.0	3.3	1.2	2.5	3.5	1.6	— .5	7.6	1.7
12	5.9	5.6	3.1	16.2	3.2	1.3	3.4	2.9	1.4	.1	10.8	1.5
13	5.5	7.6	2.9	14.9	2.9	1.1	3.3	2.4	1.5	1.2	9.4	1.6
14	5.1	10.1	3.4	12.3	2.7	1.1	2.9	2.3	1.4	.0	8.2	1.9
15	4.8	10.5	7.0	10.3	2.5	1.4	5.1	2.2	1.2	.2	5.8	1.9
16	4.5	8.2	3.0	9.0	.....	1.1	6.2	2.2	1.0	3.5	3.9	2.9
17	4.4	6.8	2.8	8.7	2.6	.7	7.0	2.6	.9	2.3	3.0	2.9
18	4.3	6.1	2.7	8.0	2.6	.7	6.8	1.8	.6	2.2	3.0	2.6
19	4.0	5.3	2.5	7.4	2.5	.7	8.4	2.0	.2	1.9	2.8	2.3
20	3.8	4.8	2.6	7.1	2.5	.8	8.8	3.8	— .3	2.0	2.3	1.9
21	3.6	5.4	2.5	7.5	2.5	.8	8.9	4.7	.6	2.2	2.2	4.6
22	3.8	5.6	2.8	8.1	2.4	1.1	7.4	3.6	1.3	4.6	2.4	7.7
23	3.7	6.0	3.2	7.6	2.5	2.0	5.7	2.6	1.8	5.4	2.6	20.3
24	3.5	5.2	3.2	6.0	3.9	3.5	4.8	2.0	1.5	3.6	2.2	25.0
25	3.5	4.8	3.3	5.7	4.7	3.0	4.7	1.4	1.3	3.1	2.0	22.1
26	3.7	4.5	3.5	5.1	5.9	2.2	3.9	1.0	.7	1.7	2.3	20.1
27	3.6	4.2	6.7	4.6	5.0	1.6	3.1	.9	.2	1.3	1.6	17.3
28	3.5	3.9	6.6	4.4	4.1	1.7	2.3	.9	.4	1.4	1.9	13.7
29	3.4	.....	11.1	4.4	3.5	2.3	2.3	.8	.7	1.5	3.1	11.9
30	3.2	.....	8.9	4.6	2.9	2.3	2.1	.4	.4	3.4	4.4	11.0
31	3.2	.....	7.1	.....	2.7	.....	1.8	.5	.....	2.3	.....	9.7

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, 1911.

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 R. E. Robertson:
September 16, 1911: Gage height, 0.00 feet; discharge, 203 second-feet.

Daily gage height, in feet, of Flint River near Woodbury, Ga., for 1911.

Day.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	.....	0.9	1.0	0.9	0.3	0.2	0.6	0.1	0.0	1.2	0.7
2	0.7	.9	.9	1.2	.2	.2	2.9	.1	—.2	1.0	.7
3	.8	.9	.8	1.0	.2	.0	4.6	.1	—.2	.7	.7
4	.8	.8	.8	.9	.2	.0	3.7	.0	—.2	.6	.6
5	.8	.8	.9	.7	.2	.0	2.3	.1	—.2	.5	.6
6	.8	.8	2.4	.7	.1	.7	1.8	.5	—.2	.5	.6
7	1.0	.8	2.9	.6	.1	.3	.9	.5	—.3	.7	.6
8	1.1	.8	2.7	.6	.3	.3	.7	.5	—.4	.9	.6
9	1.1	.8	2.0	.6	.1	.7	.7	.4	—.4	2.1	.6
10	1.5	.8	2.1	.5	.1	.4	.7	.2	—.4	2.5	.6
11	1.6	.8	2.3	.5	.1	.5	.6	.1	—.1	2.9	.6
12	2.3	.7	2.0	.5	.0	.6	.6	.0	.1	2.7	.6
13	2.5	.7	2.2	.4	.1	.6	.6	.0	.4	1.8	.6
14	2.4	.7	2.1	.4	.0	1.2	.6	.0	.3	1.5	.6
15	2.2	.7	1.8	.4	.0	1.2	.6	.2	.2	1.1	.6
16	1.7	.7	1.5	.4	.0	1.5	.4	.1	.1	1.0	.7
17	1.5	.6	1.3	.3	.0	1.8	1.2	.0	.3	.9	.8
18	1.3	.6	1.1	.3	.0	1.6	1.6	.2	.6	.8	.8
19	1.2	.6	1.0	.3	.0	1.6	1.3	.2	.7	.8	.8
20	1.4	.7	1.4	.4	.5	1.4	.8	.5	.9	.8	.8
21	1.5	.9	1.4	.4	.9	.9	.6	.5	.6	.7	2.2
22	1.3	.8	1.2	.5	.8	.7	.5	.2	.7	.7	2.7
23	1.2	.8	1.0	1.0	1.0	.7	.3	.2	.8	.7	4.8
24	1.1	.7	.9	2.1	.6	.7	.5	.1	.7	.6	5.5
25	1.0	.7	.8	1.8	.3	.6	.3	.1	.5	.6	5.0
26	.9	.8	.8	1.2	.2	.5	.2	.2	.4	.6	4.0
27	.9	2.3	.7	.9	.2	.5	.2	.1	.4	.6	3.2
28	.9	2.5	.7	.6	.6	.5	.1	.1	1.1	.7	2.8
29	.....	2.2	.8	.5	.5	.2	.1	.0	1.5	.8	2.5
30	.....	1.7	1.1	.4	.5	.1	.1	.0	1.6	.8	2.0
31	.....	1.3	.....	.3	.....	.1	.1	.....	1.3	.....	1.7

Daily discharge, in second-feet, of Flint River near Woodbury, Ga., for 1911.

Day.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	[a] 548	700	785	700	323	279	483	239	203	955	548
2	548	700	700	970	279	279	3,140	239	140	785	548
3	620	700	620	785	279	203	5,820	239	140	548	548
4	620	620	620	700	279	203	4,320	203	140	483	483
5	620	620	700	548	279	203	2,310	239	140	424	483
6	620	620	2,440	548	239	548	1,640	424	140	424	483
7	785	620	3,140	483	239	323	700	424	112	548	483
8	875	620	2,860	483	323	323	548	424	86	700	483
9	875	620	1,900	483	239	548	548	371	86	1,810	483
10	1,280	620	2,040	424	239	371	548	279	86	2,310	483
11	1,400	620	2,310	424	239	424	483	239	170	2,860	483
12	2,310	548	1,900	424	203	483	483	203	239	2,580	483
13	2,580	548	2,180	371	239	483	483	203	371	1,490	483
14	2,440	548	2,040	371	203	970	483	203	323	1,220	483
15	2,180	548	1,640	371	203	970	483	279	279	870	483
16	1,520	548	1,280	371	203	1,280	371	239	239	785	548
17	1,280	483	1,070	323	203	1,640	970	203	323	700	620
18	1,070	483	875	323	203	1,400	1,400	279	483	620	620
19	970	483	785	323	203	1,400	1,070	279	548	620	620
20	1,180	548	1,180	371	424	1,180	620	424	700	620	620
21	1,280	700	1,180	371	700	700	483	424	483	548	1,930
22	1,070	620	970	424	620	548	424	279	548	548	2,580
23	970	620	785	785	785	548	323	279	620	548	5,840
24	875	548	700	2,040	483	548	424	239	548	483	7,150
25	785	548	620	1,640	323	483	323	239	424	483	6,200
26	700	620	620	970	279	424	279	279	371	483	4,500
27	700	2,310	548	700	279	424	279	239	371	483	3,300
28	700	2,580	548	483	483	424	239	239	870	548	2,720
29	.....	2,180	620	424	424	279	239	203	1,220	620	2,310
30	.....	1,520	875	371	424	239	239	203	1,310	620	1,700
31	.....	1,070	.....	323	.....	239	239	.....	1,040	.....	1,400

[a] Estimated.

NOTE.—Daily discharge computed from a rating curve fairly well defined above 200 second-feet.

Monthly discharge of Flint River near Woodbury, Ga., for 1911.

[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	.....	.....	[a]1,030	0.945	1.09	C.
February	2,580	548	1,120	1.03	1.07	B.
March	2,580	483	810	.743	.86	B.
April	3,140	548	1,280	1.17	1.30	B.
May	2,040	323	591	.542	.62	B.
June	785	203	328	.301	.34	B.
July	1,640	203	592	.543	.63	B.
August	5,820	239	980	.899	1.04	B.
September	424	203	275	.252	.28	B.
October	1,310	86	411	.377	.43	C.
November	2,860	424	891	.817	.91	B.
December	7,150	483	1,620	1.49	1.72	B.
The year	7,150	86	827	.759	10.29	

[a] Estimated by comparison with other Flint River stations.

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, 1911.

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.

Cooperation.—Gage observer paid by the Central Georgia Power Co.

Discharge measurements of Flint River near Culloden, Ga., in 1911.

Date.	Hydrographer.	Gage height.	Discharge.
		Feet.	*Sec.-ft.*
June 29	M. R. Hall	1.69	512
Sept. 15	R. E. Robertson	1.25	279

NOTE.—Measurements made from boat.

Daily gage height, in feet, of Flint River near Culloden, Ga., for 1911.

[Walter Blasengame, observer.]

Day.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Day.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.65	1.4	1.45	1.25	2.7	2.35	16	2.7	1.9	1.55	1.35	2.6	2.4
2	1.4	2.6	1.4	1.2	2.55	2.3	17	3.4	1.2	1.4	1.3	2.55	2.5
3	1.4	6.7	1.5	1.25	2.35	2.25	18	3.2	2.8	1.55	2.4	2.4	2.45
4	1.2	8.1	2.55	1.2	1.9	2.1	19	3.9	3.0	1.7	2.15	2.3	2.4
5	1.2	5.4	1.5	1.1	2.0	2.15	20	3.2	2.7	1.65	1.65	2.35	2.85
6	1.5	3.5	1.6	1.15	1.9	2.05	21	2.7	2.3	1.8	1.5	2.2	5.4
7	2.0	2.7	1.55	1.2	2.4	2.0	22	2.3	2.1	1.75	9.4	2.15	5.9
8	1.6	2.3	1.8	1.0	2.45	1.95	23	2.3	1.8	2.0	5.1	2.0	9.9
9	1.5	2.1	1.7	1.15	3.4	2.0	24	2.3	1.6	1.7	3.4	2.05	9.0
10	2.0	2.8	1.65	1.2	4.2	2.05	25	2.1	1.9	1.65	2.55	2.1	7.8
11	1.9	2.3	1.55	2.1	4.1	2.0	26	2.0	1.7	1.4	2.4	1.9	6.5
12	2.2	2.25	1.4	1.3	4.6	2.0	27	1.8	1.6	1.55	2.0	2.0	5.7
13	2.4	2.4	1.45	1.2	4.5	2.0	28	1.8	1.55	1.45	2.3	2.15	5.0
14	2.4	2.3	1.5	1.15	3.1	2.05	29	1.6	1.5	1.2	3.2	2.2	4.9
15	3.2	2.1	1.6	1.5	2.9	2.1	30	1.6	1.45	1.3	3.4	2.4	4.1
							31	1.55	1.5	.....	3.0	.....	4.6

Daily discharge, in second-feet, of Flint River near Culloden, Ga., for 1911.

Day.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Day.	July.	Aug.	Sept.	Oct.	Nov.	Dec..
1	504	360	388	282	1,310	1,010	16	1,310	665	444	334	1,220	1,050
2	360	1,220	360	257	1,180	970	17	2,010	257	360	307	1,180	1,130
3	360	6,950	415	282	1,010	930	18	1,790	1,400	444	1,050	1,050	1,090
4	257	9,840	1,180	257	665	810	19	2,580	1,590	534	850	970	1,050
5	257	4,670	415	210	735	850	20	1,790	1,310	504	504	1,010	1,440
6	415	2,120	473	234	665	772	21	1,310	970	598	415	890	4,670
7	735	1,310	444	257	1,050	735	22	970	810	566	13,000	850	5,510
8	473	970	598	165	1,090	700	23	970	598	735	4,200	735	14,200
9	415	810	534	234	2,010	735	24	970	473	534	2,010	772	12,000
10	735	1,400	504	257	2,960	772	25	810	665	504	1,180	810	9,170
11	665	970	444	810	2,830	735	26	735	534	360	1,050	665	6,580
12	890	930	360	307	3,490	735	27	598	473	444	735	735	5,170
13	1,050	1,050	388	257	3,350	735	28	598	444	388	970	850	4,050
14	1,050	970	415	234	1,690	772	29	473	415	257	1,790	890	3,910
15	1,790	810	473	415	1,490	810	30	473	388	307	2,010	1,050	2,830
							31	444	415	.....	1,590	.....	3,490

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 1911.

[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.		
July	2,580	257	896	0.448	0.52	A.
August	9,840	257	1,480	.740	.85	B.
September	1,180	257	479	.240	.27	A.
October	13,000	165	1,180	.590	.68	B.
November	3,490	665	1,310	.655	.73	B.
December	14,200	700	2,880	1.44	1.66	C.

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 Creek.

Records available.—October 1, 1904, to December 31, 1911.

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 gage heights are very uncertain and the data should be used with caution.

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

Discharge measurements of Flint River near Montezuma, Ga., in 1911.

Date.	Hydrographer.	Gage height.	Discharge.
		Feet.	*Sec.-ft.*
July 25	M. R. Hall	2.98	1,690
26	R. E. Robertson	2.74	1,610
Oct. 25	....do	9.30	6,080
Dec. 9	....do	2.47	1,340

Daily gage height, in feet, of Flint River near Montezuma, Ga., for 1911.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	5.0	3.2	3.1	5.7	3.0	1.9	1.6	1.3	1.4	0.9	4.7	3.6
2	5.4	3.0	3.3	4.4	3.2	1.7	1.6	1.5	1.4	.8	4.2	3.3
3	5.9	3.4	3.0	3.8	3.5	1.7	1.3	4.3	1.3	.8	3.8	3.1
4	6.2	3.7	2.8	3.5	4.0	1.5	1.3	7.0	1.3	.7	3.3	2.9
5	5.7	4.1	2.5	3.4	3.5	1.6	1.7	8.3	1.6	.7	2.9	2.9
6	5.3	4.4	2.4	3.7	3.1	1.8	1.7	9.3	2.2	.6	2.6	2.6
7	5.0	4.9	2.2	5.3	2.8	1.6	1.4	9.2	1.7	.6	2.7	2.6
8	5.7	4.6	2.5	6.6	2.5	1.5	1.7	5.1	1.8	.6	3.2	2.5
9	6.2	5.1	2.8	7.5	2.4	1.3	1.7	3.5	1.9	.6	3.6	2.5
10	5.6	5.7	3.0	7.6	2.3	1.3	1.5	3.0	1.4	.5	4.6	2.4
11	4.9	5.9	3.3	7.0	2.2	1.5	1.8	5.0	1.6	.6	6.1	2.4
12	4.3	6.2	3.1	6.7	2.2	1.3	2.4	3.7	1.4	1.1	6.5	2.4
13	4.0	6.5	2.8	7.0	2.1	1.3	2.5	3.2	1.2	1.5	6.8	2.4
14	3.6	6.7	3.0	7.1	2.0	1.3	2 6	3.0	1.1	1.3	6.6	2.4
15	3.9	6.3	2.7	6.9	2.0	1.1	3.4	3.0	1.0	1.2	5.3	2.4
16	3.5	5.8	2.9	6.6	2.0	1.0	.....	2.7	1.0	1.2	4.5	3.8
17	3.0	5.3	2.6	5.7	1.8	.9	.....	2.4	.9	1.2	3.9	4.8
18	3.4	5.0	2.5	5.0	1.9	.9	.....	2.5	1.1	2.1	3.4	4.4
19	3.7	4.6	2.3	4.4	1.8	.9	5.2	3.4	1.0	2.7	3.3	4.1
20	3.9	4.1	2.4	4.2	1.7	.8	5.1	4.1	1.4	2.8	3.5	3.7
21	4.2	3.8	2.5	4.2	2.0	1.6	5.0	3.8	1.3	2.3	3.2	4.2
22	4.6	3.5	2.7	4.7	2.7	1.2	4.3	3.0	1.4	2.8	3.0	7.4
23	4.9	3.1	2.8	4.5	3.3	2.1	3.3	2.5	1.9	5.5	2.9	10.4
24	4.6	3.5	2.8	4.0	3.5	2.3	3.2	2.1	1.7	8.2	2.7	11.8
25	4.9	3.2	2.6	3.5	4.6	2.2	3.0	2.0	1.6	9.4	2.7	12.9
26	5.1	3.6	2.7	3.3	5.3	1.9	2.8	2.0	1.6	5.2	2.6	14.1
27	5.5	3.9	3.5	3.1	4.5	1.5	2.3	2.2	1.3	3.3	2.5	13.9
28	5.0	3.5	6.4	3.0	3.5	1.5	2.0	1.7	1.2	3.2	2.7	13.1
29	4.4	.....	8.0	3.0	2.6	1.8	1.8	1.5	1.1	4.2	3.3	12.0
30	4.0	.....	8.3	3.0	2.3	2.1	1.7	1.4	1.0	4.5	3.9	10.6
31	3.6	.....	7.1	.....	2.1	.....	1.5	1.4	.....	4.4	.....	8.9

Daily discharge, in second-feet, of Flint River near Montezuma, Ga., for 1911.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	2,810	1,780	1,730	3,270	1,680	1,140	1,020	900	940	740	2,620	1,980
2	3,070	1,680	1,830	2,440	1,780	1,060	1,020	980	940	700	2,320	1,830
3	3,410	1,880	1,680	2,090	1,930	1,060	900	2,380	900	700	2,090	1,730
4	3,620	2,040	1,580	1,930	2,200	980	900	4,210	900	660	1,830	1,630
5	3,270	2,260	1,430	1,880	1,930	1,020	1,060	5,240	1,020	660	1,630	1,630
6	3,000	2,440	1,380	2,040	1,730	1,100	1,060	6,080	1,280	620	1,480	1,480
7	2,810	2,740	1,280	3,000	1,580	1,020	940	6,000	1,060	620	1,530	1,480
8	3,270	2,560	1,430	3,910	1,430	980	1,060	2,880	1,100	620	1,780	1,430
9	3,620	2,880	1,580	4,600	1,380	900	1,060	1,930	1,140	620	1,980	1,430
10	3,200	3,270	1,680	4,680	1,330	900	980	1,680	940	580	2,560	1,380
11	2,740	3,410	1,830	4,210	1,280	980	1,100	2,810	1,020	620	3,550	1,380
12	2,380	3,620	1,730	3,980	1,280	900	1,380	2,040	940	820	3,840	1,380
13	2,200	3,840	1,580	4,210	1,230	900	1,430	1,780	860	980	4,060	1,380
14	1,980	3,980	1,680	4,280	1,180	900	1,480	1,680	820	900	3,910	1,380
15	2,140	3,690	1,530	4,140	1,180	820	1,880	1,680	780	860	3,000	1,380
16	1,930	3,340	1,630	3,910	1,180	780	[a]2,140	1,530	780	860	2,500	2,090
17	1,680	3,000	1,480	3,270	1,100	740	[a]2,410	1,380	740	860	2,140	2,680
18	1,880	2,810	1,430	2,810	1,140	740	[a]2,680	1,430	820	1,230	1,880	2,440
19	2,040	2,560	1,330	2,440	1,100	740	2,940	1,880	780	1,530	1,830	2,260
20	2,140	2,260	1,380	2,320	1,060	700	2,880	2,260	940	1,580	1,930	2,040
21	2,320	2,090	1,430	2,320	1,180	1,020	2,810	2,090	900	1,330	1,780	2,320
22	2,560	1,930	1,530	2,620	1,530	860	2,380	1,680	940	1,580	1,680	4,520
23	2,740	1,730	1,580	2,500	1,830	1,230	1,830	1,430	1,140	3,140	1,630	7,080
24	2,560	1,930	1,580	2,200	1,930	1,330	1,780	1,230	1,060	5,160	1,530	8,450
25	2,740	1,780	1,480	1,930	2,560	1,280	1,680	1,180	1,020	6,160	1,530	9,550
26	2,880	1,980	1,530	1,830	3,000	1,140	1,580	1,180	1,020	2,940	1,480	10,800
27	3,140	2,140	1,930	1,730	2,500	980	1,330	1,280	900	1,830	1,430	10,600
28	2,810	1,930	3,760	1,680	1,930	980	1,180	1,060	860	1,780	1,530	9,750
29	2,440	.....	5,000	1,680	1,480	1,100	1,100	980	820	2,320	1,830	8,650
30	2,200	.....	5,240	1,680	1,330	1,230	1,060	940	780	2,500	2,140	7,270
31	1,980	.....	4,280	.....	1,230	.....	980	940	.....	2,440	.....	5,740

[a] Discharge interpolated by comparison with other Flint River stations.

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 1911.

[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	3,620	1,680	2,630	0.974	1.12	B
February	3,980	1,680	2,560	.948	.99	B
March	5,240	1,280	1,950	.722	.83	B
April	4,680	1,680	2,850	1.06	1.18	B
May	3,000	1,060	1,590	.589	.68	B
June	1,330	700	984	.364	.41	C
July	2,940	900	1,510	.559	.64	C
August	6,080	900	2,090	.774	.89	B
September	1,280	740	938	.347	.39	C
October	6,160	580	1,550	.574	.66	C
November	4,060	1,430	2,170	.804	.90	B
December	10,800	1,380	3,840	1.42	1.64	B
The year	10,800	580	2,050	.759	10.33	

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, 1911 (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, 1911.

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 and reads in conformity with the United States Weather Bureau gage.

Channel.—The channel at and below the gage may be slightly shifting, 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 1911.

Date.	Hydrographer.	Gage height.	Discharge.
		Feet.	*Sec.-ft.*
Oct. 24	R. E. Robertson	2.55	4,340
Dec. 8	do	.90	2,630
8	do	1.04	2,750

NOTE.—Measurements made at the Georgia Northern Railway bridge.

Daily gage height, in feet, of Flint River, at Albany, Ga., for 1911.

[D. W. Brosnan, observer.]

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.6	1.0	1.1	4.9	0.9	0.4	−0.4	−0.4	0.0	−0.5	1.9	1.6
2	1.5	1.0	1.0	3.2	1.1	.3	− .4	.0	.5	− .8	2.0	2.1
3	1.9	1.0	1.0	2.6	1.1	.2	− .1	.3	.1	− .7	2.0	1.4
4	2.5	1.1	1.0	2.1	1.1	− .1	− .2	1.2	− .1	− .7	2.0	1.8
5	2.5	1.3	1.2	1.4	1.0	− .2	− .6	3.3	.1	−1.0	1.5	1.6
6	4.7	1.5	1.5	1.8	1.4	− .2	− .5	4.6	.1	−1.0	.8	1.1
7	5.5	1.2	1.5	1.9	1.1	− .4	− .5	5.5	.0	− .8	1.0	.9
8	6.0	1.0	1.7	2.4	.9	− .2	.0	5.0	.5	−1.0	1.0	.8
9	6.3	1.0	1.8	3.2	.6	.0	.0	4.7	.7	−1.1	1.0	.8
10	7.8	1.2	1.8	4.3	.6	.3	− .1	2.2	.4	−1.1	1.4	.9
11	7.5	1.5	1.4	4.5	.4	.2	.0	.7	.2	−1.1	1.9	.9
12	7.3	1.8	1.2	4.8	.3	− .1	.0	1.2	.3	−1.1	2.4	.8
13	6.1	2.1	.9	4.7	.3	− .2	.0	1.5	.2	−1.0	2.9	.6
14	4.0	2.6	.7	4.7	.3	− .3	.0	1.7	.1	− .5	3.4	.6
15	2.7	3.9	.7	4.6	.3	− .5	.2	1.7	− .1	− .6	3.5	.9
16	2.0	4.7	.6	4.3	.2	− .7	1.0	1.4	− .3	− .8	3.2	1.4
17	1.5	5.6	.5	4.2	− .1	− .8	1.4	1.4	− .5	.0	2.4	2.9
18	1.5	5.2	.3	3.7	− .1	− .8	2.0	1.3	− .7	− .5	2.0	4.8
19	1.4	4.3	.7	3.4	− .3	− .9	2.4	1.9	− .6	.2	1.5	5.0
20	1.4	2.8	1.1	2.5	− .3	−1.0	2.8	1.7	− .6	1.0	1.1	4.6
21	1.3	2.5	1.6	1.9	− .2	−1.0	2.9	1.9	− .4	1.7	1.1	4.6
22	1.3	2.3	1.6	1.8	− .2	− .9	2.5	1.8	− .4	1.5	1.0	5.0
23	1.5	1.8	1.2	2.1	.9	− .1	2.5	1.5	− .2	1.1	1.1	10.7
24	1.7	2.4	.7	2.2	2.3	− .7	2.3	1.4	− .2	2.5	.9	19.0
25	2.1	3.1	.4	1.9	2.5	− .4	1.8	.8	.0	3.5	.7	20.5
26	2.1	2.8	.8	1.7	2.5	.1	1.3	.5	.0	4.4	.7	19.6
27	1.8	2.1	1.4	1.4	2.7	− .3	1.0	.3	.5	5.1	.7	18.5
28	1.5	1.5	1.8	1.3	2.8	− .5	.9	.1	.4	2.9	.7	17.2
29	1.3	.....	2.6	1.2	2.4	− .3	.3	.2	.2	1.8	.8	16.5
30	1.3	.....	4.2	1.0	1.3	.0	.0	.1	− .1	1.3	.6	16.0
31	1.1	.....	4.8	.....	.6	.....	− .4	.0	.....	1.5	.....	14.8

Daily discharge, in second-feet, of Flint River at Albany, Ga., for 1911.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	3,200	2,670	2,760	6,820	2,580	2,170	1,550	1,550	1,850	1,480	3,480	3,200
2	3,110	2,670	2,670	4,860	2,760	2,090	1,550	1,850	2,250	1,280	3,570	3,670
3	3,480	2,670	2,670	4,190	2,760	2,010	1,780	2,090	1,930	1,340	3,570	3,020
4	4,080	2,760	2,670	3,670	2,760	1,780	1,700	2,840	1,780	1,340	3,570	3,380
5	4,080	2,930	2,840	3,020	2,670	1,700	1,410	4,980	1,930	1,160	3,110	3,200
6	6,590	3,110	3,110	3,380	3,020	1,700	1,480	6,480	1,930	1,160	2,500	2,760
7	7,540	2,840	3,110	3,480	2,760	1,550	1,480	7,540	1,850	1,200	2,670	2,580
8	8,170	2,670	3,290	3,980	2,580	1,700	1,850	6,940	2,250	1,160	2,670	2,500
9	8,540	2,670	3,380	4,860	2,330	1,850	1,850	6,590	2,420	1,110	2,670	2,500
10	10,400	2,840	3,380	6,130	2,330	2,090	1,780	3,770	2,170	1,110	3,020	2,580
11	10,000	3,110	3,020	6,360	2,170	2,010	1,850	2,420	2,010	1,110	3,480	2,580
12	9,800	3,380	2,840	6,700	2,090	1,780	1,850	2,840	2,090	1,110	3,980	2,500
13	8,300	3,670	2,580	6,590	2,090	1,700	1,850	3,110	2,010	1,160	4,520	2,330
14	5,780	4,190	2,420	6,590	2,090	1,620	1,850	3,290	1,930	1,480	5,100	2,330
15	4,300	5,670	2,420	6,480	2,090	1,480	2,010	3,290	1,780	1,410	5,210	2,580
16	3,570	6,590	2,330	6,130	2,010	1,340	2,670	3,020	1,620	1,280	4,860	3,020
17	3,110	7,670	2,250	6,020	1,780	1,280	3,020	3,020	1,480	1,850	3,980	4,520
18	3,110	7,180	2,090	5,440	1,780	1,280	3,570	2,930	1,340	1,480	3,570	6,700
19	3,020	6,130	2,420	5,100	1,620	1,220	3,980	3,480	1,410	2,010	3,110	6,940
20	3,020	4,410	2,760	4,080	1,620	1,160	4,410	3,290	1,410	2,670	2,760	6,480
21	2,930	4,080	3,200	3,480	1,700	1,160	4,520	3,480	1,550	3,290	2,760	6,480
22	2,930	3,870	3,200	3,380	1,700	1,220	4,080	3,380	1,550	3,110	2,670	6,940
23	3,110	3,380	2,840	3,670	2,580	1,780	4,080	3,110	1,700	2,760	2,760	14,000
24	3,290	3,980	2,420	3,770	3,870	1,340	3,870	3,020	1,700	4,080	2,580	27,000
25	3,670	4,750	2,170	3,480	4,080	1,550	3,380	2,500	1,850	5,210	2,420	30,100
26	3 670	4,410	2,500	3,290	4,080	1,930	2,930	2,250	1,850	6,240	2,420	28,200
27	3,380	3,670	3,020	3,020	4,300	1,620	2,670	2,090	2,250	7,060	2,420	26,100
28	3,110	3,110	3,380	2,930	4,410	1,480	2,580	1,930	2,170	4,520	2,420	23,800
29	2,930	.....	4,190	2,840	3,980	1,620	2,090	2,010	2,010	3,380	2,500	22,600
30	2,930	.....	6,020	2,670	2,930	1,850	1,850	1,930	1,780	2,930	2,330	21,800
31	2,760	.....	6,700	.....	2,330	.....	1,550	1,850	.....	3,110	.....	19,800

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 1911.

[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	10,400	2,760	4,770	0.954	1.10	B.
February	7,670	2,670	3,970	.794	.83	B.
March	6,700	2,090	3,050	.610	.70	B.
April	6,820	2,670	4,550	.910	1.02	B.
May	4,410	1,620	2,640	.528	.61	C.
June	2,170	1,160	1,640	.328	.37	C.
July	4,520	1,410	2,490	.498	.57	C.
August	7,540	1,550	3,320	.664	.77	C.
September	2,420	1,340	1,860	.372	.42	C.
October	7,060	1,110	2,380	.476	.55	C.
November	5,210	2,330	3,220	.644	.72	B.
December	30,100	2,330	9,550	1.91	2.20	B.
The year	30,100	1,110	3,630	.726	9.86	

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, 1911 (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, 1911.

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 R. E. Robertson:
October 23, 1911: Gage height, 3.04 feet; discharge, 3,630 second-feet.

Daily gage height, in feet, of Flint River at Bainbridge, Ga., for 1911.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.4	3.8	4.0	6.7	3.8	3.3	2.0	2.4	2.3	1.9	3.7	3.5
2	3.4	3.7	3.9	6.2	3.8	3.0	2.6	2.4	2.3	1.7	3.8	3.4
3	3.6	3.6	3.8	5.7	3.8	2.8	2.5	2.3	2.4	1.5	4.0	3.4
4	4.1	3.6	3.7	5.4	3.8	2.5	2.3	2.3	2.6	1.5	4.2	3.4
5	4.2	3.5	3.6	5.1	3.7	2.4	2.5	2.5	2.5	1.4	4.0	3.3
6	5.1	3.6	3.6	5.2	3.7	2.3	2.5	3.5	2.3	1.3	3.7	3.5
7	6.0	3.6	3.4	5.0	3.7	2.3	2.4	4.4	2.1	1.3	3.2	3.6
8	6.8	3.5	3.4	5.7	3.6	2.4	2.3	6.0	2.5	1.2	3.2	3.3
9	7.7	3.4	3.5	5.8	3.6	2.4	2.3	6.4	2.4	1.2	3.2	3.3
10	8.4	3.7	3.6	5.9	3.1	2.3	2.4	6.4	2.3	1.2	3.3	3.2
11	8.7	3.8	3.6	6.2	3.3	2.2	3.0	5.1	2.3	1.2	3.4	3.1
12	8.6	4.8	3.3	6.8	3.3	2.2	3.0	4.0	2.3	1.3	3.9	3.0
13	7.5	4.2	3.2	7.0	3.4	2.2	3.3	3.9	2.2	1.3	4.3	3.0
14	6.4	4.4	3.3	7.0	3.5	2.1	3.5	4.1	2.2	1.4	4.7	3.0
15	5.7	5.1	3.2	7.1	2.7	2.1	3.6	3.9	2.1	1.4	5.1	3.1
16	5.1	5.5	3.1	6.9	2.7	2.1	3.2	3.0	2.0	1.7	5.3	3.2
17	5.0	6.2	3.1	6.9	2.6	2.0	3.0	3.6	1.9	1.5	5.2	3.5
18	4.9	6.1	3.0	6.7	2.6	1.9	3.6	3.5	1.7	1.5	4.6	4.8
19	4.6	6.0	2.9	6.5	2.6	1.8	4.0	3.5	1.6	1.4	4.2	6.4
20	4.6	5.7	2.9	5.9	2.5	1.6	4.4	3.5	1.6	1.7	3.9	7.3
21	4.4	5.6	3.0	5.5	2.5	1.6	4.9	3.5	1.5	1.7	3.5	7.3
22	4.2	5.2	3.0	5.4	2.5	1.6	5.1	3.6	1.6	1.8	3.5	7.3
23	4.1	4.7	3.1	5.4	2.5	1.7	5.0	4.0	1.7	2.0	3.5	8.0
24	4.0	4.6	3.1	5.3	3.0	1.8	4.7	3.9	1.7	2.8	3.4	13.3
25	4.1	4.8	3.2	5.2	3.5	1.9	4.5	3.3	1.8	3.8	3.4	17.3
26	4.0	4.6	3.2	4.8	3.8	2.0	4.3	3.0	1.8	4.8	3.2	20.3
27	4.1	4.4	3.4	4.6	4.2	2.0	4.0	2.8	1.9	5.3	3.0	21.5
28	4.2	4.3	4.0	4.1	4.4	2.7	3.8	2.6	2.2	5.8	2.8	21.3
29	4.0	.....	4.4	4.0	4.5	2.0	3.3	2.5	2.1	4.6	2.9	20.3
30	4.0	.....	5.4	3.9	4.0	2.0	3.0	2.4	2.0	3.9	3.2	19.5
31	3.8	.....	6.4	.....	3.6	.....	2.6	2.4	.....	3.6	.....	19.0

Daily discharge, in second-feet, of Flint River at Bainbridge, Ga., for 1911.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	3,900	4,170	4,310	6,500	4,170	3,840	3,110	3,310	3,260	3,060	4,100	3,960
2	3,900	4,100	4,240	6,050	4,170	3,660	3,420	3,310	3,260	2,960	4,170	3,900
3	4,030	4,030	4,170	5,610	4,170	3,540	3,360	3,260	3,310	2,860	4,310	3,900
4	4,380	4,030	4,100	5,370	4,170	3,360	3,260	3,260	3,420	2,860	4,450	3,900
5	4,450	3,960	4,030	5,130	4,100	3,310	3,360	3,360	3,360	2,820	4,310	3,840
6	5,130	4,030	4,030	5,210	4,100	3,260	3,360	3,960	3,260	2,780	4,100	3,960
7	5,870	4,030	3,900	5,050	4,100	3,260	3,310	4,590	3,160	2,780	3,780	4,030
8	6,590	3,960	3,900	5,610	4,030	3,310	3,260	5,870	3,360	2,740	3,780	3,840
9	7,480	3,900	3,960	5,690	4,030	3,310	3,260	6,230	3,310	2,740	3,780	3,840
10	8,330	4,100	4,030	5,780	3,720	3,260	3,310	6,230	3,260	2,740	3,840	3,780
11	8,740	4,170	4,030	6,050	3,840	3,210	3,660	5,130	3,260	2,740	3,900	3,720
12	8,600	4,890	3,840	6,590	3,840	3,210	3,660	4,310	3,260	2,780	4,240	3,660
13	7,260	4,450	3,780	6,770	3,900	3,210	3,840	4,240	3,210	2,780	4,520	3,660
14	6,230	4,590	3,840	6,770	3,960	3,160	3,960	4,380	3,210	2,820	4,810	3,660
15	5,610	5,130	3,780	6,860	3,480	3,160	4,030	4,240	3,160	2,820	5,130	3,720
16	5,130	5,450	3,720	6,680	3,480	3,160	3,780	3,660	3,110	2,960	5,290	3,780
17	5,050	6,050	3,720	6,680	3,420	3,110	3,660	4,030	3,060	2,860	5,210	3,960
18	4,970	5,960	3,660	6,500	3,420	3,060	4,030	3,960	2,960	2,860	4,730	4,890
19	4,730	5,870	3,600	6,320	3,420	3,010	4,310	3,960	2,910	2,820	4,450	6,230
20	4,730	5,610	3,600	5,780	3,360	2,910	4,590	3,960	2,910	2,960	4,420	7,060
21	4,590	5,530	3,660	5,450	3,360	2,910	4,970	3,960	2,860	2,960	3,960	7,060
22	4,450	5,210	3,660	5,370	3,360	2,910	5,130	4,030	2,910	3,010	3,960	7,060
23	4,380	4,810	3,720	5,370	3,360	2,960	5,050	4,310	2,960	3,110	3,960	7,830
24	4,310	4,730	3,720	5,290	3,660	3,010	4,810	4,240	2,960	3,540	3,900	.....
25	4,380	4,890	3,780	5,210	3,960	3,060	4,660	3,840	3,010	4,170	3,900	.....
26	4,310	4,730	3,780	4,890	4,170	3,110	4,520	3,660	3,010	4,890	3,780	.....
27	4,380	4,590	3,900	4,730	4,450	3,110	4,310	3,540	3,060	5,290	3,660	.....
28	4,450	4,520	4,310	4,380	4,590	3,480	4,170	3,420	3,210	5,690	3,540	.....
29	4,310	.....	4,590	4,310	4,660	3,110	3,840	3,360	3,160	4,730	3,600	.....
30	4,310	.....	5,370	4,240	4,310	3,110	3,660	3,310	3,110	4,240	3,780	.....
31	4,170	.....	6,230	.....	4,030	.....	3,420	3,310	.....	4,030	.....	.....

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.

Monthly discharge of Flint River at Bainbridge, Ga., for 1911.

[Drainage area, 7,410 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
January	8,740	3,900	5,260	0.710	0.82	A.
February	6,050	3,900	4,700	.634	.66	A.
March	6,230	3,600	4,030	.544	.63	A.
April	6,860	4,240	5,670	.765	.85	A.
May	4,660	3,360	3,900	.526	.61	A.
June	3,840	2,910	3,200	.432	.48	B.
July	5,130	3,110	3,910	.528	.61	A.
August	6,230	3,260	4,070	.549	.63	A.
September	3,420	2,860	3,140	.424	.47	B.
October	5,690	2,740	3,300	.445	.51	B.
November	5,290	3,540	4,170	.563	.63	A.

NOTE.—Monthly estimates are published only for those months during which the gage heights were 12.5 feet and under. When sufficient measurements are obtained to develop the high-water portion of the rating curve the tables will be completed and published in a later report.

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, 1906, to October 13, 1906; April 22, 1907, to August 22, 1908; October 20, 1911, to December 31, 1911.

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.—There was probably some change in the controlling section during 1911 requiring a revision of the rating. As no rating was developed for the changed conditions, estimates of daily discharge are not given for 1912.

Cooperation.—Gage observer paid by the Alabama Geological Survey.

Discharge measurements of Choctawhatchee River near Newton, Ala., in 1911.

Date.	Hydrographer.	Gage height.	Discharge.
		Feet.	*Sec.-ft.*
Oct. 20	R. E. Robertson	2.67	319
20	do	2.67	327

Daily gage height, in feet, of Choctawhatchee River near Newton, Ala., for 1911.

[J. M. Hodge, observer.]

Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.
1	.....	2.7	3.5	11	.....	2.9	2.7	21	2.3	2.4	4.5
2	.....	2.6	3.4	12	.....	2.8	2.9	22	2.7	2.4	4.0
3	.....	2.4	3.4	13	.....	2.7	2.9	23	2.7	2.3	17.4
4	.....	2.3	3.3	14	.....	2.6	2.8	24	2.6	2.4	12.4
5	.....	2.3	3.2	15	.....	2.6	2.7	25	2.6	2.5	7.6
6	.....	2.7	3.0	16	.....	2.5	3.0	26	2.5	2.4	6.7
7	.....	3.1	3.1	17	.....	2.5	3.2	27	2.4	2.6	5.6
8	.....	3.2	3.0	18	.....	2.6	3.6	28	2.3	4.1	5.4
9	.....	3.1	2.8	19	.....	2.5	3.5	29	2.4	4.0	5.3
10	.....	3.0	2.9	20	2.7	2.4	4.0	30	2.5	3.8	5.3
								31	2.4	.....	5.0

PEA RIVER AT PERA, ALA.

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

Records available.—August 27, 1904, to December 31, 1911.

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.

Cooperation.—Gage observer paid by the Alabama Geological Survey.

Discharge measurements of Pea River at Pera, Ala., in 1911.

Date.	Hydrographer.	Gage height.	Discharge.
		Feet.	*Sec.-ft.*
Oct. 19	R. E. Robertson	3.00	388
19	....do	3.03	400

Daily gage height, in feet, of Pea River at Pera, Ala., for 1911.

[W. G. Early, observer.]

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	6.0	4.5	4.2	5.0	5.0	2.8	2.8	1.9	2.1	1.7	2.5	4.6
2	5.4	4.4	4.2	4.5	7.0	2.85	2.5	2.5	2.2	1.6	2.4	4.2
3	10.4	4.3	3.95	4.1	7.2	2.55	3.8	3.3	2.2	1.5	2.2	3.8
4	15.0	4.4	4.0	3.9	6.6	2.35	4.1	4.2	1.8	1.6	2.2	3.6
5	12.6	5.0	3.8	5.2	6.0	2.25	3.1	4.2	1.7	1.6	2.1	3.6
6	11.4	4.6	3.75	8.0	5.6	2.1	2.7	3.8	2.0	1.6	2.05	3.4
7	10.4	4.4	3.7	6.6	5.1	2.4	2.4	2.9	2.1	1.6	2.9	3.2
8	9.2	4.3	3.75	5.8	4.7	2.95	2.3	2.8	2.5	1.5	3.4	3.1
9	8.2	4.2	3.6	6.3	4.2	2.9	2.3	2.6	2.8	1.6	3.4	3.0
10	7.9	4.2	3.6	8.8	3.7	2.55	3.0	2.4	2.6	1.5	3.2	3.0
11	7.5	4.2	3.6	7.4	3.45	2.35	3.0	2.4	2.6	1.9	3.2	2.8
12	6.7	4.4	3.5	12.8	3.3	2.1	2.8	2.6	2.8	2.8	2.9	3.0
13	6.2	5.6	3.55	13.0	3.1	2.15	3.3	3.7	2.4	3.1	2.7	2.8
14	5.8	6.0	3.5	10.3	3.15	2.2	2.8	3.8	2.1	2.6	2.8	3.0
15	5.6	5.8	3.45	8.3	2.9	1.95	2.8	4.0	2.0	2.2	2.6	2.9
16	5.4	5.4	4.2	7.3	2.75	2.8	2.5	3.6	2.0	2.0	2.6	3.0
17	5.2	5.2	3.85	6.6	2.65	2.85	3.9	3.5	2.0	2.1	2.5	3.0
18	5.2	5.1	3.7	5.9	2.95	2.3	5.0	3.5	2.1	3.3	2.6	2.8
19	5.0	4.9	3.45	5.5	2.95	1.85	4.5	4.4	2.2	3.1	2.7	3.0
20	4.9	6.0	3.35	9.4	3.0	2.7	4.8	5.6	2.1	2.8	2.6	3.8
21	5.0	8.8	3.5	9.0	3.2	2.8	4.4	4.3	2.0	2.4	2.8	6.7
22	4.8	6.8	3.65	7.4	3.2	2.85	4.2	4.1	2.0	3.3	2.6	8.4
23	4.8	5.6	4.0	6.3	3.05	2.6	3.7	3.6	1.9	4.1	2.4	21.8
24	4.8	5.2	4.3	5.6	3.15	3.15	3.6	3.0	1.9	3.6	2.4	20.6
25	4.6	5.0	4.4	5.2	3.75	2.65	3.1	2.8	1.8	3.2	2.6	15.5
26	4.6	4.7	5.9	4.7	3.4	2.65	3.0	2.6	1.8	2.8	2.4	12.9
27	4.7	4.4	11.9	4.5	2.95	2.3	2.7	2.4	1.9	2.6	2.4	11.4
28	4.8	4.2	10.6	5.0	2.75	3.0	2.3	2.0	1.8	2.5	4.6	10.4
29	4.8	.....	8.0	5.2	2.6	3.15	2.2	2.0	1.8	2.6	6.4	8.9
30	4.6	.....	6.4	4.8	2.4	2.7	2.1	2.3	1.7	2.4	5.4	8.4
31	4.6	.....	5.6	.....	2.3	.....	1.9	2.2	.....	2.5	.....	14.0

Daily discharge, in second-feet, of Pea River at Pera, Ala., for 1911.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,160	715	644	850	850	362	362	224	252	197	310	741
2	965	691	644	715	1,510	372	310	310	266	184	295	644
3	2,930	667	589	622	1,590	318	556	457	266	171	266	556
4	5,050	691	600	578	1,360	288	622	644	210	184	266	515
5	3,950	850	556	906	1,160	273	419	644	197	184	252	515
6	3,390	741	546	1,900	1,030	252	344	556	238	184	245	476
7	2,930	691	535	1,360	878	295	295	381	252	184	381	438
8	2,400	667	546	1,090	767	390	280	362	310	171	476	419
9	1,980	644	515	1,260	644	381	280	326	362	184	476	400
10	1,860	644	515	2,230	535	318	400	295	326	171	438	400
11	1,700	644	515	1,660	486	288	400	295	326	224	438	362
12	1,400	691	495	4,040	457	252	362	326	362	362	381	400
13	1,220	1,030	505	4,130	419	259	457	535	295	419	344	362
14	1,090	1,160	495	2,890	428	266	362	556	252	326	362	400
15	1,030	1,090	486	2,020	381	231	362	600	238	266	326	381
16	965	965	644	1,620	353	362	310	515	238	238	326	400
17	906	906	567	1,360	335	372	578	495	238	252	310	400
18	906	878	535	1,120	390	280	850	495	252	457	326	362
19	850	822	486	995	390	217	715	691	266	419	344	400
20	822	1,160	466	2,490	400	344	794	1,030	252	362	326	556
21	850	2,230	495	2,310	438	362	691	667	238	295	362	1,400
22	794	1,430	525	1,660	438	372	644	622	238	457	326	2,060
23	794	1,030	600	1,260	410	326	535	515	224	622	295	8,180
24	794	906	667	1,030	428	428	515	400	224	515	295	7,630
25	741	850	691	906	546	335	419	362	210	438	326	5,280
26	741	767	1,120	767	476	335	400	326	210	362	295	4,080
27	767	691	3,620	715	390	280	344	295	224	326	295	3,390
28	794	644	3,030	850	353	400	280	238	210	310	741	2,930
29	794	.....	1,900	906	326	428	266	238	210	326	1,290	2,270
30	741	.....	1,290	794	295	344	252	280	197	295	935	2,060
31	741	.....	1,030	.....	280	.....	224	266	.....	310	.....	4,590

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

Monthly discharge of Pea River at Pera, Ala., for 1911.

[Drainage area, 1,180 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
January	5,050	741	1,490	1.26	1.45	A.
February	2,230	644	889	.753	.78	B.
March	3,620	466	834	.707	.82	B.
April	4,130	578	1,500	1.27	1.42	A.
May	1,590	280	605	.513	.59	B.
June	428	217	324	.275	.31	B.
July	850	224	440	.373	.43	B.
August	1,030	224	450	.381	.44	B.
September	362	197	253	.214	.24	B.
October	622	171	303	.257	.30	B.
November	1,290	245	402	.341	.38	B.
December	8,180	362	1,710	1.45	1.67	A.
The year	8,180	171	767	.650	8.83	

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, 1911.

Drainage area.—1,290 square miles.

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

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

Discharge measurements.—Made from the wagon bridge.

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.

Cooperation.—Gage observer paid by the Alabama Geological Survey.

Discharge measurements of Conecuh River at Beck, Ala., in 1911.

Date.	Hydrographer.	Gage height.	Discharge.
		Feet.	*Sec.-ft.*
Oct. 18	R. E. Robertson	1.71	340
18	do	1.68	336

Daily gage height, in feet, of Conecuh River at Beck, Ala., for 1911.

[J. F. Hicks, observer.]

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	.....	3.1	2.9	3.3	4.4	2.2	2.8	2.0	1.4	.....	1.4	2.5
2	.....	3.0	2.8	.....	6.0	1.95	.....	3.2	1.4	1.0	1.3	2.6
3	9.2	3.0	2.8	2.85	5.3	1.9	2.2	3.0	.....	1.0	1.3	.....
4	8.8	3.1	2.7	2.65	5.1	.....	.....	3.1	.....	.9	1.1	2.2
5	8.2	.....	.....	5.4	5.2	1.85	2.1	2.9	1.5	.9	.....	2.1
6	7.6	3.0	2.6	8.6	5.0	3.25	2.0	.....	1.5	.9	1.2	2.0
7	7.4	3.0	2.6	8.4	.....	3.05	1.9	2.7	1.6	.8	2.0	1.9
8	.....	2.9	2.6	7.4	4.8	2.7	1.7	2.6	1.8	.....	1.4	1.9
9	6.9	2.9	2.5	.....	4.0	2.75	.....	2.4	1.9	.75	1.7	1.9
10	6.4	2.9	2.4	9.6	3.45	2.5	2.1	2.0	.....	1.3	1.6	.....
11	5.6	2.9	2.5	9.6	3.05	.....	2.6	1.8	3.0	1.4	1.6	1.8
12	5.1	.....	.....	13.9	2.85	1.95	2.5	2.2	2.1	1.6	.....	1.8
13	4.7	3.5	2.4	14.2	2.7	1.85	2.2	.....	1.9	1.6	1.7	1.7
14	4.3	4.4	2.3	13.5	.....	1.7	2.0	2.8	1.6	1.5	1.7	1.7
15	.....	4.4	2.4	11.5	2.4	1.55	2.2	2.2	1.6	.....	1.6	1.7
16	3.9	4.3	2.4	.....	2.35	1.4	.....	3.2	1.5	1.4	1.6	1.8
17	3.7	4.2	2.3	8.6	2.25	1.75	4.7	3.4	.....	1.7	1.6	.....
18	3.6	3.9	2.3	7.5	2.2	.....	4.2	3.0	1.3	1.7	1.6	1.8
19	3.5	.....	.....	6.1	2.1	1.7	3.1	4.0	1.4	1.5	.....	1.9
20	3.4	5.5	2.5	8.4	2.25	1.75	3.4	.....	1.4	1.5	1.6	2.3
21	3.4	4.4	2.3	9.2	.....	1.95	4.1	3.3	1.5	1.5	1.5	3.3
22	.....	.....	2.5	7.8	2.95	1.9	4.0	3.1	1.6	.....	1.5	3.1
23	3.5	4.0	3.0	.....	2.65	2.05	.....	2.6	1.5	1.5	1.5	9.5
24	3.3	3.7	2.7	6.0	4.0	2.25	2.8	2.3	.....	1.5	1.5	.....
25	3.2	3.5	2.7	5.6	4.1	.....	2.5	2.1	1.4	1.4	1.5	6.7
26	3.2	.....	.....	5.1	4.4	1.9	2.4	2.0	1.4	1.4	.....	6.4
27	3.2	3.1	10.2	4.5	4.6	1.9	2.1	.....	1.3	1.4	1.4	6.2
28	3.3	3.0	6.5	4.4	.....	1.85	2.1	1.6	1.3	1.4	3.2	5.8
29	.....	.....	4.8	4.3	3.0	2.2	1.9	1.5	1.2	.....	2.3	5.7
30	3.2	.....	4.0	.....	.....	3.75	.....	1.5	1.1	1.4	.....	5.3
31	3.2	.....	3.6	.....	2.35	.....	1.6	1.5	.....	1.3	.....	.....

Daily discharge, in second-feet, of Conecuh River at Beck, Ala., for 1911.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,930	720	650	795	1,260	443	617	395	278	226	278	524
2	2,870	684	617	714	2,050	384	530	757	278	220	262	554
3	3,800	684	617	634	1,680	373	443	684	284	220	262	498
4	3,580	720	585	570	1,390	368	430	720	290	208	233	443
5	3,240	702	570	1,730	1,640	362	418	650	295	208	240	418
6	2,910	684	554	3,470	1,540	776	395	618	295	208	247	395
7	2,810	684	554	3,350	1,490	702	373	585	313	197	395	373
8	2,680	650	554	2,810	1,440	585	332	554	352	194	278	373
9	2,540	650	524	3,420	1,080	601	375	496	373	192	332	373
10	2,270	650	496	4,030	854	524	418	395	528	262	313	362
11	1,830	650	524	4,030	702	454	554	352	684	278	313	352
12	1,590	762	510	6,460	634	384	524	443	418	313	322	352
13	1,400	874	496	6,630	585	362	443	530	373	313	332	332
14	1,210	1,260	469	6,240	540	332	395	617	313	295	332	332
15	1,120	1,260	496	5,100	496	304	443	443	313	286	313	332
16	1,040	1,210	496	4,280	482	278	922	757	295	278	313	352
17	955	1,170	469	3,470	456	342	1,400	834	278	332	313	352
18	914	1,040	469	2,860	443	337	1,170	684	262	332	313	352
19	874	1,410	496	2,100	418	332	720	1,080	278	295	313	373
20	834	1,780	524	3,350	456	342	834	938	278	295	313	469
21	834	1,260	469	3,800	562	384	1,120	795	295	295	295	795
22	854	1,170	524	3,020	667	373	1,080	720	313	295	295	720
23	874	1,080	684	2,540	570	406	848	554	295	295	295	3,970
24	795	955	585	2,050	1,080	456	617	469	286	295	295	3,200
25	757	874	585	1,830	1,120	414	524	418	278	278	295	2,430
26	757	797	2,470	1,590	1,260	373	496	395	278	278	286	2,270
27	757	720	4,360	1,300	1,350	373	418	354	262	278	278	2,160
28	795	684	2,320	1,260	1,020	362	418	313	262	278	757	1,940
29	776	.....	1,440	1,210	684	443	373	295	247	278	469	1,890
30	757	.....	1,080	1,240	583	976	343	295	233	278	496	1,680
31	757	.....	914	.....	482	.....	313	295	.....	262	.....	2,130

NOTE.—Daily discharge computed from a rating curve fairly well defined below 7,000 second-feet. Discharge interpolated for days when gage was not read.

Monthly discharge of Conecuh River at Beck, Ala., for 1911.

[Drainage area, 1,290 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
January	3,800	757	1,580	1.22	1.41	A.
February	1,780	650	921	.714	.74	A.
March	4,360	469	842	.653	.75	B.
April	6,630	570	2,860	2.22	2.48	A.
May	2,050	418	942	.730	.84	B.
June	976	278	438	.340	.38	B.
July	1,400	313	590	.457	.53	B.
August	1,080	295	562	.436	.50	B.
September	684	233	318	.247	.28	B.
October	332	192	267	.207	.24	B.
November	757	233	326	.253	.28	B.
December	3,970	332	1,000	.775	.89	B.
The year	6,630	192	887	.688	9.32	

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, 1911.

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 are made from a boat at the ferry about 200 feet above, where the section is somewhat better.

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 for low and medium stages.

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

The following discharge measurement was made by M. R. Hall:

December 12, 1911: Gage height, 2.24 feet; discharge, 747 second-feet.

Daily gage height, in feet, of Oostanaula River at Resaca, Ga., for 1911.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	4.8	4.0	5.6	3.6	5.2	3.4	3.0	1.8	1.7	1.3	1.8	2.8
2	9.0	4.2	5.4	3.4	5.6	3.4	2.8	2.0	1.7	1.3	1.8	2.8
3	17.8	4.2	6.0	3.4	5.0	3.4	2.8	3.0	1.7	1.3	1.6	2.6
4	20.0	4.2	5.6	3.6	4.8	3.4	2.8	2.8	1.7	1.2	1.6	2.6
5	18.4	4.6	5.4	8.4	4.6	3.4	3.4	2.6	1.9	1.2	1.5	2.7
6	16.0	4.6	4.6	17.3	4.4	3.4	4.0	2.2	2.0	1.2	1.4	2.7
7	12.6	4.6	4.8	13.7	4.2	3.4	3.8	4.2	2.0	1.2	3.0	2.7
8	6.0	5.0	4.7	11.4	4.0	3.2	3.6	3.8	1.9	1.2	7.3	2.7
9	5.4	9.2	4.7	19.7	4.0	3.2	3.4	3.6	1.7	1.2	5.0	2.6
10	5.3	11.2	4.6	21.2	3.8	3.2	3.4	3.6	1.6	1.2	4.2	2.4
11	5.1	11.4	4.4	19.0	3.8	3.0	4.0	3.2	1.6	4.0	4.2	2.2
12	4.8	13.0	4.2	14.8	3.8	3.0	4.0	3.0	1.6	2.4	4.0	2.2
13	4.6	9.6	4.0	9.6	3.6	2.9	3.8	1.8	1.6	2.0	5.0	2.2
14	4.4	7.0	4.0	4.3	3.6	2.9	4.6	1.8	1.6	1.7	4.9	2.2
15	4.0	6.0	3.8	3.8	3.6	2.8	4.4	1.7	1.6	1.7	4.6	2.7
16	4.0	5.8	3.8	5.2	3.6	2.8	4.2	1.8	1.6	1.7	3.4	2.9
17	3.8	5.6	3.6	6.0	3.4	2.8	4.0	2.0	1.6	6.0	3.2	3.0
18	3.8	5.4	3.4	5.6	3.4	2.8	3.6	2.6	1.6	12.4	3.0	3.3
19	3.7	5.2	3.4	6.0	3.4	2.8	3.2	2.6	1.6	7.0	5.0	3.3
20	3.6	6.0	4.8	11.2	3.6	3.6	2.8	2.4	1.5	4.6	4.1	3.5
21	3.6	8.0	5.2	11.0	3.8	4.2	2.4	2.2	1.5	3.0	3.0	3.8
22	3.6	7.3	4.8	9.3	4.2	4.2	2.2	2.0	1.5	2.4	2.7	5.0
23	3.4	5.3	4.2	6.8	5.8	3.0	3.0	1.9	1.5	2.3	2.6	11.0
24	3.2	5.0	3.8	5.6	8.0	3.0	3.2	1.9	1.5	2.3	2.4	9.8
25	3.0	4.8	3.6	5.4	5.2	3.0	4.0	1.9	1.5	2.2	2.4	8.8
26	3.2	4.8	3.8	5.2	4.5	2.8	3.1	1.8	1.5	2.2	2.4	7.7
27	3.6	5.2	4.8	5.0	3.9	2.8	2.5	1.8	1.4	2.2	2.6	13.0
28	3.8	6.6	6.4	5.0	3.8	3.0	2.3	1.8	1.4	2.0	3.0	13.6
29	3.6	.....	4.4	5.5	3.8	3.4	2.2	1.8	1.4	2.0	3.2	12.5
30	4.0	.....	3.8	5.3	3.6	3.2	1.8	1.7	1.3	2.0	5.2	11.0
31	4.4	.....	3.6	.....	3.4	.....	1.8	1.7	.....	2.0	.....	6.8

Daily discharge, in second-feet, of Oostanaula River at Resaca, Ga., for 1911.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	2,350	1,760	2,960	1,500	2,650	1,380	1,140	560	522	390	560	1,030
2	5,870	1,900	2,800	1,380	2,960	1,380	1,030	640	522	390	560	1,030
3	14,400	1,900	3,270	1,380	2,500	1,380	1,030	1,140	522	390	486	920
4	16,600	1,900	2,960	1,500	2,350	1,380	1,030	1,030	522	360	486	920
5	15,000	2,200	2,800	5,330	2,200	1,380	1,380	920	600	360	452	972
6	12,600	2,200	2,200	13,900	2,040	1,380	1,760	726	640	360	420	972
7	9,270	2,200	2,350	10,300	1,900	1,380	1,630	1,900	640	360	1,140	972
8	3,270	2,500	2,270	8,110	1,760	1,260	1,500	1,630	600	360	4,370	972
9	2,800	6,050	2,270	16,300	1,760	1,260	1,380	1,500	522	360	2,500	920
10	2,730	7,920	2,200	17,800	1,630	1,260	1,380	1,500	486	360	1,900	820
11	2,580	8,110	2,040	15,600	1,630	1,140	1,760	1,260	486	1,760	1,900	726
12	2,350	9,660	1,900	11,400	1,630	1,140	1,760	1,140	486	820	1,760	726
13	2,200	6,410	1,760	6,410	1,500	1,080	1,630	560	486	640	2,500	726
14	2,040	4,110	1,760	1,970	1,500	1,080	2,200	560	486	522	2,420	726
15	1,760	3,270	1,630	1,630	1,500	1,030	2,040	522	486	522	2,200	972
16	1,760	3,110	1,630	2,650	1,500	1,030	1,900	560	486	522	1,380	1,080
17	1,630	2,960	1,500	3,270	1,380	1,030	1,760	640	486	3,270	1,260	1,140
18	1,630	2,800	1,380	2,960	1,380	1,030	1,500	920	486	9,070	1,140	1,320
19	1,570	2,650	1,380	3,270	1,380	1,030	1,260	920	486	4,110	2,500	1,320
20	1,500	3,270	2,350	7,920	1,500	1,500	1,030	820	452	2,200	1,830	1,440
21	1,500	4,980	2,650	7,730	1,630	1,900	820	726	452	1,140	1,140	1,630
22	1,500	4,370	2,350	6,140	1,900	1,900	726	640	452	820	972	2,500
23	1,380	2,730	1,900	3,940	3,110	1,140	1,140	600	452	772	920	7,730
24	1,260	2,500	1,630	2,960	4,980	1,140	1,260	600	452	772	820	6,600
25	1,140	2,350	1,500	2,800	2,650	1,140	1,760	600	452	726	820	5,690
26	1,260	2,350	1,630	2,650	2,120	1,030	1,200	560	452	726	820	4,720
27	1,500	2,650	2,350	2,500	1,690	1,030	870	560	420	726	920	9,660
28	1,630	3,770	3,600	2,500	1,630	1,140	772	560	420	640	1,140	10,200
29	1,500	.....	2,040	2,880	1,630	1,380	726	560	420	640	1,260	9,170
30	1,760	.....	1,630	2,730	1,500	1,260	560	522	390	640	2,650	7,730
31	2,040	.....	1,500	.....	1,380	.....	560	522	.....	640	.....	3,940

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

Monthly discharge of Oostanaula River at Resaca, Ga., for 1911.

[Drainage area, 1,610 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
January	16,600	1,140	3,880	2.41	2.78	A.
February	9,660	1,760	3,660	2.27	2.36	A.
March	3,600	1,380	2,140	1.33	1.53	A.
April	17,800	1,380	5,710	3.55	3.96	A.
May	4,980	1,380	1,960	1.22	1.41	A.
June	1,900	1,030	1,250	.777	.87	A.
July	2,200	560	1,310	.814	.94	A.
August	1,900	522	835	.519	.60	A.
September	640	390	492	.306	.34	A.
October	9,070	360	1,140	.708	.82	A.
November	4,370	420	1,440	.895	1.00	A.
December	10,200	726	2,880	1.79	2.06	A.
The year	17,800	360	2,210	1.37	18.67	

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, 1911.

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.

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.

Cooperation.—The gage observer is paid by the Alabama Geological Survey.

The following discharge measurement was made by R. E. Robertson:
August 28, 1911: Gage height, 1.10 feet; discharge, 2,480 second-feet.

Daily gage height, in feet, of Coosa River at Riverside, Ala., for 1911.

[J. O. Thompson and J. E. Whitehead, observers.]

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.0	2.2	2.9	3.85	3.15	1.95	2.0	2.6	1.0	1.0	1.0	1.6
2	3.3	2.1	3.4	3.2	3.15	1.95	1.9	3.2	1.0	1.0	1.0	1.6
3	8.0	2.0	3.8	2.85	3.05	1.85	1.8	4.2	1.0	1.0	1.0	1.6
4	10.0	2.2	3.7	2.65	3.05	1.75	1.8	5.2	1.0	1.0	1.0	1.6
5	12.0	2.2	3.6	3.85	2.95	1.75	1.7	5.3	1.0	1.0	1.0	1.6
6	12.2	2.2	3.5	6.8	2.85	1.75	1.6	4.1	1.2	1.0	1.0	1.6
7	12.0	2.9	3.2	9.4	2.75	1.65	1.6	3.9	1.2	1.0	1.0	1.6
8	10.1	3.1	3.0	10.8	2.55	1.75	1.6	3.1	1.2	1.0	1.1	1.6
9	8.6	3.7	2.7	14.2	2.55	1.65	1.7	2.0	1.0	1.0	3.4	1.5
10	5.9	5.1	2.7	14.5	2.45	1.55	1.8	2.5	1.0	1.0	4.5	1.4
11	4.5	5.8	2.6	14.4	2.45	1.55	1.9	2.8	1.0	1.0	5.4	1.4
12	4.0	6.0	2.6	14.0	2.35	1.55	2.1	2.7	1.0	1.2	4.5	1.4
13	3.6	6.2	2.5	13.6	2.35	1.45	2.5	2.5	1.0	3.0	3.7	1.6
14	3.2	6.9	2.4	13.0	2.25	1.35	2.3	2.4	1.0	3.0	3.2	1.6
15	3.0	7.1	2.4	12.0	2.15	1.25	2.7	2.5	1.0	1.9	3.0	1.7
16	2.9	6.2	2.3	10.1	2.05	1.25	2.6	2.6	1.0	1.3	3.0	1.7
17	2.8	5.2	2.3	8.4	1.95	1.25	3.4	2.6	1.0	1.3	2.8	1.8
18	2.7	4.4	2.2	7.2	1.85	1.15	3.7	2.6	1.0	1.3	2.6	1.9
19	2.6	4.1	2.2	5.6	1.85	1.15	4.6	2.7	1.0	2.2	2.6	2.8
20	2.5	4.1	2.1	5.4	1.75	1.35	3.9	3.3	1.0	4.8	2.6	4.4
21	2.6	4.1	2.2	6.1	1.95	1.75	3.0	2.0	1.0	5.3	2.5	5.5
22	2.5	4.3	2.4	6.8	2.25	1.95	2.8	2.7	1.0	4.2	2.4	6.0
23	2.3	4.7	3.1	6.6	3.55	1.95	2.9	2.5	1.0	2.3	2.4	7.0
24	2.2	4.5	2.9	6.0	3.55	1.75	3.2	2.3	1.0	1.6	2.0	7.8
25	2.2	3.9	2.7	5.1	3.95	1.65	3.5	2.1	1.0	1.4	2.0	8.3
26	2.2	3.5	2.4	4.2	3.75	1.55	3.9	2.0	1.0	1.2	2.0	8.6
27	2.2	3.1	2.9	3.85	3.55	1.45	3.6	1.9	1.0	1.2	2.0	9.6
28	2.1	3.0	3.9	3.7	3.05	1.75	3.2	1.1	1.0	1.2	2.0	10.6
29	2.1	.....	5.0	3.6	2.75	1.95	2.0	1.0	1.0	1.0	1.8	10.8
30	2.2	.....	4.8	3.35	2.25	2.15	2.5	1.0	1.0	1.0	1.8	10.2
31	2.1	.....	4.3	.....	2.05	.....	2.6	1.0	.....	1.0	.....	10.0

Daily discharge, in second-feet, of Coosa River at Riverside, Ala., for 1911.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	4,380	4,900	6,840	9,820	7,600	4,260	4,380	5,970	2,260	2,260	2,260	3,430
2	8,060	4,640	8,380	7,750	7,600	4,260	4,130	7,750	2,260	2,260	2,260	3,430
3	25,600	4,380	9,660	6,690	7,290	4,010	3,890	11,000	2,260	2,260	2,260	3,430
4	34,100	4,900	9,340	6,110	7,290	3,770	3,890	14,500	2,260	2,260	2,260	3,430
5	42,600	4,900	9,020	9,820	6,980	3,770	3,660	14,900	2,260	2,260	2,260	3,430
6	43,400	4,900	8,700	20,600	6,690	3,770	3,430	10,600	2,620	2,260	2,260	3,430
7	42,600	6,840	7,750	31,500	6,400	3,540	3,430	9,980	2,620	2,260	2,260	3,430
8	34,500	7,440	7,140	37,500	5,830	3,770	3,430	7,440	2,620	2,260	2,440	3,430
9	28,100	9,340	6,250	52,000	5,830	3,540	3,660	4,380	2,260	2,260	8,380	3,220
10	17,100	14,200	6,250	53,200	5,560	3,320	3,890	5,700	2,260	2,260	12,000	3,010
11	12,000	16,800	5,970	52,800	5,560	3,320	4,130	6,540	2,260	2,260	15,300	3,010
12	10,300	17,500	5,970	51,100	5,290	3,320	4,640	6,250	2,260	2,620	12,000	3,010
13	9,020	18,300	5,700	49,400	5,290	3,110	5,700	5,700	2,260	7,140	9,340	3,430
14	7,750	21,000	5,420	46,800	5,030	2,910	5,160	5,420	2,260	7,140	7,750	3,430
15	7,140	21,800	5,420	42,600	4,760	2,720	6,250	5,700	2,260	4,130	7,140	3,660
16	6,840	18,300	5,160	34,500	4,510	2,720	5,970	5,970	2,260	2,810	7,140	3,660
17	6,540	14,500	5,160	27,300	4,260	2,720	8,380	5,970	2,260	2,810	6,540	3,890
18	6,250	11,700	4,900	22,300	4,010	2,530	9,340	5,970	2,260	2,810	5,970	4,130
19	5,970	10,600	4,900	16,000	4,010	2,530	12,400	6,250	2,260	4,900	5,970	6,540
20	5,700	10,600	4,640	15,300	3,770	2,910	9,980	8,060	2,260	13,100	5,970	11,700
21	5,970	10,600	4,900	17,900	4,260	3,770	7,140	4,380	2,260	14,900	5,700	15,600
22	5,700	11,300	5,420	20,600	5,030	4,260	6,540	6,250	2,260	11,000	5,420	17,500
23	5,160	12,700	7,440	19,800	8,860	4,260	6,840	5,700	2,260	5,160	5,420	21,400
24	4,900	12,000	6,840	17,500	8,860	3,770	7,750	5,160	2,260	3,430	4,380	24,800
25	4,900	9,980	6,250	14,200	10,100	3,540	8,700	4,640	2,260	3,010	4,380	26,900
26	4,900	8,700	5,420	11,000	9,500	3,320	9,980	4,380	2,260	2,620	4,380	28,100
27	4,900	7,440	6,840	9,820	8,860	3,110	9,020	4,130	2,260	2,620	4,380	32,400
28	4,640	7,140	9,980	9,340	7,290	3,770	7,750	2,440	2,260	2,620	4,380	36,600
29	4,640	.....	13,800	9,020	6,400	4,260	4,380	2,260	2,260	2,260	3,890	37,500
30	4,900	.....	13,100	8,220	5,030	4,760	5,700	2,260	2,260	2,260	3,890	34,900
31	4,640	.....	11,300	.....	4,510	.....	5,970	2,260	.....	2,260	.....	34,100

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

Monthly discharge of Coosa River at Riverside, Ala., for 1911.

[Drainage area, 7,060 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
January	43,400	4,380	13,300	1.88	2.17	A.
February	21,800	4,380	11,000	1.56	1.62	A.
March	13,800	4,640	7,220	1.02	1.18	A.
April	53,200	6,110	24,300	3.44	3.84	A.
May	10,100	3,770	6,200	.878	1.01	A.
June	4,760	2,530	3,520	.499	.56	A.
July	12,400	3,430	6,110	.865	1.00	A.
August	14,900	2,260	6,380	.904	1.04	A.
September	2,620	2,260	2,300	.326	.36	A.
October	14,900	2,260	4,010	.568	.65	A.
November	15,300	2,260	5,600	.793	.88	A.
December	37,500	3,010	12,600	1.78	2.05	A.
The year	53,200	2,260	8,530	1.21	16.36	

ALABAMA RIVER AT SELMA, ALA.

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

Records available.—January 1, 1899, to December 31, 1911. 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 is 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.

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.

The following discharge measurement was made by R. E. Robertson:

August 16, 1911: Gage height, 3.10 feet; discharge, 11,100 second-feet.

Daily gage height, in feet, of Alabama River at Selma, Ala., for 1911.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.6	2.8	6.0	7.7	9.6	2.8	2.5	2.2	−0.5	−0.9	−0.3	2.9
2	4.8	2.9	5.4	6.9	10.4	2.2	1.8	1.8	− .5	−1.1	− .4	3.0
3	10.2	2.9	5.0	6.0	11.9	1.8	1.5	2.2	− .6	−1.2	− .5	2.9
4	20.4	2.7	5.0	5.0	12.4	1.6	1.7	4.5	− .7	−1.3	− .6	2.6
5	26.2	2.7	5.2	4.6	11.3	1.5	1.2	8.1	− .6	−1.2	− .7	2.2
6	28.8	2.8	5.3	6.4	9.3	1.3	.7	8.8	− .4	−1.1	− .7	1.9
7	29.5	2.8	5.3	14.1	7.2	1.1	.3	9.0	.3	−1.2	− .6	1.6
8	28.0	3.3	5.0	18.4	5.8	1.3	.6	7.4	1.4	−1.3	− .4	1.4
9	25.0	4.5	4.7	20.0	5.0	1.9	1.2	5.5	2.1	−1.5	.5	1.2
10	21.3	5.9	4.5	21.4	4.5	1.8	1.3	4.4	1.8	−1.3	1.3	.9
11	17.5	8.5	4.0	23.9	4.1	1.5	.8	3.2	1.3	−1.2	6.2	.7
12	13.4	11.7	3.9	26.4	3.8	1.3	1.3	2.3	.7	−1.0	8.5	.6
13	9.8	14.0	4.0	28.0	3.6	1.2	2.6	1.6	.2	− .9	8.5	.5
14	7.7	16.4	3.8	28.1	3.3	.9	2.9	2.1	.2	−1.0	8.0	.6
15	6.5	17.1	3.6	27.3	3.1	.6	3.8	2.5	− .1	−1.2	7.0	.5
16	5.9	16.2	3.4	25.7	2.8	.4	4.6	3.0	− .3	−1.1	5.5	.7
17	5.4	14.6	3.0	23.7	2.6	.2	4.8	3.2	− .5	1.7	4.3	.9
18	5.0	12.4	2.8	20.7	2.4	.2	5.8	2.6	− .3	1.5	3.7	1.1
19	4.5	10.4	2.7	16.3	2.3	.4	7.3	2.5	− .8	.8	3.5	1.4
20	4.3	7.5	2.7	13.7	2.2	.3	8.9	3.2	− .7	.4	3.4	2.0
21	4.0	9.7	3.0	12.6	2.2	.6	8.9	3.5	− .5	− .1	3.2	3.9
22	3.9	10.8	3.5	12.4	2.4	1.5	8.6	2.9	− .5	2.8	3.1	8.1
23	3.7	10.7	3.5	11.9	3.0	2.2	7.2	2.5	− .4	5.5	3.1	13.1
24	3.5	9.6	3.5	11.7	4.8	2.1	6.4	2.2	− .8	4.9	3.0	17.6
25	3.5	8.8	3.4	11.0	8.0	2.5	6.4	1.6	− .6	3.3	2.9	20.9
26	3.4	8.4	4.0	9.9	8.5	2.4	5.3	1.1	− .9	1.8	2.3	21.4
27	3.3	7.5	4.0	8.6	7.6	2.4	4.3	.8	− .8	.9	1.9	21.0
28	3.0	6.7	4.9	8.1	6.2	2.1	4.6	.4	− .8	.4	1.4	21.3
29	2.9	.....	7.9	9.0	5.3	2.4	4.7	.1	− .6	.1	1.7	22.1
30	2.9	.....	8.2	10.2	4.5	2.3	3.9	− .1	− .7	.1	2.5	22.1
31	2.8	.....	8.0	.....	3.7	.....	2.8	− .3	.....	.0	.....	22.1

Daily discharge, in second-feet, of Alabama River at Selma, Ala., for 1911.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	10,700	11,100	17,500	21,100	25,400	11,100	10,600	9,980	5,300	4,660	5,620	11,300
2	15,000	11,300	16,200	19,400	27,200	9,980	9,240	9,240	5,300	4,350	5,460	11,500
3	26,800	11,300	15,400	17,500	30,800	9,240	8,700	9,980	5,140	4,200	5,300	11,300
4	52,900	10,900	15,400	15,400	32,000	8,880	9,060	14,400	4,980	4,050	5,140	10,700
5	68,600	10,900	15,800	14,600	29,300	8,700	8,160	22,000	5,140	4,200	4,980	9,980
6	75,800	11,100	16,000	18,300	24,700	8,340	7,290	23,600	5,460	4,350	4,980	9,420
7	77,800	11,100	16,000	36,300	20,000	7,980	6,610	24,000	6,610	4,200	5,140	8,880
8	73,600	12,100	15,400	47,500	17,100	8,340	7,120	20,500	8,520	4,050	5,460	8,520
9	65,300	14,400	14,800	51,800	15,400	9,420	8,160	16,400	9,790	3,750	6,950	8,160
10	55,300	17,300	14,400	55,600	14,400	9,240	8,340	14,200	9,240	4,050	8,340	7,630
11	45,100	22,900	13,400	62,300	13,600	8,700	7,460	11,900	8,340	4,200	17,900	7,290
12	34,400	30,300	13,200	69,100	13,000	8,340	8,340	10,200	7,290	4,500	22,900	7,120
13	25,800	36,000	13,400	73,600	12,600	8,160	10,700	8,880	6,440	4,660	22,900	6,950
14	21,100	42,200	13,000	73,900	12,100	7,630	11,300	9,790	6,440	4,500	21,800	7,120
15	18,600	44,100	12,600	71,600	11,700	7,120	13,000	10,600	5,940	4,200	19,600	6,950
16	17,300	41,700	12,300	67,200	11,100	6,780	14,600	11,500	5,620	4,350	16,400	7,290
17	16,200	37,600	11,500	61,800	10,700	6,440	15,000	11,900	5,300	9,060	14,000	7,630
18	15,400	32,000	11,100	53,700	10,400	6,440	17,100	10,700	5,620	8,700	12,800	7,980
19	14,400	27,200	10,900	42,000	10,200	6,780	20,300	10,600	4,820	7,460	12,400	8,520
20	14,000	20,700	10,900	35,200	9,980	6,610	23,800	11,900	4,980	6,780	12,300	9,600
21	13,400	25,600	11,500	32,400	9,980	7,120	23,800	12,400	5,300	5,940	11,900	13,200
22	13,200	28,100	12,400	32,000	10,400	8,700	23,100	11,300	5,300	11,100	11,700	22,000
23	12,800	27,900	12,400	30,800	11,500	9,980	20,000	10,600	5,460	16,400	11,700	33,700
24	12,400	25,400	12,400	30,300	15,000	9,790	18,300	9,980	4,820	15,200	11,500	45,400
25	12,400	23,600	12,300	28,600	21,800	10,600	18,300	8,880	5,140	12,100	11,300	54,200
26	12,300	22,700	13,400	26,100	22,900	10,400	16,000	7,980	4,660	9,240	10,200	55,600
27	12,100	20,700	13,400	23,100	20,900	10,400	14,000	7,460	4,820	7,630	9,420	54,500
28	11,500	19,000	15,200	22,000	17,900	9,790	14,600	6,780	4,820	6,780	8,520	55,300
29	11,300	.....	21,600	24,000	16,000	10,400	14,800	6,270	5,140	6,270	9,060	57,500
30	11,300	.....	22,200	26,800	14,400	10,200	13,200	5,940	4,980	6,270	10,600	57,500
31	11,100	.....	21,800	.....	12,800	.....	11,100	5,620	.....	6,100	.....	57,500

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

Monthly discharge of Alabama River at Selma, Ala., for 1911.

[Drainage area, 15,400 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
January	77,800	10,700	28,300	1.84	2.12	A.
February	44,100	10,900	23,200	1.51	1.57	A.
March	22,200	10,900	14,400	.935	1.08	A.
April	73,900	14,600	39,500	2.56	2.86	A.
May	32,000	9,980	16,900	1.10	1.27	A.
June	11,100	6,440	8,720	.566	.63	B.
July	23,800	6,610	13,300	.864	1.00	A.
August	24,000	5,620	11,800	.766	.88	A.
September	9,790	4,660	5,890	.382	.43	B.
October	16,400	3,750	6,560	.426	.49	B.
November	22,900	4,980	11,200	.727	.81	A.
December	57,500	6,950	21,900	1.42	1.64	A.
The year	77,800	3,750	16,800	1.09	14.78	

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, 1911.

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 stage, 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 rough, rocky bed and curved channel above.

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

Artificial control.—The operation of a number of mills above may cause slight variations in flow, and 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.

Cooperation.—Gage observer is paid by the Northern Contracting Co.

Discharge measurements of Etowah River near Ball Ground, Ga., in 1911.

Date.	Hydrographer.	Gage height.	Discharge.
		Feet.	*Sec.-ft.*
Mar. 29	M. R. Hall	3.48	851
Oct. 7	R. E. Robertson	1.85	235
7	....do	1.90	258

Daily gage height, in feet, of Etowah River near Ball Ground, Ga., for 1911.

[R. O. Ellis, observer.]

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.8	2.6	3.0	3.05	3.7	2.95	2.4	3.0	2.3	1.9	2.5	2.8
2	6.6	2.55	3.15	3.0	3.8	2.8	2.3	3.3	2.2	1.8	2.3	2.75
3	9.6	2.5	2.9	2.9	3.55	2.75	2.4	3.8	2.1	1.9	2.28	2.7
4	6.6	2.8	2.8	3.4	3.5	2.75	2.3	3.8	2.2	1.95	2.35	2.6
5	4.3	2.7	2.7	12.4	3.5	2.7	3.5	3.4	2.3	1.85	2.3	2.7
6	3.7	2.65	2.7	8.8	3.4	2.7	2.5	2.7	3.0	1.8	3.9	2.6
7	3.5	2.7	2.8	5.2	3.4	2.7	2.4	2.7	2.6	1.78	4.6	2.6
8	3.4	2.85	2.9	8.7	3.3	2.6	2.6	2.7	2.2	1.95	4.2	2.55
9	3.25	3.1	2.8	8.1	3.3	2.6	4.0	2.5	2.15	3.2	7.5	2.55
10	3.0	3.2	2.7	5.6	3.25	2.6	3.3	2.4	2.1	10.2	4.5	2.5
11	2.95	3.0	2.7	5.0	3.2	2.6	3.1	2.3	2.3	5.0	3.5	2.5
12	2.9	3.45	2.65	6.0	3.2	2.5	2.8	2.3	2.2	3.0	3.4	2.48
13	2.85	3.25	2.7	5.3	3.15	2.4	3.1	2.25	2.15	2.6	3.3	2.5
14	2.8	3.05	2.7	5.1	3.1	2.4	2.9	2.35	2.1	2.4	3.1	2.45
15	2.8	3.1	2.65	4.85	3.1	2.4	3.4	2.4	2.05	2.4	2.9	2.6
16	2.7	3.0	2.6	4.6	3.1	2.4	3.5	2.3	2.0	2.3	2.8	3.2
17	2.7	2.9	2.6	4.3	3.0	2.5	3.6	2.3	1.9	6.0	2.7	3.0
18	3.0	2.95	2.6	4.1	3.0	2.8	2.7	2.3	2.0	5.2	3.7	2.75
19	2.9	2.9	3.25	4.3	3.05	3.05	2.5	2.95	2.1	3.2	3.2	2.7
20	2.7	4.3	3.9	4.7	3.1	2.8	2.4	2.5	2.0	2.9	2.9	2.9
21	2.7	3.65	3.25	4.1	3.55	2.7	2.5	2.3	2.2	2.7	2.8	3.3
22	2.8	3.2	2.95	3.95	3.3	2.8	2.55	2.2	2.35	3.1	2.75	5.6
23	2.6	3.0	2.9	3.8	3.8	2.55	2.4	2.1	2.2	2.7	2.7	7.3
24	2.55	3.0	2.8	3.7	3.5	2.4	2.55	2.1	2.05	2.55	2.9	5.0
25	2.6	2.9	2.75	3.7	3.2	2.4	3.2	2.1	2.0	2.45	2.8	4.2
26	2.7	2.9	3.8	3.6	3.0	2.4	2.5	2.1	2.15	2.4	2.7	4.1
27	2.6	3.0	4.8	3.6	2.95	2.7	2.4	3.1	2.1	2.45	2.7	5.4
28	2.6	2.9	3.7	3.75	3.15	2.5	2.3	2.5	2.0	2.4	2.95	4.6
29	2.7	.....	3.5	4.0	3.8	2.4	2.3	2.2	1.9	2.4	3.0	4.0
30	2.55	.....	3.3	3.8	3.4	2.4	2.28	2.35	1.85	2.4	2.9	3.7
31	2.5	.....	3.1	.....	3.1	.....	2.55	2.5	.....	2.3	.....	5.5

Daily discharge, in second-feet, of Etowah River near Ball Ground, Ga., for 1911.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	520	445	600	622	930	580	380	600	350	255	410	520
2	2,820	428	668	600	980	520	350	735	325	235	350	500
3	5,320	410	560	560	855	500	380	980	300	255	345	480
4	2,020	520	520	780	830	500	350	980	325	265	365	445
5	1,250	480	480	7,980	830	480	830	780	350	245	350	480
6	930	462	480	4,610	780	480	410	480	600	235	1,030	445
7	830	480	520	1,810	780	480	380	480	445	231	1,430	445
8	780	540	560	4,520	735	445	445	480	325	265	1,200	428
9	712	645	520	4,020	735	445	1,080	410	312	690	3,530	428
10	600	690	480	2,090	712	445	735	380	300	5,870	1,370	410
11	580	600	480	1,680	690	445	645	350	350	1,680	830	410
12	560	805	462	2,370	690	410	520	350	325	600	780	404
13	540	712	480	1,880	668	380	645	338	312	445	735	410
14	520	622	480	1,740	645	380	560	365	300	380	645	395
15	520	645	462	1,580	645	380	780	380	288	380	560	445
16	480	600	445	1,430	645	380	830	350	275	350	520	690
17	480	560	445	1,250	600	410	880	350	255	2,370	480	600
18	600	580	445	1,140	600	520	480	350	275	1,810	930	500
19	560	560	712	1,250	622	622	410	580	300	690	690	480
20	480	1,250	1,030	1,490	645	520	380	410	275	560	560	560
21	480	905	712	1,140	855	480	410	350	325	480	520	735
22	520	690	580	1,060	735	520	428	325	365	645	500	2,090
23	445	600	560	980	980	428	380	300	325	480	480	3,370
24	428	600	520	930	830	380	428	300	288	428	560	1,680
25	445	560	500	930	690	380	690	300	275	395	520	1,200
26	480	560	980	880	600	380	410	300	312	380	480	1,140
27	445	600	1,550	880	580	480	380	645	300	395	480	1,950
28	445	560	930	955	668	410	350	410	275	380	580	1,430
29	480	.....	830	1,080	980	380	350	325	255	380	600	1,080
30	428	.....	735	980	780	380	345	365	245	380	560	930
31	410	.....	645	.....	645	.....	428	410	.....	350	.....	2,020

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

Monthly discharge of Etowah River near Ball Ground, Ga., for 1911.

[Drainage area, 466 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
January	5,320	410	868	1.86	2.14	B.
February	1,250	410	611	1.31	1.36	B.
March	1,550	445	625	1.34	1.54	B.
April	7,980	560	1,770	3.80	4.24	A.
May	980	580	741	1.59	1.83	A.
June	622	380	451	.968	1.08	B.
July	1,080	345	518	1.11	1.28	B.
August	980	300	457	.981	1.13	B.
September	600	245	318	.682	.76	B.
October	5,870	231	726	1.56	1.80	B.
November	3,530	345	746	1.60	1.78	B.
December	3,370	395	874	1.88	2.17	B.
The year	7,980	231	726	1.56	21.11	

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, 1911.

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 ferry boat or from a small boat held in place by the ferry cable. No measurements can be made at high stages.

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 for low and medium stages.

Cooperation.—Gage observer is paid by the Northern Contracting Co.

The following discharge measurement was made by R. E. Robertson:

September 2, 1911: Gage height, 1.75 feet; discharge, 913 second-feet.

Daily gage height, in feet, of Etowah River near Rome, Ga., for 1911.

[R. M. Pattillo, observer.]

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.2	2.1	2.5	2.5	2.9	2.4	2.0	3.2	1.75	1.42	1.75	2.2
2	2.5	2.1	2.55	2.45	2.85	2.3	2.0	3.9	1.75	1.4	1.8	2.1
3	9.7	2.1	2.5	2.4	2.8	2.2	1.9	3.3	2.1	1.4	1.8	2.05
4	11.5	2.2	2.4	3.3	2.7	2.1	1.9	5.0	2.5	1.4	1.75	2.0
5	7.0	2.25	2.35	7.0	2.7	2.05	1.85	3.5	2.15	1.42	2.0	2.0
6	3.6	2.2	2.3	13.0	2.6	2.0	2.05	2.6	2.0	1.48	3.2	2.0
7	3.05	2.2	2.3	7.7	2.6	2.0	2.0	2.25	1.95	1.45	3.8	2.0
8	2.85	2.3	2.35	9.1	2.55	2.0	2.15	2.3	1.9	1.6	3.8	2.0
9	2.75	2.45	2.3	16.8	2.55	1.95	2.9	2.35	1.8	2.15	7.2	2.0
10	2.6	2.8	2.3	11.0	2.5	1.92	3.4	2.15	1.7	2.35	5.8	2.0
11	2.6	3.2	2.25	6.4	2.5	1.9	2.7	1.9	1.6	7.4	3.3	2.0
12	2.5	3.35	2.2	5.6	2.45	1.85	2.25	1.8	1.8	4.2	2.7	2.0
13	2.4	3.35	2.2	5.0	2.4	1.85	2.2	1.7	1.85	2.8	2.6	1.9
14	2.4	3.05	2.2	4.4	2.4	1.82	2.5	1.9	1.8	2.0	2.5	1.9
15	2.3	2.85	2.15	4.0	2.35	1.8	3.4	2.0	1.7	1.9	2.4	2.0
16	2.3	2.75	2.1	3.8	2.3	1.8	5.5	1.9	1.6	1.9	2.35	1.95
17	2.3	2.55	2.1	3.55	2.3	2.1	6.0	1.8	1.6	5.6	2.3	2.3
18	2.25	2.45	2.05	3.4	2.25	2.4	4.5	1.8	1.6	5.5	2.8	2.2
19	2.3	2.4	2.1	3.3	2.25	2.4	2.8	1.85	1.55	3.6	3.1	2.05
20	2.25	2.4	3.25	3.6	2.25	2.5	2.45	2.1	1.5	2.35	2.7	2.1
21	2.2	4.2	3.1	3.6	2.45	2.3	2.35	2.15	1.6	2.15	2.6	2.3
22	2.2	4.2	2.7	3.2	2.9	2.05	2.15	2.1	1.85	2.1	2.5	2.6
23	2.2	3.8	2.5	3.1	2.95	2.0	2.1	2.0	1.85	2.05	2.4	7.0
24	2.15	2.85	2.4	3.0	2.8	1.95	2.15	1.85	1.55	2.0	2.3	5.2
25	2.15	2.5	2.4	2.9	2.65	1.92	2.2	1.7	1.5	2.0	2.2	4.3
26	2.2	2.45	2.4	2.8	2.45	1.9	2.2	1.6	1.4	1.95	2.15	3.8
27	2.2	2.4	3.85	2.8	2.3	1.9	2.2	1.6	1.4	1.9	2.1	4.6
28	2.2	2.4	3.65	2.85	2.25	2.3	2.05	1.6	1.4	1.85	2.05	4.0
29	2.15	.....	3.0	3.0	2.25	2.1	1.9	1.75	1.48	1.8	2.0	3.6
30	2.15	.....	2.7	3.0	2.3	2.05	1.8	1.7	1.45	1.8	2.05	3.2
31	2.1	.....	2.6	.....	2.4	.....	2.45	1.7	.....	1.75	.....	3.6

Daily discharge, in second-feet, of Etowah River near Rome, Ga., for 1911.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,300	1,200	1,660	1,660	2,200	1,540	1,090	2,640	848	561	848	1,300
2	1,660	1,200	1,730	1,600	2,130	1,420	1,090	3,820	848	545	895	1,200
3	14,300	1,200	1,660	1,540	2,060	1,300	990	2,800	1,200	545	895	1,140
4	17,500	1,300	1,540	2,800	1,920	1,200	990	5,800	1,660	545	848	1,090
5	9,400	1,360	1,480	9,400	1,920	1,140	942	3,130	1,250	561	1,090	1,090
6	3,300	1,300	1,420	20,200	1,790	1,090	1,140	1,790	1,090	609	2,640	1,090
7	2,420	1,300	1,420	10,700	1,790	1,090	1,090	1,360	1,040	585	3,640	1,090
8	2,120	1,420	1,480	13,200	1,730	1,090	1,250	1,420	990	710	3,640	1,090
9	1,990	1,600	1,420	27,000	1,730	1,040	2,200	1,480	895	1,250	9,760	1,090
10	1,790	2,060	1,420	16,600	1,660	1,010	2,960	1,250	800	1,480	7,240	1,090
11	1,790	2,640	1,360	8,320	1,660	990	1,920	990	710	10,100	2,800	1,090
12	1,660	2,880	1,300	6,880	1,600	942	1,360	895	895	4,360	1,920	1,090
13	1,540	2,880	1,300	5,800	1,540	942	1,300	800	942	2,060	1,790	990
14	1,540	2,420	1,300	4,720	1,540	914	1,660	990	895	1,090	1,660	990
15	1,420	2,120	1,250	4,000	1,480	895	2,960	1,090	800	990	1,540	1,090
16	1,420	1,990	1,200	3,640	1,420	895	6,700	990	710	990	1,480	1,040
17	1,420	1,730	1,200	3,220	1,420	1,200	7,600	895	710	6,880	1,420	1,420
18	1,360	1,600	1,140	2,960	1,360	1,540	4,900	895	710	6,700	2,060	1,300
19	1,420	1,540	1,200	2,800	1,360	1,540	2,060	942	668	3,300	2,490	1,140
20	1,360	1,540	2,720	3,300	1,360	1,660	1,600	1,200	625	1,480	1,920	1,200
21	1,300	4,360	2,490	3,300	1,600	1,420	1,480	1,250	710	1,250	1,790	1,420
22	1,300	4,360	1,920	2,640	2,200	1,140	1,250	1,200	942	1,200	1,660	1,790
23	1,300	3,640	1,660	2,490	2,270	1,090	1,200	1,090	942	1,140	1,540	9,400
24	1,250	2,120	1,540	2,340	2,060	1,040	1,250	942	668	1,090	1,420	6,160
25	1,250	1,660	1,540	2,200	1,860	1,010	1,300	800	625	1,090	1,300	4,540
26	1,300	1,600	1,540	2,060	1,600	990	1,300	710	545	1,040	1,250	3,640
27	1,300	1,540	3,730	2,060	1,420	990	1,300	710	545	990	1,200	5,080
28	1,300	1,540	3,380	2,130	1,360	1,420	1,140	710	545	942	1,140	4,000
29	1,250	.....	2,340	2,340	1,360	1,200	990	848	609	895	1,090	3,300
30	1,250	.....	1,920	2,340	1,420	1,140	895	800	585	895	1,140	2,640
31	1,200	.....	1,790	.....	1,540	.....	1,600	800	.....	848	.....	3,300

NOTE.—Daily discharge computed from a rating curve fairly 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 1911.

[Drainage area, 1,800 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
January	17,500	1,200	2,730	1.52	1.75	A.
February	4,360	1,200	2,000	1.11	1.16	A.
March	3,730	1,140	1,710	.950	1.10	A.
April	27,000	1,540	5,810	3.23	3.60	A.
May	2,270	1,360	1,690	.939	1.08	A.
June	1,660	895	1,160	.644	.72	A.
July	7,600	895	1,920	1.07	1.23	A.
August	5,800	710	1,450	.806	.93	A.
September	1,660	545	833	.463	.52	A.
October	10,100	545	1,830	1.02	1.18	A.
November	9,760	848	2,140	1.19	1.33	A.
December	9,400	990	2,190	1.22	1.41	A.
The year	27,000	545	2,120	1.18	16.01	

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, 1911.

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.

Accuracy.—Published data considered good.

Cooperation.—Gage observer is paid by the North Georgia Electric Co.

Discharge measurements of Amicalola River near Potts Mountain, Ga., in 1911.

Date.	Hydrographer.	Gage height.	Discharge.
		Feet.	*Sec.-ft.*
Mar. 30	M. R. Hall	1.62	179
Oct. 6	R. E. Robertson	1.15	56
6	....do	1.15	58
6	....do	1.15	59

Daily gage height, in feet, of Amicalola River near Potts Mountain, Ga., for 1911.

[J. A. Whitmore, observer.]

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.5	1.4	1.5	1.6	1.9	1.6	1.35	1.3	1.3	1.2	1.3	1.45
2	3.1	1.4	1.5	1.55	1.9	1.6	1.35	1.6	1.3	1.2	1.28	1.45
3	3.7	1.4	1.5	1.55	1.9	1.6	1.3	1.7	1.3	1.2	1.28	1.45
4	2.4	1.4	1.5	1.6	1.8	1.6	1.3	1.7	1.3	1.2	1.3	1.45
5	1.9	1.4	1.5	9.5	1.8	1.6	1.7	2.0	1.5	1.2	1.3	1.45
6	1.8	1.5	1.45	3.0	1.75	1.55	1.45	1.5	1.4	1.2	2.15	1.45
7	1.7	1.5	1.45	2.8	1.75	1.55	1.3	2.1	1.3	1.2	1.7	1.4
8	1.6	1.5	1.45	3.3	1.7	1.55	2.65	2.0	1.3	1.6	1.5	1.4
9	1.55	1.55	1.4	3.0	1.7	1.5	1.9	1.5	1.3	1.6	3.0	1.4
10	1.5	1.5	1.4	2.5	1.7	1.5	1.6	1.4	1.3	4.0	1.8	1.4
11	1.5	1.5	1.4	2.6	1.7	1.5	1.5	1.35	1.3	1.8	1.7	1.4
12	1.5	1.5	1.4	2.55	1.7	1.45	1.5	1.3	1.3	1.5	1.7	1.4
13	1.5	1.5	1.4	2.5	1.65	1.45	1.45	1.3	1.3	1.4	1.6	1.4
14	1.5	1.5	1.4	2.4	1.65	1.4	2.0	1.3	1.25	1.35	1.5	1.38
15	1.5	1.5	1.4	2.3	1.6	1.4	1.4	1.3	1.25	1.35	1.5	1.38
16	1.5	1.5	1.4	2.25	1.6	1.4	1.4	1.25	1.25	1.35	1.45	1.45
17	1.5	1.5	1.4	2.2	1.6	1.4	1.4	1.25	1.25	2.6	1.45	1.4
18	1.5	1.5	1.4	2.1	1.6	1.4	1.4	1.7	1.25	1.9	2.0	1.4
19	1.5	2.0	1.45	2.05	1.6	1.9	1.4	1.5	1.25	1.6	1.6	1.4
20	1.5	1.75	1.6	2.0	1.6	1.6	1.4	1.4	1.35	1.5	1.5	1.45
21	1.5	1.6	1.5	1.95	1.9	1.5	1.4	1.3	1.3	1.45	1.5	1.45
22	1.45	1.5	1.45	1.95	1.75	1.8	1.4	1.3	1.3	1.45	1.45	3.4
23	1.4	1.5	1.45	1.95	1.9	1.45	1.4	1.3	1.25	1.4	1.45	2.5
24	1.4	1.5	1.4	1.9	1.8	1.4	1.4	1.25	1.25	1.4	1.45	1.95
25	1.4	1.5	1.4	1.85	1.65	1.4	1.5	1.25	1.25	1.4	1.45	1.9
26	1.4	1.5	2.0	1.85	1.6	1.4	1.4	1.25	1.25	1.35	1.45	2.0
27	1.4	1.5	1.8	1.8	1.6	1.4	1.4	1.7	1.25	1.35	1.45	1.9
28	1.4	1.5	1.75	1.8	1.8	1.35	1.4	1.5	1.25	1.35	1.45	3.0
29	1.4	.....	1.75	2.0	2.0	1.35	1.4	1.35	1.25	1.3	1.45	2.0
30	1.4	.....	1.7	1.95	1.8	1.35	1.35	1.3	1.25	1.3	1.45	1.9
31	1.4	.....	1.65	.....	1.6	.....	1.3	1.3	.....	1.3	.....	1.9

Daily discharge, in second-feet, of Amicalola River near Potts Mountain, Ga., for 1910–11.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1910.												
1	.....	.....	.....	.....	.....	.....	226	152	165	113	90	80
2	.....	.....	.....	.....	.....	.....	296	152	138	102	90	80
3	.....	.....	.....	.....	.....	.....	334	138	165	102	90	80
4	.....	.....	.....	.....	.....	.....	296	243	210	102	90	80
5	.....	.....	.....	.....	.....	.....	710	194	180	113	90	760
6	.....	.....	.....	.....	.....	.....	375	735	152	113	80	375
7	.....	.....	.....	.....	.....	296	420	226	138	113	80	334
8	.....	.....	.....	.....	.....	278	334	334	126	138	80	296
9	.....	.....	.....	.....	.....	260	296	260	165	138	80	260
10	.....	.....	.....	.....	.....	260	260	194	126	113	80	210
11	.....	.....	.....	.....	.....	260	243	165	126	113	80	165
12	.....	.....	.....	.....	.....	260	243	152	126	102	80	138
13	.....	.....	.....	.....	.....	260	226	152	126	102	80	102
14	.....	.....	.....	.....	.....	260	210	152	126	102	80	102
15	.....	.....	.....	.....	.....	260	194	226	126	102	80	90
16	.....	.....	.....	.....	.....	243	194	165	113	102	80	90
17	.....	.....	.....	.....	.....	243	194	152	113	102	80	90
18	.....	.....	.....	.....	.....	226	194	152	113	102	80	90
19	.....	.....	.....	.....	.....	210	194	138	113	102	80	90
20	.....	.....	.....	.....	.....	194	194	138	113	90	80	90
21	.....	.....	.....	.....	.....	194	180	138	102	90	80	90
22	.....	.....	.....	.....	.....	194	180	138	102	90	80	90
23	.....	.....	.....	.....	.....	194	165	126	102	90	80	138
24	.....	.....	.....	.....	.....	194	165	126	90	90	80	138
25	.....	.....	.....	.....	.....	194	165	126	90	90	80	113
26	.....	.....	.....	.....	.....	194	165	138	90	90	80	113
27	.....	.....	.....	.....	.....	180	165	138	90	90	80	113
28	.....	.....	.....	.....	.....	180	165	126	90	90	80	113
29	.....	.....	.....	.....	.....	226	152	126	90	90	80	113
30	.....	.....	.....	.....	.....	226	152	138	260	90	80	113
31	.....	.....	.....	.....	.....	.....	152	165	.....	90	.....	113

Daily discharge, in second-feet, of Amicalola River near Potts Mountain, Ga., for 1910–11—Continued.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1911.												
1	138	113	138	165	260	165	102	90	90	69	90	126
2	810	113	138	152	260	165	102	165	90	69	86	126
3	1,140	113	138	152	260	165	90	194	90	69	86	126
4	465	113	138	165	226	165	90	194	90	69	90	126
5	260	113	138	4,550	226	165	194	296	138	69	90	126
6	226	138	126	760	210	152	126	138	113	69	354	126
7	194	138	126	660	210	152	90	334	90	69	194	113
8	165	138	126	915	194	152	585	296	90	165	138	113
9	152	152	113	760	194	138	260	138	90	165	760	113
10	138	138	113	510	194	138	165	113	90	1,300	226	113
11	138	138	113	560	194	138	138	102	90	226	194	113
12	138	138	113	535	194	126	138	90	90	138	194	113
13	138	138	113	510	180	126	126	90	90	113	165	113
14	138	138	113	465	180	113	296	90	80	102	138	108
15	138	138	113	420	165	113	113	90	80	102	138	108
16	138	138	113	398	165	113	113	80	80	102	126	126
17	138	138	113	375	165	113	113	80	80	560	126	113
18	138	138	113	334	165	113	113	194	80	260	296	113
19	138	296	126	315	165	260	113	138	80	165	165	113
20	138	210	165	296	165	165	113	113	102	138	138	126
21	138	165	138	278	260	138	113	90	90	126	138	126
22	126	138	126	278	210	226	113	90	90	126	126	970
23	113	138	126	278	260	126	113	90	80	113	126	510
24	113	138	113	260	226	113	113	80	80	113	126	278
25	113	138	113	243	180	113	138	80	80	113	126	260
26	113	138	296	243	165	113	113	80	80	102	126	296
27	113	138	226	226	165	113	113	194	80	102	126	260
28	113	138	210	226	226	102	113	138	80	102	126	760
29	113	.....	210	296	296	102	113	102	80	90	126	296
30	113	.....	194	278	226	102	102	90	80	90	126	260
31	113	.....	180	.....	165	.....	90	90	.....	90	.....	260

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 1910–11.

[Drainage area, 80 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
1910.						
June 7–30	296	180	229	2.86	2.55	A.
July	710	152	240	3.00	3.46	A.
August	735	126	184	2.30	2.65	A.
September	260	90	129	1.61	1.80	A.
October	138	90	102	1.28	1.48	A.
November	90	80	81.7	1.02	1.14	A.
December	760	80	156	1.95	2.25	A.
1911.						
January	1,140	113	205	2.56	2.95	A.
February	296	113	143	1.79	1.86	A.
March	296	113	143	1.79	2.06	A.
April	4,550	152	520	6.50	7.25	B.
May	296	165	205	2.56	2.95	A.
June	260	102	140	1.75	1.95	A.
July	585	90	142	1.78	2.05	A.
August	334	80	134	1.68	1.94	A.
September	138	80	88.1	1.10	1.23	A.
October	1,300	69	167	2.09	2.41	B.
November	760	86	169	2.11	2.35	A.
December	970	108	214	2.68	3.09	A.
The year	4,550	69	189	2.36	32.09	

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, 1911.

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 stage. 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 deck railroad bridge. Some low-water measurements made from boat.

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 and excellent results secured at this station.

Cooperation.—The gage observer is paid by the Alabama Geological Survey.

The following discharge measurement was made by M. R. Hall:
February 20, 1911: Gage height, 4.22 feet; discharge, 5,090 second-feet.

Daily gage height, in feet, of Tallapoosa River at Sturdevant, Ala., for 1911.

[C. J. Stowe, observer.]

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.8	2.15	2.6	2.6	2.85	1.9	1.3	1.5	1.05	0.38	1.8	2.15
2	5.0	2.05	2.6	2.45	3.05	1.75	1.15	5.8	1.1	.29	1.4	1.9
3	12.3	2.05	2.7	2.4	2.95	1.6	1.1	5.4	1.0	.27	1.35	1.8
4	11.0	2.15	2.6	2.65	2.8	1.5	1.15	5.1	1.0	.22	1.3	1.7
5	7.6	2.35	2.5	7.9	2.55	1.55	1.65	4.5	1.8	.18	1.2	1.6
6	5.6	2.25	2.4	8.3	2.4	2.1	3.6	3.0	1.9	.18	1.4	1.6
7	4.3	3.2	2.4	6.3	2.4	2.1	2.2	2.4	2.2	.14	2.4	1.55
8	3.6	3.55	2.35	5.2	2.35	1.8	1.6	2.05	1.9	.09	3.3	1.5
9	3.3	4.0	2.35	6.7	2.25	1.55	1.35	1.8	1.25	.09	6.5	1.5
10	3.15	5.2	2.35	7.5	2.15	1.6	1.5	1.7	1.15	.11	5.6	1.5
11	2.9	4.9	2.4	6.7	2.15	1.55	1.85	1.6	1.0	.29	4.1	1.5
12	2.8	5.8	2.35	5.0	2.05	1.4	2.15	1.8	.9	.71	3.2	1.5
13	2.7	5.6	2.3	4.5	2.05	1.4	2.4	1.65	.81	1.3	2.7	1.5
14	2.6	4.5	2.25	4.1	1.95	1.3	2.9	2.45	.70	1.0	2.35	1.5
15	2.5	3.95	2.15	3.85	1.9	1.2	3.2	2.45	.62	.88	2.1	1.6
16	2.4	3.6	2.15	3.5	1.9	1.0	5.3	1.9	.56	.84	1.9	2.05
17	2.4	3.45	2.05	3.3	1.8	1.0	6.9	3.45	.54	2.3	1.85	2.15
18	2.35	3.2	2.05	3.2	1.9	1.25	6.5	4.3	.54	2.45	1.85	1.95
19	2.35	3.0	2.25	3.25	1.8	1.55	6.4	3.45	.56	3.3	2.2	1.9
20	2.35	3.95	3.0	3.15	1.9	1.65	4.5	2.8	.75	2.45	2.45	2.8
21	2.25	4.2	3.15	3.6	3.3	2.15	3.7	2.15	1.25	1.75	2.3	4.7
22	2.25	3.9	2.85	3.25	3.5	2.75	3.35	1.8	1.1	1.45	1.95	6.0
23	2.25	3.4	2.6	3.0	5.0	2.75	3.6	1.6	1.5	1.1	1.8	6.8
24	2.2	3.1	2.4	2.8	5.1	2.2	3.05	1.5	1.35	1.0	1.7	5.9
25	2.15	2.9	2.25	2.7	3.4	1.85	3.65	1.4	1.05	.95	1.75	4.7
26	2.05	2.8	3.1	2.65	2.75	1.65	3.5	1.25	.9	.84	1.9	4.1
27	2.15	2.7	4.3	2.65	2.35	2.4	2.65	1.2	.85	.88	1.8	5.2
28	2.15	2.6	4.1	3.35	2.15	2.15	2.25	1.15	.66	.95	2.35	5.0
29	2.15	.....	3.45	3.15	2.0	2.05	1.95	1.35	.58	1.25	2.55	4.1
30	2.25	.....	3.05	2.7	1.85	1.6	1.7	1.1	.58	1.1	2.3	4.1
31	2.25	.....	2.75	.....	1.8	.....	1.55	1.05	.....	1.45	.....	5.3

Daily discharge, in second-feet, of Tallapoosa River at Sturdevant, Ala., for 1911.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	2,530	1,720	2,270	2,270	2,600	1,460	950	1,100	782	426	1,360	1,720
2	6,760	1,620	2,270	2,080	2,880	1,320	848	8,880	815	386	1,020	1,460
3	29,300	1,620	2,400	2,020	2,740	1,180	815	7,800	750	378	985	1,360
4	25,200	1,720	2,270	2,340	2,530	1,100	848	7,020	750	358	950	1,270
5	14,300	1,960	2,140	15,200	2,200	1,140	1,220	5,550	1,360	343	880	1,180
6	8,330	1,840	2,020	16,500	2,020	1,670	3,770	2,810	1,460	343	1,020	1,180
7	5,120	3,110	2,020	10,300	2,020	1,670	1,780	2,020	1,780	329	2,020	1,140
8	3,770	3,680	1,960	7,280	1,960	1,360	1,180	1,620	1,460	312	3,270	1,100
9	3,270	4,510	1,960	11,400	1,840	1,140	985	1,360	915	312	10,800	1,100
10	3,040	7,280	1,960	14,000	1,720	1,180	1,100	1,270	848	318	8,330	1,100
11	2,670	6,500	2,020	11,400	1,720	1,140	1,410	1,180	750	386	4,710	1,100
12	2,530	8,880	1,960	6,760	1,620	1,020	1,720	1,360	690	586	3,110	1,100
13	2,400	8,330	1,900	5,550	1,620	1,020	2,020	1,220	640	950	2,400	1,100
14	2,270	5,550	1,840	4,710	1,510	950	2,670	2,080	580	750	1,960	1,100
15	2,140	4,420	1,720	4,220	1,460	880	3,110	2,080	540	679	1,670	1,180
16	2,020	3,770	1,720	3,600	1,460	750	7,540	1,460	510	657	1,460	1,620
17	2,020	3,520	1,620	3,270	1,360	750	12,000	3,520	500	1,900	1,410	1,720
18	1,960	3,110	1,620	3,110	1,460	915	10,800	5,120	500	2,080	1,410	1,510
19	1,960	2,810	1,840	3,190	1,360	1,140	10,600	3,520	510	3,270	1,780	1,460
20	1,960	4,420	2,810	3,040	1,460	1,220	5,550	2,530	608	2,080	2,080	2,580
21	1,840	4,910	3,040	3,770	3,270	1,720	3,950	1,720	915	1,320	1,900	6,010
22	1,840	4,320	2,600	3,190	3,600	2,460	3,350	1,360	815	1,060	1,510	9,440
23	1,840	3,430	2,270	2,810	6,760	2,460	3,770	1,180	1,100	815	1,360	11,700
24	1,780	2,960	2,020	2,530	7,020	1,780	2,880	1,100	985	750	1,270	9,160
25	1,720	2,670	1,840	2,400	3,430	1,410	3,860	1,020	782	720	1,320	6,010
26	1,620	2,530	2,960	2,340	2,460	1,220	3,600	915	690	657	1,460	4,710
27	1,720	2,400	5,120	2,340	1,960	2,020	2,340	880	662	679	1,360	7,280
28	1,720	2,270	4,710	3,350	1,720	1,720	1,840	848	560	720	1,960	6,760
29	1,720	.....	3,520	3,040	1,560	1,620	1,510	985	520	915	2,200	4,710
30	1,840	.....	2,880	2,400	1,410	1,180	1,270	815	520	815	1,900	4,710
31	1,840	.....	2,460	.....	1,360	.....	1,140	782	.....	1,060	.....	7,540

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

Monthly discharge of Tallapoosa River at Sturdevant, Ala., for 1911.

[Drainage area, 2,460 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
January	29,300	1,620	4,610	1.87	2.16	A.
February	8,880	1,620	3,780	1.54	1.60	A.
March	5,120	1,620	2,380	.967	1.11	A.
April	16,500	2,020	5,350	2.17	2.42	A.
May	7,020	1,360	2,330	.948	1.09	A.
June	2,460	750	1,350	.549	.61	A.
July	12,000	815	3,240	1.32	1.52	A.
August	8,880	782	2,420	.984	1.13	A.
September	1,780	560	810	.329	.37	A.
October	3,270	312	850	.345	.40	A.
November	10,800	880	2,300	.935	1.04	A.
December	11,700	1,100	3,390	1.38	1.59	A.
The year	29,300	312	2,730	1.11	15.04	

TOMBIGBEE RIVER AT COLUMBUS, MISS.

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

Records available.—July 13, 1905, to December 31, 1911. 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.

Discharge measurements of Tombigbee River at Columbus, Miss., in 1911.

Date.	Hydrographer.	Gage height.	Discharge.
		Feet.	*Sec.-ft.*
Aug. 25	R. E. Robertson	1.06	3,650
Nov. 11	do	−2.42	980
11	do	−2.41	951

Daily gage height, in feet, of Tombigbee River at Columbus, Miss., for 1911.

[C. R. Shackelford, observer.]

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.45	−0.05	8.2	2.05	10.3	−2.25	−0.8	−2.0	−1.5	−3.9	−3.6	−1.4
2	9.8	− .05	9.6	1.15	10.2	−2.45	−1.0	.2	−2.0	−3.9	−3.7	−1.4
3	13.1	− .45	10.8	.35	8.4	−2.55	−1.7	.1	−2.4	−3.9	−3.7	−1.7
4	13.8	− .65	11.2	− .25	6.7	−2.65	−2.4	.1	−2.7	−4.0	−3.7	−2.0
5	15.6	− .75	9.9	11.8	4.5	−2.75	−2.8	.3	−2.9	−4.0	−3.7	−2.2
6	17.8	− .65	6.9	14.6	2.85	−2.75	−2.9	.0	−3.0	−4.0	−3.7	−2.4
7	17.6	− .35	3.75	16.4	1.95	−2.75	−2.5	− .1	−3.0	−4.0	−3.7	−2.5
8	16.1	.85	2.45	19.5	1.25	−2.85	−2.5	− .8	−3.0	−4.0	−3.7	−2.6
9	12.0	2.55	1.75	21.2	.75	−2.85	−2.8	− .6	−3.1	−4.1	−3.3	−2.7
10	6.6	6.6	1.25	21.7	.35	−2.85	−2.8	.1	−2.7	−4.1	−2.9	−2.8
11	3.65	7.6	.75	21.1	− .15	−2.95	−3.0	− .1	−2.5	−4.1	−2.5	−2.5
12	2.05	9.6	.25	21.1	− .45	−3.15	−3.0	− .9	−2.4	−4.1	−2.3	− .9
13	1.15	10.7	.05	21.4	− .65	−3.25	− .8	−1.7	−2.4	−4.0	−2.4	4.6
14	.55	11.0	− .15	21.0	− .85	−3.25	.6	−2.2	−2.3	−3.5	−2.5	8.6
15	.15	10.8	− .25	19.5	−1.05	−3.35	2.5	−2.5	−2.4	−3.1	−2.4	12.8
16	− .15	9.6	− .25	17.4	−1.25	−3.35	1.4	.8	−2.5	−3.2	−2.2	13.8
17	− .45	8.2	− .45	14.8	−1.65	−3.45	.0	.3	−2.8	−3.4	−2.2	14.4
18	− .55	6.9	− .65	13.2	−1.65	−3.55	.2	− .5	−3.0	−3.5	−2.3	15.4
19	− .65	5.3	− .85	13.7	−1.75	−3.55	− .6	.2	−3.3	−3.1	−2.4	16.0
20	− .85	4.3	− .95	16.3	−1.85	−3.25	− .9	1.4	−3.4	−2.1	−2.3	16.0
21	−1.05	4.2	− .45	18.1	−1.75	−3.35	−1.2	2.0	−3.5	−2.4	−2.1	15.2
22	−1.25	4.1	.25	22.5	− .95	−3.35	−2.0	1.8	−3.6	−2.8	−2.0	14.1
23	−1.25	3.45	.25	26.0	.65	−2.85	2.6	1.8	−3.7	−3.0	−2.3	14.4
24	−1.25	2.25	− .15	26.2	.65	−2.05	5.0	1.7	−3.7	−3.3	−2.6	14.1
25	−1.35	1.45	− .55	24.7	.75	−1.55	5.0	1.3	−3.7	−3.4	−2.7	13.5
26	−1.45	.95	− .65	22.2	.75	− .95	4.2	.5	−3.8	−3.5	−2.6	14.3
27	−1.45	.95	.05	18.9	− .35	− .25	3.6	− .5	−3.8	−3.6	−2.4	17.0
28	− .75	7.0	3.15	16.1	− .95	− .55	2.3	− .6	−3.8	−3.6	−2.2	18.1
29	.35	.....	4.6	13.6	−1.45	.35	.6	− .3	−3.8	−3.6	−2.0	17.9
30	.25	.....	4.5	11.2	−1.75	− .15	− .6	− .3	−3.9	−3.6	−1.6	17.6
31	.05	.....	3.3	.....	−2.05	.....	−1.6	− .9	.....	−3.6	.....	18.4

Daily discharge, in second-feet, of Tombigbee River at Columbus, Miss., for 1911.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	2,980	2,540	11,600	4,470	14,400	980	1,940	1,130	1,460	250	345	1,520
2	13,700	2,540	13,400	3,620	14,300	868	1,800	2,760	1,130	250	310	1,520
3	18,600	2,210	15,100	2,900	11,800	812	1,320	2,670	895	250	310	1,320
4	19,700	2,050	15,700	2,370	9,640	760	895	2,670	735	220	310	1,130
5	22,700	1,980	13,900	16,600	7,030	710	685	2,850	635	220	310	1,010
6	26,500	2,050	9,880	21,000	5,270	710	635	2,580	590	220	310	895
7	26,200	2,290	6,200	24,000	4,370	710	840	2,500	590	220	310	840
8	23,500	3,340	4,870	30,000	3,710	660	840	1,940	590	220	310	785
9	16,900	4,970	4,180	34,000	3,260	660	685	2,090	545	195	460	735
10	9,520	9,520	3,710	35,200	2,900	660	685	2,670	735	195	635	685
11	6,100	10,800	3,260	33,800	2,450	612	590	2,500	840	195	840	840
12	4,470	13,400	2,800	33,800	2,210	522	590	1,870	895	195	950	1,870
13	3,620	15,000	2,620	34,500	2,050	480	1,940	1,320	895	220	895	7,140
14	3,080	15,400	2,450	33,500	1,900	480	3,120	1,010	950	380	840	12,100
15	2,720	15,100	2,370	30,000	1,760	440	4,920	840	895	545	895	18,100
16	2,450	13,400	2,370	25,800	1,620	440	3,850	3,300	840	500	1,010	19,700
17	2,210	11,600	2,210	21,300	1,360	400	2,580	2,850	685	420	1,010	20,700
18	2,130	9,880	2,050	18,800	1,360	362	2,760	2,170	590	380	950	22,300
19	2,050	7,960	1,900	19,600	1,290	362	2,090	2,760	460	545	895	23,400
20	1,900	6,810	1,840	23,900	1,130	480	1,870	3,850	420	1,070	950	23,400
21	1,760	6,700	2,210	27,100	1,290	440	1,660	4,420	380	895	1,070	22,000
22	1,620	6,590	2,800	37,200	1,840	440	1,130	4,230	345	685	1,130	20,200
23	1,620	5,880	2,800	46,000	3,160	660	5,020	4,230	310	590	950	20,700
24	1,620	4,670	2,450	46,500	3,160	1,100	7,600	4,140	310	460	785	20,200
25	1,560	3,900	2,130	42,800	3,260	1,420	7,600	3,760	310	420	735	19,300
26	1,490	3,440	2,050	36,500	3,260	1,840	6,700	3,030	280	380	785	20,500
27	1,490	3,440	2,620	28,700	2,290	2,370	6,040	2,170	280	345	895	25,100
28	1,980	10,000	5,570	23,500	1,840	2,130	4,720	2,090	280	345	1,010	27,100
29	2,900	.....	7,140	19,400	1,490	2,900	3,120	2,330	280	345	1,130	26,700
30	2,800	.....	7,030	15,700	1,290	2,450	2,090	2,330	250	345	1,390	26,200
31	2,620	.....	5,720	.....	1,100	.....	1,390	1,870	.....	345	.....	27,700

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 1911.

[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	26,500	1,490	7,500	1.69	1.95	B.
February	15,400	1,980	7,050	1.59	1.66	B.
March	15,700	1,840	5,320	1.20	1.38	B.
April	46,500	2,370	25,800	5.81	6.48	C.
May	14,400	1,100	3,800	.856	.99	B.
June	2,900	362	929	.209	.23	B.
July	7,600	590	2,640	.595	.69	A.
August	4,420	840	2,610	.588	.68	A.
September	1,460	250	613	.138	.15	B.
October	1,070	195	382	.086	.10	B.
November	1,390	310	758	.171	.19	B.
December	27,700	685	13,400	3.02	3.48	B.
The year	46,500	195	5,880	1.32	17.98	

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 those years); November 29, 1904, to December 31, 1911. 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.

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

Cooperation.—Gage observer paid by the Alabama Geological Survey.

Discharge measurements of Tombigbee River at Epes, Ala., in 1911.

Date.	Hydrographer.	Gage height.	Discharge.
		Feet.	*Sec.-ft.*
Aug. 17	R. E. Robertson	3.40	2,860
17	....do	3.98	3,310

Daily gage height, in feet, of Tombigbee River at Epes, Ala., for 1911.

[George Haven, observer.]

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.75	5.1	11.1	9.0	33.9	2.75	5.0	4.0	3.6	0.7	0.9	3.7
2	21.6	5.0	13.6	7.7	31.5	2.45	4.5	4.1	3.0	.6	.9	3.8
3	26.3	4.9	15.0	6.5	28.7	2.25	4.0	4.2	2.6	.6	.9	3.9
4	27.4	4.75	16.4	5.7	25.0	2.1	4.1	5.0	2.2	.6	.9	3.7
5	27.8	4.5	17.3	9.9	19.8	2.0	2.9	5.2	2.0	.6	.9	3.4
6	28.0	4.35	17.5	20.4	14.5	1.85	2.3	5.4	2.0	.5	1.0	3.0
7	28.4	6.2	16.0	23.8	10.7	1.8	2.0	5.2	1.6	.5	1.1	2.6
8	29.3	5.4	11.7	26.0	8.8	1.75	1.9	4.8	1.8	.5	1.8	2.4
9	29.9	10.8	9.2	27.9	7.6	1.65	2.0	4.2	1.8	.5	4.0	2.3
10	29.9	14.6	8.0	29.5	7.0	1.65	2.0	3.7	1.6	.5	2.7	2.2
11	28.5	15.8	7.6	31.4	6.4	1.65	1.9	4.0	1.6	.6	2.4	2.6
12	23.6	18.0	7.0	33.3	5.7	1.65	1.9	4.2	1.8	.6	2.8	8.8
13	16.5	19.6	6.5	34.0	5.0	1.45	2.0	3.9	1.9	.6	3.4	15.4
14	11.2	20.7	5.9	35.7	4.55	1.35	3.9	3.3	1.9	.6	3.0	22.6
15	8.6	21.2	5.3	36.4	4.2	1.35	10.4	2.7	1.9	.6	2.8	26.6
16	7.3	21.2	4.9	36.6	3.9	1.25	12.4	2.5	1.8	.7	2.6	30.0
17	6.6	20.6	4.75	36.6	3.6	1.15	13.2	3.5	1.8	1.4	2.6	30.8
18	5.8	19.0	4.5	36.1	3.4	1.15	8.4	4.6	1.7	1.5	2.6	30.8
19	5.1	16.8	4.3	34.9	3.2	1.15	6.4	6.0	1.6	1.4	2.8	30.2
20	4.7	14.7	4.15	33.1	3.05	1.15	5.3	6.2	1.4	1.3	2.7	30.4
21	4.4	12.8	4.0	31.1	2.9	1.2	4.6	6.6	1.2	1.6	2.5	31.5
22	4.2	12.0	4.15	30.0	3.0	1.25	4.1	7.1	1.0	2.0	2.6	33.6
23	4.0	11.4	4.7	29.8	3.7	1.25	4.1	6.6	1.0	2.0	2.8	36.1
24	3.9	10.7	4.7	30.5	5.0	1.6	10.0	6.5	.9	1.8	2.7	36.8
25	4.05	9.4	4.75	31.8	5.0	2.05	12.9	6.1	.9	1.6	2.4	37.0
26	4.05	8.0	4.5	33.0	5.2	3.3	12.8	5.7	.9	1.3	2.2	37.2
27	3.9	7.3	4.45	34.0	5.3	3.95	11.8	5.1	.8	1.2	2.1	37.4
28	3.75	7.2	4.85	35.4	4.9	4.95	10.9	4.2	.8	1.1	5.1	37.0
29	3.95	.....	7.5	35.8	4.35	4.8	9.2	3.6	.8	1.0	5.2	37.0
30	4.85	.....	9.3	35.2	3.5	5.0	7.0	3.7	.7	1.0	4.0	37.2
31	5.2	.....	9.9	.....	3.1	.....	5.2	3.9	.....	.9	.....	38.2

Daily discharge, in second-feet, of Tombigbee River at Epes, Ala., for 1911.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	2,840	4,420	10,400	8,200	34,100	2,290	4,320	3,400	3,040	770	895	3,130
2	21,300	4,320	13,000	6,900	31,600	2,040	3,850	3,490	2,500	710	895	3,220
3	26,200	4,220	14,400	5,740	28,700	1,880	3,400	3,580	2,160	710	895	3,310
4	27,300	4,080	15,900	4,980	24,800	1,760	3,490	4,320	1,840	710	895	3,130
5	27,700	3,850	16,800	9,120	19,400	1,680	2,420	4,510	1,680	710	895	2,860
6	27,900	3,720	17,000	20,000	13,900	1,570	1,920	4,700	1,680	655	960	2,500
7	28,400	5,460	15,500	23,600	9,950	1,530	1,680	4,510	1,380	655	1,030	2,160
8	29,300	4,700	11,000	25,900	8,000	1,490	1,600	4,130	1,530	655	1,530	2,000
9	29,900	10,100	8,400	27,800	6,800	1,420	1,680	3,580	1,530	655	3,400	1,920
10	29,900	14,000	7,200	29,500	6,220	1,420	1,680	3,130	1,380	655	2,240	1,840
11	28,500	15,300	6,800	31,500	5,650	1,420	1,600	3,400	1,380	710	2,000	2,160
12	23,400	17,500	6,220	33,500	4,980	1,420	1,600	3,580	1,530	710	2,330	8,000
13	16,000	19,200	5,740	34,200	4,320	1,280	1,680	3,310	1,600	710	2,860	14,800
14	10,500	20,300	5,180	35,900	3,900	1,200	3,310	2,270	1,600	710	2,500	22,300
15	7,800	20,900	4,600	36,700	3,580	1,200	9,640	2,240	1,600	710	2,330	26,500
16	6,500	20,900	4,220	36,900	3,310	1,140	11,700	2,080	1,530	770	2,160	30,000
17	5,840	20,200	4,080	36,900	3,040	1,060	12,500	2,950	1,530	1,240	2,160	30,900
18	5,080	18,600	3,850	36,400	2,860	1,060	7,600	3,940	1,460	1,310	2,160	30,900
19	4,420	16,300	3,670	35,100	2,680	1,060	5,650	5,270	1,380	1,240	2,330	30,200
20	4,040	14,100	3,540	33,200	2,540	1,060	4,600	5,460	1,240	1,170	2,240	30,400
21	3,760	12,100	3,400	31,200	2,420	1,100	3,940	5,840	1,100	1,380	2,080	31,600
22	3,580	11,300	3,540	30,000	2,500	1,140	3,490	6,320	960	1,680	2,160	33,800
23	3,400	10,700	4,040	29,800	3,130	1,200	3,490	5,840	960	1,680	2,330	36,400
24	3,310	9,950	4,040	30,500	4,320	1,380	9,220	5,740	895	1,530	2,240	37,100
25	3,440	8,600	4,080	31,900	4,320	1,720	12,200	5,360	895	1,380	2,000	37,300
26	3,440	7,200	3,850	33,100	4,510	2,770	12,100	4,980	895	1,170	1,840	37,500
27	3,310	6,500	3,800	34,200	4,600	3,360	11,100	4,420	830	1,100	1,760	37,700
28	3,180	6,410	4,180	35,600	4,220	4,270	10,200	3,580	830	1,030	4,420	37,300
29	3,360	.....	6,700	36,100	3,720	4,130	8,400	3,040	830	960	4,510	37,300
30	4,180	.....	8,500	35,400	2,950	4,320	6,220	3,130	770	960	3,400	37,500
31	4,510	.....	9,120	.....	2,590	.....	4,510	3,310	.....	895	.....	28,500

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 1911.

[Drainage area, 8,830 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
January	29,900	2,840	13,000	1.47	1.70	B.
February	20,900	3,720	11,200	1.27	1.32	B.
March	17,000	3,400	7,510	.851	.98	A.
April	36,900	4,980	28,000	3.17	3.54	B.
May	34,100	2,420	8,370	.948	1.09	B.
June	4,320	1,060	1,810	.205	.23	B.
July	12,500	1,600	5,510	.624	.72	B.
August	6,320	2,080	4,060	.460	.53	A.
September	3,040	770	1,420	.161	.18	B.
October	1,680	655	965	.109	.13	B.
November	4,510	895	2,110	.239	.27	B.
December	38,500	1,840	21,100	2.39	2.76	B.
The year	38,500	655	8,740	.990	13.45	

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, 1911.

Drainage area.—1,900 square miles.

Gage.—Staff gage in three sections, the lower one being a sloping timber bolted to bedrock, 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.

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.

Discharge measurements of Black Warrior River near Cordova, Ala., for 1911.

Date.	Hydrographer.	Gage height.	Discharge.
		Feet.	*Sec.-ft.*
Nov. 10	R. E. Robertson	−0.25	446
10	.....do	−0.25	444

Daily gage height, in feet, of Black Warrior River near Cordova, Ala., for 1911.

[C. R. Jones, observer.]

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1911.												
1	0.4	1.3	7.9	1.5	2.6	−0.15	0.0	−0.2	−0.6	−0.95	−0.9	−0.2
2	16.0	1.1	7.0	1.2	3.4	− .2	− .2	.2	− .6	− .95	−1.0	− .2
3	30.0	.9	6.2	1.0	3.0	− .25	− .3	.9	− .6	− .95	−1.0	− .2
4	24.5	1.1	4.9	.8	2.6	− .3	− .4	1.8	− .65	−1.0	−1.0	− .2
5	10.0	1.4	4.0	22.0	2.0	− .3	− .5	.6	− .7	−1.0	−1.0	− .3
6	6.0	1.5	3.5	28.5	1.5	− .35	− .5	.3	− .7	−1.0	−1.0	− .3
7	4.0	3.5	3.0	16.8	1.2	− .4	.3	.1	− .7	−1.0	−1.0	− .3
8	3.0	4.2	2.2	12.6	.8	− .45	.0	.3	− .7	−1.0	−1.0	− .3
9	2.6	7.8	1.7	22.0	.7	− .5	− .2	.5	− .5	−1.0	− .9	− .3
10	2.0	14.8	1.4	20.0	.5	− .5	.0	.2	− .5	−1.0	− .5	− .4
11	2.0	11.6	1.4	12.0	.4	− .5	.6	.1	− .6	−1.0	− .5	− .3
12	1.8	8.7	1.3	8.7	.3	− .55	.4	.0	.1	−1.0	− .2	2.0
13	1.6	6.1	1.1	6.8	.3	− .6	.4	− .2	.0	−1.0	− .2	7.0
14	1.4	6.1	1.0	5.5	.3	− .65	1.9	.0	− .2	−1.0	− .3	9.2
15	1.4	5.8	1.0	5.0	.2	− .7	1.1	.2	− .3	−1.0	− .4	10.3
16	1.4	4.9	.9	5.3	.15	− .7	.8	.5	− .4	−1.0	− .5	13.3
17	1.3	4.1	.8	5.0	.15	− .7	.6	.7	− .5	− .5	− .6	11.4
18	1.3	3.6	.8	4.2	.0	− .7	.4	1.2	− .55	3.0	− .4	6.5
19	1.0	2.9	.7	3.7	.0	− .7	.2	1.6	− .6	1.1	− .4	6.4
20	1.0	3.8	.6	17.1	.1	− .5	.1	1.1	− .6	1.0	− .4	4.5
21	.8	3.8	.6	13.2	.5	− .5	.3	.7	− .6	.9	− .4	5.4
22	.7	3.0	.6	8.0	1.3	− .5	.6	.3	− .65	.7	− .5	7.4
23	.6	2.6	.6	5.1	3.1	− .5	1.1	.0	− .7	.5	− .5	14.0
24	.4	2.3	.5	4.0	3.0	.8	.9	− .2	− .75	.2	− .2	13.0
25	1.2	2.1	.5	3.2	2.4	.4	.6	− .25	− .8	.1	− .1	8.5
26	1.9	2.0	1.1	2.4	1.5	.9	.3	− .3	− .85	.1	− .2	9.4
27	1.8	2.5	2.5	2.1	.8	1.5	.0	− .35	− .9	.0	− .2	20.2
28	1.7	8.7	3.0	2.8	.5	1.1	− .1	− .4	− .9	.0	.7	20.5
29	1.6	.....	2.6	2.8	.2	.9	− .2	− .4	− .9	− .1	.8	12.5
30	1.6	.....	2.2	2.7	.0	.4	− .3	− .5	− .9	− .3	.8	7.6
31	1.5	.....	1.7	.....	− .1	.....	− .3	− .6	.....	− .6	.....	14.0

Daily discharge, in second-feet, of Black Warrior River near Cordova, Ala., for 1909–1911.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1909.												
1	1,460	1,220	7,710	2,940	10,100	2,160	4,520	2,380	318	195	155	240
2	1,260	1,120	6,600	2,660	12,000	5,560	3,520	1,750	318	195	155	375
3	1,080	1,080	7,710	2,380	8,130	6,470	2,720	2,270	290	195	155	318
4	915	995	7,430	2,160	6,470	30,400	2,270	2,540	290	195	155	265
5	4,780	995	6,340	1,960	4,650	29,600	1,850	2,160	265	175	140	240
6	12,100	1,850	5,560	1,850	3,400	17,000	1,460	2,270	265	175	140	685
7	9,950	2,940	6,470	2,940	2,380	10,200	1,170	2,490	240	175	140	1,460
8	5,820	2,940	8,830	7,150	2,830	7,010	1,360	2,490	218	155	140	2,380
9	4,580	1,850	24,400	8,830	2,160	4,390	1,850	1,750	218	155	140	2,380
10	3,400	17,400	27,600	4,520	1,850	10,500	2,380	1,260	195	140	140	1,550
11	2,830	19,900	22,600	3,400	1,650	8,130	1,850	1,080	195	140	140	1,750
12	2,490	13,600	21,200	2,830	1,500	6,470	1,460	915	195	140	140	540
13	2,220	10,400	41,600	3,520	1,410	5,690	1,260	760	195	140	140	290
14	2,060	24,100	60,400	12,400	1,260	5,430	1,080	685	195	140	140	540
15	6,340	30,400	59,600	9,670	1,170	6,080	995	610	175	610	140	915
16	9,110	31,200	50,000	5,950	1,170	5,820	915	575	175	470	155	760
17	13,900	23,800	40,200	4,780	2,160	4,520	915	575	175	405	470	610
18	10,900	18,600	28,900	3,880	2,380	3,640	1,170	540	155	345	345	540
19	8,130	13,800	18,400	3,290	2,270	2,830	1,080	470	155	290	290	540
20	5,560	10,600	10,400	2,830	2,940	2,160	995	438	155	240	240	470
21	4,520	9,110	17,600	2,490	1,750	2,600	915	405	195	470	240	405
22	3,760	7,570	19,400	2,380	2,270	29,600	875	375	610	345	218	345
23	3,400	19,200	11,800	3,290	1,960	27,400	835	345	540	240	470	290
24	3,120	25,600	9,950	19,900	1,260	18,600	835	345	835	240	405	265
25	2,720	29,600	8,130	11,500	1,550	10,200	760	318	540	240	345	405
26	2,220	23,000	6,730	14,600	3,060	7,710	685	318	345	218	318	540
27	1,960	15,000	5,820	14,500	2,940	7,010	610	290	290	218	290	540
28	1,750	10,900	5,170	13,200	2,270	6,470	540	290	265	195	290	540
29	1,600	.....	4,390	10,100	2,060	5,820	540	290	240	175	265	505
30	1,410	.....	3,760	7,570	1,850	5,300	1,080	290	218	155	265	505
31	1,310	.....	3,290	.....	1,360	.....	1,960	290	.....	155	.....	505
1910.												
1	430	985	12,800	575	430	1,080	4,520	1,460	300	190	190	145
2	430	895	12,400	538	398	895	7,290	1,170	500	190	190	145
3	430	852	13,200	538	650	730	6,470	895	895	145	190	145
4	398	852	8,270	500	985	650	6,210	895	500	145	145	190
5	398	810	5,960	538	730	575	7,710	985	430	145	145	810
6	895	810	4,910	730	538	1,170	8,690	1,170	365	110	190	4,130
7	14,800	810	3,880	650	430	1,850	13,900	4,520	365	1,460	190	7,150
8	10,900	770	3,180	612	650	1,260	12,800	6,470	240	895	190	3,180
9	5,820	770	2,600	575	1,080	770	9,250	3,060	145	895	145	1,460
10	4,460	770	2,160	538	770	1,960	7,990	2,490	110	810	145	1,080
11	3,520	730	4,000	538	612	9,950	6,470	1,650	110	810	145	895
12	2,720	810	3,640	500	500	5,170	4,910	1,170	110	730	145	810
13	2,060	1,170	2,600	500	430	4,520	3,700	1,080	80	730	145	730
14	1,650	895	2,270	500	365	3,760	4,260	1,080	80	1,850	145	730
15	1,360	810	1,850	465	332	3 060	4,650	985	53	2,830	110	650
16	1,170	730	1,650	500	500	2,380	2,490	730	53	2,720	110	575
17	1,080	895	1,460	1,650	1,170	1,850	3,290	500	53	1,360	110	500
18	985	18,200	1,360	2,380	810	1,460	3,880	365	40	1,080	110	430
19	1,550	15,400	1,260	1,850	500	1,080	5,040	300	40	500	110	365
20	1,170	8,550	1,170	1,360	430	810	4,390	240	28	365	110	365
21	2,940	6,080	1,080	1,080	895	3,180	3,640	300	28	240	110	300
22	6,080	6,870	985	895	9,110	4,130	3,290	240	28	190	110	300
23	4,390	5,950	940	810	11,100	4,260	2,060	240	28	190	110	300
24	3,290	5,300	895	730	7,570	2,380	1,080	240	110	145	110	500
25	2,600	5,170	852	650	8,270	1,650	1,260	240	240	145	110	1,260
26	2,060	4,780	810	1,460	10,200	1,960	1,750	190	190	145	110	1,170
27	1,850	4,130	770	538	5,690	1,550	1,360	190	145	110	110	985
28	1,650	8,130	730	500	3,520	1,960	1,080	190	110	300	190	895
29	1,460	.....	690	465	2,490	2,270	1,080	190	145	240	190	895
30	1,260	.....	650	465	1,850	3,060	810	190	190	240	190	895
31	1,120	.....	612	.....	1,360	.....	1,650	300	.....	240	.....	810

Daily discharge, in second-feet, of Black Warrior River near Cordova, Ala., for 1909–1911—Continued.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1911.												
1	880	1,650	10,100	1,850	3,060	508	605	475	250	115	130	475
2	22,200	1,460	8,830	1,560	4,000	475	475	740	250	115	100	475
3	43,200	1,280	7,710	1,360	3,520	445	415	1,280	250	115	100	475
4	35,900	1,460	5,950	1,190	3,060	415	355	2,160	228	100	100	475
5	13,200	1,750	4,780	31,200	2,380	415	300	1,030	205	100	100	415
6	7,430	1,850	4,130	40,900	1,850	385	300	810	205	100	100	415
7	4,780	4,130	3,520	23,400	1,560	355	810	670	205	100	100	415
8	3,520	5,040	2,600	17,000	1,190	328	605	810	205	100	100	415
9	3,060	9,950	2,060	31,200	1,110	300	475	955	300	100	130	415
10	2,380	20,400	1,750	28,200	955	300	605	740	300	100	300	355
11	2,380	15,600	1,750	16,200	880	300	1,030	670	250	100	300	415
12	2,160	11,200	1,650	11,200	810	275	880	605	670	100	475	2,380
13	1,960	7,570	1,460	8,550	810	250	880	475	605	100	475	8,830
14	1,750	7,570	1,360	6,730	810	228	2,270	605	475	100	415	12,000
15	1,750	7,150	1,360	6,080	740	205	1,460	740	415	100	355	13,600
16	1,750	5,950	1,280	6,470	705	205	1,190	955	355	100	300	18,100
17	1,650	4,910	1,190	6,080	705	205	1,030	1,110	300	300	250	15,200
18	1,650	4,260	1,190	5,040	605	205	880	1,560	275	3,520	355	8,130
19	1,360	3,400	1,110	4,390	605	205	740	1,960	250	1,460	355	7,990
20	1,360	4,520	1,030	23,800	670	300	670	1,460	250	1,360	355	5,430
21	1,190	4,520	1,030	18,000	955	300	810	1,110	250	1,280	355	6,600
22	1,110	3,520	1,030	10,200	1,650	300	1,030	810	228	1,110	300	9,390
23	1,030	3,060	1,030	6,210	3,640	300	1,460	605	205	955	300	19,200
24	880	2,720	955	4,780	3,520	1,190	1,280	475	185	740	475	17,600
25	1,560	2,490	955	3,760	2,830	880	1,030	445	165	670	540	10,900
26	2,270	2,380	1,460	2,830	1,850	1,280	810	415	148	670	475	12,200
27	2,160	2,940	2,940	2,490	1,190	1,850	605	385	130	605	475	28,400
28	2,060	11,200	3,520	3,290	955	1,460	540	355	130	605	1,110	28,900
29	1,960	.....	3,060	3,290	740	1,280	475	355	130	540	1,190	16,900
30	1,960	.....	2,600	3,180	605	880	415	300	130	415	1,190	9,670
31	1,850	.....	2,060	.....	540	.....	415	250	.....	250	.....	19,200

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 1909–1911.

[Drainage area, 1,900 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
1909.						
January	13,900	915	4,410	2.32	2.68	B.
February	31,200	995	13,200	6.95	7.24	C.
March	60,400	3,290	18,000	9.47	10.92	C.
April	19,900	1,850	6,320	3.33	3.72	B.
May	12,000	1,170	3,040	1.60	1.84	B.
June	30,400	2,160	9,830	5.17	5.77	C.
July	4,520	540	1,430	.753	.87	C.
August	2,540	290	1,020	.537	.62	C.
September	835	155	282	.148	.17	C.
October	610	140	236	.124	.14	C.
November	470	140	226	.119	.13	C.
December	2,380	240	700	.368	.42	C.
The year	60,400	140	4,830	2.54	34.52	
1910.						
January	14,800	398	2,740	1.44	1.66	B.
February	18,200	730	3,680	1.94	2.02	B.
March	13,200	612	3,210	1.69	1.95	B.
April	2,380	465	788	.415	.46	C.
May	11,100	332	2,400	1.26	1.45	B.
June	9,950	575	2,380	1.25	1.40	B.
July	13,900	810	4,740	2.49	2.87	B.
August	6,470	190	1,090	.574	.66	C.
September	895	28	190	.100	.11	D.
October	2,830	110	650	.342	.39	C.
November	190	110	143	.075	.08	D.
December	7,150	145	1,060	.558	.64	C.
The year	18,200	28	1,920	1.01	13.69	
1911.						
January	43,200	880	5,560	2.93	3.38	C.
February	20,400	1,280	5,500	2.89	3.01	B.
March	10,100	955	2,760	1.45	1.67	B.
April	40,900	1,190	11,000	5.79	6.46	C.
May	4,000	540	1,560	.821	.95	C.
June	1,850	205	534	.281	.31	D.
July	2,270	300	801	.422	.49	C.
August	2,160	250	816	.429	.49	C.
September	670	130	265	.139	.16	D.
October	3,520	100	520	.274	.32	D.
November	1,190	100	377	.198	.22	D.
December	28,900	355	8,880	4.67	5.38	C.
The year	43,200	100	3,200	1.68	22.84	

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, 1911.

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 cleared ground and overflows for several hundred feet at a stage of about 20 feet.

Discharge measurements.—Made from the highway bridge.

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.

Discharge measurements of Pearl River at Jackson, Miss., in 1911.

Date.	Hydrographer.	Gage height.	Discharge.
		Feet.	*Sec.-ft.*
Aug. 18	R. E. Robertson	5.22	1,870
18	.....do	5.26	1,850

Daily gage height, in feet, of Pearl River at Jackson, Miss., for 1911.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.8	4.6	6.9	2.9	10.0	2.3	4.3	3.9	2.4	0.7	0.3	0.7
2	14.4	4.3	5.9	2.9	11.5	2.1	4.2	4.1	2.2	.7	.3	.8
3	17.4	4.1	5.2	2.9	12.4	1.8	4.3	3.2	2.8	.7	.3	.8
4	18.9	4.2	4.6	3.0	12.8	1.5	5.7	3.0	2.4	.7	.2	.9
5	20.2	4.2	4.2	2.8	12.2	1.5	4.7	3.9	2.2	.6	.2	.9
6	20.2	3.9	4.0	2.5	10.2	1.4	4.6	4.6	2.0	.6	.3	1.0
7	20.0	3.6	3.8	3.5	8.9	1.3	4.8	5.0	1.8	.6	.3	1.2
8	19.5	3.5	3.6	7.4	7.8	1.3	5.1	4.5	1.7	.6	.5	1.1
9	19.3	3.8	4.0	14.0	6.9	1.3	5.2	3.9	2.3	.5	.6	1.2
10	20.6	5.4	3.8	15.2	6.1	1.2	4.1	3.5	2.1	.5	.7	1.1
11	21.2	6.1	3.5	17.1	5.7	1.1	3.1	3.1	2.0	.5	.7	1.1
12	21.1	8.4	3.2	19.4	4.6	1.4	2.7	2.8	1.9	.5	.8	1.1
13	20.3	8.9	2.9	20.4	4.2	1.5	2.6	5.4	1.7	.5	1.2	2.1
14	18.0	9.4	2.8	21.4	3.6	1.3	2.4	4.9	1.9	.5	1.3	3.0
15	15.3	10.4	2.7	22.1	3.5	1.2	2.5	3.1	1.7	.4	1.5	7.2
16	12.2	11.2	2.6	22.6	3.1	1.0	4.1	2.8	1.7	.4	1.4	8.9
17	9.6	11.7	2.5	22.4	2.8	.9	3.5	3.9	1.7	.4	1.4	7.8
18	8.7	11.9	2.4	22.0	2.5	.8	4.8	4.9	1.6	.4	1.3	7.4
19	7.1	11.9	2.2	21.7	1.9	.9	5.3	5.5	1.6	.4	1.3	8.2
20	6.0	12.0	2.2	21.6	2.2	1.3	5.6	4.6	1.5	.4	1.2	9.0
21	5.4	11.8	2.2	21.0	2.1	1.1	5.6	4.5	1.5	.4	1.2	10.1
22	4.5	11.1	2.2	20.3	1.9	.9	5.4	5.1	1.3	.3	1.1	10.5
23	4.2	10.1	2.1	18.9	1.7	.9	5.3	5.8	1.3	.3	1.1	14.0
24	4.1	9.6	2.0	16.8	1.6	1.0	4.1	5.9	1.2	.3	1.0	14.0
25	4.0	8.9	2.1	14.3	1.4	1.2	4.9	5.3	1.0	.3	.9	13.8
26	3.8	8.5	2.2	12.4	1.4	1.7	5.6	4.6	1.0	.3	.8	14.0
27	3.7	7.9	2.2	10.3	1.2	2.9	6.4	4.5	.9	.3	.8	17.5
28	4.0	7.9	2.2	10.6	1.4	4.3	6.5	3.6	.8	.3	.9	16.0
29	3.4	.....	2.2	9.5	1.5	4.6	6.2	3.2	.7	.3	.8	17.1
30	4.1	.....	2.2	8.3	1.6	4.6	5.6	2.6	.7	.3	.7	16.9
31	4.4	.....	2.6	.....	1.9	.....	4.6	2.5	.....	.3	.....	18.4

Daily discharge, in second-feet, of Pearl River at Jackson, Miss., for 1911.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,220	1,580	2,800	830	4,640	590	1,450	1,270	630	145	100	145
2	7,580	1,450	2,260	830	5,610	520	1,400	1,360	555	145	100	160
3	9,820	1,360	1,870	830	6,200	415	1,450	955	790	145	100	160
4	11,000	1,400	1,580	870	6,460	320	2,140	870	630	145	90	180
5	12,200	1,400	1,400	790	6,060	320	1,630	1,270	555	130	90	180
6	12,200	1,270	1,320	670	4,760	290	1,580	1,580	485	130	100	200
7	12,000	1,140	1,220	1,090	3,980	265	1,680	1,770	415	130	100	240
8	11,600	1,090	1,140	3,080	3,320	265	1,820	1,540	380	130	120	220
9	11,400	1,220	1,320	7,300	2,800	265	1,870	1,270	590	120	130	240
10	12,500	1,980	1,220	8,140	2,360	240	1,360	1,090	520	120	145	220
11	14,000	2,360	1,090	9,580	2,140	220	910	910	485	120	145	220
12	13,000	3,680	955	11,500	1,580	290	750	790	450	120	160	220
13	12,300	3,980	830	12,400	1,400	320	710	1,980	380	120	240	520
14	10,300	4,280	790	13,300	1,140	265	630	1,720	450	120	265	870
15	8,210	4,900	750	14,000	1,090	240	670	910	380	110	320	2,970
16	6,060	5,420	710	14,600	910	200	1,360	790	380	110	290	3,980
17	4,400	5,740	670	14,300	790	180	1,090	1,270	380	110	290	3,320
18	3,860	5,870	630	13,900	670	160	1,680	1,720	350	110	265	3,080
19	2,920	5,870	555	13,600	450	180	1,920	2,040	350	110	265	3,560
20	2,310	5,940	555	13,500	555	265	2,090	1,580	320	110	240	4,040
21	1,980	5,800	555	12,900	520	220	2,090	1,540	320	110	240	4,700
22	1,540	5,350	555	12,300	450	180	1,980	1,820	265	100	220	4,960
23	1,400	4,700	520	11,000	380	180	1,920	2,200	265	100	220	7,300
24	1,360	4,400	485	9,340	350	200	1,360	2,260	240	100	200	7,300
25	1,320	3,980	520	7,510	290	240	1,720	1,920	200	100	180	7,160
26	1,220	3,740	555	6,200	290	380	2,090	1,580	200	100	160	7,300
27	1,180	3,380	555	4,830	240	830	2,530	1,540	180	100	160	9,900
28	1,320	3,380	555	5,020	290	1,450	2,580	1,140	160	100	180	8,700
29	1,040	.....	555	4,340	320	1,580	2,420	955	145	100	160	9,580
30	1,360	.....	555	3,620	350	1,580	2,090	710	145	100	145	9,420
31	1,500	.....	710	.....	450	.....	1,580	670	.....	100	.....	10,600

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

Monthly discharge of Pearl River at Jackson, Miss., for 1911.

[Drainage area, 3,120 square miles.]

Month.	Discharge in second-feet.				Run-off (depth in inches on drainage area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.		
January	14,000	1,040	6,260	2.01	2.32	B.
February	5,940	1,090	3,450	1.11	1.16	B.
March	2,800	485	961	.308	.36	B.
April	14,600	670	7,740	2.48	2.77	B.
May	6,460	240	1,960	.628	.72	B.
June	1,580	160	422	.135	.15	B.
July	2,580	630	1,630	.522	.60	B.
August	2,260	670	1,390	.446	.51	B.
September	790	145	386	.124	.14	B.
October	145	100	116	.037	.04	C.
November	320	90	181	.058	.06	C.
December	10,600	145	3,600	1.15	1.33	B.
The year	14,600	90	2,330	.747	10.16	

MISCELLANEOUS MEASUREMENTS.

The following miscellaneous discharge measurements were made in south Atlantic coast and eastern Gulf of Mexico drainage basins during 1911:

Miscellaneous measurements in south Atlantic coast and eastern Gulf of Mexico drainage basins in 1911.

Date.	Stream.	Tributary to—	Locality.	Gage height.	Discharge.
				Feet.	*Sec.-ft.*
July 29	Roanoke River	Albemarle Sound.	Randolph, Va.	3.28	8.76
Dec. 10	do	do	Weldon, N. C.	10.56	3,440
Oct. 4	Beech Creek	Chattahoochee River.	Young's Mills, about 5 miles north of La Grange, Ga.		2.9
4	do	do	do		2.7
26	Allatoona Creek	Etowah River	Alabama wagon bridge, one-fourth mile east of Allatoona, Ga.		14
7	Etowah River	Alabama River	Milford Shoals, about 1 mile above the regular gaging station at Ball Ground, Ga.	.37	183
7	do	do	do	.47	186

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 1911.

	Drainage area (square miles).	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
James River at Buchanan, Va.	2,060	2.38	1.52	2.13	3.75	0.631	0.427	0.317	0.343	0.519	1.13	0.913	1.17	1.27
James River at Cartersville, Va.	6,230	1.73	1.33	1.25	2.17	.591	.368	.279	.242	.549	.689	.833	1.34	.944
Roanoke River at Roanoke, Va.	388	1.32	1.05	1.70	2.53	.559	.513	.492	.276	.284	.549	.546	1.38	.933
Yadkin River near Salisbury, N. C.	3,400	.....	.....	.....	.....	.....	.....	.....	.....	.756	1.28	.935	1.44	.....
Tallulah River at Tallulah Falls, Ga.	191	2.97	2.30	2.10	5.97	2.93	1.73	1.51	1.55	1.35	1.92	2.09	3.00	2.45
Broad River (of Georgia) near Carlton, Ga.	762	1.23	1.13	1.05	2.14	.881	.988	.959	.966	1.13	1.21	1.28	2.32	1.27
Ocmulgee River near Jackson, Ga.	1,400	.487	.864	.793	1.32	.598	.317	.688	.850	.273	.964	1.24	1.72	.843
Ocmulgee River at Macon, Ga.	2,420	.566	.657	.595	1.06	.504	.307	.616	.711	.255	1.02	.992	1.62	.744
Oconee River near Greensboro, Ga.	1,100	.813	.885	.746	1.66	.667	.424	1.40	1.35	.411	.945	1.35	1.95	1.05
Oconee River at Fraleys Ferry, near Milledgeville, Ga.	2,840	.820	.768	.711	1.19	.535	.384	.824	.820	.335	.982	1.05	1.74	.849
Oconee River at Dublin, Ga.	4,180	.804	.732	.703	1.26	.455	.380	.742	.758	.443	.761	1.08	2.21	.861
Chattahoochee River near Norcross, Ga.	1,170	1.71	1.26	1.23	3.09	1.45	.966	1.13	1.02	.702	1.26	1.52	1.97	1.44
Flint River near Woodbury, Ga.	1,090	.945	1.03	.743	1.17	.542	.301	.543	.899	.252	.377	.817	1.49	.759
Flint River near Culloden, Ga.	2,000	.....	.....	.....	.....	.....	.....	.488	.740	.240	.590	.655	1.44	.....
Flint River near Montezuma, Ga.	2,700	.974	.948	.722	1.06	.589	.364	.559	.774	.347	.574	.804	1.42	.759
Flint River at Albany, Ga.	5,000	.954	.794	.610	.910	.528	.328	.498	.664	.372	.476	.644	1.91	.726
Flint River at Bainbridge, Ga.	7,410	.710	.634	.544	.765	.526	.432	.528	.549	.424	.445	.563	.....	.....
Pea River at Pera, Ala.	1,180	1.26	.753	.707	1.27	.513	.275	.373	.381	.214	.257	.341	1.45	.650
Conecuh River at Beck, Ala.	1,290	1.22	.714	.653	2.22	.730	.340	.457	.436	.247	.207	.253	.775	.688
Oostanaula River at Resaca, Ga.	1,610	2.41	2.27	1.33	3.55	1.22	.777	.814	.519	.306	.708	.895	1.79	1.37
Coosa River at Riverside, Ala.	7,060	1.88	1.56	1.02	3.44	.878	.499	.865	.904	.326	.568	.793	1.78	1.21
Alabama River at Selma, Ala.	15,400	1.84	1.51	.935	2.56	1.10	.566	.864	.766	.382	.426	.727	1.42	1.09
Etowah River near Ball Ground, Ga.	466	1.86	1.31	1.34	3.80	1.59	.968	1.11	.981	.682	1.56	1.60	1.88	1.56
Etowah River near Rome, Ga.	1,800	1.52	1.11	.950	3.23	.939	.644	1.07	.806	.463	1.02	1.19	1.22	1.18
Amicalola River near Potts Mountain, Ga.	80	2.56	1.79	1.79	6.50	2.56	1.75	1.78	1.68	1.10	2.09	2.11	2.68	2.36
Tallapoosa River at Sturdevant, Ala.	2,460	1.87	1.54	.967	2.17	.948	.549	1.32	.984	.329	.345	.935	1.38	1.11
Tombigbee River at Columbus, Miss.	4,440	1.69	1.59	1.20	5.81	.856	.209	.595	.588	.138	.086	.171	3.02	1.32
Tombigbee River at Epes, Ala.	8,830	1.47	1.27	.851	3.17	.948	.205	.624	.460	.161	.109	.239	2.39	.990
Black Warrior River near Cordova, Ala.	1,900	2.93	2.89	1.45	5.79	.821	.281	.422	.429	.139	.274	.198	4.67	1.68
Pearl River at Jackson, Miss.	3,120	2.01	1.11	.308	2.48	.628	.135	.522	.446	.124	.037	.058	1.15	.747

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