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UNITED STATES GEOLOGICAL SURVEY

No. 27

OPERATIONS AT RIVER STATIONS, 1898.—PART I

WASHINGTON
GOVERNMENT PRINTING OFFICE
1899

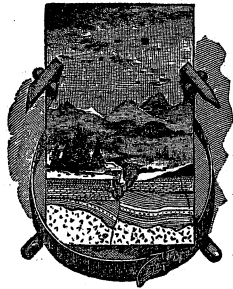
UNITED STATES GEOLOGICAL SURVEY

CHARLES D. WALCOTT, DIRECTOR

OPERATIONS AT RIVER STATIONS, 1898

A REPORT OF THE
DIVISION OF HYDROGRAPHY
OF THE
UNITED STATES GEOLOGICAL SURVEY

PART I



WASHINGTON
GOVERNMENT PRINTING OFFICE
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LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,
UNITED STATES GEOLOGICAL SURVEY,
DIVISION OF HYDROGRAPHY,
Washington, March 1, 1899.

SIR: I have the honor to transmit herewith a manuscript giving the results of operations at the river stations in the eastern and central portions of the country during the calendar year 1898, together with related data, for publication in the series of papers upon water supply and irrigation. The data for the western portion of the country (Part II) will be transmitted as the succeeding number of the series.

Very respectfully,

F. H. NEWELL,
Hydrographer in Charge.

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

OPERATIONS AT RIVER STATIONS, 1898,

PART I.

INTRODUCTION.

The following pages contain descriptions of the river stations maintained during 1898 by the United States Geological Survey, together with tables of the average daily height of water, results of measurements of discharge, and rating tables constructed from the latter and applicable in general for the calendar year. Similar facts have been printed for the year 1896 in Water-Supply Paper No. 11, and for 1897 in Water-Supply Papers Nos. 15 and 16. In the papers mentioned the description of each station has been given, next the date and result of each measurement, followed by the table of daily gage heights. In the present manuscript the order has been modified in order to secure a more concise presentation. The stations have been grouped in geographic order, and for each group the descriptions of all of the stations have been given; following these all of the gage heights for the group, then all of the discharge measurements and the rating tables. In the case of river stations, where the changes have been trivial in character, the descriptions have not been repeated, but reference made to the page of preceding papers where more fully described.

The material above noted consists essentially of the results of operations at the river stations, and forms the basis for computations of daily, monthly, and annual flow. In order to make these necessary computations considerable time and labor is involved and the resulting facts can be most clearly and concisely given by diagrams. The preparation of the computations and the diagrams necessitates unavoidable delays, and therefore it has been the custom to present the facts, such as are given herewith, as soon as possible after the close of the calendar year, so that the original data may be available at an early date to all who are concerned with their use. While these original figures are being printed the computations of final results are being prepared, and, with the illustrations, have in the past been made to form a part of the annual report of the Director of the Geological Survey. For example, the results for 1896, mentioned above, as given in Water-Supply Paper No. 11, are fully discussed in Part IV of the Eighteenth Annual Report, also the original data for

1897, given in Water-Supply Papers Nos. 15 and 16, are published in final form in the Nineteenth Annual Report, Part IV. In the same way the figures herewith given form the basis for conclusions, being prepared for publication in Part IV of the Twentieth Annual Report.

Most of the measurements herewith presented have been obtained through local hydrographers, a comparatively small part of the work having been conducted directly from the office of the Geological Survey at Washington. Acknowledgment is therefore due to each of these persons individually. Thanks should also be extended to individuals and corporations who have cooperated in various ways, either by furnishing readings of height of water or assisting in transportation. The following list gives the names of the resident hydrographers or persons cooperating, this being arranged alphabetically by States:

Arizona: W. A. Farish, civil engineer, Phoenix; Albert T. Colton, civil engineer, Florence.

California: J. B. Lippincott, civil engineer, Los Angeles.

Colorado: A. L. Fellows, deputy State engineer, Denver.

Georgia and Alabama: Prof. B. M. Hall, civil engineer, Atlanta, Ga., and Prof. W. S. Yeates, State geologist, Atlanta.

Idaho: Frank S. Shirley, civil engineer, Boise.

Kansas: W. G. Russell, Russell; Prof. E. C. Murphy, State University, Lawrence.

Maryland: Prof. W. B. Clark, State geologist, Baltimore.

Montana: S. M. Emery, director experiment station, Bozeman; and Roe Emery, Bozeman.

Nebraska: Prof. O. V. P. Stout, State University, Lincoln, assisted by Adna Dobson and Glenn E. Smith.

Nevada: L. H. Taylor, civil engineer, Golconda.

New Mexico: P. E. Harroun, civil engineer, Santa Fe.

North and South Carolina: Prof. J. A. Holmes, State geologist, Chapel Hill, N. C., assisted by E. W. Myers.

Texas: Prof. Thomas U. Taylor, State University, Austin.

Utah: Prof. Samuel Fortier, civil engineer, Corinne.

Virginia and West Virginia: Prof. D. C. Humphreys, Washington and Lee University, Lexington, Va.

Washington: Sydney Arnold, civil engineer, North Yakima; William J. Ware, civil engineer, Port Angeles.

Wyoming: Clarence T. Johnston, civil engineer, Cheyenne.

In a number of instances related data have been inserted, such, for example, as results of computation of daily flow at mill dams, made by local engineers, and data of river heights obtained from the United States Weather Bureau or Corps of Engineers, United States Army. Reference to these facts, mainly unpublished, has been, or will be, made in other publications of this survey, and they are, therefore, placed in consecutive order for convenience of reference.

The methods of measurement of discharge of the various streams and the computations have been described in a general way on pages 18-30 of the Nineteenth Annual Report, Part IV. There has been gradual progress and development of details, but the operations there described have remained essentially unchanged.

NORTHERN ATLANTIC COAST DRAINAGE.

DESCRIPTION OF RIVER STATIONS.

Waterville station on Kennebec River.—Computations of discharge of Kennebec River at Waterville, Maine, have been made by Mr. Sumner Hollingsworth, president of the Hollingsworth & Whitney Company, those beginning on November 15, 1891, being fragmentary in character through 1892. Prior to June 20, 1893, computations are based upon the flow over the dam as determined by weir formula. Subsequent to that date figures are from computations of the flow through turbines, using assumed readings, to which has been added any excess passing over the crest of the dam. The figures really give the discharge at noon on each day, this hour being the time when the flow is least affected by storage of dams upstream, and as giving most readily the average for the day. A summary of results is given on page 75 of the Nineteenth Annual Report, Part IV.

Rumford Falls station on Androscoggin River.—Computations of discharge made of Androscoggin River at Rumford Falls are described on page 92 of the Nineteenth Annual Report, Part IV. They begin on May 18, 1892, and extend to the end of April, 1895. Until January, 1893, the discharge was determined from the computed flow over the dam, as given by Francis's ordinary weir formula. Subsequent to that time, as water was used for power, additions were made to the computed flow over the dam of the amounts assumed to pass through the turbines, until July, 1895. Since that date the quantities are the sums of the actual measured quantities passing through the wheels and the computed flow over the dam. The gage readings are taken at the lower dam, and at first were made once a day, later four times a day, and subsequently every two hours. The results have been kindly furnished by Mr. Charles A. Mixer, resident engineer of the Rumford Falls Power Company. A summary of the results is given on page 93 of the Nineteenth Annual Report, Part IV.

Lambertville station on Delaware River.—Described on page 7 of Paper No. 15; results for 1897 shown on page 122 of the Nineteenth Annual Report, Part IV.

Harrisburg station on Susquehanna River.—Described on page 8 of Paper No. 15; results for 1897 given on page 122 of the Nineteenth Annual Report, Part IV.

Rowlandsville station on Octoraro Creek.—Described on page 12 of Paper No. 15; results for 1897 given on page 128 of the Nineteenth Annual Report, Part IV.

Woodstock station on Patapsco River.—Described on page 13 of Paper No. 15; results for 1897 given on page 129 of the Nineteenth Annual Report, Part IV.

Laurel station on Patuxent River.—Described on page 14 of Paper No. 15; results for 1897 shown on page 131 of the Nineteenth Annual Report, Part IV.

Sharpsburg station on Antietam Creek.—Described on page 16 of Paper No. 15; results for 1897 shown on page 149 of the Nineteenth Annual Report, Part IV. On January 26, 1898, a United States Geological Survey standard copper bolt bench mark was set in a rock on the left bank of the stream, 150 feet upstream from the point where the cable enters the ground. This is 16.34 feet above gage datum.

Port Republic station on North and South rivers.—Described on page 17 of Paper No. 15; result for 1897 shown on page 138 of the Nineteenth Annual Report, Part IV. No measurements were made on these rivers in 1898.

Millville station on Shenandoah River.—Described on page 19 of Paper No. 15; results for 1897 shown on pages 150 and 151 of the Nineteenth Annual Report, Part IV.

Frederick station on Monocacy River.—Described on page 20 of Paper No. 15; results for 1897 shown on page 154 of the Nineteenth Annual Report, Part IV.

Point of Rocks station on Potomac River.—Described on page 21 of Paper No. 15; results for 1897 shown on page 152 of the Nineteenth Annual Report, Part IV.

Park station on Rock Creek.—Described on page 22 of Paper No. 15; results for 1897 given on page 155 of the Nineteenth Annual Report, Part IV. No rating table was constructed for lack of sufficient data.

Glasgow station on North of James River.—Described on page 23 of Paper No. 15; results for 1897 given on page 162 of the Nineteenth Annual Report, Part IV.

Buchanan station on James River.—Described on page 24 of Paper No. 15; results for 1897 given on page 172 of the Nineteenth Annual Report, Part IV. The observer is W. H. Hyde. The temporary bench mark is the upper end of the fifth floor beam from the left bank. It is at an elevation of 30 feet above the zero of the gage.

TABLES OF DAILY DISCHARGE AND GAGE HEIGHT.

Daily discharge of Kennebec River at Waterville, Maine, in cubic feet per second, average for the twenty-four hours.

[Drainage area, 4,410 square miles.]

1892.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1				3,530	-----	11,840	17,355	-----	-----	-----	-----	-----
2				4,730	7,920	-----	20,030	-----	-----	-----	-----	-----
3				10,260	-----	11,840	-----	-----	-----	-----	-----	-----
4				19,100	6,310	-----	29,985	-----	-----	-----	-----	-----
5				25,250	-----	-----	-----	-----	-----	-----	-----	-----
6				22,980	8,950	11,515	-----	-----	-----	-----	-----	-----
7				28,150	-----	-----	-----	-----	-----	-----	-----	-----
8				24,830	-----	8,200	-----	-----	-----	-----	-----	-----
9				22,810	9,680	-----	-----	-----	-----	-----	-----	-----
10				18,060	-----	7,925	-----	-----	-----	-----	-----	-----
11				18,060	5,900	-----	-----	-----	-----	-----	-----	-----
12				11,195	7,650	7,375	-----	-----	-----	-----	-----	-----
13				8,660	-----	7,100	-----	-----	-----	-----	-----	-----
14				-----	-----	-----	-----	-----	-----	-----	α 545	-----
15				-----	-----	-----	-----	-----	-----	-----	α 395	-----
16				-----	-----	-----	-----	-----	-----	-----	α 670	-----
17				-----	6,940	8,490	-----	-----	-----	-----	α 639	-----
18				6,940	6,580	-----	-----	-----	-----	-----	α 568	-----
19				-----	-----	-----	-----	-----	-----	-----	α 961	-----
20				6,465	5,310	10,260	-----	-----	-----	-----	α 1,449	-----
21				-----	-----	-----	-----	-----	-----	-----	α 1,488	-----
22			2,470	7,530	-----	17,355	-----	-----	-----	-----	α 1,112	-----
23			-----	9,835	7,215	-----	-----	-----	-----	-----	-----	-----
24			2,430	-----	-----	19,640	-----	-----	-----	-----	-----	-----
25			-----	-----	13,750	21,615	-----	-----	-----	-----	-----	-----
26			2,220	-----	-----	-----	-----	-----	-----	-----	-----	-----
27			2,000	13,160	10,750	19,250	-----	-----	-----	-----	-----	-----
28			2,325	-----	-----	19,640	-----	-----	-----	-----	-----	-----
29			2,390	8,780	-----	29,990	-----	-----	-----	-----	-----	-----
30			2,730	-----	12,160	20,030	-----	-----	-----	-----	-----	-----
31			3,080	-----	-----	-----	-----	-----	-----	-----	-----	-----

α These figures are for the year 1891. The closing of gates at Moosehead Lake is said to have caused the small discharge here recorded.

1893.

1		2,350	2,500	4,100	21,700	13,200	10,840	1,940	2,490	-----	1,980	2,780
2		2,250	2,500	4,250	21,200	16,250	-----	2,330	2,140	1,980	1,980	2,580
3		2,200	2,450	4,500	27,600	15,200	9,990	2,380	-----	1,980	1,980	-----
4		2,100	2,400	4,400	24,700	-----	11,230	2,360	1,890	1,710	1,980	-----
5		2,100	2,400	3,700	60,500	13,800	8,840	2,290	1,890	1,980	-----	1,440
6		2,200	2,400	3,700	46,500	15,250	9,740	-----	1,890	1,980	1,980	1,440
7		2,300	2,550	3,600	36,700	16,250	8,410	2,240	2,260	1,980	2,250	1,440
8		2,250	2,350	3,600	30,200	18,200	8,410	2,210	2,360	-----	1,980	1,440
9		2,100	2,325	6,400	26,300	23,500	-----	2,360	2,680	1,980	1,980	1,440
10		3,000	2,300	9,200	25,200	15,900	8,200	2,360	-----	1,980	1,980	-----
11		2,400	2,800	12,400	27,000	-----	8,710	2,290	2,180	1,710	1,980	1,440
12	2,000	2,550	2,300	15,000	31,700	16,250	6,510	2,290	2,380	1,440	-----	1,440
13	2,100	2,600	5,400	18,500	31,300	23,200	6,410	-----	2,190	1,710	1,980	1,440
14	2,300	2,550	8,000	16,500	64,500	20,500	6,040	2,240	2,410	1,980	1,980	1,440
15	2,500	2,500	11,300	13,200	43,100	18,200	5,540	2,290	2,340	4,000	1,980	1,440
16	2,600	2,400	7,400	16,500	34,100	15,200	-----	2,430	2,175	3,050	1,980	1,440
17	4,800	2,300	6,300	14,100	30,700	13,200	4,840	2,210	-----	2,550	1,980	-----
18	5,000	2,300	6,100	14,000	33,500	13,200	4,490	2,150	1,710	2,550	2,250	1,710
19	4,200	2,100	5,700	14,100	46,100	11,200	3,660	2,290	1,980	1,980	-----	1,710
20	3,200	2,200	5,600	16,300	34,500	11,000	3,270	-----	2,200	1,980	2,250	1,440
21	2,100	2,350	4,600	14,500	-----	12,000	3,590	2,240	1,710	1,980	2,250	1,440
22	1,900	2,450	3,900	12,300	24,300	14,480	3,490	2,180	1,710	1,980	2,550	1,440
23	2,100	2,350	3,600	13,800	22,800	13,640	-----	2,180	-----	1,980	2,550	1,440
24	2,200	2,200	3,600	15,800	21,200	11,840	-----	2,153	-----	1,980	2,480	-----
25	2,300	2,400	4,000	14,500	19,800	-----	3,170	2,295	1,710	1,980	1,980	-----
26	2,200	2,400	4,400	14,600	17,000	14,270	2,830	2,390	1,710	2,380	-----	1,440
27	2,200	2,450	4,400	14,200	16,300	14,000	2,440	2,390	1,980	1,980	1,980	1,590
28	2,300	2,500	4,300	14,300	15,200	15,100	2,360	2,340	1,980	3,630	2,080	1,440
29	2,200	-----	4,200	14,800	14,550	14,600	2,240	2,310	1,710	3,530	3,980	1,590
30	2,300	-----	4,200	19,800	13,600	13,500	-----	2,230	1,980	3,280	3,630	1,590
31	2,400	-----	4,100	-----	13,900	-----	2,440	2,430	-----	2,280	-----	-----
Mean	2,650	2,350	4,180	11,660	30,520	15,290	5,770	2,270	2,040	2,330	2,230	1,580

Daily discharge of Kennebec River, at Waterville, Maine, in cubic feet per second, average for the twenty-four hours—Continued.

1894.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,470	1,910	1,740	-----	15,650	11,190	-----	3,305	2,253	2,181	3,896	1,570
2	1,640	1,910	1,740	4,496	14,510	12,930	7,060	3,240	1,125	1,923	7,295	-----
3	1,640	1,740	1,740	4,496	14,090	-----	6,860	3,143	2,812	1,915	5,619	2,187
4	1,640	-----	-----	4,370	13,220	12,930	-----	3,218	1,871	1,930	10,512	2,194
5	1,640	1,910	2,010	4,370	13,220	10,400	10,020	-----	2,207	1,896	9,486	2,213
6	1,640	1,910	1,740	5,473	-----	9,070	8,570	3,087	1,824	1,655	7,381	1,869
7	-----	1,740	1,910	4,720	12,280	9,070	7,665	3,019	2,209	-----	5,606	2,193
8	1,640	1,740	2,370	-----	10,100	8,520	-----	3,019	2,185	1,897	4,651	2,128
9	1,470	1,740	3,040	5,278	8,550	6,910	7,053	3,285	1,140	1,913	3,937	1,245
10	1,640	1,740	4,643	5,655	7,226	-----	6,336	3,045	2,293	1,913	3,739	1,937
11	1,640	-----	-----	5,950	7,050	5,900	6,674	3,050	2,094	5,553	3,040	1,211
12	1,470	1,740	5,390	6,980	6,110	-----	6,674	-----	2,818	6,738	3,636	1,694
13	1,640	1,740	5,390	7,170	-----	6,280	6,674	3,250	2,280	5,017	3,476	1,819
14	-----	1,740	6,220	6,980	5,840	5,900	6,336	3,125	2,309	8,337	2,782	2,386
15	1,470	1,740	5,580	-----	6,820	6,010	-----	3,005	2,341	9,036	2,500	2,600
16	1,640	1,740	4,400	12,150	7,410	5,900	6,674	3,010	-----	3,829	2,061	2,275
17	1,640	1,740	4,855	13,310	9,935	-----	6,048	3,110	2,183	7,527	2,489	2,513
18	1,470	-----	-----	20,040	9,935	-----	5,765	3,060	1,189	6,418	2,651	2,331
19	1,640	1,740	4,140	21,760	10,915	5,520	5,100	-----	1,883	5,038	1,984	3,326
20	1,640	1,740	5,405	22,910	-----	9,565	5,550	3,230	1,685	4,253	2,446	2,205
21	1,640	1,780	3,802	26,860	13,540	10,055	4,885	3,050	12,102	3,231	2,446	2,208
22	1,640	1,780	6,680	-----	3,250	5,490	-----	2,915	6,659	3,730	2,502	2,208
23	1,640	1,810	6,395	35,280	6,100	6,265	3,680	2,825	4,673	3,576	2,495	1,229
24	1,640	1,810	5,215	33,680	6,390	-----	3,565	3,070	4,143	3,315	2,487	1,912
25	1,910	-----	-----	29,130	6,580	3,930	3,670	2,555	2,646	2,549	2,736	-----
26	1,910	1,760	4,855	25,210	10,560	-----	3,781	3,830	2,571	2,605	2,484	-----
27	1,910	1,740	4,184	21,980	-----	3,710	3,830	2,855	2,509	2,854	2,461	1,831
28	-----	1,740	4,180	20,680	8,690	10,480	3,830	2,494	2,378	-----	2,515	1,770
29	1,640	-----	3,895	-----	7,480	8,985	-----	2,615	1,918	2,859	1,444	1,657
30	1,640	-----	3,620	17,450	7,960	8,070	3,415	2,294	467	2,458	1,645	904
31	1,640	-----	3,510	-----	10,000	-----	3,345	2,400	-----	2,452	-----	1,227
Mean	1,640	1,780	4,020	14,680	9,570	7,790	5,720	2,970	2,740	3,750	3,760	1,930

1895.

1	1,135	2,214	1,685	2,176	13,227	9,818	5,042	3,153	1,792	1,106	1,081	5,904
2	1,599	2,208	1,687	2,205	11,967	9,314	4,315	3,062	2,867	1,149	1,347	4,682
3	1,655	1,733	1,252	2,406	11,461	8,408	4,278	3,063	2,660	1,190	1,870	6,883
4	1,604	2,174	1,720	2,638	12,172	7,979	3,784	1,576	2,226	1,110	1,421	5,842
5	1,698	2,444	2,229	6,164	11,934	7,364	4,062	3,015	2,212	1,152	2,201	3,519
6	1,780	2,077	2,145	7,691	12,584	7,370	3,844	2,738	2,200	-----	1,946	2,723
7	1,678	1,854	1,956	9,286	12,764	7,425	4,429	2,610	2,155	1,128	1,708	3,273
8	1,947	1,718	1,951	9,325	10,917	7,623	4,499	2,816	1,438	1,104	1,657	2,301
9	1,894	1,622	1,949	24,407	12,074	6,166	4,039	2,580	2,250	1,126	1,426	3,393
10	1,896	1,397	1,368	54,192	7,848	6,418	4,072	2,382	2,502	1,356	5,125	3,089
11	1,889	1,983	1,633	27,999	9,630	5,852	3,993	1,529	2,256	1,109	9,595	3,105
12	1,864	1,946	1,920	20,858	7,920	6,454	3,934	2,690	2,209	1,121	8,351	2,598
13	1,273	1,943	1,932	19,304	11,352	4,854	3,731	2,435	1,996	-----	6,279	2,278
14	2,403	1,967	1,946	24,061	16,175	5,887	3,658	2,405	1,970	1,185	3,882	2,524
15	2,441	1,648	2,236	86,201	12,878	6,925	3,767	2,160	1,150	1,141	3,869	1,747
16	2,481	1,950	2,224	70,381	12,121	6,592	3,631	2,433	1,736	1,134	4,972	2,545
17	2,490	579	1,566	43,408	9,842	6,156	3,508	2,118	1,710	1,250	6,455	2,069
18	2,509	2,112	2,224	34,708	7,895	6,121	3,546	857	1,987	1,546	5,695	2,621
19	2,439	1,708	2,194	31,068	8,668	5,616	3,512	2,681	1,721	1,587	4,591	1,928
20	1,817	1,689	1,937	31,562	7,807	5,905	3,232	2,072	1,741	-----	4,169	2,180
21	2,439	1,361	1,965	31,363	5,863	5,641	3,257	2,357	1,707	1,353	10,949	2,536
22	2,304	1,656	1,946	29,572	5,449	4,497	2,617	2,240	1,050	1,422	11,179	3,321
23	2,332	1,606	1,977	28,511	5,515	5,075	3,151	2,199	1,139	1,428	6,694	11,026
24	2,290	-----	1,627	23,707	8,261	5,046	2,875	2,722	1,387	1,432	5,124	9,147
25	2,353	1,629	2,241	20,348	8,037	5,670	2,893	1,656	1,167	1,372	6,632	6,136
26	2,319	1,676	2,314	18,931	6,919	6,216	2,590	4,284	1,155	1,399	4,804	5,162
27	1,706	1,714	2,769	15,489	7,533	6,290	2,552	5,089	1,104	-----	9,383	5,792
28	2,435	1,927	2,600	15,929	8,119	5,708	2,096	4,890	1,145	1,115	15,900	26,673
29	2,198	-----	2,418	10,853	6,109	5,690	2,671	3,450	-----	1,355	11,623	16,148
30	2,439	-----	2,459	13,216	4,868	4,955	2,930	3,080	1,115	1,395	9,372	14,590
31	2,127	-----	1,898	-----	8,982	-----	2,678	3,102	-----	1,081	-----	19,713
Mean	2,040	1,800	2,000	23,930	9,580	6,430	3,520	2,690	1,780	1,250	5,610	6,030

Daily discharge of Kennebec River at Waterville, Maine, in cubic feet per second, average for the twenty-four hours—Continued.

1896.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	3,281	2,648	6,257	5,527	29,468	7,491	4,811	3,730	2,643	2,870	3,238	8,049
2	21,881	1,292	111,246	5,861	26,601	11,004	4,374	2,696	2,611	2,975	4,259	6,844
3	17,367	2,717	52,691	6,647	25,207	6,846	4,236	3,595	1,772	3,734	4,023	5,730
4	11,482	2,522	24,810	6,442	18,064	5,891	5,578	3,597	2,577	2,275	3,757	2,200
5	6,708	2,243	13,866	5,782	26,563	5,318	5,249	3,037	2,371	5,249	3,435	2,603
6	4,153	2,236	13,170	5,709	30,879	4,961	11,678	3,044	2,129	4,567	29,865	2,545
7	3,803	2,837	11,862	5,373	29,499	4,343	11,214	3,313	6,903	3,954	23,836	3,312
8	4,329	4,634	10,323	4,998	25,090	4,391	9,685	3,468	7,978	3,277	17,040	2,851
9	2,970	3,962	8,950	5,040	22,228	4,374	8,690	-----	6,094	3,210	15,322	2,870
10	2,971	3,452	9,499	5,199	19,977	5,953	7,149	4,113	4,624	3,166	12,152	2,852
11	3,006	3,140	5,469	6,757	20,249	3,855	6,047	4,737	4,003	2,394	10,028	2,851
12	2,755	3,002	5,226	8,356	21,463	6,252	4,637	4,276	3,668	2,626	11,389	2,938
13	2,970	2,816	6,109	16,221	19,072	5,235	4,844	3,906	1,857	2,617	11,777	2,385
14	2,689	2,967	3,651	11,472	13,994	5,142	4,437	3,695	2,952	2,363	10,962	2,981
15	2,595	2,879	-----	15,989	18,066	4,679	4,289	3,414	3,002	2,388	9,319	2,874
16	2,990	2,193	3,888	46,946	16,696	4,944	4,449	2,566	2,789	2,311	8,426	2,307
17	2,513	2,829	10,129	64,700	17,981	4,549	5,121	3,197	2,336	2,384	7,947	2,272
18	2,736	2,824	3,159	61,270	14,846	4,536	5,125	3,137	2,932	2,016	7,952	1,489
19	1,568	2,758	4,087	57,188	15,227	4,219	4,495	3,178	3,590	2,319	8,130	2,303
20	2,782	2,763	6,699	52,131	13,163	4,710	4,596	3,079	1,733	2,326	7,547	1,870
21	3,000	2,781	12,922	74,469	14,782	5,352	4,391	2,858	4,813	2,352	6,572	2,547
22	2,767	2,771	3,239	60,021	13,215	6,073	4,419	2,747	4,207	4,208	5,222	2,287
23	2,793	2,162	10,026	41,711	3,976	6,655	4,374	2,759	4,147	8,966	3,749	2,047
24	2,542	3,854	7,820	46,693	23,517	6,275	4,258	2,943	3,754	7,804	4,006	1,768
25	2,394	2,812	6,080	40,793	14,220	6,334	4,386	2,990	2,924	7,986	6,185	1,579
26	1,881	2,790	6,637	36,126	4,482	5,817	3,794	2,851	2,969	6,227	6,322	1,506
27	2,499	2,772	7,253	32,729	5,729	5,459	4,215	2,571	2,474	5,388	5,683	1,497
28	2,765	2,558	10,846	30,217	5,117	5,309	3,781	2,410	3,149	2,644	6,169	2,317
29	2,531	2,794	5,945	30,517	4,867	4,200	3,728	2,416	3,148	2,214	8,424	2,063
30	2,473	-----	6,901	30,977	3,192	5,307	3,335	1,625	2,777	2,888	8,432	1,845
31	2,230	-----	5,006	-----	6,092	-----	3,831	2,531	-----	2,861	-----	1,787
Mean	4,304	2,830	13,140	27,400	17,050	5,520	5,330	3,150	3,410	3,768	9,059	2,750

1897.

1	2,073	3,587	2,007	6,334	39,001	18,204	8,719	12,975	4,771	2,314	2,911	4,630
2	2,085	3,485	2,950	7,648	34,299	16,780	9,885	13,656	4,357	2,048	2,637	3,825
3	1,650	3,775	2,423	9,075	32,654	17,528	9,531	11,263	4,340	967	6,687	3,754
4	2,318	3,598	2,629	9,635	34,210	17,542	8,512	9,206	3,701	2,532	9,422	3,190
5	3,732	3,348	2,566	11,536	40,730	17,349	7,147	7,796	3,090	2,490	8,628	3,063
6	18,504	3,223	2,522	12,889	36,362	15,756	8,189	7,226	3,865	2,375	7,729	5,968
7	10,210	4,185	4,026	13,929	26,923	16,023	7,410	5,889	3,571	2,158	6,457	6,382
8	5,860	4,305	2,703	21,149	26,610	15,785	7,922	5,761	4,008	1,533	6,443	5,229
9	5,928	5,634	2,285	18,288	24,400	13,801	7,967	4,000	3,973	2,097	5,195	5,172
10	3,793	6,225	2,291	15,458	23,995	12,961	7,270	5,243	3,997	2,109	7,927	4,879
11	3,293	5,933	4,554	16,671	41,196	16,003	6,290	5,849	4,808	2,100	8,133	4,212
12	3,601	5,007	4,230	14,377	41,223	14,962	5,761	7,562	9,689	1,508	7,313	4,048
13	3,084	4,629	5,238	13,999	23,965	13,819	7,256	9,771	5,463	1,788	6,350	5,765
14	2,542	3,897	5,045	14,796	41,284	15,304	45,507	7,112	4,915	6,070	2,789	6,104
15	2,881	4,070	5,387	16,881	38,988	16,003	55,634	6,601	4,864	6,323	4,902	7,153
16	2,715	4,028	4,925	24,426	32,431	14,617	33,770	5,368	4,325	5,528	4,402	13,621
17	2,187	3,848	2,533	34,813	27,453	14,636	26,160	7,776	4,353	3,887	5,913	14,005
18	2,942	3,163	2,025	28,642	23,788	13,344	21,286	11,566	3,239	3,267	7,191	11,381
19	1,918	2,467	2,304	31,734	21,013	11,200	17,067	8,562	3,632	3,287	6,428	7,665
20	2,211	2,480	2,339	32,799	18,843	11,390	12,542	6,755	3,488	2,322	4,991	5,835
21	2,283	3,543	3,167	26,949	17,562	10,649	7,747	7,129	5,043	2,331	4,161	6,799
22	2,222	2,636	2,083	24,087	15,105	7,399	5,218	7,907	8,422	2,326	3,009	5,419
23	2,951	2,427	2,621	24,008	15,448	9,991	8,408	6,166	7,438	2,051	2,703	3,861
24	2,300	2,302	5,547	29,875	14,809	9,095	8,980	5,718	5,838	1,510	2,181	3,839
25	1,953	2,544	5,832	33,605	10,818	8,353	8,925	5,816	4,481	2,140	2,687	3,225
26	1,847	2,877	6,345	42,860	16,539	8,751	10,826	6,280	3,841	2,348	1,889	2,541
27	2,727	2,825	5,992	51,255	21,779	7,590	9,842	6,220	4,555	2,415	6,097	2,563
28	2,252	3,705	5,311	66,907	24,563	7,691	7,950	5,706	4,084	2,973	13,399	2,685
29	2,477	-----	4,994	58,745	26,000	8,023	6,734	5,382	2,915	2,008	6,883	3,001
30	4,024	-----	5,071	43,797	22,697	8,345	6,405	5,154	2,801	2,344	6,171	2,733
31	3,534	-----	5,113	-----	20,526	-----	11,707	4,364	-----	2,600	-----	2,699
Mean	3,587	3,705	3,790	25,385	26,943	12,970	13,115	7,298	4,595	2,635	5,702	5,330

Daily discharge of Kennebec River at Waterville, Maine, in cubic feet per second, average for the twenty-four hours—Continued.

1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	2,475	2,539	4,170	20,385	36,048	14,341	4,385	3,790	-----	-----	-----	-----
2	2,284	2,955	4,188	16,556	39,372	13,776	4,343	2,707	-----	-----	-----	-----
3	2,222	2,687	5,048	13,871	38,301	10,900	3,440	2,887	-----	-----	-----	-----
4	2,715	3,090	5,163	12,143	37,358	8,791	3,490	2,883	-----	-----	-----	-----
5	2,771	2,775	2,997	10,830	37,730	9,846	4,343	2,809	-----	-----	-----	-----
6	3,431	3,068	4,094	10,150	37,569	10,301	4,272	3,712	-----	-----	-----	-----
7	1,807	3,475	5,070	7,080	31,580	9,189	4,477	3,252	-----	-----	-----	-----
8	4,826	2,994	5,033	6,563	29,880	9,098	4,203	4,374	-----	-----	-----	-----
9	5,434	3,744	4,767	7,472	23,753	12,541	5,464	4,218	-----	-----	-----	-----
10	4,492	3,154	4,623	10,457	25,636	14,318	1,745	4,017	-----	-----	-----	-----
11	3,025	3,829	5,329	15,299	22,059	12,086	4,111	3,048	-----	-----	-----	-----
12	3,286	3,317	6,752	19,848	21,899	41,322	4,484	3,413	-----	-----	-----	-----
13	3,240	3,680	8,397	44,854	24,042	11,003	4,267	2,927	-----	-----	-----	-----
14	3,237	3,912	9,890	47,141	34,332	10,777	3,776	1,130	-----	-----	-----	-----
15	4,909	4,026	11,534	50,381	32,988	12,514	4,327	3,443	-----	-----	-----	-----
16	3,717	4,042	12,816	49,415	27,500	11,295	3,994	2,499	-----	-----	-----	-----
17	3,891	3,764	12,215	47,112	24,756	10,584	3,611	2,560	-----	-----	-----	-----
18	3,453	3,221	11,918	47,321	23,440	9,478	3,896	2,491	-----	-----	-----	-----
19	3,460	3,267	12,484	44,700	23,153	9,196	3,938	2,622	-----	-----	-----	-----
20	3,505	2,885	13,218	39,327	20,592	11,129	3,747	2,526	-----	-----	-----	-----
21	3,893	3,172	14,580	36,671	19,088	10,855	3,855	913	-----	-----	-----	-----
22	4,614	3,764	17,177	33,789	18,570	9,950	5,038	3,425	-----	-----	-----	-----
23	2,542	2,133	16,615	30,792	17,073	8,334	3,871	2,866	-----	-----	-----	-----
24	2,321	3,437	15,987	34,352	15,277	9,483	3,418	3,425	-----	-----	-----	-----
25	2,866	4,352	17,812	52,119	15,993	8,864	3,747	2,849	-----	-----	-----	-----
26	2,032	3,933	17,029	45,520	15,589	7,508	3,879	4,432	-----	-----	-----	-----
27	3,136	3,653	16,560	38,083	15,639	5,267	3,385	4,218	-----	-----	-----	-----
28	2,905	4,387	18,928	37,354	14,611	4,326	4,189	3,940	-----	-----	-----	-----
29	2,727	-----	19,762	33,652	16,632	5,689	3,444	3,396	-----	-----	-----	-----
30	1,738	-----	17,711	31,767	16,962	6,715	3,204	3,555	-----	-----	-----	-----
31	2,607	-----	27,432	-----	16,238	-----	2,832	2,857	-----	-----	-----	-----
Mean	3,213	3,402	11,287	29,833	25,120	9,983	3,908	3,133	-----	-----	-----	-----

Daily discharge of Androscoggin River at Rumford Falls, Maine, in cubic feet per second, average for the twenty-four hours.

[Drainage area, 2,320 square miles.]

1892.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	-----	-----	-----	-----	-----	6,500	16,300	3,200	5,860	2,700	2,580	3,830
2	-----	-----	-----	-----	-----	7,000	11,800	3,450	5,860	-----	2,820	3,580
3	-----	-----	-----	-----	-----	5,540	-----	3,450	5,240	2,700	3,060	2,820
4	-----	-----	-----	-----	-----	6,500	16,700	3,450	-----	2,700	4,080	-----
5	-----	-----	-----	-----	-----	6,150	17,500	3,450	4,940	2,940	3,830	3,050
6	-----	-----	-----	-----	-----	6,150	14,800	3,450	4,940	2,940	-----	3,580
7	-----	-----	-----	-----	-----	6,150	12,600	-----	4,350	2,940	2,820	3,580
8	-----	-----	-----	-----	-----	5,540	12,000	3,320	4,080	2,700	3,060	3,830
9	-----	-----	-----	-----	-----	5,540	11,000	2,820	3,580	-----	5,860	3,830
10	-----	-----	-----	-----	-----	4,360	-----	2,820	3,580	2,700	4,650	3,200
11	-----	-----	-----	-----	-----	4,080	10,000	2,600	-----	2,700	3,320	-----
12	-----	-----	-----	-----	-----	4,350	9,300	4,080	3,200	2,700	2,820	3,200
13	-----	-----	-----	-----	-----	3,890	6,500	4,350	3,200	2,700	-----	3,200
14	-----	-----	-----	-----	-----	3,890	6,500	-----	3,200	2,700	2,330	3,200
15	-----	-----	-----	-----	-----	3,890	5,240	5,870	8,000	2,700	2,580	3,200
16	-----	-----	-----	-----	-----	4,080	4,940	5,870	4,940	-----	4,650	2,940
17	-----	-----	-----	-----	-----	3,830	-----	4,940	4,080	2,700	24,500	2,940
18	-----	-----	-----	-----	5,860	4,080	4,650	4,940	-----	2,700	13,000	-----
19	-----	-----	-----	-----	5,550	3,830	3,830	4,350	3,300	2,700	16,300	2,940
20	-----	-----	-----	-----	4,940	4,080	4,080	4,650	3,050	2,700	-----	2,940
21	-----	-----	-----	-----	4,940	11,000	3,700	-----	2,580	2,700	8,300	2,940
22	-----	-----	-----	-----	5,540	11,200	3,700	5,540	3,060	2,700	7,500	2,940
23	-----	-----	-----	-----	7,500	7,500	3,700	4,650	3,830	-----	5,550	2,940
24	-----	-----	-----	-----	11,700	6,500	-----	4,650	3,330	2,940	4,950	2,940
25	-----	-----	-----	-----	9,300	7,000	3,950	4,350	-----	2,940	4,080	-----
26	-----	-----	-----	-----	8,600	13,000	3,950	8,500	3,080	2,940	4,350	-----
27	-----	-----	-----	-----	8,900	11,300	3,580	8,500	3,330	2,940	-----	2,940
28	-----	-----	-----	-----	9,300	15,800	3,320	-----	3,580	2,940	4,350	2,940
29	-----	-----	-----	-----	8,600	19,900	2,820	8,500	3,060	2,940	3,830	3,200
30	-----	-----	-----	-----	8,000	19,900	4,660	8,500	3,060	-----	3,580	3,200
31	-----	-----	-----	-----	8,500	-----	-----	6,500	-----	2,700	-----	3,200
Mean	-----	-----	-----	-----	7,640	7,410	7,330	4,840	4,030	2,780	5,720	3,200

Daily discharge of Androscoggin River at Rumford Falls, Maine, in cubic feet per second, average for the twenty-four hours—Continued.

1893.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1		2,990	2,990	2,870	9,560	5,040	3,810	2,840	3,760		3,570	3,820
2		2,990	2,750		11,460	5,040		2,840	3,260	2,900	3,570	2,860
3	3,580	2,990	2,750	3,250	11,460	4,450	3,810	3,080		2,450	3,340	
4	3,830	2,990	2,750	3,250	11,760		3,580	2,840	2,560	2,450	3,340	1,900
5	3,200			2,750	25,460	4,750	3,630	2,580	2,360	2,860		2,260
6	2,940	2,990	2,750	2,750	17,060	4,750	3,580	2,840	2,560	2,660	3,080	2,260
7	2,940	2,990	2,990	2,750		5,040	3,580	3,820	2,760	2,260	3,080	2,260
8		2,990	2,990	2,750	14,260	6,250	3,310	3,820	3,270		3,340	2,460
9	2,940	2,990	2,990		14,260	4,750		2,840	3,530	2,750	3,340	2,460
10	2,940	2,990	2,990	5,910	17,060	5,040	3,310	2,840		2,660	2,870	
11	3,200	2,990	2,990	4,700	24,060		3,580	2,580	2,560	2,860	2,670	2,260
12	3,200			5,910	27,860	9,700	2,590	2,580	2,560	2,660		2,060
13	3,200	2,990	3,250	7,050	27,860	8,400	2,590	2,840	3,040	2,660	2,670	2,260
14	3,200	2,990	4,130	7,050		7,100	2,120	2,370	2,350	4,340	2,460	2,260
15	2,990	2,990	4,130	8,050	28,460	7,100	2,310	1,960	2,160		2,670	2,260
16	3,200	2,990	3,880		25,060	6,600		1,600	2,570	6,840	2,770	2,460
17	3,200	2,990	3,250	5,000	30,460	5,650	2,310	1,600		3,580	2,770	
18	3,200	2,990	3,250	4,700	38,060		2,120	1,750	3,280	4,320	2,770	2,460
19	3,200			4,700	26,060	4,450	2,590	2,580	3,280	3,670		2,460
20	3,200	2,990	3,250	4,400	21,060	5,950	2,590	2,870	2,560	3,080	2,860	2,460
21	3,200	2,990	3,250	5,000		5,100	2,820	3,560	2,560	3,080	2,860	2,460
22		2,990	3,250	5,290	16,760	5,350	2,590	3,060	2,360		3,340	2,260
23	3,200	2,990	3,250		14,260	5,350		3,060	2,160	3,340	3,080	2,260
24	3,200	2,990	2,990	5,590	13,060	5,740	2,590	3,060		4,330	2,680	
25	3,200	2,990	2,990	5,910	9,660		2,810	4,080	2,300	13,060	2,060	3,820
26	3,200			5,590	8,860	8,400	3,070	4,850	2,360	6,450		2,860
27	3,200	2,990	3,370	6,550	6,560	6,250	2,590	4,080	3,040	4,320	1,900	3,340
28	2,940	2,990	3,380	7,050		5,640	2,590	3,820	2,150	4,060	2,460	3,080
29			3,110	7,050		5,610	2,820	3,080	2,350		4,830	3,080
30	2,940		3,370		5,610	3,160	2,330	12,300	2,350	4,830	4,320	3,080
31	2,940		3,060		5,110		2,820	4,850		3,820		
Mean	3,180	2,990	3,190	5,030	17,630	5,640	2,800	3,290	2,660	3,830	3,070	2,660

1894.

1	3,570	2,130	1,680		13,730	9,430		1,680	1,980	1,680	7,380	1,880
2	3,570	2,130	1,570	4,290	13,730	9,830	3,110	1,750		1,570	5,060	1,980
3	2,290	1,960	1,570	4,050	14,230		2,280	1,980	1,830	1,790	4,560	1,980
4	2,290			4,050	11,730	9,830	5,310	2,130	1,980	1,980		2,030
5	2,490	2,130	1,980	3,570	10,530	6,730	3,810		1,980	1,680	5,060	2,030
6	2,700	2,130	3,900	9,730	5,880	3,090	1,980	1,930	1,460	4,050	2,180	
7		1,960	3,310	3,570	8,530	5,580	2,280	1,680	1,830		3,300	2,280
8	2,490	2,130	6,880		8,530	5,310		2,030	1,680	1,680	2,890	1,570
9	2,490	2,280	5,310	3,570	7,730	4,810	2,480	2,280		1,780	5,100	
10	2,280	2,130	5,310	3,300	7,380		2,700	2,480	3,800	5,580	2,930	1,980
11	2,280			3,570	7,080	4,810	2,480	2,130	2,890	4,050		1,830
12	2,280	2,280	4,550	3,570	5,880	3,100	3,310		1,980	2,890	3,300	2,480
13	2,130	1,680	5,310	3,570		4,060	2,280	1,830	1,630	3,800	2,890	2,890
14		1,960	3,800	5,070	4,060		2,130	1,980	1,630		2,280	2,730
15	2,280	1,680	4,560	4,300	4,550	3,800		2,130	1,680	3,100	2,730	2,530
16	2,280	2,310	3,800	5,880	4,550	3,800	2,480	2,130		2,660	2,530	
17	2,130	1,680	3,570	7,730	5,070		2,280	2,130	1,680	2,890	2,730	
18	2,130	1,960	3,570	9,030	4,810	4,550	2,480	2,280	2,280	2,890		2,280
19	3,110	1,960	3,570	12,530	4,570	6,170	2,480	2,280	1,830	2,890	3,100	2,130
20	3,310	1,960	3,570	17,730		5,310	1,680	2,130	5,880	2,480	1,830	2,730
21	3,310	1,960	7,060	22,230	6,170	5,310	3,300	3,310	3,310		1,930	2,330
22	3,310	1,830	5,570	6,170	4,550			1,880	2,480	2,280	2,700	1,460
23	3,310	1,680	5,310	20,630	5,880	3,800	1,980	1,880		2,280	2,700	
24	3,570	1,680	4,300	19,230	5,880		1,830	1,680	2,280	2,280	2,890	1,880
25	3,570		11,730	6,470	3,100		1,830	1,730	2,130	2,330		2,030
26	3,310	1,680	4,300	16,530	11,630	3,100	2,130		1,830	2,690	2,490	1,980
27	3,310	1,680	4,050	15,230		3,100	2,130	1,680	1,880	2,130	1,680	1,480
28		1,570	3,800	16,930	5,880	4,050	2,280	1,680	1,830		2,130	1,880
29	2,890		3,570		5,070	4,600		1,880	1,680	2,180	1,460	1,980
30	2,890		3,300	14,930	19,230	4,050	1,830	1,830		2,280	1,380	
31	2,280		3,570		10,830		1,680	2,030				1,830
Mean	2,720	2,000	4,080	9,470	8,240	5,090	2,490	1,930	2,220	2,500	3,040	2,090

Daily discharge of Androscoggin River at Rumford Falls, Maine, in cubic feet per second, average for the twenty-four hours—Continued.

1895.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	2,130	1,460	1,230	1,330	10,780	5,030	2,010	1,870	6,380	1,730	4,970	
2	2,180	1,380	1,230	1,230	9,060	4,430	2,000	1,980	3,700	2,160	4,870	
3	2,130	1,230	1,230	1,230	7,780	4,430	1,950	2,000	1,450	2,570	2,310	5,980
4	2,130	1,330	1,230	1,330	9,060	4,350	2,300	1,860	2,570	1,860	2,870	
5	2,530	1,230	1,230	1,230	4,010	2,090	1,900	1,900	1,710	2,690	1,860	2,850
6	1,230	1,230	1,230	1,230	9,350	3,760	1,890	1,860	1,700	1,860	1,860	2,810
7	2,130	1,230	1,230	2,130	8,330	3,400	1,660	1,840	2,360	2,020	2,830	
8	2,080	1,230	1,230	3,100	7,570	3,230	2,020	1,640	2,200	2,530	2,880	
9	1,980	1,230	1,230	15,080	7,770	2,000	1,600	1,550	2,200	2,290	2,400	
10	1,890	1,230	1,230	9,730	7,880	3,100	1,960	1,760	1,710	2,200	6,440	2,190
11	1,680	1,230	1,230	6,790	6,390	2,700	2,010	1,620	1,880	5,190	2,520	
12	1,570	1,230	1,230	5,570	17,070	2,170	1,920	2,080	2,070	2,020	2,970	2,440
13	1,230	1,230	1,230	8,730	11,570	2,060	1,890	2,000	2,130	2,470	1,890	
14	1,630	1,230	1,230	11,570	2,380	1,860	1,600	1,600	5,130	2,300	1,890	
15	2,490	1,230	1,230	55,230	8,730	2,580	1,880	1,770	3,980	2,230	2,070	
16	2,130	1,230	1,230	38,230	7,770	1,840	1,730	1,780	2,770	3,540	1,990	
17	1,630	1,230	1,230	17,630	7,480	3,000	1,740	1,720	1,620	2,550	3,010	2,260
18	1,630	1,230	1,230	13,530	6,700	2,360	1,760	1,530	2,350	2,520	2,220	
19	2,480	1,230	1,230	12,030	6,290	2,240	1,760	1,990	1,580	2,200	2,800	2,550
20	1,230	1,230	1,230	12,930	5,630	2,180	1,690	1,900	1,580	2,600	2,280	
21	1,460	1,230	1,230	14,930	4,230	2,180	1,690	1,760	1,630	2,110	3,970	2,270
22	1,480	1,230	1,230	16,530	5,330	2,150	1,490	1,580	1,950	3,060	3,470	
23	1,480	1,230	1,230	16,530	5,030	1,350	1,590	1,970	1,880	2,730	9,420	
24	1,580	1,230	1,230	16,530	4,230	2,320	1,350	1,700	2,130	1,830	2,780	5,860
25	1,380	1,230	1,230	14,930	4,230	2,330	1,400	2,240	1,880	2,770	4,500	
26	1,380	1,230	1,230	14,930	2,320	1,350	2,000	2,370	1,880	2,640	3,260	
27	1,230	1,230	1,230	13,730	3,600	2,330	1,350	1,880	2,960	15,650	8,450	
28	1,460	1,230	1,230	12,930	8,730	2,500	1,750	1,770	2,910	1,890	7,870	12,420
29	1,330	1,230	1,230	12,930	7,730	2,710	1,750	1,860	1,740	5,760	6,970	
30	1,450	1,230	1,230	10,730	6,530	1,600	1,890	4,790	1,690	5,470	4,030	
31	1,380	1,230	1,230	10,730	5,330	1,580	1,770	1,640	1,640	12,640		
Mean.	1,800	1,250	1,230	12,000	7,628	2,873	1,775	1,819	1,989	2,539	3,566	4,180

Daily gage height, in feet, of Delaware River at Lambertville, New Jersey, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	4.30	(a)	5.45	6.30	5.70	5.70	3.60	3.95	5.15	3.35	5.05	5.40
2	4.05	(a)	5.20	5.85	5.45	5.30	3.50	4.20	4.70	3.25	4.90	5.20
3	3.90	(a)	5.05	5.55	5.20	5.05	3.40	5.40	4.50	2.95	4.70	5.05
4	(a)	(a)	5.10	5.35	5.20	4.90	3.30	4.70	4.35	2.90	4.60	5.00
5	(a)	(a)	4.80	5.10	5.25	4.75	3.20	5.35	4.25	2.90	4.45	6.85
6	(a)	(a)	4.70	4.95	5.35	4.60	3.20	6.40	4.25	2.90	4.40	6.30
7	(a)	(a)	4.65	4.85	5.60	4.40	3.05	6.20	4.25	2.90	4.35	6.10
8	(a)	4.40	4.50	4.75	7.10	4.40	3.00	5.25	4.25	3.95	4.30	5.75
9	4.30	4.50	4.60	4.70	7.95	4.30	3.00	4.80	4.55	4.05	4.30	5.45
10	4.25	4.45	4.80	4.60	6.80	4.20	2.90	4.85	4.60	3.90	4.80	5.45
11	4.25	4.55	5.25	4.50	6.10	4.10	2.90	6.20	4.35	4.35	5.55	5.00
12	4.20	4.80	5.90	4.40	5.80	4.15	2.65	5.35	4.15	4.10	7.60	5.15
13	4.25	5.25	7.30	4.40	5.95	4.00	2.70	4.90	4.05	3.85	7.15	4.80
14	4.55	6.85	8.30	4.30	5.65	4.00	2.60	4.55	3.95	3.90	6.30	4.95
15	5.45	6.20	8.00	4.45	6.25	4.55	2.50	4.45	3.80	4.10	5.75	(a)
16	5.85	5.55	6.80	4.60	6.00	4.30	2.50	4.80	3.75	4.60	5.45	(a)
17	5.50	5.30	6.10	4.45	6.60	4.15	2.40	4.10	3.70	5.50	5.30	(a)
18	5.20	4.85	5.85	4.30	6.50	4.00	2.50	4.35	3.65	5.00	5.15	(a)
19	4.75	4.60	5.55	4.25	6.05	3.90	2.60	4.50	3.55	4.70	6.85	4.50
20	4.80	7.95	5.50	4.20	6.05	3.90	4.20	4.45	3.45	4.60	6.85	4.85
21	5.85	8.85	6.60	4.20	6.60	3.90	3.70	4.75	3.30	4.50	7.15	4.80
22	6.50	9.60	6.80	4.05	6.55	4.10	3.70	5.00	3.30	4.60	6.65	4.70
23	8.00	8.85	6.60	4.10	6.00	4.05	3.30	4.55	3.40	4.65	6.50	5.85
24	8.40	7.85	8.30	4.35	7.00	3.95	3.10	4.35	3.50	4.80	6.30	5.95
25	7.70	7.00	7.95	5.80	6.15	3.70	3.00	6.95	3.45	4.70	6.10	6.30
26	7.05	6.55	6.95	7.35	6.95	3.70	3.20	7.25	3.30	4.70	5.90	5.95
27	6.40	6.05	6.40	7.30	7.65	3.60	3.40	6.45	3.25	5.20	5.90	5.50
28	5.85	5.75	6.10	6.80	7.35	3.55	3.40	5.50	3.20	5.90	5.35	5.25
29	5.60	-----	6.10	6.50	7.00	3.50	4.20	5.10	3.20	5.95	5.35	4.70
30	5.05	-----	6.45	6.10	6.60	3.65	4.20	4.80	3.30	5.45	5.40	4.95
31	4.90	-----	6.75	-----	6.10	-----	4.05	4.60	-----	5.25	-----	4.90

a Frozen.

Daily gage height, in feet, of Susquehanna River at Harrisburg, Pennsylvania, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.66	3.91	4.66	8.66	6.00	4.33	2.00	1.41	2.66	0.75	4.66	3.08
2	2.33	3.41	4.33	7.41	5.41	4.16	2.16	1.50	2.33	.75	4.00	3.16
3	2.16	3.00	4.16	6.41	4.83	3.91	2.00	1.41	3.00	.66	3.66	3.08
4	2.66	2.66	3.91	5.75	4.66	3.58	1.75	2.33	2.50	.66	3.50	3.00
5	1.91	2.66	3.66	5.41	4.41	3.33	1.66	4.58	2.08	.66	3.16	3.66
6	1.91	2.66	3.58	4.91	4.43	3.00	1.58	5.33	1.91	.66	3.00	5.00
7	2.25	2.66	3.50	4.50	4.66	2.83	1.50	4.00	1.66	.66	2.91	4.60
8	2.50	3.08	3.80	4.41	5.50	2.66	1.41	3.50	1.66	1.00	2.50	4.08
9	2.66	3.41	3.33	4.16	6.25	2.50	1.33	3.08	1.66	1.33	2.50	3.83
10	2.75	3.50	3.33	3.83	5.58	2.50	1.25	3.66	2.00	1.41	2.50	3.58
11	3.00	3.41	3.83	3.66	5.16	2.33	1.16	4.25	2.83	2.25	2.58	3.08
12	3.00	3.75	4.91	3.50	4.75	2.33	1.08	3.75	2.75	2.40	4.00	2.50
13	3.33	4.41	6.50	3.33	4.50	2.25	1.00	3.33	2.58	2.33	8.75	2.25
14	4.00	7.66	8.66	3.25	4.00	2.25	.91	2.66	2.08	2.00	8.00	2.25
15	6.95	8.16	9.83	3.16	4.00	2.41	.83	2.50	1.91	2.00	6.58	2.08
16	8.08	7.50	9.33	3.66	4.25	2.75	.83	2.25	1.75	2.08	5.50	2.00
17	7.88	6.50	8.08	4.08	5.16	3.25	.75	2.00	1.41	2.16	4.83	2.00
18	7.53	5.83	7.16	3.91	6.08	3.00	.66	1.91	1.33	3.25	4.33	1.91
19	6.58	5.00	6.33	3.66	5.33	2.66	.66	2.33	1.16	3.75	4.16	2.00
20	5.83	4.33	5.83	3.50	5.50	2.41	.75	3.00	1.00	4.00	4.16	2.50
21	5.75	4.66	7.33	3.41	6.66	2.33	.91	4.41	.91	4.33	4.25	2.91
22	6.16	6.83	9.25	3.33	6.66	2.33	.75	4.33	.91	4.33	4.58	3.08
23	7.41	6.91	10.91	3.16	6.50	2.08	.91	3.75	.91	7.33	4.83	3.50
24	9.25	7.75	15.03	3.00	6.00	2.00	.83	3.41	.83	8.33	4.66	5.41
25	10.50	6.66	15.25	3.50	7.00	2.16	.83	3.00	.83	7.41	4.33	7.88
26	9.50	6.25	11.66	6.66	6.50	2.08	.83	2.66	.75	6.16	4.00	7.66
27	8.00	5.66	9.25	10.33	6.50	2.00	1.33	2.50	.91	5.66	3.91	6.33
28	7.00	5.00	7.75	9.50	6.16	1.91	1.16	2.41	.91	5.58	3.66	5.33
29	6.08	-----	6.66	8.16	5.75	1.83	1.83	4.16	.75	5.66	3.50	4.83
30	5.50	-----	7.00	6.66	5.33	1.66	1.58	3.83	.75	6.08	3.33	4.83
31	4.83	-----	9.00	-----	4.91	-----	1.33	3.00	-----	5.33	-----	3.83

Daily gage height, in feet, of Octoraro Creek at Rowlandsville, Maryland, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.40	3.70	3.60	4.10	3.90	3.90	3.40	3.30	3.30	3.40	3.40	4.60
2	3.60	3.70	3.60	4.00	3.80	3.80	3.30	3.30	3.30	3.40	3.75	4.60
3	3.60	3.70	3.60	3.90	3.80	3.80	3.30	3.40	3.30	3.40	4.55	4.50
4	3.50	3.75	3.60	3.80	3.70	3.70	3.80	5.85	3.30	3.40	4.55	4.75
5	3.45	3.70	3.50	3.80	3.75	3.70	3.70	4.90	3.30	3.40	4.55	9.25
6	3.40	3.70	3.50	3.80	3.80	3.70	3.50	4.35	3.30	3.40	4.90	8.40
7	3.40	3.60	3.50	3.70	4.25	3.70	3.40	3.95	3.45	3.30	4.50	6.70
8	3.40	3.65	3.50	3.70	4.30	3.60	3.40	3.85	3.90	3.30	4.05	5.90
9	3.40	3.65	3.50	3.70	4.05	3.60	3.40	4.00	3.50	3.30	3.90	5.30
10	3.40	3.65	3.50	3.60	3.80	3.60	3.30	4.50	3.50	3.30	3.75	4.90
11	3.40	3.60	3.50	3.60	3.85	3.50	3.30	3.45	3.50	3.40	3.60	3.65
12	3.55	3.50	3.50	3.60	4.25	3.50	3.30	3.80	3.40	3.40	3.50	3.60
13	4.30	3.50	3.50	3.60	4.10	3.50	3.30	3.70	3.40	3.40	3.85	3.60
14	3.60	3.50	3.50	3.50	4.10	3.50	3.30	3.55	3.40	3.40	3.65	3.60
15	4.40	3.50	3.50	3.50	4.25	3.50	3.30	3.50	3.30	3.40	3.60	3.50
16	4.60	3.50	3.50	3.50	5.00	3.50	3.30	3.60	3.30	3.30	3.60	3.50
17	3.85	3.40	3.50	3.50	5.25	3.50	3.30	3.70	3.30	3.30	4.70	3.50
18	3.45	3.45	3.50	3.50	4.95	3.50	3.30	4.50	3.30	3.30	4.90	3.50
19	3.40	3.90	3.50	3.50	4.55	3.50	3.55	4.25	3.30	3.30	6.20	3.90
20	3.75	5.10	3.50	3.50	4.85	4.35	3.55	3.80	3.20	3.30	5.70	9.05
21	3.85	4.60	3.50	3.50	4.90	3.75	3.35	3.50	3.20	3.95	5.15	7.80
22	3.50	3.95	3.60	3.50	4.50	3.70	3.30	3.50	3.20	3.65	4.95	6.05
23	4.30	3.80	3.80	4.30	4.25	3.70	3.30	3.50	4.10	3.50	4.65	6.75
24	3.80	3.80	4.10	4.10	4.20	3.60	3.30	3.50	3.80	3.40	4.70	4.85
25	3.65	3.70	5.10	3.90	4.35	3.60	3.30	6.35	3.60	3.40	4.35	4.30
26	4.00	3.70	3.80	4.05	4.10	3.60	3.30	3.35	3.40	3.40	4.10	4.20
27	3.70	3.60	3.70	4.15	4.80	3.50	3.30	3.70	4.20	3.35	4.90	4.10
28	3.55	3.60	3.70	4.00	4.05	3.50	3.30	3.95	3.60	3.90	4.75	4.00
29	3.50	-----	3.75	4.00	4.00	3.45	3.35	3.45	3.55	3.55	4.80	4.00
30	3.50	-----	4.65	3.90	3.90	3.40	3.45	3.30	3.45	3.50	4.70	3.90
31	3.60	-----	4.30	-----	3.90	-----	3.70	3.30	-----	3.40	-----	4.15

Daily gage height, in feet, of Patapsco River at Woodstock, Maryland, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.95	3.95	4.00	4.15	4.05	3.80	3.50	6.05	3.40	3.35	4.00	3.90
2	3.95	4.10	4.00	4.15	4.05	3.80	3.40	4.65	3.35	3.20	3.55	3.90
3	3.95	4.10	4.09	4.15	3.90	3.80	3.40	3.70	3.25	3.40	3.60	4.30
4	3.90	4.05	4.10	4.05	4.00	3.85	3.40	3.60	3.35	3.45	3.55	4.70
5	3.85	4.00	4.10	4.05	4.00	3.80	3.50	3.85	3.25	3.45	3.55	5.95
6	3.90	4.00	4.00	4.05	4.40	3.80	3.50	3.80	3.20	3.45	3.55	4.80
7	3.85	4.10	4.05	4.10	4.80	3.80	3.55	3.75	3.25	3.45	3.55	4.15
8	3.80	3.90	4.05	4.00	4.95	3.75	3.50	3.70	3.20	3.35	3.40	4.15
9	3.85	4.05	3.90	3.50	4.65	3.75	3.55	3.70	3.20	3.35	3.40	4.05
10	3.55	3.95	3.95	3.50	4.30	5.75	3.50	5.65	3.35	3.25	3.60	4.05
11	4.20	3.95	3.95	3.95	4.20	-----	3.60	4.20	3.10	3.25	4.35	4.00
12	4.25	4.00	4.00	4.10	4.35	3.75	3.45	3.85	3.45	3.45	3.35	3.95
13	4.20	3.50	4.05	4.00	4.30	4.25	3.45	4.10	3.35	3.35	3.35	3.95
14	4.05	3.50	4.05	3.90	4.10	3.90	3.45	3.95	3.30	3.40	3.40	3.95
15	5.00	3.90	4.00	4.30	4.25	3.80	3.35	3.75	3.30	3.45	3.35	(a)
16	4.65	3.65	3.95	4.10	5.10	3.70	3.45	3.60	3.40	3.35	3.65	-----
17	4.25	3.90	4.00	3.90	4.85	3.70	3.15	3.60	3.35	3.50	4.15	-----
18	4.00	3.95	3.85	3.90	4.30	3.70	3.35	3.70	3.05	3.35	4.15	-----
19	3.95	4.55	3.85	3.90	4.20	3.60	3.60	4.00	3.20	4.25	5.15	-----
20	4.25	4.65	3.85	4.00	4.20	3.60	3.60	3.75	3.30	3.75	4.20	-----
21	4.20	5.20	4.00	3.90	4.20	3.65	3.55	3.70	3.30	3.80	3.70	-----
22	4.05	4.45	4.00	3.90	4.20	3.65	3.75	3.65	3.30	4.10	3.85	-----
23	4.65	4.20	4.00	3.90	4.25	3.60	3.60	3.60	3.60	3.80	3.95	-----
24	4.30	4.10	4.15	4.50	4.20	3.60	3.40	3.40	3.60	3.65	3.85	-----
25	4.10	4.10	4.40	4.20	4.10	3.55	3.55	3.40	3.35	3.50	3.75	-----
26	4.65	4.00	4.00	4.10	4.05	3.40	3.60	3.60	3.40	3.50	3.80	-----
27	4.25	4.00	4.00	4.00	4.00	3.50	3.60	3.60	3.35	3.50	3.75	-----
28	4.10	3.95	4.00	4.10	4.00	3.50	4.10	3.55	3.35	3.50	3.75	-----
29	4.10	-----	4.15	4.10	3.80	3.45	3.70	3.50	3.35	3.50	3.75	-----
30	4.05	-----	4.80	4.00	3.35	3.50	3.55	3.45	3.35	4.30	3.85	-----
31	4.05	-----	4.50	-----	3.90	-----	3.50	3.60	-----	4.20	-----	-----

a Bridge floor taken up; gage removed December 16 to 31.

Daily gage height, in feet, of Patuxent River at Laurel, Maryland, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.
1	5.10	4.90	4.65	5.00	4.40	4.40	3.80	5.15
2	4.30	4.85	4.55	4.85	4.45	4.35	3.90	4.50
3	4.90	5.30	4.70	4.60	4.35	4.35	3.20	3.80
4	4.95	5.00	5.05	4.70	4.45	4.35	3.20	3.95
5	4.85	5.00	4.70	4.80	4.50	3.90	3.95	10.15
6	4.60	5.10	4.45	4.60	4.70	4.40	3.65	4.55
7	4.65	5.15	4.55	4.60	5.85	4.35	3.80	4.05
8	4.70	5.40	4.55	4.60	5.70	4.25	3.60	4.00
9	4.75	4.90	4.60	4.45	5.60	4.35	3.55	4.80
10	6.30	4.75	4.55	4.40	4.95	4.35	3.55	6.50
11	5.85	4.75	4.55	4.60	7.25	4.25	3.50	(a)
12	4.95	4.60	4.55	4.50	7.10	4.15	2.95	-----
13	5.00	4.65	4.40	4.55	5.95	4.20	3.05	-----
14	5.00	4.65	4.55	4.45	5.00	6.00	2.85	-----
15	6.60	4.65	4.50	4.75	4.50	4.40	3.00	-----
16	6.30	4.65	4.60	4.70	4.60	4.30	3.70	-----
17	5.55	4.50	4.70	4.35	8.40	4.25	3.50	-----
18	5.35	4.50	4.55	4.45	6.45	4.30	3.60	-----
19	5.05	5.35	4.45	4.50	4.85	4.40	3.60	-----
20	5.15	5.80	4.25	4.50	4.80	4.20	3.70	-----
21	5.50	6.45	4.50	4.45	4.70	4.10	3.75	-----
22	5.25	5.75	4.45	4.50	4.55	4.10	3.75	-----
23	5.90	5.00	4.35	4.30	4.80	3.95	3.40	-----
24	5.10	4.90	4.55	4.40	4.70	3.95	3.15	-----
25	5.10	4.85	5.70	4.80	4.50	3.85	3.55	-----
26	5.50	4.75	4.50	4.45	4.50	3.95	3.05	-----
27	5.50	4.65	4.35	4.35	4.60	3.90	5.85	-----
28	5.10	4.85	4.55	4.45	4.45	4.15	5.70	-----
29	4.85	-----	4.65	4.65	4.10	4.10	3.95	-----
30	4.90	-----	6.65	4.55	4.55	3.90	3.05	-----
31	4.85	-----	5.55	-----	4.45	-----	3.35	-----

a Gage torn out; bridge being repair. Station discontinued.

Daily gage height, in feet, of Antietam Creek at Sharpsburg, Maryland, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.00	2.40	2.10	2.80	2.00	2.40	1.80	2.00	1.90	1.80	2.10	2.30
2	2.40	2.60	2.10	2.70	2.00	2.30	1.70	1.90	1.90	1.80	2.10	2.20
3	2.10	2.90	2.10	2.60	2.00	2.20	1.80	1.80	1.90	1.70	2.00	2.00
4	1.80	2.50	2.10	2.50	2.00	2.20	1.80	1.90	1.90	1.70	2.10	2.60
5	1.70	2.40	2.20	2.60	2.00	2.10	1.80	2.50	2.10	1.70	1.90	7.80
6	1.50	2.20	2.10	2.50	2.10	2.20	1.80	2.00	2.00	1.60	1.80	3.85
7	1.90	2.40	2.10	2.50	2.20	2.20	1.70	1.80	1.90	1.70	1.80	3.25
8	1.80	2.20	2.10	2.50	2.40	2.10	1.70	1.80	1.90	1.60	1.70	3.00
9	1.70	2.10	2.00	2.40	3.25	2.10	1.80	2.00	1.90	1.60	1.70	2.90
10	2.00	2.10	2.00	2.40	2.70	2.10	1.80	3.10	1.80	1.60	1.90	2.80
11	2.10	2.30	2.10	2.40	2.50	2.10	1.80	3.05	1.70	1.60	2.50	2.70
12	1.90	2.20	2.10	2.30	2.40	2.15	1.80	2.30	1.90	1.80	2.15	2.70
13	2.00	2.20	2.00	2.30	2.50	2.20	1.80	2.10	1.80	1.70	2.20	2.70
14	1.80	2.20	2.00	2.30	2.30	2.20	1.80	2.00	1.80	1.80	2.20	2.80
15	2.90	2.20	2.10	2.35	2.30	2.10	1.80	2.05	1.90	1.70	2.00	2.70
16	3.15	2.10	2.00	2.40	2.90	2.10	1.70	2.00	1.80	1.50	2.00	2.80
17	2.90	2.00	2.20	2.30	3.00	2.10	1.70	2.00	1.80	1.60	1.90	2.50
18	2.50	2.20	2.20	2.30	2.80	2.10	1.80	5.05	1.70	2.75	2.00	2.40
19	2.30	2.30	2.20	2.30	2.60	2.00	1.80	3.65	1.90	1.80	2.60	2.50
20	2.40	2.10	2.00	2.30	2.40	2.10	1.80	2.95	1.80	2.40	2.50	3.15
21	2.40	2.60	2.10	2.30	2.40	2.00	1.80	2.45	1.80	2.20	2.40	2.90
22	2.20	2.60	2.50	2.20	3.10	1.90	1.80	2.30	1.80	2.90	2.40	2.80
23	2.85	2.40	2.55	2.20	2.50	2.10	1.80	2.10	1.90	2.80	2.30	3.85
24	2.80	2.60	2.70	2.20	3.00	2.10	1.80	2.00	1.90	1.90	2.40	3.20
25	2.60	2.30	3.25	2.30	2.70	1.90	2.20	1.90	1.80	1.70	2.30	3.00
26	2.60	2.30	2.95	2.30	2.90	1.90	1.90	2.00	1.80	2.40	2.30	2.90
27	2.60	2.20	2.80	2.20	2.70	1.90	1.90	2.00	1.90	2.30	2.30	2.80
28	2.50	2.30	2.70	2.20	2.70	1.80	1.80	1.90	1.80	2.10	2.30	2.60
29	2.50	-----	2.75	2.20	2.60	1.80	1.80	2.00	1.90	2.10	2.20	2.60
30	2.40	-----	3.10	2.10	2.50	1.80	1.80	2.00	1.80	2.10	2.20	2.50
31	2.50	-----	2.90	-----	2.40	-----	1.90	2.00	-----	2.10	-----	2.60

Daily gage height, in feet, of North River at Port Republic, Virginia, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.15	2.70	2.10	3.85	2.65	2.35	2.20	4.25	2.60	2.40	3.00	2.40
2	2.15	2.70	2.10	3.50	2.60	2.30	2.20	4.25	2.50	2.40	2.80	2.30
3	2.15	2.70	2.10	3.30	2.50	2.15	2.20	4.00	2.50	2.40	2.65	2.30
4	2.10	2.70	2.10	3.15	2.45	2.15	2.20	4.50	2.50	2.40	2.60	3.00
5	2.10	2.70	2.10	3.00	2.40	2.15	2.20	8.00	2.50	3.00	2.60	7.00
6	2.10	2.65	2.10	2.90	3.00	2.10	2.20	5.00	2.50	2.90	2.60	5.00
7	2.05	2.65	2.10	2.90	6.40	2.10	2.20	5.00	2.50	2.80	2.50	3.60
8	2.05	2.60	2.10	2.80	7.25	2.10	2.20	4.60	2.50	2.60	2.50	3.30
9	2.00	2.50	2.10	2.60	6.30	2.10	2.20	4.00	2.50	2.40	2.45	3.00
10	2.60	2.40	2.10	2.75	5.00	2.00	2.15	9.00	2.50	2.25	2.40	2.90
11	2.55	2.30	2.10	2.75	4.00	2.00	2.10	9.00	2.50	2.10	2.40	2.80
12	2.50	2.20	2.10	2.75	3.60	2.60	2.10	7.00	2.50	2.10	2.40	2.70
13	2.45	2.20	2.10	2.75	3.30	2.50	2.00	6.00	2.50	2.10	2.35	2.65
14	2.45	2.15	2.10	2.75	3.20	2.35	2.00	6.00	2.50	2.00	2.35	2.60
15	2.45	2.15	2.10	4.15	3.00	2.20	2.10	6.00	2.50	2.00	2.30	2.55
16	2.45	2.10	2.10	5.20	2.80	4.20	2.10	4.50	2.50	2.00	2.30	2.50
17	2.45	2.10	2.25	4.50	2.80	3.40	2.25	4.20	2.50	2.00	2.25	2.50
18	2.45	2.10	2.80	4.00	2.70	3.00	2.50	4.00	2.50	2.00	2.20	2.40
19	2.55	2.10	2.95	3.50	2.60	3.00	2.40	4.00	2.50	9.50	2.15	2.30
20	2.55	2.10	2.85	3.20	2.60	3.00	2.30	3.60	2.50	5.00	2.60	2.30
21	2.55	2.10	2.75	3.00	2.60	3.00	2.30	3.30	2.50	5.00	2.60	2.30
22	2.55	2.10	2.75	2.90	3.35	3.00	2.30	3.20	2.50	10.00	2.60	2.30
23	2.70	2.10	2.75	2.75	3.30	2.80	2.30	3.10	2.75	6.50	2.60	4.00
24	2.80	2.10	2.75	2.75	3.20	2.65	3.00	3.10	2.75	5.00	2.60	4.30
25	2.80	2.10	2.85	2.75	3.00	2.50	2.80	3.00	2.65	3.80	2.60	3.60
26	2.80	2.10	2.90	2.75	2.90	2.50	2.70	2.90	2.65	3.65	2.60	3.30
27	2.80	2.10	3.00	2.75	2.75	2.50	3.50	2.80	2.60	3.30	2.50	3.00
28	2.70	2.10	3.00	2.70	2.65	2.40	4.75	2.70	2.60	3.90	2.55	2.80
29	2.70	-----	3.00	2.65	2.65	2.40	5.00	2.70	2.50	3.15	2.50	2.60
30	2.70	-----	3.30	2.65	2.50	2.40	5.00	2.60	2.40	3.15	2.50	2.60
31	2.70	-----	4.20	-----	2.40	-----	4.50	2.60	2.40	3.15	-----	2.60

Daily gage height, in feet, of South River at Port Republic, Virginia, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.80	2.00	1.50	2.25	2.10	1.75	1.60	2.10	1.60	1.35	2.50	1.90
2	1.80	2.00	1.50	2.25	2.05	1.65	1.60	2.00	1.50	1.35	2.35	1.80
3	1.80	2.00	1.60	2.25	2.00	1.60	1.55	2.00	1.50	1.35	2.20	1.80
4	1.75	2.00	1.60	2.20	2.00	1.60	1.55	2.00	1.50	1.35	2.15	2.50
5	1.75	2.00	1.60	2.15	1.90	1.60	1.55	4.40	1.50	1.75	2.10	4.00
6	1.65	1.95	1.60	2.15	2.20	1.60	1.55	3.00	1.50	3.00	2.10	3.00
7	1.65	1.90	1.60	2.15	4.10	1.60	1.55	2.40	1.50	2.90	2.05	2.90
8	1.60	1.85	1.60	2.10	5.00	1.60	1.55	2.40	1.50	2.60	2.00	2.70
9	1.60	1.80	1.60	2.00	4.10	1.55	1.55	2.30	1.50	2.30	2.00	2.50
10	1.60	1.75	1.60	2.10	3.50	1.55	1.50	6.40	1.50	2.15	2.00	2.40
11	1.60	1.70	1.60	2.05	3.10	1.50	1.45	6.60	1.50	2.00	2.00	2.35
12	1.55	1.70	1.60	2.00	2.90	1.85	1.40	3.60	1.50	1.95	2.00	2.30
13	1.55	1.65	1.60	2.00	2.60	1.75	1.40	3.00	1.50	1.90	2.00	2.30
14	1.55	1.60	1.60	2.00	2.60	1.65	1.40	3.00	1.50	1.80	1.90	2.25
15	1.55	1.55	1.60	2.75	2.50	1.55	1.60	2.80	1.50	1.80	1.90	2.20
16	1.55	1.50	1.60	3.00	2.40	1.75	1.60	2.60	1.50	1.80	1.90	2.15
17	1.55	1.50	1.85	2.80	2.40	1.75	1.60	2.40	1.50	1.75	1.90	2.10
18	1.55	1.50	1.85	2.70	2.30	1.75	1.60	2.30	1.50	1.75	1.85	2.10
19	1.55	1.50	1.85	2.50	2.20	1.75	1.60	2.30	1.50	7.50	1.85	2.10
20	1.55	1.50	1.80	2.40	2.10	1.75	1.60	2.20	1.50	3.80	2.15	2.00
21	1.55	1.50	1.80	2.25	2.00	1.75	1.60	2.20	1.50	3.80	2.10	2.00
22	1.55	1.50	1.80	2.15	2.60	1.75	1.60	2.20	1.50	7.60	2.10	2.00
23	2.00	1.50	1.80	2.10	2.00	1.70	1.60	2.20	1.65	4.50	2.10	2.60
24	2.00	1.50	1.90	2.10	2.00	1.70	1.70	2.10	1.65	4.00	2.10	2.60
25	2.00	1.50	1.90	2.20	1.90	1.70	1.70	2.00	1.60	3.10	2.10	2.50
26	2.00	1.50	1.90	2.50	1.90	1.70	1.70	1.90	1.50	3.00	2.10	2.45
27	2.00	1.50	2.00	2.30	1.85	1.65	1.70	1.80	1.45	2.80	2.10	2.40
28	2.00	1.50	2.00	2.25	1.80	1.60	1.70	1.70	1.40	2.60	2.10	2.35
29	2.00	-----	2.00	2.20	1.80	1.60	1.70	1.60	1.35	2.50	2.10	2.30
30	2.00	-----	2.00	2.10	1.80	1.60	1.70	1.60	1.35	2.50	2.00	2.30
31	2.00	-----	2.20	-----	1.80	-----	2.10	1.60	-----	2.50	-----	2.30

Daily gage height, in feet, of Shenandoah River at Millville, West Virginia, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.10	1.60	0.60	3.50	1.80	1.40	0.70	1.70	1.50	0.90	2.80	2.10
2	.80	1.60	.60	3.40	1.70	1.30	-----	.90	1.50	.90	2.40	2.10
3	.70	1.30	.60	2.70	1.50	1.20	.70	.70	1.70	1.00	2.50	2.10
4	.90	1.20	.60	2.50	1.40	1.10	.70	1.00	1.50	1.00	2.70	2.50
5	.50	1.60	.50	2.30	1.20	1.10	.60	3.20	1.40	1.20	2.10	5.40
6	.70	1.10	.60	2.10	1.20	1.10	.60	7.90	1.40	1.80	2.00	6.00
7	.50	1.40	.60	2.06	1.60	1.00	.50	3.70	1.40	1.50	2.00	4.60
8	.50	1.40	.60	1.90	5.90	.90	.50	1.50	1.40	1.10	1.90	3.80
9	.50	1.20	.60	1.80	8.50	.80	.50	3.50	1.30	1.50	1.90	3.00
10	.70	.90	.50	1.60	7.00	.70	.50	6.20	1.30	1.40	1.80	2.80
11	1.20	.90	.50	1.40	5.00	.70	.60	11.70	1.10	1.30	1.90	2.60
12	.80	.90	.50	1.30	4.00	.70	.70	9.60	1.10	1.20	1.80	2.40
13	1.60	.70	.50	1.30	3.30	.60	.70	5.60	1.10	1.00	1.70	2.40
14	1.50	.70	.50	1.30	2.90	1.00	.70	4.70	1.10	1.00	1.80	2.20
15	1.60	.70	.50	1.80	2.50	1.00	.70	3.70	1.00	1.00	1.70	1.90
16	3.20	.60	.50	4.10	2.40	1.00	.70	3.50	1.00	1.00	1.70	2.20
17	2.50	.50	.70	5.20	2.30	.90	.70	3.60	1.00	1.10	1.70	2.20
18	2.20	.50	1.90	4.00	2.00	1.00	.70	3.40	1.10	1.10	1.70	2.20
19	1.70	.60	1.60	3.40	1.80	1.50	.60	2.80	1.00	7.75	1.80	2.30
20	1.70	.60	1.70	3.00	1.70	1.40	.50	3.40	1.00	8.40	2.30	2.00
21	1.70	.60	1.70	2.40	1.60	1.10	.70	2.70	1.00	5.00	2.70	2.00
22	1.60	.90	1.60	2.20	1.60	1.30	.70	2.40	1.00	5.00	2.50	2.00
23	1.60	.90	1.50	2.00	2.00	1.00	.60	2.30	1.10	9.10	2.50	2.30
24	1.70	.90	1.50	1.80	2.50	1.00	.50	2.10	1.10	5.70	2.50	2.90
25	1.70	.80	2.50	1.70	3.00	1.10	1.20	2.00	1.10	4.40	2.30	4.00
26	1.80	.80	2.70	1.70	2.50	.80	1.10	2.00	1.40	3.50	2.30	3.50
27	2.20	.70	2.50	1.70	2.00	.70	1.10	1.60	1.20	3.40	2.20	3.00
28	2.00	.70	2.20	1.90	2.00	.70	1.00	1.80	1.10	2.20	2.00	2.80
29	1.80	-----	2.20	1.80	2.00	.70	1.00	1.60	1.10	3.00	2.00	2.50
30	1.10	-----	2.50	1.80	1.70	.70	1.20	1.60	1.00	2.90	2.20	2.40
31	1.40	-----	3.00	-----	1.50	-----	1.70	1.60	-----	2.90	-----	2.30

Daily gage height, in feet, of Monocacy River at Frederick, Maryland, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	5.25	5.40	5.40	7.10	4.70	5.50	4.40	4.70	4.00	3.80	5.50	6.30
2	5.20	6.50	5.30	6.90	4.70	5.40	4.30	4.60	4.00	3.80	5.30	6.20
3	6.00	6.50	5.30	6.00	4.60	5.30	4.30	4.40	4.00	3.80	4.70	5.50
4	5.70	6.50	5.70	5.80	4.60	5.20	4.30	4.10	4.00	3.80	4.60	7.00
5	5.50	6.10	6.20	5.80	4.60	5.10	4.40	7.65	3.90	3.80	4.50	17.95
6	5.50	6.10	6.00	5.80	4.60	5.10	4.40	6.90	3.90	3.80	4.40	8.50
7	5.50	5.50	5.90	5.80	6.20	5.10	4.40	5.10	3.90	3.80	4.40	7.00
8	5.60	5.00	5.50	5.50	7.00	5.00	4.40	4.20	4.00	3.90	4.40	6.40
9	5.70	5.20	5.30	5.50	13.40	5.00	4.40	4.10	4.00	3.90	4.40	5.70
10	6.50	5.40	5.20	5.20	7.50	5.00	4.40	6.70	4.00	3.80	4.70	5.50
11	7.10	5.40	5.20	5.20	6.50	5.00	4.30	12.40	3.90	3.80	9.70	5.30
12	7.20	6.00	5.10	5.20	6.50	5.00	4.20	6.00	3.80	3.90	6.90	5.30
13	8.10	6.20	5.10	5.10	8.20	5.00	4.20	5.40	3.80	3.80	5.40	5.30
14	8.50	5.60	5.10	5.10	6.00	4.90	4.20	5.40	3.80	3.80	5.30	5.30
15	11.90	5.50	5.00	5.30	5.60	4.90	4.20	4.60	3.80	4.00	5.20	5.20
16	11.40	5.30	5.00	5.90	6.75	4.90	4.10	4.50	3.80	4.20	5.00	5.00
17	8.75	5.20	5.00	5.50	11.55	4.70	4.10	4.50	3.80	3.90	5.50	5.00
18	7.50	5.10	5.00	5.00	7.50	4.60	4.10	6.35	3.80	5.50	6.10	5.00
19	6.90	6.40	5.00	4.90	6.50	4.50	4.10	10.10	3.80	6.25	12.35	6.00
20	6.90	6.50	4.90	4.90	6.50	4.50	4.30	7.00	3.80	5.60	9.50	9.60
21	9.00	14.80	6.10	4.90	6.40	4.50	5.40	5.50	3.80	4.90	6.85	8.60
22	9.50	12.00	7.30	4.80	6.00	4.50	4.40	4.90	3.90	11.55	5.90	8.80
23	12.75	7.50	7.60	4.80	6.00	4.50	4.10	4.60	4.15	9.00	5.90	13.60
24	9.50	6.50	7.60	5.00	6.60	4.40	4.00	4.50	4.20	7.10	6.30	8.00
25	7.50	6.30	10.75	5.30	6.70	4.40	3.90	4.40	4.10	5.20	5.90	7.50
26	8.70	5.70	8.50	5.30	6.60	4.40	3.90	4.30	3.90	5.20	5.40	6.10
27	8.00	5.60	6.60	5.00	6.30	4.40	4.30	4.30	3.90	5.50	5.20	6.00
28	7.30	5.40	6.60	4.90	5.90	4.40	4.30	4.20	3.90	5.30	5.20	5.90
29	6.50	-----	7.70	4.90	5.80	4.40	4.30	4.10	3.90	5.10	5.30	5.50
30	5.90	-----	9.50	4.80	5.70	4.40	4.20	4.10	3.80	5.10	5.70	5.50
31	5.70	-----	7.90	-----	5.60	-----	4.00	4.00	-----	6.00	-----	5.50

Daily gage height, in feet, of Potomac River at Point of Rocks, Maryland, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.90	2.80	1.90	6.10	2.60	2.20	0.90	1.50	1.20	0.70	2.70	2.10
2	2.90	1.70	1.80	5.20	2.40	2.00	.80	1.70	1.10	.70	2.50	2.10
3	3.00	2.00	1.70	4.60	2.20	1.80	.80	1.40	1.10	.60	2.30	2.00
4	3.20	1.90	1.70	4.10	2.00	1.70	.70	1.20	1.00	.70	2.20	2.50
5	3.20	1.90	1.60	3.80	1.90	1.60	.70	2.20	1.00	.80	2.00	5.10
6	3.30	2.00	1.60	3.60	1.80	1.40	.70	7.20	1.00	.80	1.80	9.20
7	3.20	2.00	1.60	3.20	2.20	1.30	.70	6.10	1.10	1.00	1.80	6.10
8	2.90	1.90	1.50	2.90	5.40	1.30	.80	3.70	1.00	1.10	1.70	4.50
9	3.00	1.90	1.50	2.40	11.05	1.20	.70	3.90	1.00	1.00	1.60	3.60
10	3.20	1.80	1.40	2.50	9.60	1.20	.70	5.60	.90	1.00	1.60	3.00
11	3.90	1.80	1.40	2.50	6.50	1.10	.70	14.00	.90	.90	2.00	2.60
12	5.80	1.90	1.50	2.40	5.20	1.10	.60	16.05	.90	.90	1.80	2.40
13	5.70	2.00	1.50	2.40	4.20	1.10	.50	9.50	.80	1.40	1.80	2.20
14	5.30	1.90	1.60	2.50	3.70	1.30	.50	8.00	.80	1.20	2.00	2.20
15	5.50	1.90	1.60	2.50	3.10	1.30	.50	7.20	.80	1.00	2.00	2.00
16	6.70	2.00	1.70	4.00	3.00	1.30	.50	6.10	.80	.80	1.80	1.80
17	8.00	2.00	1.70	9.00	3.20	1.30	.50	5.20	.80	.80	1.80	1.80
18	6.70	1.80	2.00	6.70	4.60	1.20	.50	4.30	.80	.80	1.80	2.00
19	5.60	1.70	5.80	5.10	4.40	1.50	.70	3.30	.80	1.40	2.20	2.10
20	4.90	1.70	4.60	4.20	3.50	1.40	.70	3.10	.70	9.00	3.00	2.20
21	4.70	2.80	3.50	3.50	2.30	1.30	.90	3.00	.70	5.40	3.60	2.60
22	4.60	3.80	3.50	3.20	2.90	1.30	.90	3.80	.70	5.35	3.30	3.30
23	5.00	4.10	6.60	2.90	3.10	1.30	1.10	2.80	.70	13.10	3.20	4.70
24	9.40	3.40	6.20	2.60	3.90	1.20	.90	2.30	.70	10.10	3.10	6.20
25	8.40	2.90	6.40	2.60	5.10	1.10	.80	2.00	.70	5.90	3.00	6.90
26	5.10	2.60	10.50	2.60	5.60	1.10	.90	1.80	.70	4.50	2.70	5.30
27	5.00	2.30	7.20	2.50	4.10	1.00	1.20	1.50	.90	3.80	2.60	4.30
28	5.10	2.10	5.30	3.30	3.40	1.00	1.00	1.50	.80	3.60	2.40	3.70
29	5.10	-----	4.40	3.00	3.00	.90	1.20	1.40	.70	3.40	2.20	3.20
30	3.60	-----	4.30	2.80	2.80	.90	1.40	1.30	.70	3.00	2.10	3.00
31	3.40	-----	6.20	-----	2.40	-----	1.70	1.30	-----	2.80	-----	2.70

Daily gage height, in feet, of Rock Creek at Park station, District of Columbia, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.10	3.15	3.10	3.30	3.50	2.95	2.85	2.80	2.45	2.30	2.80	2.95
2	2.95	3.15	3.10	3.20	3.50	2.95	2.80	2.80	2.40	2.35	2.80	2.80
3	3.10	3.10	3.15	3.20	3.50	2.95	2.80	2.80	2.40	2.35	2.80	2.80
4	3.05	3.05	3.15	3.20	3.50	2.90	2.80	2.80	2.40	2.40	2.60	3.15
5	3.05	3.05	3.15	3.20	3.50	2.90	2.85	3.90	2.40	2.40	2.60	4.45
6	3.00	3.05	3.10	3.15	3.20	2.90	2.85	2.85	2.40	2.40	2.65	3.15
7	3.05	3.05	3.10	3.10	3.95	2.90	2.80	2.80	2.40	2.40	2.65	3.00
8	3.05	3.05	3.10	3.10	3.40	2.90	2.80	2.80	2.35	2.35	2.60	2.90
9	3.05	3.10	3.05	3.10	3.30	2.90	2.80	2.90	2.35	2.35	2.60	2.85
10	3.90	3.10	3.05	3.10	3.00	2.90	2.80	3.45	2.35	2.35	2.65	2.85
11	3.35	3.10	3.05	3.05	3.00	2.90	2.80	3.70	2.35	2.35	3.40	2.75
12	3.20	3.10	3.05	3.15	3.15	2.90	2.75	4.00	2.30	2.40	3.85	2.80
13	3.30	3.10	3.05	3.15	3.15	2.90	2.75	4.15	2.30	2.40	2.70	2.85
14	3.20	3.05	3.05	3.15	3.15	3.20	2.75	3.95	2.30	2.45	2.65	2.80
15	3.40	3.05	3.05	3.15	3.10	2.90	2.80	2.75	2.30	2.40	2.65	2.80
16	4.10	3.05	3.05	3.10	3.10	2.85	2.80	2.80	2.30	2.45	2.65	2.80
17	3.30	3.00	3.25	3.10	3.90	2.85	2.75	2.55	2.30	2.45	2.60	2.75
18	3.25	3.05	3.20	3.10	3.10	2.85	2.75	2.65	2.30	2.40	3.25	2.75
19	3.15	3.25	3.10	3.60	3.10	2.90	2.95	3.15	2.30	2.90	4.05	2.80
20	3.20	3.50	3.10	3.20	3.10	2.85	2.90	2.75	2.30	2.75	3.10	3.35
21	3.35	3.75	3.05	3.30	3.30	2.85	2.90	2.75	2.25	2.60	2.85	3.35
22	3.20	3.40	3.05	3.30	3.50	2.85	2.80	2.70	2.30	2.75	2.80	2.90
23	3.25	3.25	3.05	3.30	3.50	2.80	2.75	2.60	2.45	2.90	2.80	3.60
24	3.30	3.20	3.10	3.10	3.50	2.80	2.75	2.60	2.60	2.70	2.80	3.05
25	3.15	3.15	3.50	3.15	3.65	2.80	2.75	2.55	2.35	2.65	2.75	2.90
26	3.65	3.10	3.20	3.10	3.50	2.80	2.75	2.55	2.35	2.55	2.80	2.80
27	3.40	3.10	3.10	3.65	3.50	2.80	3.10	2.50	2.30	2.60	2.75	2.80
28	3.25	3.10	3.10	3.10	2.00	3.10	3.10	2.50	2.30	2.60	2.75	2.80
29	3.15	-----	3.15	3.10	3.00	2.95	3.00	2.50	2.30	2.60	2.80	2.70
30	3.15	-----	3.95	3.10	2.95	2.90	2.80	2.50	2.30	2.85	2.85	2.75
31	3.15	-----	3.45	-----	2.95	-----	2.80	2.45	-----	2.95	-----	2.85

Daily gage height, in feet, of North of James River at Glasgow, Virginia, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.28	2.00	1.55	3.09	2.00	2.00	1.45	1.30	1.28	1.19	2.80	1.86
2	1.30	1.60	1.55	3.04	1.90	1.90	1.45	1.30	1.25	1.20	2.60	1.75
3	1.32	1.75	1.55	2.92	1.88	1.80	1.46	1.28	1.20	1.21	2.50	1.72
4	1.50	1.70	1.65	2.75	1.88	1.76	1.45	1.74	1.45	1.30	2.30	1.82
5	1.50	1.70	1.75	2.70	1.89	1.68	1.45	6.25	1.70	1.80	2.20	4.30
6	1.45	1.70	1.75	2.68	5.90	1.65	1.50	3.60	1.48	2.40	2.05	3.50
7	1.52	1.65	1.80	2.55	5.88	1.62	1.40	2.88	1.25	2.00	2.02	2.90
8	1.60	1.60	1.80	2.45	4.50	1.58	1.40	2.76	1.15	1.80	1.90	2.50
9	1.50	1.50	1.82	2.40	3.90	1.60	1.40	2.55	1.14	1.65	1.80	2.80
10	1.85	1.50	1.81	2.35	3.80	1.62	1.35	5.75	1.11	1.52	1.82	2.10
11	2.15	1.50	1.80	2.35	3.30	1.62	1.32	8.95	1.08	1.48	1.85	2.15
12	1.65	1.45	1.81	2.35	3.10	1.63	1.32	4.45	1.04	1.60	1.88	2.20
13	1.50	1.55	1.83	2.35	2.77	1.80	1.33	3.40	1.00	1.50	1.85	1.93
14	1.40	1.45	1.85	2.75	2.60	1.92	1.35	3.00	1.00	1.40	1.82	1.70
15	1.55	1.50	1.89	4.48	2.48	1.95	1.35	2.80	1.05	1.40	1.84	1.62
16	3.60	1.30	1.82	4.10	2.38	2.00	1.35	2.40	1.00	1.40	1.86	1.62
17	2.90	1.20	1.86	3.75	2.32	2.05	1.35	2.25	1.00	1.40	1.88	1.72
18	2.52	1.35	1.95	3.15	2.21	2.05	3.00	2.15	1.02	1.38	1.90	1.70
19	2.30	1.50	2.00	3.00	2.10	2.40	2.50	2.00	1.00	5.80	2.40	1.65
20	2.15	1.50	1.95	2.85	2.01	2.55	2.15	1.90	.95	3.65	3.20	1.75
21	2.45	1.70	1.80	2.65	2.27	2.25	1.90	1.70	.98	3.00	2.80	1.70
22	1.40	1.80	1.75	2.32	2.55	2.00	1.70	1.64	1.00	10.75	2.52	1.68
23	1.45	1.90	1.75	2.30	2.85	1.90	2.52	1.52	3.00	5.60	2.50	3.05
24	1.42	1.75	2.14	2.25	2.77	1.80	1.90	1.70	1.90	3.90	2.41	3.40
25	2.00	1.75	2.85	2.28	3.10	1.70	1.90	1.60	1.48	3.60	2.30	3.80
26	2.50	1.70	2.80	2.25	2.70	1.65	1.90	1.48	1.30	2.95	2.18	2.60
27	2.50	1.65	2.58	2.25	2.90	1.60	1.90	1.45	1.25	2.15	2.10	2.42
28	2.45	1.55	2.50	2.12	2.55	1.60	2.00	1.42	1.20	2.50	2.00	2.30
29	2.20	-----	2.08	2.10	2.32	1.58	2.00	1.98	1.20	2.60	1.90	2.12
30	2.20	-----	4.85	2.05	2.25	1.50	1.80	1.30	1.20	2.80	1.92	2.02
31	2.10	-----	4.50	-----	2.10	-----	1.60	1.30	-----	2.90	-----	2.00

Daily gage height, in feet, of James River at Buchanan, Virginia, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.50	3.00	2.50	6.95	3.00	3.00	1.90	2.45	2.40	2.20	3.65	3.20
2	2.55	3.00	2.50	5.70	2.90	2.85	1.90	2.20	2.30	2.10	3.55	3.10
3	2.70	2.90	2.60	4.85	2.80	2.70	1.90	2.20	2.20	2.10	3.25	3.00
4	2.60	2.90	2.60	4.40	2.70	2.60	1.90	3.60	2.50	2.60	3.00	3.30
5	2.50	2.80	2.50	4.20	2.60	2.60	1.80	7.30	2.25	2.75	3.00	5.45
6	2.50	2.80	2.50	4.35	4.35	2.60	1.85	5.55	2.20	4.35	3.00	4.45
7	2.40	2.80	2.50	4.15	11.10	2.50	1.90	4.20	2.20	3.95	2.90	4.40
8	2.40	2.80	2.60	3.90	8.80	2.40	1.90	3.95	2.10	3.20	2.90	5.70
9	2.40	2.70	2.60	3.80	7.00	2.40	1.90	4.50	2.10	2.95	2.80	3.70
10	2.40	2.70	2.60	3.80	5.70	2.30	1.90	8.30	2.00	2.70	2.70	3.60
11	3.50	2.55	2.60	4.70	4.95	2.30	1.90	11.55	2.00	2.60	2.70	3.50
12	3.95	2.40	2.60	6.65	4.45	2.30	1.90	6.90	2.00	2.60	2.70	3.40
13	3.55	2.40	2.60	5.50	4.05	2.30	1.80	5.05	1.90	2.50	2.70	3.30
14	3.20	2.40	2.60	5.40	3.75	2.30	1.80	6.00	1.90	2.50	2.90	3.20
15	3.15	2.40	2.60	7.20	3.60	2.30	1.80	4.70	1.90	2.40	2.90	3.10
16	4.20	2.40	2.60	6.35	3.50	2.30	1.80	4.10	1.80	2.40	2.90	3.00
17	4.80	2.40	2.60	5.50	3.50	2.40	1.80	3.60	1.80	2.45	2.90	3.00
18	4.30	2.90	3.55	4.90	3.30	2.40	2.35	3.35	1.80	2.70	2.90	2.90
19	3.70	2.90	4.40	4.40	3.30	2.55	2.50	3.35	1.80	6.45	4.25	2.90
20	3.55	2.90	4.20	4.15	3.50	2.70	2.20	3.05	1.80	4.85	6.30	2.80
21	3.80	2.90	5.75	3.75	3.30	2.60	2.10	2.80	1.80	6.65	5.25	2.80
22	3.85	2.75	3.45	3.55	3.10	2.50	2.30	2.70	2.25	14.10	4.40	2.80
23	3.55	3.30	3.25	3.35	5.00	2.40	2.35	2.55	5.50	8.60	4.25	4.35
24	3.50	3.05	3.10	3.30	5.90	2.40	2.30	2.40	3.70	6.05	4.20	5.60
25	3.70	2.90	4.00	3.30	5.05	2.30	2.50	2.65	3.00	5.00	4.05	4.70
26	3.80	2.90	5.25	3.30	4.70	2.30	2.50	2.50	2.50	4.55	3.75	4.25
27	4.45	2.70	4.45	3.30	4.25	2.15	2.25	2.50	2.40	4.10	3.55	3.85
28	4.10	2.60	4.00	3.25	3.80	2.05	3.40	2.50	2.30	4.00	3.40	3.60
29	3.70	-----	4.30	3.10	3.45	2.00	3.25	2.50	2.30	3.65	3.30	3.50
30	3.55	-----	8.50	3.00	3.30	2.00	2.75	2.50	2.20	3.70	3.20	3.50
31	3.25	-----	8.20	-----	3.20	-----	2.50	2.40	-----	3.90	-----	3.40

List of discharge measurements, 1898.

Date.	Stream.	Locality.	Hydrographer.	Gage height.	Dis-charge.
Feb. 24	Delaware River	Lambertville, N. J.	E. G. Paul	7.85	44,421
Sept. 21	do	do	do	3.30	4,683
Feb. 25	Susquehanna River.	Harrisburg, Pa.	do	6.58	76,250
Mar. 24	do	do	do	15.75	250,485
Mar. 25	do	do	do	14.65	223,374
Mar. 26	do	do	do	10.75	149,589
July 25	do	do	do	.83	5,466
Sept. 22	do	do	do	.92	6,998
Oct. 7	do	do	do	.72	6,121
Jan. 8	Octoraro Creek	Rowlandsville, Md.	Hugh W. Caldwell	3.40	201
Jan. 26	do	do	do	4.00	430
Feb. 12	do	do	do	3.70	360
Feb. 21	do	do	do	4.90	934
Feb. 22	do	do	do	4.10	428
Feb. 23	do	do	do	3.90	339
Mar. 12	do	do	do	3.60	236
May 24	do	do	do	4.10	416
May 25	do	do	do	3.70	362
June 20	do	do	do	4.30	426
June 22	do	do	do	3.50	214
July 5	do	do	do	4.10	424
July 12	do	do	do	3.30	211
July 19	do	do	do	3.80	288
Aug. 3	do	do	do	3.40	225
Aug. 12	do	do	do	3.80	289
Aug. 25	do	do	do	6.40	1,663
Sept. 30	do	do	do	3.50	209
Oct. 6	do	do	E. G. Paul	3.60	182
Oct. 17	do	do	Hugh W. Caldwell	3.30	200
Oct. 22	do	do	do	3.70	287
Nov. 26	do	do	do	4.10	420
Dec. 7	do	do	do	6.40	1,557
Dec. 26	do	do	do	4.20	434
Jan. 26	Patapsco River	Woodstock, Md.	E. G. Paul	4.55	763
Oct. 3	do	do	do	3.60	190
Jan. 27	Patuxent River	Laurel, Md.	do	5.80	359
May 19	do	do	do	4.90	221
Jan. 24	Antietam Creek	Sharpsburg, Md.	do	2.70	427
Aug. 19	do	do	do	3.50	831
Jan. 24	Shenandoah River	Millville, W. Va.	do	2.20	3,001

List of discharge measurements, 1898—Continued.

Date.	Stream.	Locality.	Hydrographer.	Gage height.	Dis-charge.
Aug. 16	Shenandoah River	Millville, W. Va.	E. G. Paul	<i>Feet.</i> 4.30	<i>Sec. feet.</i> 7,834
Oct. 1	do	do	do	.90	1,001
Jan. 26	Monocacy River	Frederick, Md.	do	7.55	2,352
Aug. 20	do	do	do	6.95	1,605
Jan. 25	Potomac River	Point of Rocks, Md.	do	6.50	33,344
Aug. 19	do	do	do	3.30	14,309
Oct. 3	do	do	do	.65	1,939
May 18	Rock Creek	Park station, D. C.	do	3.20	95
May 7	North River	Glasgow, Va.	D. C. Humphreys	6.00	6,316
July 19	do	do	do	1.60	436
Dec. 23	do	do	do	3.68	2,869
Feb. 12	James River	Buchanan, Va.	do	2.40	932
June 27	do	do	do	2.05	544
July 30	do	do	do	2.86	1,468
Dec. 23	do	do	do	4.32	3,664
May 12	North Branch of Potomac River	Cumberland, Md.	E. G. Paul	3.80	1,829
Do.	Willis Creek	do	do		381
May 13	do	do	do	5.00	368
Oct. 2	Antietam Creek	Stonebreakers Mills, Md.	do	1.80	70
Oct. 5	Great Gunpowder River.	One-half mile above Loreley, Md.	do		308

Rating tables.

Lambertville.		Harrisburg.		Rowlandsville.		Woodstock.		Laurel.		Sharpsburg.	
Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.
<i>Feet.</i>	<i>Sec.-ft.</i>	<i>Feet.</i>	<i>Sec.-ft.</i>	<i>Feet.</i>	<i>Sec.-ft.</i>	<i>Feet.</i>	<i>Sec.-ft.</i>	<i>Feet.</i>	<i>Sec.-ft.</i>	<i>Feet.</i>	<i>Sec.-ft.</i>
2.4	2,500	0.0	3,000	2.7	120	3.0	50	2.7	0	1.2	38
2.6	2,750	.5	4,700	2.8	125	3.1	66	2.8	2	1.3	45
2.8	3,250	1.0	7,000	2.9	137	3.2	83	2.9	5	1.4	60
3.0	3,750	1.5	10,100	3.0	150	3.3	100	3.0	10	1.5	80
3.2	4,350	2.0	13,900	3.2	180	3.4	122	3.2	20	1.6	105
3.4	5,200	2.5	18,300	3.4	220	3.5	148	3.4	30	1.7	138
3.6	6,300	3.0	23,400	3.6	270	3.6	173	3.6	42	1.8	171
3.8	7,450	3.5	29,100	3.8	330	3.7	200	3.8	56	1.9	202
4.0	8,800	4.0	35,400	4.0	390	3.8	235	4.0	70	2.0	233
4.2	10,300	4.5	42,750	4.2	480	3.9	270	4.2	86	2.1	264
4.4	11,900	5.0	51,400	4.4	590	4.0	310	4.4	102	2.2	294
4.6	13,600	5.5	61,090	4.6	705	4.1	355	4.6	120	2.3	325
4.8	15,400	6.0	69,990	4.8	815	4.2	400	4.8	140	2.4	356
5.0	17,200	6.5	78,890	5.0	930	4.3	450	5.0	162	2.5	387
5.2	19,050	7.0	87,790	5.2	1,040	4.4	520	5.5	217	2.6	417
5.4	20,950	7.5	96,690	5.4	1,155	4.5	590	6.0	272	2.7	448
5.6	22,860	8.0	105,590	5.6	1,265	4.6	670	6.5	329	2.8	479
5.8	24,780	8.5	114,490	5.8	1,380	4.7	750	7.0	389	2.9	510
6.0	26,700	9.0	123,390	6.0	1,490	4.8	835	7.5	455	3.0	544
6.2	28,620	9.5	132,290	6.2	1,605	4.9	915	8.0	545	3.2	644
6.4	30,540	10.0	141,240	6.4	1,715	5.0	1,000	8.5	655	3.4	766
6.6	32,460	10.5	150,190	6.6	1,830	5.1	1,100	9.0	800	3.6	887
6.8	34,380	11.0	159,140	6.8	1,940	5.2	1,200	9.5	1,025	3.8	1,000
7.0	36,300	11.5	168,090	7.0	2,055	5.3	1,300	10.0	1,400	4.0	1,114
7.5	41,100	12.0	177,040	7.5	2,335	5.4	1,400	10.5	2,094	4.2	1,227
8.0	45,900	12.5	185,990	8.0	2,615	5.5	1,500	11.0	2,674	4.4	1,340
8.5	50,700	13.0	194,940	8.5	2,900	5.6	1,600			4.6	1,454
9.0	55,500	13.5	203,890	9.0	3,180	5.7	1,700			4.8	1,567
9.5	60,300	14.0	212,840	9.5	3,460	5.8	1,800			5.0	1,680
10.0	65,100	15.0	230,740	10.0	3,740	5.9	1,900				

Rating tables—Continued.

Port Republic. a		Port Republic. b		Millville.		Frederick.		Point of Rocks.	
Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1.6	165	1.3	95	0.3	600	3.6	45	0.0	300
1.8	215	1.4	105	.4	620	3.8	90	.2	600
2.0	275	1.5	120	.5	650	4.0	150	.4	1,100
2.2	350	1.6	140	.6	710	4.2	210	.6	1,700
2.4	445	1.7	160	.7	780	4.4	270	.8	2,400
2.6	555	1.8	180	.8	850	4.6	340	1.0	3,100
2.8	700	1.9	210	.9	920	4.8	420	1.2	4,000
3.0	865	2.0	250	1.0	990	5.0	500	1.4	4,900
3.2	1,050	2.2	350	1.2	1,160	5.5	750	1.6	5,800
3.4	1,290	2.4	495	1.4	1,390	6.0	1,020	1.8	6,700
3.6	1,550	2.6	645	1.6	1,650	6.5	1,450	2.0	7,600
3.8	1,860	2.8	795	1.8	1,960	7.0	1,880	2.2	8,600
4.0	2,170	3.0	945	2.0	2,310	7.5	2,310	2.4	9,600
4.2	2,480	3.2	1,090	2.2	2,700	8.0	2,740	2.6	10,650
4.4	2,790	3.4	1,240	2.4	3,100	8.5	3,170	2.8	11,750
4.6	3,100	3.6	1,390	2.6	3,500	9.0	3,600	3.0	12,850
4.8	3,410	3.8	1,535	2.8	3,930	9.5	4,030	3.5	15,500
5.0	3,720	4.0	1,685	3.0	4,370	10.0	4,460	4.0	18,250
5.5	4,495	4.2	1,835	3.2	4,840	10.5	4,890	4.5	21,250
6.0	5,270	4.4	1,980	3.4	5,320	11.0	5,320	5.0	24,000
6.5	6,045	4.6	2,125	3.6	5,800	11.5	5,750	5.5	27,000
7.0	6,820	4.8	2,275	3.8	6,280	12.0	6,180	6.0	30,150
7.5	7,595	5.0	2,425	4.0	6,800	12.5	6,610	6.5	33,200
8.0	8,370	5.2	2,575	4.5	8,200	13.0	7,040	7.0	37,700
8.5	9,145	5.4	2,720	5.0	9,890	13.5	7,470	7.5	42,200
9.0	9,920	5.6	2,870	5.5	11,605	14.0	7,900	8.0	46,700
9.5	10,695	5.8	3,015	6.0	13,490	14.5	8,330	8.5	51,200
10.0	11,470	6.0	3,165	6.5	15,255	15.0	8,760	9.0	55,700
10.5	12,245	6.5	3,535	7.0	17,080	15.5	9,190	9.5	60,200
11.0	13,020	7.0	3,905	-----	-----	16.0	9,620	10.0	64,700

a Rating table for North River, applicable from August 5, 1895, to December 31, 1898.

b Rating table for South River, applicable from August 5, 1895, to December 31, 1898

SOUTHERN ATLANTIC COAST DRAINAGE.

DESCRIPTION OF RIVER STATIONS.

Roanoke station on Roanoke River.—Described on page 25 of Paper No. 15; results for 1897 shown on page 174 of the Nineteenth Annual Report, Part IV. The observer since September 3, 1898, has been Preston Lyons.

Clarksville station on Dan and Staunton rivers.—Described on page 26 of Paper No. 15; results for 1897 shown on page 176 of the Nineteenth Annual Report, Part IV. This station was discontinued on February 26, 1898.

Neal station on Roanoke River.—Described on page 28 of Paper No. 15; results for 1897 given on page 174 of the Nineteenth Annual Report, Part IV.

Tarboro station on Tar River.—Described on page 29 of Paper No. 15; results for 1897 given on page 183 of the Nineteenth Annual Report, Part IV.

Selma station on Neuse River.—Described on page 30 of Paper No. 15; results for 1897 given on page 185 of the Nineteenth Annual Report, Part IV.

Moncure station on Haw River.—This station, established May 6, 1898, is located about $1\frac{1}{2}$ miles north of Moncure, Chatham County, North Carolina, at the bridge of the Seaboard Air Line, which crosses the river here, and about 2 miles from the junction with the Deep

River to form the Cape Fear. The observer is M. A. Moore, Moncure, Chatham County, North Carolina, who also attends the station on Deep River. The gage is a horizontal rod, well painted, divided into feet and tenths, and securely nailed to the outer side of the guard rail of the bridge on the upstream side. The two-foot mark on the rod is over the center of the second-floor beam from the south end of the second span from the south end of the bridge. The outer rim of the pulley wheel is 0.3 foot from the zero of the gage rod and the distance from the end of the weight to the pointer on the wire rope is 43.45 feet, the gage reading zero when the weight touches the bottom of the stream. The initial point for soundings is a notch cut in the guard rail opposite the south end of the bridge and on the upstream side, the section here being better than that on the downstream side. The channel is straight for some distance above and below the station. The velocity is good and uniformly distributed across the stream. Both banks are rather low and somewhat subject to overflow in time of flood. The bed of the stream is of coarse sand and gravel, and is probably not subject to any decided change in high water. The current here is somewhat modified by a fish dam about 150 yards above the bridge. The station is reached by private conveyance from Moncure.

Moncure station on Deep River.—This station, established May 5, 1898, is located about one-fourth of a mile south of Moncure, Chatham County, North Carolina, at the covered wooden bridge of the Seaboard Air Line, which crosses the river here, and about 2 miles above the junction with the Haw River to form the Cape Fear. The observer is M. A. Moore, Moncure, Chatham County, North Carolina, a farmer and also bridge watchman, living about 100 yards from the bridge. The gage is a horizontal rod, well painted, divided into feet and tenths, and securely nailed to the guard rail of the bridge. The zero of the rod is 50 feet south of the north end of the second span of the bridge from the north. The outer rim of the pulley wheel is 3.7 feet from the zero of the rod, and from the end of the weight to the pointer on the wire rope is 45.16 feet, the gage reading zero when the weight touches the bottom of the river. The initial point for soundings is a notch cut in the guard rail opposite the south end of the bridge and on the downstream side. The channel is straight for some distance above and below the station. The velocity is not great but sufficient for the purpose, and is well distributed across the stream. Both banks are rather low and subject to overflow. The bed of the river is of fine sand and mud, and is probably subject to change in high water.

Fayetteville station on Cape Fear River.—Described on page 31 of Paper No. 15; results for 1897 given on page 187 of the Nineteenth Annual Report, Part IV.

Salisbury station on Yadkin River.—Described on page 32 of Paper No. 15; results for 1897 given on page 194 of the Nineteenth Annual Report, Part IV.

Norwood station on Yadkin (Pedee) River.—Described on page 33 of Paper No. 15; results for 1897 given on page 194 of the Nineteenth Annual Report, Part IV.

Catawba station on Catawba River.—Described on page 34 of Paper No. 15; results for 1897 shown on page 204 of the Nineteenth Annual Report, Part IV. The observer since July 2, 1898, has been C. A. Reid, jr.

Rockhill station on Catawba River.—Described on page 35 of Paper No. 15; results for 1897 shown on page 204 of the Nineteenth Annual Report, Part IV. The rating table for this station, printed on page 213 of the above report, does not fairly represent the conditions prevailing from February to December, 1897. The drought that began in August of that year and continued until the latter half of October was the most severe in the history of the State, if not in the history of the South generally, and the streams attained a lower stage of flow than ever before, according to the testimony of those living near them. Also the level of the underground waters, as shown by the wells and springs, was lower than for a quarter of a century. As shown by the gage heights of the rivers, all of them during September and October of this year reached a stage of flow lower than at any time during the year or during the preceding years. The rating table and the gage heights for the upper station on this river show that the minimum flow for this year was during this period. It therefore appears that the same should be true for this lower station, but instead the rating table makes the minimum flow for the year come in January, which is out of accord not only with the abnormal conditions prevailing at this time, but with those of the normal year.

Gaffney station on Broad River (a tributary of Santee River).—This station has been changed from the locality described on page 36 of Paper No. 15. The gage wire was broken on October 1, 1898, and on October 25 the gage was moved to Gaffney Ferry, about 200 yards above the railroad bridge, where there is a better section and where nearly all the measurements have been taken. The gage was moved in the following manner: A small temporary gage was set up at the ferry in order that the rise or fall of the river might be determined and allowed for in the final setting of the gage in its new position. The wire to the gage at the railroad bridge was then replaced and the gage reading taken. The rod was then removed and taken to the ferry. The temporary gage was read again and with the same result as before, indicating that the water was at a stand. This being the case, all that was necessary to set the gage was to make the reading in its new position the same as in its old position. From the fact, however, that in its old position the water had frequently fallen below the zero of the gage, it was thought best to change the position of the rod somewhat, and accordingly the zero of the rod was moved downward 2 feet. The reading at the bridge was 0.90 foot; the new reading was therefore 2.90 feet. The observations from January 1 to September 30 have been adjusted to the new zero by adding 2 feet.

The rod is securely nailed and braced to a large overhanging tree just east of Gaffney Ferry, on the south side of the river, and the rod is 72 feet west of a bench mark consisting of a large steel nail

driven in a notch cut in the root of a large elm tree on the south side of the river, just to the east of the road leading to the ferry and about 30 feet from the river bank. The zero of the rod is 13.29 feet below this nail. The bottom here is sand, with some mud, and quite smooth. The velocity is quite rapid, well distributed all the way across, and the channel is straight for some distance above and below the station. The services of the ferryman, John W. Gaffney, Gaffney, South Carolina, were obtained to take charge of the gage.

Alston station on Broad River (tributary to Santee River).—Described on page 37 of Paper No. 15; results for 1897 shown on page 215 of the Nineteenth Annual Report, Part IV.

Waterloo station on Saluda River.—Described on page 38 of Paper No. 15; results for 1897 shown on page 221 of the Nineteenth Annual Report, Part IV.

Madison station on Tugalo River.—Established July 19, 1898, at Cooks Ferry, about half a mile from Madison, South Carolina, and 1 mile below the Southern Railway bridge on Tugalo River. S. C. Cobb, a farmer living in Georgia, about 300 yards from the ferry, was employed on July 19, 1898, as observer; but the discharge measurements were begun on May 26, 1898. The gage is a 2 by 4 inch scantling, 10 feet long, graduated to feet and tenths, and nailed to a sycamore tree on the right bank at the ferry landing. Higher stages are noted on the sycamore above the rod by measuring up from the top of rod. Measurements are made from a boat held in place by the ferry rope stretched across the river. The bench marks are on the left bank of river, the first being on a willow tree at the bateau landing, and consisting of three large nails 3 feet above zero of gage; the second is on the same tree, being one nail 6 feet above zero of gage; and the third is a large nail in a sycamore at the ferry landing 12 feet above the zero of gage.

Calhoun Falls station on Savannah River.—Described on page 39 of Paper No. 15; results for 1897 are shown on page 223 of the Nineteenth Annual Report, Part IV. The station was discontinued on August 9, 1898.

Augusta station on Savannah River.—Observations of river height have been maintained since 1875 by the city of Augusta at the city highway bridge. The results have been printed in the volumes entitled Stages of Water at River Stations, prepared by the United States Weather Bureau. Those for 1875 to 1889 are given in Part III, those for 1890 to 1892 in Part IV, and for 1893 to 1895 in Part V. The gage consists of a vertical timber fastened to the pier and graduated to feet and inches. Readings are made four times a day, usually at 6 a. m., 12 m., 6 p. m., and 9 p. m. The 6 a. m. readings are those used by the Weather Bureau. The observer is J. M. Youngblood, keeper of the city bridge. The gage heights as given in the following pages have been changed from feet and inches to feet and tenths, and have been averaged for the day. The zero of this gage is the low water of 1835. The highest water recorded was on September 11, 1888, at 38.7 feet.

At that time the entire city was submerged, ten persons were drowned, and property was damaged to the amount of \$2,000,000.¹

The floods of this river have been investigated under the direction of the Corps of Engineers, United States Army, and reports prepared by George W. Brown, assistant engineer. The first of these, dated February 11, 1889, was printed, with maps, as House Ex. Doc. No. 213, Fifty-first Congress, first session; also given, with few maps, in the Report of the Chief of Engineers, United States Army, 1890, page 1340. A later report, dated June 10, 1890, also prepared by Mr. George W. Brown, was printed as Ex. Doc. No. 255, Fifty-first Congress, second session. In this report is given a rating table, showing the probable discharge of the river at heights on the gage of from 5 to 40 feet. On page 17 of this latter document is shown the run-off in cubic feet per second per square mile for various portions of the drainage basin. There is also given a table of distances and elevations and the slope of the river, as well as a description of the character of the drainage basin.

From the figures in the above-named reports a computation was made by Cyrus C. Babb of the fluctuations of flow of Savannah River, the results being published in the Fourteenth Annual Report, Part II, of the United States Geological Survey, page 147, and relating to the years 1884 to 1891, inclusive. A discussion of the results is also given in Transactions American Society of Civil Engineers, Volume XXIII, page 332. The later discharge measurements, made during 1897 and 1898 by Prof. B. M. Hall and others, have furnished material for the construction of a new rating table. A comparison of this with earlier, less accurate tables may be of interest in this connection.

Rating tables of Savannah River at Augusta, Georgia.

Gage height.	Discharge in second-feet.		
	Brown. <i>a</i>	Babb. <i>b</i>	Hall. <i>c</i>
<i>Feet.</i>			
4.0.....		1,900	2,350
5.0.....	3,000	2,700	3,100
6.0.....	4,000	3,600	4,020
7.0.....	5,210	4,900	5,400
8.0.....	6,600	6,700	7,200
9.0.....	8,400	8,500	9,340
10.0.....	10,400	10,400	11,800
11.0.....	12,600	12,800	14,620
12.0.....	14,900	14,800	17,750
13.0.....	17,300	17,300	21,100
14.0.....	20,000	20,100	25,000
15.0.....	22,700	22,800	29,300
16.0.....	25,500	25,300	33,600
17.0.....	28,700	28,500	38,000
18.0.....	32,100	31,900	42,400
20.0.....	39,000	39,000	51,200
22.0.....		46,800	60,000
24.0.....		55,000	68,800
26.0.....		62,700	77,600
28.0.....		76,500	86,400
30.0.....	89,000	89,200	

a By George W. Brown, assistant engineer, Corps of Engineers, United States Army, published in Annual Report of Chief of Engineers, United States Army, 1890, page 1341.

b By Cyrus C. Babb, assistant hydrographer, United States Geological Survey. Results published in Fourteenth Annual Report of United States Geological Survey, Part II, page 147.

c By B. M. Hall, resident hydrographer, United States Geological Survey, from gages made in 1897 and 1898.

¹ Description of River Gages, Part V, United States Weather Bureau, p. viii.

Much of the difference between the results given in the above tables is due to deepening of the channel at the Augusta wharf, immediately below the city bridge, to a pier of which the gage is attached.

By the use of the values of discharge corresponding to various gage heights Professor Hall has computed the minimum flow, by months, from 1892 to 1898, inclusive. In each case he has taken the average of all the readings for the day of lowest water in the given month, and not the lowest single reading. The lowest average daily reading for the seven years is that on July 3, 1898, of 3.88. The rating table, therefore, begins at about this point, the value for a height of 3.9 feet being 2,306 second-feet.

Minimum monthly gage height and discharge of the Savannah River at Augusta, Georgia, for 1892 to 1898, inclusive.

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.
1892.			1895—Continued.		
	<i>Feet.</i>	<i>Sec. feet.</i>		<i>Feet.</i>	<i>Sec. feet.</i>
January 2.....	7.80	6,820	July 21.....	6.66	5,905
February 7.....	8.55	8,328	August 3.....	5.90	3,910
March 6.....	8.25	7,698	September 30.....	5.40	3,436
April 30.....	8.63	8,502	October 25.....	5.03	3,125
May 2.....	7.30	5,922	November 2.....	5.20	3,268
June 30.....	7.53	6,358	December 8.....	5.40	3,436
July 17.....	6.76	5,093			
August 10.....	6.06	4,091	1896.		
September 21.....	6.40	4,522	January 15.....	6.50	4,660
October 2.....	6.30	4,589	February 28.....	8.10	7,398
November 2.....	6.80	5,092	March 31.....	7.50	6,274
December 15.....	6.63	4,843	April 24.....	6.03	4,040
1893.			May 23.....	5.30	3,352
January 18.....	6.45	4,591	June 18.....	4.93	3,045
February 10.....	8.06	7,318	July 4.....	4.73	2,875
March 31.....	8.00	7,200	August 25.....	5.16	3,200
April 20.....	6.30	4,589	September 23.....	4.10	2,405
May 29.....	6.35	4,455	October 11.....	3.94	2,323
June 30.....	6.70	4,944	November 1.....	4.80	2,930
July 15.....	5.53	3,550	December 27.....	6.16	4,158
August 26.....	5.23	3,296			
September 26.....	6.86	5,200	1897.		
October 31.....	6.06	4,091	January 12.....	6.00	4,020
November 21.....	5.73	3,735	February 1.....	7.40	6,098
December 15.....	6.30	4,589	March 6.....	9.20	9,804
1894.			April 29.....	8.60	8,436
January 6.....	7.10	5,572	May 29.....	6.60	4,800
February 4.....	7.76	6,760	June 27.....	6.00	4,020
March 31.....	8.13	7,456	July 4.....	5.65	3,655
April 28.....	7.23	5,810	August 31.....	5.40	3,436
May 31.....	6.36	4,484	September 15.....	4.55	2,738
June 18.....	5.33	3,380	October 10.....	3.93	2,330
July 16.....	5.23	3,296	November 14.....	5.00	3,100
August 24.....	5.90	3,910	December 12.....	5.85	3,860
September 13.....	5.30	3,352			
October 31.....	5.83	3,840	1898.		
November 12.....	5.76	3,765	January 11.....	5.97	3,930
December 3.....	5.53	3,550	February 26.....	5.67	3,885
1895.			March 27.....	5.67	3,670
January 8.....	7.75	6,728	April 23.....	6.97	5,350
February 10.....	8.66	8,506	May 29.....	4.92	3,032
March 1.....	8.95	9,220	June 11.....	4.20	2,475
April 7.....	8.76	8,800	July 3.....	3.88	2,294
May 18.....	8.70	8,656	August 4.....	6.55	4,730
June 27.....	6.73	5,040	September 30.....	7.47	6,220
			October 2.....	7.02	5,435
			November 6.....	7.55	6,364
			December 18.....	7.85	6,916

Each of the above gage heights is an average of all the readings taken on the day named.

Water is diverted from Savannah River above the city of Augusta by a canal following along the right bank, described in Volume XVI of the Tenth Census, 1880, on page 789. A conception of the size of this canal is given by a measurement made by Prof. B. M. Hall on September 29, 1897, above all the water wheels. At that time he found a flow of 2,640 second-feet. Presumably all of this was passing through the water wheels under varying heads. The full head is 50 feet, but the canal has three levels. Some of the wheels discharge from the upper level or main canal directly into the river, while others discharge from one level to another.

The measurements noted on page 44 were made at North Augusta highway bridge, which is a through iron bridge in three spans, 206½ feet, 209 feet, and 206½ feet in length, respectively, not including approaches from street to each end. There are two piers in the water and one in each bank. The stream at gage height, 6.67, is 572 feet wide, including the two piers, has a maximum depth of 10 feet and an average depth of 6.5 feet, the mean velocity being 1.24 feet per second. The initial point is center of first sidewalk floor beam, right bank, downstream side of bridge.

Carlton station on Broad River (tributary to Savannah River).—Described on page 40 of Paper No. 15; results for 1897 shown on page 225 of the Nineteenth Annual Report, Part IV.

Cary station on Oconee River.—Described on page 41 of Paper No. 15; results for 1897 shown on page 227 of the Nineteenth Annual Report, Part IV. This station was discontinued March 31, 1898, as the rating is evidently affected by a dam several miles below.

Dublin station on Oconee River.—Described on page 42 of Paper No. 15; results for 1897 shown on page 227 of the Nineteenth Annual Report, Part IV. Observations were taken under the direction of the United States Geological Survey from February 11 to October 15, inclusive, with Jasper Young as observer. Since that time the United States Weather Bureau has taken the observations, the observer being Mathew R. Scarborough. The measurements are taken on the upstream side of the iron highway bridge, which is about 100 yards above the railroad bridge at which the gage is located.

Almon station on Yellow River.—Described on page 43 of Paper No. 15; result for 1897 shown on page 229 of the Nineteenth Annual Report, Part IV. No current meter measurements have been made during 1898, nor have gage heights been recorded. An attempt, however, has been made to ascertain the fluctuations of discharge by comparison with the observations made at Macon. A rating table published on page 229 of the Nineteenth Annual Report, Part IV, was constructed from discharge measurements made during the autumn of 1897. This has been used to obtain the quantity of flow at fifteen times on days when the elevation was not fluctuating notably. The gage height at Macon, Georgia, was ascertained on each morn-

ing following these dates. In this way the estimated discharge at Almon was referred to the readings on the gage at Macon and a new discharge table computed in which the heights at Macon are given, and assume discharges at Almon are set opposite. The application of such a table involves the assumption that the fluctuations at Almon are coincident with those at Macon. The following values have been obtained:

Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.
<i>Feet.</i>	<i>Sec.-ft.</i>	<i>Feet.</i>	<i>Sec.-ft.</i>	<i>Feet.</i>	<i>Sec.-ft.</i>	<i>Feet.</i>	<i>Sec.-ft.</i>	<i>Feet.</i>	<i>Sec.-ft.</i>
—1.00	80	3.00	523	7.00	1,070	10.00	1,479	14.00	2,022
0.00	132	4.00	664	8.00	1,208	11.00	1,614	16.00	2,294
1.00	257	5.00	800	9.00	1,342	12.00	1,750	18.00	2,566
2.00	392	6.00	935						

Macon station on Ocmulgee River.—Described on page 44 of Paper No. 15; result for 1897 shown on page 230 of the Nineteenth Annual Report, Part IV.

TABLES OF DAILY GAGE HEIGHT.

Daily gage height, in feet, of Roanoke River at Roanoke, Virginia, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.15	2.00	0.95	2.25	0.80	1.35	0.95	1.85	1.05	1.30	1.85	1.30
2	1.15	1.90	.95	2.00	.75	1.30	.90	1.90	.95	1.40	1.80	1.20
3	1.15	1.85	1.00	1.85	.75	1.20	.85	1.95	.95	2.08	1.75	1.50
4	1.10	1.85	1.00	1.70	.70	1.15	.85	2.50	1.05	2.00	1.75	2.00
5	1.10	1.80	1.10	1.65	.70	1.10	.85	3.10	2.04	2.68	1.70	3.40
6	1.00	1.80	1.00	1.60	3.80	1.05	.85	2.45	2.00	3.00	1.75	2.50
7	.95	1.70	.95	1.60	4.90	1.05	.80	1.95	2.03	2.35	1.70	2.25
8	.95	1.65	.95	1.50	3.25	1.00	.75	1.90	1.07	2.00	1.70	2.00
9	.90	1.60	.90	1.50	2.50	1.00	.60	1.90	1.07	1.90	1.65	1.90
10	.90	1.60	.85	1.40	2.10	.95	.55	1.95	1.07	1.80	1.65	1.60
11	.85	1.55	.80	1.40	2.00	.90	.45	1.95	1.07	1.70	1.60	1.60
12	.85	1.50	.75	1.35	2.20	.90	.45	1.90	1.05	1.65	1.60	1.50
13	.85	1.50	.75	1.30	1.65	.95	.45	1.90	1.03	1.60	1.55	1.50
14	.95	1.40	.75	1.65	1.50	1.00	.45	2.60	1.01	1.55	1.50	1.45
15	1.30	1.35	.70	1.60	1.45	1.25	.50	2.45	1.01	1.50	1.45	1.40
16	1.40	1.30	.70	1.55	1.45	1.30	.50	2.20	1.01	1.50	1.40	1.35
17	1.35	1.20	.70	(a)	1.40	1.40	.45	1.90	1.50	1.40	1.55	1.65
18	1.25	1.15	.65	(a)	1.30	1.40	1.15	1.75	1.00	1.60	1.50	1.65
19	1.20	1.10	.65	(a)	1.25	1.50	1.20	1.50	1.00	3.50	1.95	1.65
20	1.15	1.10	.65	(a)	1.20	1.45	1.10	1.30	1.00	2.60	2.20	1.60
21	2.00	1.00	.65	(a)	1.15	1.40	.95	1.25	1.05	2.60	2.00	1.60
22	2.50	1.00	.60	(a)	1.55	1.60	1.75	1.20	1.40	5.00	1.90	1.55
23	2.35	1.00	.60	(a)	3.10	1.70	1.75	1.10	3.55	4.45	1.85	2.20
24	2.35	.95	.70	(a)	2.95	1.60	1.60	1.10	2.20	3.00	1.75	2.50
25	2.40	.95	1.50	(a)	2.40	1.55	1.45	1.00	1.85	2.75	1.65	2.35
26	2.40	.95	1.75	(a)	1.95	1.50	1.25	.95	1.70	2.30	1.65	2.20
27	2.35	.90	2.00	(a)	1.62	1.35	1.15	.95	1.50	2.00	1.50	2.00
28	2.20	.90	2.50	(a)	1.50	1.15	1.35	1.10	1.50	1.90	1.40	1.90
29	2.15	-----	2.75	(a)	1.45	1.00	1.40	1.10	1.40	1.90	1.50	1.85
30	2.15	-----	3.05	(a)	1.40	1.00	1.55	1.15	1.30	1.95	1.40	1.80
31	2.15	-----	2.75	(a)	1.40	-----	1.55	1.15	-----	1.95	-----	1.80

a April 17-30, no observations.

Daily gage height, in feet, of Dan River at Clarksville, Virginia, for 1898. (a)

Day.	Jan.	Feb.	Day.	Jan.	Feb.	Day.	Jan.	Feb.	Day.	Jan.	Feb.
1....	0.70	0.87	9...	1.00	0.90	17...	0.75	0.55	25...	2.70	1.02
2....	.68	.72	10...	.80	1.25	18...	1.45	.53	26...	3.92	.95
3....	.65	.69	11...	.70	1.12	19...	1.05	.59	27...	2.45	-----
4....	.78	.65	12...	1.10	1.02	20...	.95	.55	28...	2.05	-----
5....	.95	.58	13...	.89	.88	21...	.80	.68	29...	1.70	-----
6....	1.05	.55	14...	.89	.76	22...	.74	.75	30...	1.28	-----
7....	1.00	.62	15...	.70	.70	23...	.68	.88	31...	.95	-----
8....	1.00	.75	16...	.65	.60	24...	1.25	.95			

a Station discontinued February 26.

Daily gage height, in feet, of Staunton River at Clarksville, Virginia, for 1898. (a)

Day.	Jan.	Feb.	Day.	Jan.	Feb.	Day.	Jan.	Feb.	Day.	Jan.	Feb.
1....	0.35	0.49	9...	0.60	0.51	17...	0.48	0.27	25...	2.10	0.74
2....	.43	.40	10...	.42	.65	18...	1.05	.25	26...	3.25	.65
3....	.39	.43	11...	.38	.60	19...	.70	.33	27...	2.08	-----
4....	.50	.39	12...	.69	.54	20...	.65	.33	28...	1.63	-----
5....	.65	.33	13...	.50	.51	21...	.42	.43	29...	1.25	-----
6....	.70	.27	14...	.50	.49	22...	.47	.48	30...	.88	-----
7....	.71	.35	15...	.38	.88	23...	.43	.54	31...	.65	-----
8....	.71	.48	16...	.39	.34	24...	.65	.65			

a Station discontinued February 26.

Daily gage height, in feet, of Roanoke River at Neal, North Carolina, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1....	8.60	8.60	3.40	10.00	6.10	11.20	3.20	7.80	5.30	13.50	16.80	7.50
2....	7.40	7.30	3.50	15.30	5.40	9.80	3.60	7.20	5.30	11.00	17.30	8.10
3....	6.40	6.70	3.40	15.20	4.70	8.60	3.40	6.70	4.80	9.10	15.00	8.30
4....	5.70	5.80	3.60	12.80	4.30	7.10	2.70	6.20	3.80	7.50	12.30	9.00
5....	4.80	4.90	4.30	10.60	4.00	5.67	1.90	5.30	3.30	6.10	10.10	10.50
6....	4.20	4.10	7.40	9.90	4.30	4.40	1.85	4.50	2.70	5.40	8.50	15.70
7....	4.00	3.60	9.70	13.00	6.70	3.80	4.20	3.50	2.30	5.80	7.70	20.90
8....	4.40	4.00	9.20	15.40	15.95	3.30	4.20	5.65	7.50	12.80	6.90	20.10
9....	4.60	4.40	8.10	14.30	20.85	3.00	3.90	6.90	8.90	13.00	6.80	17.50
10...	4.60	4.80	6.90	11.50	22.51	2.90	5.30	5.90	8.60	10.40	6.70	14.80
11...	4.43	4.90	6.00	9.80	22.51	2.70	5.90	4.70	7.90	8.10	6.20	12.70
12...	4.50	4.80	5.40	8.30	20.00	2.30	5.90	4.10	5.50	6.40	5.70	10.90
13...	4.68	4.70	4.90	7.30	16.95	2.20	4.80	4.60	3.80	5.30	5.30	9.50
14...	4.80	4.70	4.80	7.40	14.20	2.10	5.15	5.30	2.60	4.60	5.30	8.50
15...	4.80	4.40	5.00	8.40	12.10	2.40	4.40	9.20	2.10	4.20	5.50	7.70
16...	4.85	4.20	5.00	7.90	11.32	4.20	3.30	11.70	1.80	3.80	5.40	7.10
17...	4.90	3.90	4.80	7.80	12.50	6.90	2.50	15.70	1.60	3.50	5.50	6.50
18...	4.60	3.70	4.60	8.20	12.75	9.00	3.30	12.50	1.40	3.20	5.70	5.75
19...	4.30	3.60	4.40	7.90	11.90	12.30	6.90	8.90	1.35	3.20	6.00	5.50
20...	4.30	3.40	4.20	7.10	9.90	15.00	7.80	6.60	1.20	3.80	6.90	5.90
21...	4.10	3.40	4.00	6.40	8.30	14.70	8.60	6.00	1.10	6.30	9.00	6.70
22...	4.20	3.80	3.80	5.70	6.50	15.80	7.80	5.70	1.00	11.80	11.10	7.30
23...	5.10	4.50	3.60	5.20	5.60	13.50	6.15	7.80	1.20	10.40	10.80	8.20
24...	6.90	5.00	3.50	4.90	10.60	10.20	4.90	6.80	2.00	12.10	9.80	9.50
25...	7.40	4.90	3.45	4.80	21.61	7.40	4.60	5.30	21.28	22.30	9.20	14.80
26...	7.30	4.60	3.40	5.50	22.66	5.10	5.90	4.20	22.73	22.10	9.30	17.80
27...	8.50	4.20	3.50	8.10	22.20	4.00	7.25	3.30	23.88	20.98	8.90	15.20
28...	12.00	3.80	4.10	9.40	20.60	3.20	6.90	4.80	23.20	16.50	7.90	12.75
29...	13.50	-----	4.80	8.50	18.30	2.90	5.30	4.70	20.60	14.30	7.00	10.80
30...	12.00	-----	5.10	7.20	16.00	3.15	5.80	5.00	17.00	12.40	7.20	9.50
31...	10.10	-----	6.00	-----	13.30	-----	8.10	4.80	-----	11.20	-----	8.00

Daily gage height, in feet, of Tar River at Tarboro, North Carolina, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.40	3.30	1.80	7.30	4.50	5.70	1.80	1.20	8.30	1.60	1.70	4.70
2	3.00	3.25	1.65	9.20	3.70	6.10	1.10	2.15	6.30	1.20	2.20	5.30
3	2.90	3.10	1.55	8.90	3.40	5.00	.90	2.80	4.10	.80	2.30	5.20
4	2.70	2.80	1.70	7.00	2.85	4.10	.60	4.00	3.20	1.20	1.80	6.20
5	2.40	2.60	3.20	5.90	2.50	3.00	.50	3.20	3.10	1.30	1.70	8.50
6	2.20	2.40	5.00	6.20	2.30	2.40	1.90	2.30	2.80	1.40	2.90	11.00
7	2.25	2.30	7.30	8.00	3.00	2.00	7.50	1.80	2.60	1.30	2.50	12.50
8	2.12	2.30	7.00	9.80	4.60	1.70	9.90	1.60	2.10	1.20	2.60	13.00
9	2.00	2.40	4.90	9.10	7.10	1.50	9.60	1.30	2.60	1.60	2.70	11.30
10	1.90	2.20	4.00	6.40	7.80	1.30	8.50	1.00	3.20	1.50	2.90	9.40
11	2.00	2.10	3.70	5.50	6.50	1.10	11.20	.90	2.60	1.60	2.30	7.00
12	2.05	2.00	3.50	5.10	4.90	1.00	11.70	1.50	1.70	1.50	2.80	5.70
13	2.30	1.90	3.20	4.50	4.10	.80	10.70	2.10	1.50	1.40	1.50	5.00
14	2.75	1.90	2.90	4.10	4.00	1.50	8.80	4.10	1.30	1.10	1.40	4.50
15	2.70	2.00	3.60	4.00	3.60	1.00	7.90	4.20	1.00	1.00	1.60	4.10
16	2.60	1.70	5.00	3.80	3.30	1.90	6.30	3.40	.80	.80	1.70	3.60
17	2.40	1.70	5.80	3.50	5.95	3.30	5.20	2.40	.70	.50	2.10	3.40
18	2.90	1.60	4.70	3.30	8.40	5.60	4.30	2.30	.60	.70	2.30	3.10
19	3.00	1.55	4.20	3.10	9.80	5.40	4.20	2.10	.50	.60	2.50	3.20
20	2.73	1.50	4.00	2.80	9.00	5.50	3.70	2.50	.50	2.60	4.30	3.30
21	2.60	1.60	3.60	2.60	7.20	6.70	4.20	5.30	.50	3.00	4.90	3.70
22	2.60	2.30	3.40	2.40	5.70	6.30	3.15	6.50	.40	2.80	5.50	5.00
23	2.70	2.40	3.00	2.20	4.60	5.30	2.80	6.00	.60	2.30	4.30	5.70
24	2.55	2.50	2.70	2.00	5.10	4.10	2.40	5.30	4.70	1.90	3.70	6.30
25	2.70	2.45	2.40	1.90	8.90	3.10	2.20	5.50	7.30	2.30	3.40	6.00
26	3.00	2.30	2.50	2.30	11.00	2.50	1.90	4.60	6.20	2.00	3.20	5.60
27	3.95	2.00	2.40	2.90	12.80	2.00	2.00	2.80	4.00	2.70	3.20	5.00
28	5.90	1.70	2.30	4.20	13.70	2.30	1.50	3.20	2.80	2.50	2.90	4.50
29	5.40	-----	2.30	5.30	12.40	2.50	1.40	4.50	2.20	2.80	3.00	4.20
30	4.20	-----	2.20	5.20	9.10	2.70	1.30	8.80	2.10	2.70	3.70	3.80
31	3.50	-----	2.50	-----	6.50	-----	1.30	8.90	-----	1.30	-----	3.50

Daily gage height, in feet, of Neuse River at Selma, North Carolina, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.70	1.30	1.00	11.40	1.50	2.70	0.50	0.70	6.00	0.30	3.00	2.50
2	1.70	1.30	1.00	10.20	1.20	2.00	.50	.80	5.80	.30	3.60	3.00
3	1.50	1.30	1.00	6.70	1.00	1.40	.60	1.10	1.80	.20	2.00	2.80
4	1.30	1.30	1.40	6.00	.80	1.00	.70	1.00	1.00	.30	1.60	7.30
5	1.20	1.30	1.50	7.20	.60	.90	.70	.60	4.50	.50	1.20	11.30
6	1.10	1.20	1.80	10.70	.80	.80	3.00	.50	3.20	.60	1.20	11.40
7	1.00	1.10	8.30	8.00	4.00	.70	5.90	.50	4.10	.70	1.20	10.70
8	.90	1.10	3.70	7.00	6.90	.60	6.00	.50	3.40	2.00	1.30	5.50
9	1.20	1.10	3.20	6.00	5.40	.50	5.80	.50	2.10	1.00	1.40	3.10
10	1.30	1.00	2.00	2.90	4.10	.50	5.30	.60	3.40	1.10	1.40	3.00
11	1.00	1.10	2.50	2.80	3.00	.50	5.00	.50	3.00	1.10	1.50	3.00
12	1.00	1.00	1.70	2.70	3.60	5.00	2.50	1.80	2.80	1.20	1.60	3.20
13	1.20	1.00	1.60	2.00	2.80	4.00	2.00	3.20	2.40	1.30	1.70	3.30
14	1.50	1.00	1.80	2.00	2.00	3.40	2.00	3.30	2.00	1.00	1.90	2.30
15	1.50	1.00	2.80	1.80	8.90	3.00	1.90	3.40	1.80	.80	2.00	1.80
16	1.20	1.00	5.10	1.80	8.00	2.00	1.80	3.00	1.00	.60	2.00	1.60
17	1.30	1.00	6.00	1.70	7.00	1.40	1.50	2.80	1.00	.40	2.60	1.50
18	1.60	1.00	5.00	1.50	5.40	1.50	2.00	2.80	1.00	.90	3.00	1.50
19	1.30	.80	4.20	1.40	3.60	1.80	4.00	1.30	1.00	1.40	5.40	1.40
20	1.30	1.00	3.70	1.30	2.70	2.00	7.00	9.60	1.10	1.80	5.80	1.60
21	1.20	1.00	2.00	1.20	2.00	2.20	5.00	10.40	1.20	1.90	5.00	2.30
22	1.60	1.80	1.70	1.10	3.00	2.00	2.70	6.30	1.30	2.30	4.50	2.40
23	1.40	2.50	1.40	1.20	5.00	1.80	2.00	2.60	4.00	1.90	3.00	2.40
24	1.30	1.80	1.20	1.30	9.00	1.00	1.00	2.50	12.00	1.50	2.80	2.50
25	1.40	1.40	2.00	1.50	10.00	.90	.90	2.80	13.00	1.60	2.20	2.30
26	3.50	1.30	2.50	1.70	11.00	.50	.80	1.60	9.40	1.80	2.00	2.40
27	7.00	1.20	1.80	2.00	7.00	.50	.80	1.80	6.10	1.60	1.90	2.00
28	5.80	1.00	2.00	3.70	5.50	.50	.70	8.90	1.00	1.20	1.80	1.70
29	3.40	-----	3.00	5.00	4.00	.50	.70	5.40	1.00	1.00	2.00	1.60
30	2.30	-----	7.00	4.20	3.50	.40	.70	9.10	.80	1.40	2.50	1.50
31	1.90	-----	9.00	-----	3.00	-----	.70	9.00	-----	2.60	-----	1.40

Daily gage height, in feet, of Haw River at Moncure, North Carolina, for 1898.

Day.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1		2.16	1.88	1.88	4.12	1.60	5.34	3.24
2		2.10	1.65	1.96	3.18	1.48	4.28	2.88
3		1.92	1.60	1.86	2.98	1.66	3.44	2.52
4		1.85	1.40	1.80	7.40	1.88	2.62	6.62
5		1.50	1.20	1.60	11.88	2.00	2.55	7.44
6		1.60	1.80	1.60	7.78	2.86	2.12	6.48
7	1.30	1.50	7.38	1.62	5.22	2.94	2.10	5.20
8	4.50	1.52	3.12	1.50	5.46	2.86	3.00	4.26
9	3.65	1.60	2.30	1.22	4.45	1.72	2.76	3.28
10	3.00	1.50	1.90	1.20	3.74	1.48	2.25	3.16
11	2.50	1.44	2.00	1.30	2.32	1.54	2.42	2.94
12	2.23	1.40	1.38	1.76	2.10	1.60	2.12	2.25
13	1.87	1.40	1.40	2.70	2.04	1.52	2.38	2.54
14	3.10	1.80	1.70	5.98	1.64	1.50	2.67	2.40
15	2.60	2.10	1.85	5.30	1.65	1.51	3.24	2.36
16	2.00	3.10	1.60	3.00	1.60	1.34	3.00	2.22
17	2.30	1.70	1.60	2.94	1.62	1.23	5.23	2.20
18	2.20	1.70	5.60	3.86	1.65	1.66	6.44	2.34
19	2.22	2.30	3.40	10.30	1.62	2.65	6.08	2.12
20	2.00	2.96	4.10	15.85	1.64	1.27	5.62	2.78
21	1.80	3.34	2.44	14.92	1.46	1.94	4.28	2.41
22	1.74	2.60	1.92	10.64	1.44	7.64	3.84	2.22
23	1.60	2.10	4.98	7.25	11.35	5.56	3.02	3.46
24	8.20	1.22	2.80	5.18	9.14	3.28	2.84	3.21
25	6.14	1.30	2.34	3.32	5.28	2.42	2.06	3.34
26	4.46	1.64	2.12	2.14	4.00	2.50	2.00	2.78
27	4.00	1.52	1.90	2.18	2.64	2.14	2.48	2.37
28	3.10	1.58	2.38	2.25	2.32	2.22	2.92	2.30
29	2.42	1.85	2.10	2.38	1.88	1.88	2.58	2.48
30	2.00	1.90	2.16	7.14	1.52	7.16	2.92	2.36
31	2.00		1.98	4.97		9.98		2.34

Daily gage height, in feet, of Deep River at Moncure, North Carolina, for 1898.

Day.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1		1.75	1.76	1.12	3.32	1.52	5.72	2.95
2		1.50	1.53	2.00	3.50	1.92	4.89	3.27
3		1.62	1.34	1.80	2.64	1.88	3.22	3.20
4		1.50	1.20	2.00	4.84	1.54	2.78	7.90
5		1.96	1.14	1.98	12.62	2.92	2.44	9.49
6	1.90	1.20	2.80	1.52	8.67	2.84	2.14	6.34
7	2.30	1.25	7.80	1.50	7.14	2.74	3.92	5.42
8	3.50	1.20	4.52	1.24	5.72	2.22	3.64	4.60
9	3.70	1.24	2.90	1.22	5.88	1.68	2.98	3.14
10	2.74	1.20	2.16	1.20	4.22	1.56	2.76	3.00
11	2.40	1.14	3.60	1.46	3.40	1.54	2.51	2.34
12	2.00	1.54	2.40	1.50	2.48	1.51	2.16	2.32
13	1.74	1.20	1.72	2.66	2.08	1.50	3.28	2.30
14	2.65	1.22	1.84	8.12	1.85	1.54	2.76	2.28
15	2.20	1.30	1.72	12.10	1.08	1.52	2.52	2.25
16	2.10	1.35	1.78	3.82	1.98	1.36	3.51	2.26
17	1.94	2.10	1.75	2.68	1.67	1.32	2.13	2.12
18	2.00	1.94	4.00	4.88	1.52	1.92	5.54	2.25
19	2.10	1.82	2.74	9.00	1.50	3.56	6.28	2.30
20	1.98	2.24	2.86	19.10	1.56	3.22	4.94	2.10
21	1.76	2.65	2.12	18.84	1.48	2.42	4.08	2.54
22	1.64	2.98	1.16	14.13	1.19	8.98	3.76	2.32
23	1.50	2.38	4.22	9.62	2.22	6.00	2.96	4.18
24	6.20	1.94	3.14	5.37	10.44	3.56	2.48	3.70
25	6.54	1.72	2.32	3.12	4.56	3.44	2.21	3.28
26	4.96	1.35	1.94	3.00	3.65	2.98	2.05	3.22
27	3.48	1.36	1.98	2.57	2.68	2.21	2.34	2.48
28	2.28	1.22	1.90	3.30	2.14	2.01	2.24	2.76
29	2.20	1.24	1.82	3.52	1.96	1.99	2.31	2.72
30	1.98	1.78	1.88	6.73	1.80	6.70	3.10	2.40
31	1.70		1.82	5.58		8.76		2.26

Daily gage height, in feet, of Cape Fear River at Fayetteville, North Carolina, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	5.00	5.00	3.50	21.00	6.60	3.20	2.00	6.00	10.30	2.90	14.00	6.10
2	4.90	4.90	3.20	17.30	5.50	3.00	2.00	7.00	9.60	2.50	9.90	6.90
3	4.50	4.80	3.50	11.00	5.00	3.00	1.50	7.00	7.20	2.40	7.10	6.70
4	4.30	4.40	3.50	9.40	4.90	2.70	1.20	6.40	5.70	2.50	5.50	8.40
5	3.70	4.00	7.00	6.00	4.10	2.30	1.00	5.20	14.00	2.40	4.70	16.00
6	3.70	3.90	20.50	12.80	3.80	1.90	5.10	5.00	18.80	2.50	4.20	18.00
7	3.60	3.80	17.70	21.50	3.10	1.40	12.00	4.10	14.00	5.50	3.80	14.60
8	4.00	3.60	11.00	15.30	8.00	1.20	16.20	3.00	12.50	5.60	5.40	11.80
9	3.60	3.50	8.70	11.70	7.00	1.10	12.40	3.00	13.20	4.20	5.00	9.00
10	3.50	3.40	7.90	8.00	6.30	1.20	10.20	2.60	10.00	3.40	4.80	7.00
11	3.40	3.40	5.80	7.00	5.40	1.10	12.50	2.30	8.70	2.70	4.30	5.50
12	3.30	3.50	5.20	6.10	4.50	1.10	8.00	3.70	6.50	2.30	3.70	5.30
13	3.40	3.50	4.90	5.90	4.00	1.20	6.00	5.00	5.00	2.00	3.50	5.30
14	3.60	3.40	5.00	5.70	3.70	1.30	5.10	9.40	4.30	1.90	3.90	5.30
15	3.80	3.20	5.10	5.40	5.00	1.30	5.10	16.00	4.10	1.80	4.30	5.00
16	3.60	2.90	8.00	5.40	4.90	2.50	5.50	14.00	3.80	1.80	6.00	5.00
17	3.70	2.90	9.20	5.60	5.10	3.90	5.50	10.00	3.60	1.50	7.00	4.80
18	3.60	2.90	7.70	5.40	4.70	4.30	4.10	7.00	3.40	1.30	9.80	4.60
19	3.70	3.10	6.20	4.70	4.20	3.90	6.00	9.20	3.10	2.00	10.20	4.70
20	3.80	4.50	5.50	4.40	4.00	4.00	5.50	22.20	2.90	5.00	11.00	4.60
21	3.60	5.30	5.00	4.20	3.50	7.00	5.50	29.00	2.50	5.00	12.20	5.30
22	4.10	5.70	5.00	4.00	3.00	7.00	4.20	29.20	2.20	4.50	9.60	6.10
23	4.40	6.00	4.70	3.90	3.00	5.50	3.60	23.50	2.50	10.00	7.80	8.00
24	4.40	5.50	4.50	4.10	2.90	4.30	10.00	18.00	15.00	9.80	5.60	7.30
25	4.40	5.10	4.20	4.40	12.00	3.20	7.00	10.30	14.00	6.00	5.10	7.00
26	5.50	4.50	5.00	7.20	11.40	2.70	6.00	6.00	9.80	4.50	5.00	6.40
27	14.00	4.10	6.00	10.40	9.00	2.20	4.60	6.10	7.00	4.70	5.10	5.50
28	11.00	3.80	5.60	10.70	6.70	1.70	4.10	6.20	5.00	4.50	4.70	5.30
29	9.20	-----	4.70	12.00	5.00	1.60	4.00	7.00	3.90	3.60	4.40	5.10
30	6.50	-----	4.30	9.60	4.00	2.10	3.90	8.50	3.40	3.50	4.70	4.90
31	5.30	-----	14.80	-----	3.50	-----	4.00	11.00	-----	10.00	-----	4.70

Daily gage height, in feet, of Yadkin River at Salisbury, North Carolina, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.00	2.00	1.70	4.70	1.80	1.80	1.70	1.80	2.30	1.80	2.40	1.70
2	2.00	2.00	1.70	3.00	1.80	1.80	1.70	1.70	2.00	1.80	2.40	1.70
3	2.00	2.00	1.80	2.80	1.80	1.70	1.50	2.00	1.80	1.90	2.00	1.70
4	2.00	1.90	2.20	2.30	1.80	1.70	1.30	3.00	2.00	2.20	1.80	2.30
5	2.00	1.90	2.10	2.70	2.60	1.80	1.30	3.10	4.50	3.65	1.80	4.80
6	1.90	1.90	2.00	2.70	2.00	1.70	1.80	3.00	4.00	7.10	1.80	5.60
7	1.90	1.90	1.90	2.40	3.00	1.60	1.90	2.20	3.80	5.00	1.80	4.20
8	1.90	1.80	1.90	2.00	2.60	1.60	2.30	2.00	3.00	3.20	1.70	3.10
9	1.90	1.80	1.90	2.00	2.00	1.60	1.70	1.90	2.10	2.20	1.80	2.00
10	1.90	1.70	1.90	2.00	1.70	1.50	1.70	2.00	1.80	1.90	1.90	1.80
11	1.90	1.70	1.80	2.00	1.70	1.50	1.60	3.00	1.60	1.80	1.80	1.80
12	1.90	1.60	1.80	1.90	1.80	2.00	2.70	4.50	1.60	1.80	1.70	1.80
13	1.90	1.60	2.00	1.90	2.00	2.10	1.80	5.30	1.60	1.90	1.70	1.70
14	1.90	1.60	2.60	1.90	2.80	1.70	1.80	4.30	1.50	1.90	1.80	1.60
15	2.00	1.50	2.90	1.80	1.80	1.80	1.50	3.80	1.50	1.80	1.80	1.60
16	2.00	1.50	2.80	1.80	1.70	1.80	2.40	2.80	1.50	1.80	2.00	1.60
17	2.20	1.50	2.60	1.60	1.60	1.70	2.00	2.20	1.60	1.70	2.80	1.60
18	2.00	1.80	2.30	1.60	1.80	2.10	1.80	2.00	1.60	1.70	1.70	1.80
19	2.00	2.00	2.80	1.70	1.70	2.00	1.80	1.80	1.60	1.70	1.80	2.00
20	3.00	2.10	2.00	1.70	1.70	2.00	2.00	3.50	1.50	2.30	1.70	2.80
21	2.60	2.20	1.90	1.70	1.80	1.90	1.80	5.70	1.50	2.50	1.80	2.40
22	2.60	2.00	1.90	1.90	1.80	1.80	2.10	4.10	1.50	5.05	2.00	2.40
23	2.60	2.10	1.80	2.00	2.95	1.80	2.80	2.70	5.65	5.70	2.30	2.10
24	3.00	1.80	1.80	2.30	5.35	1.70	2.80	2.60	13.40	3.80	2.00	1.90
25	3.90	1.80	1.80	3.10	3.00	1.70	3.00	1.70	14.80	3.80	2.10	2.00
26	4.00	1.80	1.80	3.20	2.80	1.70	2.80	1.90	6.20	2.60	1.90	2.00
27	3.20	1.60	1.90	2.20	2.00	2.00	3.00	2.20	6.20	2.00	1.90	2.00
28	2.80	1.60	2.00	1.90	2.00	1.80	3.00	2.00	1.80	1.90	1.80	1.90
29	2.60	-----	2.10	1.80	1.90	1.80	4.60	1.80	1.80	1.90	1.80	1.80
30	2.60	-----	3.60	1.80	1.70	1.80	3.90	4.95	1.90	1.80	1.80	2.60
31	2.40	-----	6.10	-----	1.70	-----	2.00	4.00	-----	2.00	-----	2.80

Daily gage height, in feet, of Yadkin (Pedee) River at Norwood, North Carolina, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.80	1.80	1.50	4.20	1.80	1.70	1.20	1.90	2.40	1.90	1.90	2.10
2	1.80	1.90	1.60	3.40	1.70	1.60	1.20	1.70	2.60	1.70	1.70	2.20
3	1.80	1.70	1.70	2.50	1.60	1.50	1.00	1.80	2.50	1.60	2.10	2.20
4	1.70	1.50	2.30	2.40	1.60	1.30	1.00	1.70	1.90	1.80	2.20	3.10
5	1.50	1.60	2.50	3.00	1.50	1.30	.90	1.60	2.20	1.90	2.30	4.70
6	1.60	1.70	2.40	4.50	1.50	1.30	1.30	1.50	4.10	5.60	2.90	4.50
7	1.70	1.60	2.10	3.40	1.60	1.20	2.00	2.00	3.60	4.60	2.70	3.60
8	1.70	1.60	1.90	2.60	2.30	1.20	1.70	1.70	2.70	2.90	2.50	3.40
9	1.60	1.50	1.80	2.30	2.00	1.30	1.40	1.60	2.60	2.40	2.10	3.90
10	1.50	1.50	1.80	2.20	1.80	1.20	1.40	1.50	2.40	2.30	1.90	2.90
11	1.70	1.60	1.60	2.10	1.60	1.30	1.50	1.60	1.90	2.10	1.80	2.20
12	1.70	1.60	1.60	2.00	1.60	1.30	2.10	1.90	1.70	1.90	1.70	2.10
13	1.60	1.60	1.50	1.80	1.70	1.60	1.70	3.00	1.20	1.80	1.80	1.90
14	1.70	1.70	1.70	1.90	1.80	1.30	1.80	1.50	1.50	1.70	2.10	1.90
15	1.70	1.90	2.50	2.00	1.70	1.40	2.10	3.60	1.50	1.80	2.30	1.80
16	1.60	1.70	2.60	2.20	1.60	1.30	1.10	2.50	1.40	1.90	3.20	1.70
17	1.60	1.70	2.70	2.00	1.50	1.40	2.10	2.00	1.20	1.70	2.70	1.80
18	1.60	1.60	2.00	1.90	1.40	2.30	1.90	2.60	1.50	1.80	2.90	1.90
19	1.50	1.70	1.90	1.80	1.40	1.80	1.30	1.90	1.40	1.90	3.10	2.10
20	1.50	1.80	2.30	1.80	1.50	2.20	1.40	1.70	1.30	2.70	3.20	2.20
21	1.70	1.90	2.20	1.70	1.40	2.10	1.30	4.00	1.30	2.60	2.90	2.30
22	2.60	1.90	1.90	1.70	1.40	1.80	1.20	3.20	1.20	2.90	2.40	2.50
23	2.20	1.80	1.70	1.80	2.80	1.60	1.70	2.20	1.50	5.40	2.30	2.90
24	2.00	1.70	1.80	1.90	4.80	1.50	2.20	2.10	7.00	3.80	2.40	3.90
25	2.30	1.60	1.90	2.30	3.80	1.40	2.90	1.90	11.00	2.70	2.20	3.70
26	3.60	1.60	2.10	3.40	2.60	1.20	2.20	1.90	7.00	2.50	2.30	3.90
27	3.70	1.60	2.00	2.30	2.30	1.10	2.90	1.70	3.70	2.40	2.10	3.70
28	3.00	1.50	1.70	2.10	2.00	1.40	2.00	2.50	2.40	2.30	1.90	2.30
29	2.40	-----	1.80	1.80	1.80	1.40	2.30	3.00	2.20	2.30	1.80	2.10
30	2.10	-----	5.70	1.80	1.60	1.30	3.00	3.40	2.00	2.70	1.90	1.90
31	2.00	-----	6.10	-----	1.80	-----	2.30	2.70	-----	2.50	-----	1.80

Daily gage height, in feet, of Catawba River at Catawba, North Carolina, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.00	2.20	1.95	3.30	2.10	1.90	1.80	3.45	2.90	3.70	3.10	2.60
2	2.00	2.10	1.95	3.00	2.10	1.90	1.80	3.40	2.60	3.00	2.95	2.60
3	2.00	2.05	1.90	2.60	2.10	1.80	1.80	3.00	3.30	3.50	2.89	2.60
4	1.95	2.00	1.90	2.40	2.05	1.80	1.80	2.75	5.50	9.70	2.80	4.50
5	1.90	2.00	1.90	3.00	2.25	1.80	2.00	9.65	5.65	11.50	2.28	5.60
6	1.90	2.00	1.90	2.90	2.60	1.80	2.50	4.30	4.35	7.20	2.75	3.90
7	2.00	2.00	1.90	2.20	2.50	1.80	2.35	4.00	4.90	6.10	2.70	3.40
8	2.05	2.00	1.90	2.30	2.35	1.80	2.50	3.50	3.90	5.00	2.65	3.00
9	2.00	2.00	1.90	2.20	2.25	1.75	2.80	3.55	3.60	4.10	2.60	2.90
10	1.95	2.00	1.90	2.15	2.15	1.75	2.35	3.70	3.15	3.80	2.60	2.85
11	1.95	2.00	1.90	2.15	2.05	1.75	2.00	4.60	2.60	3.60	2.60	2.80
12	2.00	2.00	1.90	2.10	2.00	1.75	2.00	6.50	2.40	3.40	2.60	2.70
13	2.00	2.00	1.90	2.10	2.00	1.70	1.85	4.80	2.35	3.20	2.60	2.70
14	2.00	2.00	1.90	2.10	1.95	1.70	4.20	3.50	2.30	3.10	2.70	2.65
15	2.00	2.00	1.90	2.10	1.90	1.90	7.00	3.20	2.30	2.95	2.75	2.50
16	1.95	1.95	1.90	2.40	1.90	2.00	4.10	3.10	2.20	2.80	2.75	2.50
17	1.95	1.95	2.00	2.30	1.90	3.50	4.00	2.90	2.10	2.80	2.80	2.50
18	1.95	1.95	2.10	2.25	1.90	2.80	3.70	2.90	2.10	3.40	3.00	2.50
19	1.95	1.95	2.05	2.20	1.85	2.00	3.10	4.30	2.10	3.20	3.30	2.50
20	2.25	1.95	2.05	2.20	1.85	1.95	2.50	4.30	2.10	3.50	3.20	2.50
21	3.00	2.00	2.00	2.20	1.85	1.95	2.40	4.00	2.05	8.30	3.00	2.90
22	3.00	2.00	2.00	2.20	1.85	1.80	2.40	3.20	2.40	7.45	2.80	3.00
23	2.75	2.00	2.00	2.30	1.85	1.80	3.00	3.00	19.95	6.60	2.95	3.15
24	2.50	1.95	2.00	2.25	3.50	1.80	4.50	2.50	11.60	5.00	3.10	3.25
25	3.00	1.95	1.95	2.20	2.50	1.80	3.90	2.50	5.70	4.10	3.00	3.10
26	5.50	1.95	1.95	2.15	2.20	1.80	3.30	2.60	5.40	3.80	2.85	3.00
27	3.40	1.95	2.90	2.10	2.00	1.80	2.80	2.55	4.90	3.50	2.70	3.00
28	3.00	1.95	3.00	2.10	1.90	1.85	3.40	2.45	4.10	3.30	2.70	2.90
29	2.75	-----	3.50	2.10	1.95	1.80	3.50	5.60	3.40	3.30	2.70	2.85
30	2.40	-----	7.50	2.10	1.95	1.80	3.10	3.30	3.30	3.30	2.65	2.85
31	2.30	-----	5.50	-----	1.95	-----	3.50	3.10	-----	3.20	-----	2.90

Daily gage height, in feet, of Catawba River at Rockhill, South Carolina, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.80	2.00	1.50	4.40	1.60	1.40	1.25	1.90	1.90	2.50	2.70	2.70
2	1.70	1.90	1.50	3.10	1.60	1.35	1.20	1.80	(a)	2.30	2.60	2.60
3	1.65	1.80	1.50	2.50	1.50	1.25	1.10	1.80	(a)	2.40	2.50	2.50
4	1.60	1.70	1.75	2.20	1.50	1.20	1.00	2.30	(a)	3.35	2.50	2.60
5	1.60	1.70	2.00	2.50	1.50	1.20	1.00	1.80	(a)	10.00	2.50	3.80
6	1.60	1.70	1.80	3.80	1.50	1.10	1.00	5.60	(a)	10.30	2.50	4.90
7	1.60	1.70	1.60	2.90	1.45	1.10	2.40	3.00	(a)	9.80	3.00	3.65
8	1.60	1.70	1.60	2.40	1.70	1.10	2.00	2.50	(a)	4.80	2.60	3.10
9	1.60	1.70	1.55	2.15	1.60	1.10	1.65	2.40	(a)	3.80	2.55	2.90
10	1.60	1.70	1.55	2.00	1.50	1.10	1.90	2.20	(a)	3.30	2.50	2.80
11	1.60	1.70	1.50	2.00	1.50	1.10	1.90	2.50	(a)	3.20	2.50	2.60
12	1.65	1.70	1.50	1.90	1.50	1.10	1.55	3.00	(a)	2.90	2.60	2.60
13	1.65	1.70	1.50	1.85	1.90	1.00	1.45	1.90	(a)	2.80	2.50	2.60
14	1.70	1.70	1.50	1.85	1.65	1.00	1.50	3.00	(a)	2.80	2.60	2.50
15	1.70	1.65	1.70	1.90	1.50	1.10	1.60	3.00	(a)	2.60	2.70	2.50
16	1.70	1.65	1.70	1.80	1.50	1.10	4.10	2.40	(a)	2.50	2.60	2.40
17	1.65	1.60	1.70	1.70	1.40	3.30	2.90	2.40	(a)	2.40	2.60	2.40
18	1.60	1.60	1.70	1.70	1.40	1.60	2.90	2.20	(a)	2.40	2.70	2.40
19	1.60	1.60	2.90	1.60	1.40	2.30	2.00	2.40	(a)	2.55	3.00	2.30
20	1.60	1.65	2.15	1.60	1.40	2.60	1.80	6.80	(a)	5.00	3.10	2.30
21	1.60	1.70	1.90	1.60	1.30	2.10	1.60	7.51	(a)	3.45	3.05	2.80
22	2.25	1.65	1.75	1.55	1.30	2.60	1.55	5.00	(a)	5.65	2.90	2.80
23	2.30	1.65	1.65	1.50	1.20	1.40	1.50	2.50	(a)	8.40	2.80	3.80
24	2.05	1.60	1.60	1.80	1.30	1.30	2.35	2.25	(a)	4.80	2.90	4.40
25	2.10	1.60	1.70	2.10	2.30	1.20	2.80	2.00	(a)	3.70	3.00	3.70
26	3.15	1.50	1.80	2.10	2.20	1.20	2.50	2.15	3.80	3.35	2.80	3.20
27	4.05	1.50	1.70	1.90	1.90	1.45	2.40	2.30	3.20	3.30	2.70	2.90
28	3.00	1.50	1.60	1.80	1.60	1.20	2.55	2.00	2.90	3.10	2.60	2.80
29	2.50	-----	1.60	1.70	1.55	1.40	2.10	2.00	2.80	2.90	2.50	2.70
30	2.25	-----	3.10	1.60	1.50	1.30	2.90	4.00	2.60	2.70	2.70	2.60
31	2.10	-----	6.60	-----	1.40	-----	2.80	3.60	-----	2.90	-----	2.60

a Gage broken.

Daily gage height, in feet, of Broad River at Gaffney, South Carolina, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.49	3.71	3.81	4.69	3.55	3.07	2.72	3.32	3.71	(a)	2.02	2.00
2	3.39	3.62	3.19	4.58	3.42	3.11	2.73	3.11	3.79	(a)	2.01	2.00
3	3.38	3.55	3.29	3.89	3.35	3.13	2.78	3.25	3.81	(a)	2.01	2.00
4	3.31	3.84	3.28	4.85	3.36	3.14	2.66	3.19	4.12	(a)	2.01	2.70
5	3.19	4.64	3.42	4.88	3.34	3.04	2.92	5.39	5.89	(a)	2.01	4.30
6	3.21	4.56	3.08	4.79	3.41	2.98	3.71	3.85	6.96	(a)	2.07	2.70
7	3.12	4.49	3.06	4.19	3.38	2.95	4.81	3.53	4.59	(a)	2.07	2.40
8	3.13	4.61	3.81	3.69	3.45	2.82	3.73	3.28	5.19	(a)	2.06	2.30
9	2.98	3.89	3.32	3.65	3.35	2.71	3.17	3.21	4.11	(a)	2.01	2.30
10	3.15	3.74	3.41	3.58	3.31	2.89	3.14	3.11	3.68	(a)	2.01	2.20
11	3.13	3.68	3.34	3.49	3.34	2.79	3.22	4.28	3.58	(a)	2.00	2.00
12	3.03	3.45	3.32	3.39	3.25	2.69	3.24	3.75	3.65	(a)	2.00	2.00
13	3.05	3.26	3.31	3.35	3.33	2.59	3.44	3.95	3.55	(a)	2.00	2.00
14	3.03	3.04	3.28	3.41	3.36	2.78	3.83	5.79	3.39	(a)	2.02	2.00
15	3.04	3.39	3.42	3.57	3.31	2.71	4.82	4.42	3.45	(a)	2.02	2.00
16	3.21	3.49	3.51	3.54	3.22	2.81	3.95	3.41	3.21	(a)	2.00	1.90
17	3.27	3.41	3.34	3.49	3.31	3.05	3.73	3.38	3.25	(a)	2.02	1.80
18	3.25	3.34	3.48	3.39	3.28	3.02	3.55	3.36	3.22	(a)	2.00	1.70
19	3.31	3.31	3.46	3.55	3.25	3.65	3.19	3.61	3.29	(a)	2.04	1.70
20	3.35	3.24	3.55	3.43	3.21	3.52	3.09	5.45	3.25	(a)	2.30	2.50
21	3.41	3.32	3.48	3.32	3.22	3.21	3.07	3.56	3.21	(a)	2.30	3.00
22	4.84	3.42	3.29	3.29	3.31	3.25	3.02	3.42	3.19	(a)	2.10	2.50
23	3.69	3.35	3.44	3.28	3.32	2.89	3.04	3.68	11.28	(a)	2.20	4.20
24	3.51	3.25	3.32	3.62	3.21	2.96	5.03	3.34	10.65	(a)	2.30	3.50
25	3.83	3.28	3.29	4.11	3.49	2.93	3.98	3.25	6.15	(a)	2.00	3.00
26	4.91	3.26	3.38	3.59	3.29	3.05	3.52	3.28	5.31	2.07	2.00	2.70
27	4.44	3.23	3.22	3.53	3.19	2.98	3.41	3.33	5.01	2.06	2.00	2.50
28	4.24	3.33	3.25	3.85	3.21	2.91	3.25	3.21	4.85	2.04	2.00	2.20
29	4.13	-----	3.32	3.65	3.18	2.84	3.48	3.22	3.93	2.04	2.00	2.20
30	3.72	-----	6.12	3.54	3.15	2.81	3.29	3.51	3.85	2.09	2.10	2.10
31	3.41	-----	5.68	-----	3.05	-----	3.15	3.81	-----	2.07	-----	2.10

a Gage broken.

Daily gage height, in feet, of Broad River at Alston, South Carolina, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.01	3.99	3.20	7.21	3.95	2.90	2.63	3.90	5.33	3.92	4.00	4.33
2	3.50	3.80	3.55	6.11	3.79	2.81	2.49	4.61	4.76	3.71	3.99	4.00
3	3.90	3.65	3.30	4.90	3.50	2.71	2.33	5.81	4.39	3.80	3.90	3.70
4	3.19	3.55	4.60	4.31	3.61	2.84	2.31	4.62	4.71	3.14	3.69	4.45
5	3.45	3.50	-----	5.60	3.50	2.45	1.95	3.68	5.01	4.50	3.65	6.85
6	3.90	3.50	4.65	8.63	3.31	2.50	1.78	6.62	7.98	8.20	3.64	6.29
7	3.40	3.49	3.97	7.00	3.32	2.32	3.90	4.22	7.28	8.86	3.99	5.87
8	3.50	3.15	3.50	5.50	3.25	2.42	5.86	4.68	9.18	5.88	3.83	4.92
9	3.90	3.45	3.60	4.58	3.24	2.50	4.85	4.15	6.50	4.79	3.84	4.50
10	3.45	3.47	3.50	4.30	2.78	2.60	4.72	3.80	4.95	4.80	3.60	4.28
11	3.39	3.40	3.35	4.40	3.18	2.28	4.45	3.38	4.01	4.50	3.61	4.12
12	3.39	3.39	3.30	4.10	3.11	2.29	3.15	4.33	3.63	4.00	3.68	4.06
13	3.59	3.33	3.25	4.00	2.92	2.15	3.30	4.70	3.54	3.90	3.80	4.00
14	3.27	3.21	3.12	3.85	3.05	1.85	3.95	5.35	3.60	3.80	4.21	3.98
15	3.90	3.12	3.70	4.09	3.30	2.65	4.83	7.12	3.46	3.92	4.10	3.80
16	3.41	3.31	3.78	4.00	3.00	2.61	5.72	6.50	3.41	3.63	4.50	3.78
17	3.90	3.26	3.72	3.80	2.81	3.20	4.75	5.65	3.39	3.72	4.25	3.69
18	3.02	3.11	3.79	3.60	3.10	4.40	4.80	5.85	3.26	3.00	4.90	3.72
19	3.90	3.15	3.60	3.40	3.31	4.18	4.00	6.87	3.19	3.81	5.03	3.68
20	3.19	3.50	3.91	3.80	2.95	4.55	3.70	9.26	2.79	5.20	5.20	3.59
21	3.70	3.60	3.71	3.57	2.89	4.80	3.12	8.46	2.22	4.10	4.52	4.36
22	4.05	3.41	3.40	3.40	2.83	4.20	3.01	5.85	2.89	6.86	4.31	5.50
23	4.10	3.34	3.50	3.41	2.80	3.55	3.18	4.60	3.20	10.52	4.11	5.82
24	3.75	3.36	3.49	4.57	2.48	3.15	4.25	4.30	14.39	8.21	4.10	7.70
25	4.50	3.30	3.52	5.30	2.80	2.80	7.89	4.03	13.60	5.81	4.20	6.31
26	8.43	3.25	3.43	4.52	3.00	2.69	6.50	3.91	9.14	4.74	3.80	5.47
27	8.51	3.06	3.34	4.73	2.20	2.30	5.23	4.95	5.39	4.60	3.80	4.90
28	6.15	3.14	3.29	5.98	2.60	2.70	5.45	4.01	4.49	4.27	3.68	3.65
29	4.94	-----	3.30	5.15	2.71	2.78	4.80	3.51	4.38	4.07	3.48	3.44
30	4.33	-----	6.80	4.25	2.55	2.80	4.23	7.55	4.02	4.01	4.32	3.32
31	4.00	-----	6.85	-----	2.40	-----	3.77	6.20	-----	4.10	-----	3.25

Daily gage height, in feet, of Saluda River at Waterloo, South Carolina, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	4.63	4.05	3.85	7.55	3.95	3.75	3.20	5.65	5.15	4.80	4.95	4.50
2	3.55	4.60	4.50	5.83	4.00	3.67	3.70	4.45	7.30	4.40	4.50	4.45
3	3.05	3.85	4.90	5.42	3.75	3.48	2.95	5.50	6.70	4.55	4.85	4.60
4	4.50	3.85	5.10	4.00	3.73	3.45	1.90	4.15	8.05	5.95	4.85	7.40
5	4.55	3.85	4.60	7.00	3.70	3.61	2.00	5.55	6.90	7.40	4.80	8.00
6	4.45	3.77	3.65	6.87	4.77	3.00	3.65	6.90	7.50	6.45	5.15	6.20
7	4.55	4.05	3.75	5.90	3.75	4.06	4.20	6.35	7.00	7.85	3.35	5.15
8	4.40	4.60	4.50	4.60	4.00	3.40	6.27	6.15	6.70	6.95	4.95	4.95
9	3.80	4.15	3.85	5.23	3.50	3.90	5.15	4.90	5.70	7.65	4.50	4.70
10	3.05	4.20	3.80	4.45	4.65	3.35	4.75	4.10	5.25	5.65	4.40	4.65
11	4.45	4.60	3.75	4.60	3.85	2.65	4.35	5.75	5.45	5.35	4.20	5.60
12	4.62	3.95	4.55	5.05	3.75	3.25	3.68	5.60	3.70	4.85	4.95	3.90
13	4.35	3.60	3.87	4.38	3.65	2.40	4.70	6.15	4.80	4.65	6.50	4.90
14	4.30	4.00	3.35	4.45	4.75	4.00	5.47	6.80	4.25	4.30	4.10	4.60
15	4.30	4.15	4.35	5.10	4.00	3.35	6.65	9.75	3.80	4.80	5.40	4.50
16	3.65	4.20	4.30	4.90	3.85	3.35	6.20	11.10	3.80	4.30	4.60	3.95
17	3.48	3.95	4.75	5.20	3.85	3.60	5.00	5.95	4.65	4.50	4.80	4.50
18	3.60	4.00	3.95	3.60	4.60	3.15	3.50	5.30	3.65	4.50	5.00	5.00
19	3.90	4.02	4.70	4.40	3.55	4.40	4.35	7.98	4.10	4.25	5.70	5.55
20	4.03	3.70	3.60	4.10	4.40	5.30	3.40	7.50	4.50	5.70	5.40	5.70
21	4.78	3.60	4.00	3.95	4.20	5.85	3.50	7.40	3.75	8.75	4.85	5.10
22	4.70	3.75	4.40	4.00	3.30	5.07	2.75	6.55	3.90	11.35	5.50	5.60
23	4.65	4.55	4.60	4.85	2.60	3.80	4.70	6.05	7.28	10.00	4.60	6.55
24	4.10	4.50	3.75	5.55	4.50	3.60	7.60	5.10	10.95	7.05	5.00	7.65
25	6.60	4.15	4.63	5.20	3.75	4.40	8.30	4.60	12.50	5.75	4.50	7.00
26	8.25	3.95	4.55	4.25	3.50	3.45	6.00	4.35	6.20	5.35	4.40	6.30
27	6.95	3.55	3.60	5.00	4.08	2.60	5.00	6.60	5.45	5.20	5.50	4.70
28	5.67	2.90	2.95	4.75	4.57	3.80	5.00	5.25	4.90	4.85	4.40	5.20
29	5.20	-----	3.95	4.70	3.25	3.60	4.75	4.10	4.90	4.90	4.70	4.40
30	4.50	-----	6.00	4.85	3.15	3.33	4.75	4.95	4.55	5.80	4.60	4.40
31	4.55	-----	7.85	-----	4.15	-----	4.53	4.20	-----	4.70	-----	3.80

Daily gage height, in feet, of Tugalo River at Madison, South Carolina, for 1898.

Day.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Day.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	-----	2.30	6.40	3.00	3.60	5.00	17	-----	4.10	3.70	4.30	3.60	2.70
2	-----	2.10	20.00	2.80	3.50	3.40	18	-----	6.40	3.60	9.35	3.60	2.70
3	-----	6.20	17.00	3.10	3.40	3.40	19	2.10	5.70	3.40	6.20	4.70	2.70
4	-----	9.75	13.00	18.00	3.30	3.50	20	1.90	5.70	3.30	5.00	4.00	4.50
5	-----	9.20	8.20	22.00	3.40	4.30	21	1.80	4.30	3.20	5.50	3.60	3.50
6	-----	6.70	7.30	14.00	4.10	3.60	22	1.70	3.80	3.40	6.30	3.40	3.20
7	-----	5.40	6.30	8.70	3.40	3.50	23	4.10	5.40	8.10	5.20	6.30	7.80
8	-----	6.10	5.40	7.80	3.30	3.40	24	4.40	3.40	4.30	4.70	4.70	4.70
9	-----	4.70	4.90	6.80	3.20	3.30	25	4.50	3.80	3.70	4.50	4.10	4.00
10	-----	4.80	4.90	6.20	3.30	3.20	26	4.00	3.90	3.40	4.30	3.90	3.70
11	-----	8.90	4.80	5.80	4.10	3.60	27	2.90	3.60	3.30	4.20	3.60	3.50
12	-----	7.95	4.50	5.50	3.40	3.00	28	4.10	3.10	3.20	4.10	3.40	3.40
13	-----	6.70	4.20	5.10	3.30	2.90	29	3.00	2.90	3.20	3.90	3.50	3.30
14	-----	7.90	4.10	4.80	4.00	2.90	30	2.80	3.40	3.10	3.90	3.80	3.20
15	-----	4.80	3.90	4.60	3.50	2.80	31	2.30	3.20	-----	3.70	-----	3.30
16	-----	4.50	3.80	4.40	3.40	2.80							

Daily gage height, in feet, of Savannah River at Calhoun Falls, South Carolina, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.
1	-----	2.30	3.25	2.30	4.60	2.65	1.75	3.20
2	-----	2.30	3.10	2.35	3.40	2.75	1.70	3.00
3	-----	2.25	3.00	2.45	3.25	2.80	1.65	3.60
4	-----	2.25	2.90	2.80	3.00	2.80	1.75	3.00
5	-----	2.20	2.85	3.00	4.45	2.75	1.95	2.75
6	-----	2.40	2.80	2.80	4.00	2.70	2.05	2.50
7	-----	2.35	2.75	2.65	3.80	2.60	2.00	5.05
8	-----	2.30	2.65	2.60	3.55	2.55	1.95	4.40
9	-----	2.25	2.60	2.50	3.20	2.60	1.85	α3.25
10	-----	2.25	2.60	2.45	3.00	2.60	1.80	-----
11	-----	2.20	2.55	2.35	3.15	2.40	1.75	-----
12	-----	2.20	2.60	2.25	3.05	2.25	1.75	-----
13	-----	2.15	2.50	2.20	3.00	2.15	1.95	-----
14	-----	2.15	2.50	2.25	3.00	2.00	1.90	-----
15	-----	2.20	2.45	2.50	2.90	2.20	1.90	-----
16	-----	2.40	2.40	2.40	2.70	2.10	1.95	-----
17	-----	2.35	2.35	2.45	2.65	2.05	2.00	-----
18	-----	2.35	2.30	2.35	2.55	2.00	2.05	-----
19	-----	2.45	2.90	2.30	2.50	2.05	2.25	-----
20	-----	2.85	2.30	2.30	2.65	2.00	2.35	-----
21	-----	2.70	2.35	2.30	2.50	1.90	2.05	-----
22	-----	2.65	2.30	2.25	2.45	2.00	2.00	-----
23	-----	2.90	2.30	2.20	2.35	1.95	1.95	-----
24	-----	2.85	2.25	2.25	2.75	1.95	1.90	-----
25	-----	3.65	2.25	2.25	3.00	1.90	1.85	-----
26	-----	5.50	2.25	2.20	2.85	1.85	1.90	-----
27	-----	4.65	2.35	2.20	3.05	1.85	1.85	-----
28	-----	4.05	2.40	2.25	2.90	1.80	1.80	-----
29	-----	3.85	-----	2.30	2.80	1.80	1.80	-----
30	-----	3.60	-----	3.90	2.70	1.85	1.80	-----
31	-----	3.45	-----	6.75	-----	1.80	3.65	-----

α Discontinued.

Daily gage height, in feet, of Savannah River at Augusta, Georgia, for 1896.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	12.0	8.3	10.3	7.8	8.4	5.1	4.7	5.9	4.5	8.7	5.0	14.5
2	10.3	8.2	9.1	7.9	7.3	5.5	4.3	6.2	4.3	6.2	5.8	16.0
3	8.7	9.8	8.3	9.6	7.7	7.7	4.4	7.0	4.2	5.3	5.5	16.8
4	7.9	13.3	7.8	8.8	8.2	8.8	4.3	6.6	4.2	5.0	5.2	14.5
5	7.3	12.0	7.7	7.5	10.6	8.2	9.8	6.4	4.0	4.7	5.2	13.0
6	7.0	19.1	7.5	7.0	9.7	7.5	6.3	6.3	4.9	4.5	20.9	11.2
7	6.7	22.7	7.6	7.1	9.9	6.5	8.8	5.7	11.2	4.3	17.3	10.1
8	6.7	20.5	8.0	6.9	8.2	5.8	22.4	5.2	8.7	4.1	11.0	10.2
9	7.2	24.2	8.0	6.8	7.2	5.7	29.2	4.9	6.1	3.9	8.1	9.8
10	8.0	24.3	7.8	6.7	6.7	5.7	30.2	4.8	5.2	3.8	7.0	9.2
11	7.6	19.5	7.5	6.6	6.3	5.7	25.8	4.8	4.8	4.0	6.6	8.9
12	6.9	14.8	9.6	7.2	6.0	6.4	20.1	5.2	4.7	3.8	6.0	8.4
13	6.7	12.7	10.5	6.5	5.9	6.0	15.0	5.3	4.9	3.8	9.6	7.9
14	6.5	11.2	9.9	6.6	5.8	5.5	11.7	4.9	4.4	3.9	13.4	7.3
15	6.4	12.0	8.0	6.5	5.7	5.0	9.5	6.0	4.2	4.0	10.6	8.3
16	6.5	11.6	7.7	6.5	5.7	4.9	8.6	6.0	4.0	4.7	8.3	17.6
17	10.3	10.4	7.7	6.3	5.6	4.7	8.0	5.8	4.0	4.1	7.2	15.4
18	16.7	9.6	7.8	6.2	5.5	4.6	8.0	5.5	4.2	4.2	6.8	11.8
19	14.5	9.1	7.6	6.3	5.4	4.8	8.0	5.0	4.0	3.9	6.2	9.9
20	11.0	8.8	8.0	6.2	5.2	6.2	8.8	4.9	4.3	3.9	6.0	8.3
21	8.9	8.6	8.2	5.9	5.1	6.1	8.8	4.8	3.9	3.8	6.0	8.0
22	8.3	8.2	8.4	5.8	5.0	5.9	8.8	4.6	3.8	3.7	5.9	7.2
23	9.0	7.9	8.0	5.8	4.9	6.0	8.4	4.5	3.8	3.4	5.7	7.3
24	17.8	8.0	7.7	5.7	5.8	5.9	8.6	4.4	3.9	3.5	5.6	6.9
25	22.2	8.0	7.8	8.8	6.3	5.8	7.8	3.9	5.2	4.8	5.4	6.9
26	18.5	8.0	8.0	7.7	6.6	5.3	7.2	5.2	4.9	5.9	5.3	6.6
27	14.1	7.9	7.7	7.2	5.9	5.0	6.0	4.9	4.8	5.5	5.5	6.1
28	11.3	7.8	7.6	6.9	5.8	4.9	6.0	5.8	4.0	5.0	5.3	6.5
29	9.9	9.2	7.2	6.8	5.7	4.9	6.8	5.7	3.9	4.8	6.3	6.0
30	9.0		7.1	6.8	5.7	4.8	7.0	5.8	10.1	4.4	9.4	5.9
31	8.7		7.1		5.6		6.6	4.9		4.0		5.8

Daily gage height, in feet, of Savannah River at Augusta, Georgia, for 1897.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	6.0	7.2	11.1	11.0	8.9	6.8	8.9	5.8	5.0	4.7	5.0	7.9
2	6.1	10.3	10.0	19.2	16.9	6.8	6.7	5.8	6.1	4.8	4.9	7.4
3	6.0	15.5	9.5	18.0	15.5	6.5	5.9	5.6	6.3	4.8	6.9	6.8
4	6.2	14.2	9.3	17.7	11.2	8.3	6.0	5.4	6.8	4.7	8.0	6.4
5	6.5	11.6	9.5	19.4	9.8	7.5	5.8	5.6	6.8	4.3	6.8	6.9
6	6.4	23.3	9.2	28.5	9.1	8.5	8.2	5.5	5.4	4.2	6.0	7.3
7	6.8	27.1	14.6	27.0	8.8	8.7	9.7	10.4	4.9	4.2	6.2	7.0
8	6.5	25.2	20.1	19.5	8.7	8.4	8.2	10.5	4.8	4.3	4.9	7.3
9	6.2	18.3	15.6	15.5	8.4	9.5	7.3	8.6	4.8	4.1	5.4	6.9
10	6.0	14.4	12.5	15.6	8.2	11.7	7.1	6.8	4.8	4.0	5.0	6.6
11	6.2	12.1	11.1	14.7	8.2	9.3	7.8	6.1	4.8	3.9	5.0	6.4
12	5.9	20.3	11.2	12.8	8.2	8.0	7.3	5.9	4.8	6.6	5.2	6.0
13	5.8	22.8	18.6	11.8	8.3	7.1	8.0	5.8	4.9	7.8	5.0	5.9
14	6.8	19.9	23.9	11.2	9.8	6.9	8.8	5.5	4.6	8.5	5.0	6.0
15	12.4	15.6	25.2	10.8	9.7	6.8	7.0	5.7	4.3	6.9	5.0	6.0
16	11.7	13.0	23.8	10.7	9.0	7.5	6.0	5.3	4.2	6.0	4.9	6.6
17	10.1	14.1	19.3	10.8	8.2	8.5	5.7	10.7	4.4	5.6	4.9	7.5
18	9.2	12.9	17.0	10.2	8.0	8.6	8.2	9.5	4.2	5.3	4.9	6.6
19	13.4	11.1	14.4	10.0	7.8	7.1	9.5	10.8	4.3	5.2	4.9	6.5
20	11.8	10.2	13.8	9.5	7.7	6.9	16.6	16.6	4.8	5.9	4.9	6.2
21	10.2	11.0	16.7	9.4	7.7	6.9	15.5	12.0	4.7	7.7	4.9	6.3
22	20.8	12.5	15.3	9.2	7.4	7.0	14.2	20.3	4.5	8.4	4.9	6.8
23	17.9	11.8	13.6	9.0	7.6	6.5	11.3	16.8	12.2	6.9	4.9	7.0
24	13.4	13.3	14.5	9.1	7.3	6.1	8.8	12.2	12.5	6.1	4.8	7.6
25	10.7	15.0	13.7	9.1	7.2	6.0	7.5	10.6	6.9	5.8	4.9	7.4
26	9.2	20.3	12.1	8.8	7.0	6.1	6.8	8.8	8.6	5.6	5.0	7.0
27	8.8	18.0	10.9	8.8	7.0	6.6	7.0	6.7	5.3	5.3	5.0	7.5
28	8.3	13.6	10.5	8.8	6.8	6.2	10.7	5.9	5.1	5.2	8.6	8.6
29	8.0		9.8	8.5	6.8	5.9	8.7	5.0	5.0	5.0	9.4	8.2
30	7.6		9.3	8.5	6.9	9.3	7.4	5.7	4.9	5.0	8.8	7.7
31	7.0		9.4		6.8		6.0	5.3		5.0		6.9

Daily gage height, in feet, for Savannah River at Augusta, Georgia, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	6.5	7.8	6.0	15.9	8.3	4.5	4.0	8.0	15.3	7.2	8.4	10.0
2	6.3	7.5	5.9	12.5	7.6	4.7	3.8	7.8	28.4	7.1	8.0	9.2
3	6.2	7.1	5.9	9.7	7.3	4.7	4.0	6.9	28.4	7.2	7.9	9.6
4	6.0	6.8	6.2	8.5	7.0	4.5	4.2	6.5	27.8	17.9	7.8	12.7
5	5.9	6.7	10.0	9.0	6.8	4.4	3.7	8.4	27.0	17.8	7.6	16.2
6	6.0	6.5	9.1	17.7	6.5	4.2	3.3	15.5	22.6	24.0	7.5	14.8
7	6.2	6.4	7.6	18.0	6.5	4.6	8.4	12.4	18.2	23.4	8.3	12.4
8	6.3	6.5	6.8	14.0	6.8	4.5	10.6	10.7	15.9	16.7	8.7	10.5
9	5.9	6.3	6.5	10.9	6.0	4.4	12.4	10.4	17.9	13.5	7.8	9.6
10	6.1	6.3	6.0	9.0	6.1	4.4	9.9	9.2	13.7	11.4	7.5	9.0
11	6.0	6.1	6.0	8.5	5.9	4.0	12.3	8.3	11.5	10.7	7.4	8.5
12	6.0	6.2	6.0	8.9	5.9	4.8	8.5	10.0	9.9	9.8	7.8	8.5
13	6.2	6.1	6.0	8.4	5.9	4.4	9.6	11.1	9.0	9.3	8.2	8.5
14	6.3	6.0	6.0	8.0	5.9	4.2	14.0	14.4	8.7	9.0	10.1	8.4
15	6.3	6.0	8.7	8.5	6.7	4.2	16.4	11.8	8.5	8.6	11.0	8.1
16	6.1	5.9	11.8	8.2	6.0	4.4	17.5	13.5	8.2	8.8	10.3	8.0
17	6.0	5.9	9.0	7.9	5.6	4.5	13.9	10.8	8.0	7.8	17.4	7.9
18	6.0	6.0	8.0	7.2	5.5	5.3	9.4	9.6	7.9	7.6	15.5	7.9
19	6.0	6.2	7.6	7.0	5.7	6.1	7.8	11.8	7.1	8.4	14.3	8.0
20	6.0	6.2	7.5	6.9	5.6	8.0	6.9	19.9	7.6	12.0	15.0	8.5
21	6.0	6.5	6.9	7.0	5.8	9.7	7.4	15.0	7.4	9.6	13.1	8.3
22	6.2	6.5	6.5	7.2	5.6	8.4	5.9	11.8	7.3	15.5	10.8	10.3
23	6.3	6.0	6.5	6.2	5.4	7.0	5.7	9.9	7.9	17.2	9.5	10.2
24	7.2	5.9	6.4	6.2	5.3	5.7	9.8	8.7	13.0	13.8	9.4	13.5
25	7.5	5.9	6.4	11.8	5.3	5.0	17.7	11.8	11.0	11.0	10.3	13.3
26	12.4	5.9	5.9	11.2	5.9	5.3	15.5	6.4	9.4	9.6	9.3	11.2
27	16.7	5.8	5.9	9.1	5.7	4.5	13.2	10.5	8.3	9.0	9.0	10.0
28	14.2	5.9	5.8	10.9	5.6	4.3	10.4	14.8	7.9	8.6	8.8	9.3
29	11.0	-----	6.0	11.1	5.5	4.2	10.9	12.6	7.4	8.5	8.5	9.0
30	9.0	-----	5.4	9.8	4.6	4.0	11.3	15.9	7.3	8.2	9.4	8.6
31	8.2	-----	13.5	-----	4.8	-----	9.0	15.7	-----	8.3	-----	8.5

Daily gage height, in feet, of Broad River at Carlton, Georgia, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.05	2.25	1.90	3.60	2.20	1.60	1.40	2.10	9.10	2.15	2.35	2.75
2	2.00	2.15	1.90	2.75	2.15	1.60	1.35	1.95	18.85	2.10	2.35	2.55
3	1.95	2.10	1.95	2.45	2.05	1.60	1.35	1.80	18.53	3.20	2.30	2.80
4	1.95	2.05	2.10	2.30	2.05	1.60	1.40	3.00	13.38	4.85	2.30	3.90
5	1.95	2.05	2.15	5.25	2.00	1.55	1.80	3.85	7.88	11.20	2.30	3.50
6	1.95	2.05	2.05	4.45	2.00	1.50	2.35	4.00	5.00	10.10	2.20	3.10
7	1.95	2.05	2.00	3.00	2.00	1.45	3.50	4.20	4.60	4.35	2.40	2.85
8	1.95	2.00	1.95	2.60	1.95	1.45	2.60	3.40	4.50	3.25	2.35	2.70
9	1.95	2.00	1.90	2.45	1.95	1.40	2.30	2.50	3.50	2.90	2.35	2.60
10	1.90	2.00	1.90	2.40	1.90	1.35	1.95	2.20	2.90	2.70	2.65	2.55
11	1.90	2.00	1.85	2.45	1.90	1.35	1.70	3.05	2.85	2.60	2.45	2.55
12	1.90	2.00	1.85	2.35	1.90	1.40	1.60	6.20	2.70	2.50	2.40	2.50
13	1.90	1.95	1.85	2.25	1.85	2.00	1.90	4.05	2.55	2.45	2.45	2.50
14	1.90	1.95	2.35	2.30	1.85	1.60	4.20	3.50	2.45	2.40	2.95	2.45
15	1.90	1.95	2.80	2.30	1.85	1.50	3.85	3.00	2.40	2.30	2.90	2.40
16	1.90	1.90	2.40	2.25	1.80	1.50	3.55	2.70	2.35	2.25	2.75	2.40
17	1.85	1.90	2.45	2.15	1.80	1.50	2.55	2.35	2.35	2.25	3.00	2.45
18	1.85	1.95	2.35	2.10	1.80	2.40	2.00	3.25	2.25	2.70	3.00	2.45
19	1.85	2.05	2.25	2.05	1.85	2.35	1.80	6.95	2.25	3.35	3.55	2.45
20	2.15	2.00	2.10	2.10	2.10	2.15	1.80	3.60	2.20	2.65	3.40	2.70
21	2.55	2.00	2.05	2.05	1.85	1.80	1.70	3.00	2.20	3.60	2.90	3.00
22	2.35	1.95	2.00	2.00	1.80	1.60	1.65	2.85	2.25	4.45	2.70	3.65
23	2.20	1.95	1.95	2.00	1.80	1.55	9.00	2.55	2.40	3.65	2.70	4.05
24	2.90	1.90	1.95	2.95	1.95	1.55	6.00	2.25	3.45	3.00	2.60	4.85
25	4.90	1.90	1.90	2.75	2.10	1.50	4.20	2.10	2.55	2.65	2.55	3.65
26	5.10	1.85	1.90	2.30	1.80	1.50	3.10	2.45	2.35	2.55	2.50	3.10
27	3.30	1.90	1.90	2.60	1.75	2.30	2.60	2.60	2.25	2.45	2.45	2.80
28	3.05	1.95	1.85	3.30	1.65	1.55	6.40	3.00	2.20	2.40	2.40	2.70
29	2.70	-----	1.85	2.60	1.60	1.50	4.60	2.70	2.20	2.40	2.75	2.65
30	2.50	-----	3.35	2.35	1.60	1.45	2.70	2.50	2.15	2.45	3.00	2.60
31	2.35	-----	4.40	-----	1.60	-----	2.35	2.35	-----	2.40	-----	2.65

Daily gage height, in feet, of Oconee River at Cary, Georgia, for 1898. (a)

Day.	Jan.	Feb.	Mar.	Day.	Jan.	Feb.	Mar.	Day.	Jan.	Feb.	Mar.
1	2.20	2.70	2.30	12	2.30	2.30	2.30	23	2.40	2.20	2.40
2	2.10	2.50	2.20	13	2.20	2.30	2.20	24	2.40	2.20	2.40
3	2.00	2.40	2.20	14	2.20	2.30	2.20	25	2.50	2.20	2.30
4	2.00	2.40	2.50	15	2.10	2.30	3.50	26	5.00	2.10	2.20
5	2.10	2.50	2.80	16	2.10	2.30	3.90	27	5.70	2.10	2.20
6	2.10	2.40	2.70	17	2.10	2.30	3.50	28	4.50	2.10	2.30
7	2.10	2.40	2.40	18	2.10	2.30	3.90	29	3.50	-----	2.30
8	2.10	2.40	2.40	19	2.00	2.30	3.10	30	3.00	-----	2.30
9	2.00	2.40	2.40	20	2.00	2.30	2.60	31	2.80	-----	2.50
10	2.10	2.40	2.30	21	2.70	2.30	2.40				
11	2.20	2.40	2.30	22	2.70	2.30	2.50				

a Discontinued March 31.

Daily gage height, in feet, of Oconee River at Dublin, Georgia, for 1898.

Day.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	-----	0.50	1.00	4.00	-0.60	-1.00	5.80	11.80	0.80	3.60	5.50
2	-----	.50	2.00	2.60	-.70	-1.10	4.30	13.00	.70	3.30	5.50
3	-----	.50	2.80	1.90	-.70	-1.20	2.80	16.00	2.30	3.10	5.40
4	-----	.90	2.00	1.70	-.80	-1.20	2.00	23.00	6.90	2.60	7.50
5	-----	1.90	2.50	1.40	-.90	-1.30	1.60	24.60	8.70	2.30	8.50
6	-----	3.90	6.00	1.10	-1.00	-1.20	2.00	23.30	9.40	2.10	9.60
7	-----	3.90	7.80	1.00	-.10	-.90	4.20	21.20	10.50	2.00	11.10
8	-----	2.60	8.50	.90	-.10	+.30	5.90	19.50	11.30	2.00	12.60
9	-----	2.00	9.40	.80	-1.10	1.00	6.40	18.00	13.50	1.80	12.60
10	-----	1.80	10.00	.70	-1.10	1.80	6.50	17.00	15.50	1.70	10.70
11	-----	0.90	1.50	.60	-1.20	1.80	4.20	16.00	16.00	1.70	7.70
12	.90	1.40	6.50	.60	-1.20	2.80	3.40	14.80	14.50	1.60	6.70
13	.90	1.00	5.90	.30	-1.20	3.00	3.00	12.50	11.80	1.60	6.00
14	.90	.90	3.30	.20	-1.20	1.60	4.80	7.60	5.00	3.90	5.60
15	.90	.90	2.90	.10	-.70	2.90	5.50	4.70	3.90	6.70	5.20
16	.80	2.00	2.50	.00	-.60	4.60	6.50	3.60	3.50	7.20	4.60
17	.80	3.50	2.00	.00	-.40	4.00	6.40	3.00	3.20	7.60	4.20
18	.90	3.50	1.80	-.20	.00	3.20	4.60	3.00	3.00	8.90	4.60
19	1.00	2.80	1.70	-.20	+.90	1.80	5.90	2.70	3.00	11.00	3.90
20	1.50	3.10	1.50	-.30	.80	.90	6.00	2.30	2.80	13.00	4.00
21	1.60	2.40	1.40	-.30	.60	.50	5.90	2.20	4.30	14.30	4.40
22	1.40	1.90	1.40	-.40	.80	.00	5.00	2.00	5.60	15.00	5.00
23	1.10	1.50	1.30	-.40	.70	-.20	3.60	2.00	6.90	14.10	6.10
24	.90	1.10	1.80	-.40	-.30	+.10	2.50	1.80	7.50	12.80	6.50
25	.80	1.00	3.90	-.10	-.50	2.60	1.90	2.00	7.80	10.20	6.90
26	.70	1.00	5.50	+.20	-.70	5.10	1.60	2.80	6.30	8.30	6.70
27	.60	.90	6.00	.80	-.80	6.10	1.90	2.40	4.30	6.20	6.40
28	.60	.80	4.70	.60	-.90	7.00	7.00	1.50	3.50	5.20	5.60
29	.70	.40	4.90	-.10	-.90	6.70	10.50	1.20	3.10	5.00	5.20
30	.60	.50	5.40	-.30	-.90	6.00	10.90	.90	3.00	5.20	4.90
31	.60	.60	-----	-.50	-----	5.60	11.10	-----	3.30	-----	4.00

Daily gage height, in feet, of Ocmulgee River at Macon, Georgia, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.50	1.10	0.25	1.75	1.87	-0.53	-0.82	5.11	4.96	0.75	2.54	4.15
2	.45	1.01	.30	.50	1.10	-.48	-.87	3.70	14.48	.72	2.19	3.51
3	.38	1.00	.30	.48	.92	-.52	-.35	2.11	16.60	7.72	2.08	9.40
4	.32	.70	1.08	.60	.78	-.58	-.50	1.85	18.22	16.85	2.00	13.60
5	.32	.69	3.35	4.33	.60	-.70	-.78	10.50	15.76	17.32	1.85	9.72
6	.38	.71	3.30	12.10	.50	-.78	-.90	10.76	14.72	15.15	1.92	8.10
7	.45	.77	1.45	10.13	.58	-.82	+2.12	10.79	11.00	13.35	2.90	6.61
8	.43	.75	1.35	7.90	.58	-.87	1.35	8.72	9.40	11.75	2.03	6.03
9	.41	.67	1.10	4.37	.47	-.80	1.93	4.91	6.90	9.21	1.90	5.21
10	.43	.60	.80	3.92	.30	-.83	3.48	2.70	6.11	7.35	1.83	5.80
11	.58	.60	.75	2.90	.21	-.94	3.62	6.31	4.00	5.02	2.91	4.21
12	.75	.52	.60	2.74	.18	-.95	1.22	12.70	3.65	4.10	3.37	3.64
13	1.63	.50	.60	2.10	.20	-.96	.90	13.00	3.80	3.50	4.22	3.60
14	1.30	.48	.60	1.75	.18	+.10	1.20	12.97	2.80	3.07	6.41	3.42
15	.90	.36	2.00	1.60	.10	.53	3.20	9.12	2.50	2.85	6.23	3.21
16	.94	.32	3.92	1.50	.04	-.10	3.80	6.52	1.93	2.56	14.10	2.91
17	.83	.25	3.00	1.20	-.08	-.10	2.67	4.92	1.89	2.30	10.21	2.80
18	.76	.40	2.02	.98	-.15	-.38	1.60	5.41	1.72	4.12	9.27	2.77
19	.60	.63	1.49	.85	-.20	+.11	.70	2.70	1.56	4.38	12.31	3.11
20	.66	.72	1.22	1.02	-.10	.83	.20	4.10	1.90	4.18	9.02	3.00
21	1.45	.64	.95	1.60	-.15	.60	-.11	2.10	1.22	5.21	6.95	4.10
22	1.85	.50	.85	1.32	+.05	2.21	-.28	1.94	1.48	6.90	5.50	5.67
23	1.56	.40	.75	1.30	.11	.20	.32	1.90	1.42	5.23	5.15	5.60
24	1.10	.38	.50	7.95	.91	-.41	+3.32	1.42	1.35	4.17	4.31	5.52
25	1.22	.29	.50	8.90	1.52	-.50	2.51	.90	1.31	3.94	4.00	4.91
26	2.37	.25	.45	6.12	1.46	.53	5.35	.50	1.28	3.20	3.50	4.60
27	4.31	.23	.36	3.15	1.10	+.30	5.90	4.25	1.12	2.91	3.18	4.07
28	4.31	.22	.36	2.00	.52	.11	3.14	7.21	.96	2.43	2.92	3.80
29	2.50	.99	.99	2.55	-.11	.42	3.14	9.45	.83	3.32	3.50	3.30
30	2.08	.50	.50	2.05	-.30	-.65	4.30	7.53	.77	2.90	9.31	3.21
31	1.62	.50	1.50	-----	-.36	-----	9.02	5.08	-----	2.71	-----	3.10

List of discharge measurements.

Date.	Stream.	Locality.	Hydrographer.	Gage height.	Dis-charge.
				<i>Feet.</i>	<i>Sec.-feet.</i>
1898.					
Feb. 26	Roanoke River	Roanoke, Va.	D. C. Humphreys	0.94	132
May 7	do	do	do	3.75	3,445
July 20	do	do	do	.95	113
Jan. 8	Dan River	Clarksville, Va.	E. W. Myers	1.05	2,009
Feb. 26	Staunton River	do	do	.70	1,969
Jan. 11	Roanoke River	Neal, N. C.	do	4.43	4,334
May 10	do	do	do	22.50	27,880
Jan. 13	Tar River	Tarboro, N. C.	do	2.30	1,323
May 10	do	do	do	7.30	3,757
Jan. 9	Neuse River	Selma, N. C.	do	1.20	426
Aug. 31	do	do	do	6.85	2,903
May 6	Haw River	Moncure, N. C.	do	1.56	495
Aug. 19	do	do	do	15.40	7,925
May 6	Deep River	do	do	2.00	403
Aug. 20	do	do	do	17.20	14,994
Jan. 10	Cape Fear River	Fayetteville, N. C.	do	3.55	1,303
Aug. 22	do	do	do	28.35	23,215
Jan. 17	Yadkin River	Salisbury, N. C.	do	2.10	2,567
April 1	do	do	do	3.90	9,110
Aug. 13	do	do	do	5.05	11,237
Jan. 16	Yadkin (Pedee) River.	Norwood, N. C.	do	1.63	3,041
Mar. 31	do	do	do	5.75	24,825
Jan. 14	Catawba River	Catawba, N. C.	do	2.01	1,228
Jan. 25	do	Rockhill, S. C.	do	3.20	7,732
Oct. 26	do	do	do	3.50	7,102
Jan. 26	Broad River	Gaffney, S. C.	do	2.67	5,052
Oct. 27	do	Alston, S. C.	do	4.60	5,637
Jan. 23	Saluda River	Waterloo, S. C.	do	4.65	1,350
Oct. 27	do	do	do	5.10	1,684
May 25	Tugalo River	Madison, S. C.	Max Hall	1.50	902
June 9	do	do	do	.90	563
July 19	do	do	do	2.05	1,100
Oct. 28	do	do	do	4.00	2,439
Apr. 16	Savannah River	Calhoun Falls, S. C.	do	2.75	4,081
1896.					
Oct. 3	do	Augusta, Ga.	B. M. Hall	5.41	3,154
1897.					
July 15	do	do	do	6.67	4,198
Sept. 29	do	do	do	5.17	3,180
Nov. 6	do	do	Max Hall	6.20	4,311
1898.					
Apr. 28	do	do	do	11.55	14,494
June 16	do	do	B. M. Hall	5.25	3,393
July 27	do	do	do	9.85	11,380
July 28	do	do	do	10.37	14,280
Aug. 2	do	do	Knox T. Thomas	7.17	6,302
Aug. 3	do	do	do	6.73	5,511
Sept. 3	do	do	B. M. Hall	28.27	87,472
Sept. 16	do	do	Warren Hall	8.10	7,432
Sept. 17	do	do	do	8.00	7,108
Nov. 14	do	do	Jas. C. Conn	11.66	13,243
Jan. 29	Broad River	Carlton, Ga.	Max Hall	2.68	995
Feb. 21	do	do	do	2.00	577
Apr. 20	do	do	do	2.10	667
June 14	do	do	do	1.56	366
July 25	do	do	do	3.75	2,165
Sept. 13	do	do	B. M. Hall	2.50	930
Oct. 8	do	do	do	3.05	1,446
Mar. 22	Oconee River	Cary, Ga.	Max Hall	2.50	1,168
Nov. 15	do	do	Jas. C. Conn	3.65	2,386
Feb. 11	do	Dublin, Ga.	Max Hall	.95	2,057
Mar. 29	do	do	do	.65	1,927
May 20	do	do	do	— .28	1,272
June 24	do	do	do	— .28	1,164
July 27	do	do	do	6.23	7,007
Aug. 30	do	do	do	10.30	12,161
Oct. 20	do	do	B. M. Hall	3.70	4,153
Jan. 7	Ocmulgee River	Macon, Ga.	Max Hall	.42	899
Feb. 10	do	do	do	.60	1,010
Mar. 28	do	do	do	.36	976
Mar. 30	do	do	do	.50	1,028
May 19	do	do	do	— .20	687
June 23	do	do	do	— .34	620
July 26	do	do	do	4.92	3,218
July 27	do	do	do	5.65	3,799
Aug. 29	do	do	do	9.25	6,125
Aug. 30	do	do	do	7.20	4,477
Oct. 19	do	do	B. M. Hall	4.50	3,111
Nov. 5	do	do	Jas. C. Conn	1.90	1,474

List of miscellaneous discharge measurements, 1898.

Date.	Stream.	Locality.	Hydrographer.	Gage height.	Dis-charge.
Jan. 12	Amicalola River ...	Hearde Mill, Hol- lensheds Bridge, Ga.	Max Hall	Feet. 1.40	Sec.-feet. 273
Jan. 13	Ellijay River.....	Ellijay, Ga.....	do	1.00	262
Do...	Cartecay River	do	do	1.20	428
Feb. 12	East Long Swamp Creek.	Marble Hill, Ga....	B. M. Hall.....	.....	20
Apr. 19	Chattahoochee River.	Near Gainesville, Shallow Ford Bridge, Ga.	do	1.20	844
May 26	Choccolocco Creek..	Eureka, Alabama.	do	1.08	171
May 28	Peachtree Creek....	At mouth, from first wagon bridge, Oakdale, Ga.	do	a. 30	36
Do...	Proctor Creek.....	Mouth, one-fourth mile below Oak- dale, Ga.	do	a. 30	7
June 16	Hiwassee River....	Reliance, Tenn....	Max Hall	2.84	954
June 23	Long Swamp Creek	Revis Bridge, in Cherokee Coun- ty, Ga.	B. M. Hall.....	.....	50
June 25	Amicalola River ...	Hills Ford, Daw- son County, Ga..	do .....	.....	112
Do...	Talking Rock Creek.	Near Carters, Ga.	Olin P. Hall.....	a 1.12	55
July 7	Peachtree Creek... Do... do	At mouth, first wagon bridge. do	Warren Hall..... do	a 1.15 a 1.10	31 33
Aug. 19	Vickers Creek.....	Near Roswell, Ga..	B. M. Hall.....	2.00	129
Aug. 25	Talking Rock Creek.	Carters, Ga.....	Max Hall	a 1.70	79
Dec. 20	Silver Spring.....	Near Ocala, Fla....	do .....	.....	822
Dec. 21	Kissingen Spring..	Bartow, Fla.....	do .....	.....	31
Dec. 22	Blue Spring.....	Juliet, Fla.....	do .....	.....	778
Dec. 23	Itchatucknee Spring.	Near Fort White, Fla.	do .....	.....	403
Oct. 25	Broad River.....	Blacksburg, S. C..	E. W. Myers.....	2.90	2,999

a At river station.

Rating tables.

Neal.		Fayetteville.		Catawba.		Rockhill.		Alston.	
Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.
Feet.	Sec.-feet.	Feet.	Sec.-feet.	Feet.	Sec.-feet.	Feet.	Sec.-feet.	Feet.	Sec.-feet.
0.0	1,750	1.0	489	1.5	750	1.0	1,800	1.0	1,560
.5	1,900	2.0	810	2.0	1,425	1.5	2,610	1.5	1,700
1.0	2,060	3.0	1,187	2.5	2,175	2.0	3,700	2.0	1,900
1.5	2,225	4.0	1,674	3.0	3,050	2.5	5,000	2.5	2,250
2.0	2,410	5.0	2,210	3.5	4,135	3.0	6,350	3.0	2,850
2.5	2,585	6.0	2,740	4.0	5,400	3.5	7,800	3.5	3,620
3.0	2,775	7.0	3,280	4.5	6,780	4.0	9,300	4.0	4,490
3.5	2,975	8.0	3,822	5.0	8,225	4.5	10,800	4.5	5,490
4.0	3,200	9.0	4,382	5.5	9,700	5.0	12,400	5.0	6,490
4.5	3,430	10.0	4,955	6.0	11,175	5.5	14,200	5.5	7,490
5.0	3,660	11.0	5,535	6.5	12,650	6.0	16,000	6.0	8,530
5.5	3,910	12.0	6,133	7.0	14,125	6.5	18,000	6.5	9,590
6.0	4,185	13.0	6,733	7.5	15,600	7.0	20,000	7.0	10,700
6.5	4,460	14.0	7,333	8.0	17,075	7.5	22,500	7.5	11,850
7.0	4,750	15.0	7,933	8.5	18,550	8.0	25,000	8.0	13,000
8.0	5,450	16.0	8,541	9.0	20,025	8.5	27,500	8.5	14,150
9.0	6,250	17.0	9,161	9.5	21,500	9.0	30,000	9.0	15,300
10.0	7,200	18.0	9,781	10.0	22,975	9.5	32,500	9.5	16,450
11.0	8,200	19.0	10,401	10.5	24,450	10.0	35,000	10.0	17,600
12.0	9,300	20.0	11,021	11.0	25,925	10.5	37,500	11.0	20,000
13.0	10,600	21.0	12,028	12.0	28,875	11.0	40,000	12.0	22,500
14.0	12,000	22.0	14,287	13.0	31,825	11.5	42,750	13.0	25,000
15.0	13,500	23.0	15,640	14.0	34,775	12.0	45,500	14.0	27,500
16.0	15,075	24.0	17,005	15.0	37,725	12.5	49,550	15.0	30,000
17.0	16,700	25.0	18,364	16.0	40,675	13.0	53,600	16.0	32,500
18.0	18,400	26.0	19,723	17.0	43,630	13.5	57,700	17.0	35,000
20.0	22,400	27.0	21,082	18.0	46,650	14.0	61,800	18.0	37,500
22.0	27,850	28.0	22,441	19.0	49,650	14.5	65,900	19.0	40,000
24.0	34,650	29.0	23,800	20.0	52,650	15.0	70,000	20.0	42,500
28.0	64,300	30.0	25,159	21.0	55,650	15.5	74,100	22.0	47,500

Rating tables—Continued.

Waterloo.		Madison.		Calhoun Falls.		Augusta.	
Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.
<i>Feet.</i>	<i>Sec.-feet.</i>	<i>Feet.</i>	<i>Sec.-feet.</i>	<i>Feet.</i>	<i>Sec.-feet.</i>	<i>Feet.</i>	<i>Sec.-feet.</i>
1.9	290	0.9	563	1.7	1,450	3.0	2,000
2.0	300	1.0	615	1.8	1,580	3.5	2,150
2.1	310	1.2	715	1.9	1,720	4.0	2,350
2.2	320	1.4	815	2.0	1,875	5.0	3,100
2.3	335	1.6	920	2.1	2,045	6.0	4,020
2.4	350	1.8	1,030	2.2	2,235	7.0	5,400
2.5	375	2.0	1,140	2.3	2,445	8.0	7,200
2.6	400	2.2	1,260	2.4	2,680	9.0	9,340
2.7	430	2.4	1,380	2.5	2,940	10.0	11,800
2.8	465	2.6	1,500	2.6	3,240	11.0	14,620
2.9	505	2.8	1,620	2.7	3,590	12.0	17,750
3.0	550	3.0	1,740	2.8	4,000	13.0	21,100
3.2	630	3.2	1,874	2.9	4,500	14.0	25,000
3.4	715	3.4	2,008	3.0	5,000	15.0	29,300
3.6	805	3.6	2,148	3.1	5,500	16.0	33,600
3.8	900	3.8	2,294	3.2	6,000	17.0	38,000
4.0	1,000	4.0	2,440	3.3	6,500	18.0	42,400
4.2	1,105	4.2	2,598	3.4	7,000	19.0	46,800
4.4	1,215	4.4	2,756	3.5	7,500	20.0	51,200
4.6	1,330	4.6	2,914	3.6	8,000	21.0	55,600
4.8	1,450	4.8	3,072	3.7	8,500	22.0	60,000
5.0	1,575	5.0	3,230	3.8	9,000	23.0	64,400
5.2	1,705	5.5	3,625	3.9	9,500	24.0	68,800
5.4	1,840	6.0	4,020	4.0	10,000	25.0	73,200
5.6	1,980	6.5	4,415	4.2	11,000	26.0	77,600
5.8	2,130	7.0	4,810	4.4	12,000	27.0	82,000
6.0	2,280	7.5	5,205	4.6	13,000	28.0	86,400
7.0	3,030	8.0	5,600	4.8	14,000		
8.0	3,830			5.0	15,000		
9.0	4,730						

Carlton.		Cary.		Dublin.		Macon.	
Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.
<i>Feet.</i>	<i>Sec.-feet.</i>	<i>Feet.</i>	<i>Sec.-feet.</i>	<i>Feet.</i>	<i>Sec.-feet.</i>	<i>Feet.</i>	<i>Sec.-feet.</i>
1.4	320	0.0	240	-1.2	890	-1.0	370
1.6	385	.2	260	-1.0	950	-.5	545
1.8	480	.4	290	-.5	1,140	.0	740
2.0	577	.6	320	.0	1,425	.5	940
2.2	700	.8	350	.5	1,745	1.0	1,150
2.4	850	1.0	380	1.0	2,080	1.5	1,380
2.6	1,030	1.2	415	1.5	2,429	2.0	1,630
2.8	1,215	1.4	470	2.0	2,790	2.5	1,905
3.0	1,405	1.6	560	2.5	3,166	3.0	2,180
3.5	1,894	1.8	675	3.0	3,560	3.5	2,455
4.0	2,384	2.0	815	3.5	3,980	4.0	2,730
4.5	2,874	2.2	970	4.0	4,460	4.5	3,005
5.0	3,364	2.4	1,144	4.5	4,908	5.0	3,280
5.5	3,854	2.6	1,320	5.0	5,360	5.5	3,555
6.0	4,344	2.8	1,496	5.5	6,130	6.0	3,830
6.5	4,834	3.0	1,672	6.0	6,700	6.5	4,110
7.0	5,324	3.2	1,848	6.5	7,270	7.0	4,410
7.5	5,814	3.4	2,024	7.0	7,840	7.5	4,710
8.0	6,304	3.6	2,200	7.5	8,410	8.0	5,060
8.5	6,794	3.8	2,376	8.0	8,980	8.5	5,440
9.0	7,284	4.0	2,554	8.5	9,550	9.0	5,820
9.5	7,774	4.2	2,750	9.0	10,120	10.0	6,200
10.0	8,264	4.4	2,965	9.5	10,690	11.0	6,580
10.5	8,754	4.6	3,200	10.0	11,260	12.0	7,300
		4.8	3,450	11.0	12,400	13.0	8,020
		5.0	3,750	12.0	13,540	14.0	8,740
		5.2	4,080	13.0	14,680	15.0	9,460
		5.4	4,500	14.0	15,820	16.0	10,180
		5.6	4,950	15.0	16,960	17.0	10,900
		5.8	5,410	16.0	18,100	18.0	11,620

EASTERN GULF DRAINAGE.

DESCRIPTION OF RIVER STATIONS.

Molina station on Flint River.—Described on page 45 of Paper No. 15. Results for 1897 shown on pages 233–234 of the Nineteenth Annual Report, Part IV. The alternate accumulation and washing out of sediment in an eddy half a mile below so affected the gage heights that it has not been possible to establish a definite relation between them and the discharge measurements of 1897 and 1898. Prof. B. M. Hall has constructed a rating table by averaging the conflicting measurements that were made at or near the same gage heights. This is the best that can be done with the data in hand. A new station will be established as soon as a proper section can be found.

Albany station on Flint River.—This station is maintained by the United States Weather Bureau. The drainage area is approximately 5,000 square miles. The observer is John E. Clark. No discharge measurements were made during 1898. Mr. J. B. Marbury, the local forecast official at Atlanta, Georgia, furnishes the following information: The river gage is in two sections. The long section, from 10 to 36 feet, is nailed in two segments to the south face, downstream side of the west pier on the right or Albany side of river. The short section is nailed to a cypress tree 120 feet down the river from pier. The top of the pier-foundation sill is 8.1 feet above low water. A second gage, reading from zero to 21 feet, is nailed to a cypress tree on left-hand bank of river, about 100 feet downstream from the point where the south side of Commerce street, if extended, would cross the river. The first bench mark is the top of the white marble foundation stone of the A. M. E. Church, corner of Washington and State street, Albany, Georgia. It is 49.5 feet above zero of gage. The second bench mark is the top of the sill of the old wharf at the foot of Broad street. It is 3 feet above low water.

Oakdale station on Chattahoochee River.—Described on page 46 of Paper No. 15. Results for 1897 shown on page 235 of the Nineteenth Annual Report, Part IV. On July 1 the station was moved to Mason and Turner's Ferry, 1 mile below Oakdale. The observer is C. H. Turner. The gage at this point, known as Oakdale lower gage, is nailed to a tree on the right bank, 100 yards below the ferry, and is set 1 foot deeper in the water than the gage at the Southern Railroad Bridge.

West Point station on Chattahoochee River.—Described on page 47 of Paper No. 15. Results for 1897 are shown on page 237 of the Nineteenth Annual Report, Part IV.

Canton station on Etowah River.—Described on page 48 of Paper No. 15. Results for 1897 shown on page 242 of the Nineteenth Annual

Report, Part IV. The zero of gage is 881.02 feet above sea level, as given in Report of United States Weather Bureau, Daily River Stages on the principal rivers of the United States, Part IV, 1893.

Carters station on Coosawattee River.—Described on page 49 of Paper No. 15; results for 1897 shown on page 243 of the Nineteenth Annual Report, Part IV. The observer for 1898 was H. S. Weems.

Resaca station on Oostanaula River.—Described on page 50 of Paper No. 15; results for 1897 given on page 245 of the Nineteenth Annual Report, Part IV.

Rome station on Coosa River.—Coosa River is formed by the junction of Etowah and Oostanaula rivers at Rome, Georgia. Measurements of discharge are made on each of these tributaries. The Etowah River is measured at Second Avenue Bridge and Oostanaula River at Fifth Avenue Bridge, and the results added to give the flow of Coosa River, the junction being a short distance below these bridges. The gage height is taken from the Weather Bureau gage at Fifth Avenue Bridge, on the Oostanaula. There is practically no fall on the Oostanaula River from Fifth Avenue Bridge to the junction, hence the gage is used as Coosa River gage, and gives the fluctuations of Coosa River. This gage is 4 by 6 timber, graduated to feet and tenths, and fastened to the downstream left-hand corner of the first pier from left bank. The zero of gage is 575.79 above sea level. The United States Weather Bureau has maintained a station here for many years. It is now maintained only as a half-year station, from November 1 to April 30, inclusive, but W. M. Towers, the river observer, feels so much personal interest in the matter that he reads the gage during the other six months without compensation, and kindly furnishes the Survey with monthly reports of the daily gage heights for the entire year without charge. Mr. Towers has kept the record for many years, and has predicted floods with great precision.

Riverside station on Coosa River, including locks Nos. 4 and 5.—Described on page 51 of Paper No. 15; results for 1897 given on page 246 of the Nineteenth Annual Report, Part IV.

Wetumpka station on Coosa River.—Described on page 54 of Paper No. 15, and on page 241 of the Nineteenth Annual Report, Part IV.

Milstead station on Tallapoosa River.—Described on page 56 of Paper No. 15; results for 1897 shown on page 249 of the Nineteenth Annual Report, Part IV. This station was established by B. M. Hall August 7, 1897.

Tuscaloosa station on Black Warrior River.—Described on page 57 of Paper No. 15; results for 1897 shown on page 250 of the Nineteenth Annual Report, Part IV. The observer since April 16, 1898, has been R. C. McCalla, jr., United States assistant engineer.

TABLES OF DAILY GAGE HEIGHT.

Daily gage height, in feet, of Flint River at Molina, Georgia, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	Day.	Jan.	Feb.	Mar.	Apr.	May.	June.
1	1.95	2.10	1.80	2.25	1.85	1.05	17	2.10	1.80	2.55	1.85	1.20	-----
2	1.90	2.00	1.80	2.10	1.75	α 1.10	18	2.05	1.90	2.40	1.75	1.20	-----
3	1.80	2.00	1.85	1.95	1.65	-----	19	1.95	2.05	2.25	1.70	1.15	-----
4	1.75	1.90	2.40	1.85	1.60	-----	20	2.00	2.05	2.10	1.80	1.20	-----
5	1.85	1.90	2.80	4.00	1.50	-----	21	2.10	2.00	2.00	1.90	1.15	-----
6	1.85	1.90	2.60	5.50	1.45	-----	22	2.30	1.95	1.95	1.90	1.15	-----
7	1.90	1.90	2.40	4.10	1.45	-----	23	2.30	1.90	1.90	1.80	1.15	-----
8	1.95	1.90	2.20	3.50	1.40	-----	24	2.20	1.85	1.80	3.80	1.45	-----
9	2.05	1.90	2.10	2.90	1.40	-----	25	2.10	1.85	1.80	3.35	1.80	-----
10	2.00	1.95	2.00	2.55	1.35	-----	26	2.40	1.80	1.70	3.35	1.60	-----
11	1.90	1.90	1.95	2.25	1.30	-----	27	2.60	1.80	1.70	3.05	1.45	-----
12	2.05	1.95	1.90	2.10	1.30	-----	28	2.60	1.80	1.70	2.50	1.30	-----
13	2.20	1.90	1.90	2.05	1.35	-----	29	2.45	-----	1.70	2.20	1.20	-----
14	2.30	1.90	2.10	2.05	1.30	-----	30	2.30	-----	1.90	2.05	1.10	-----
15	2.20	1.90	2.75	2.00	1.30	-----	31	2.20	-----	2.40	-----	1.00	-----
16	2.25	1.85	2.70	1.90	1.30	-----							

a Discontinued.

Daily gage height, in feet, of Flint River at Albany, Georgia, for 1897. (a)

Day.	Feb.	Mar.	Apr.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.7	9.4	-----	1.3	1.6	2.2	1.5	0.9	1.1
2	3.9	11.5	-----	1.5	1.4	2.0	1.5	.9	1.4
3	4.3	12.4	13.8	1.6	1.2	2.0	1.6	.9	1.5
4	5.7	11.8	13.8	1.0	1.1	2.2	1.7	1.1	1.6
5	6.5	10.0	13.7	1.0	1.0	1.9	1.5	1.5	1.5
6	6.7	8.9	14.2	1.7	1.0	1.7	1.5	1.4	1.5
7	7.2	7.6	14.7	4.2	.9	1.6	1.4	1.3	1.6
8	7.5	8.7	15.1	5.5	1.2	1.5	1.2	1.1	1.6
9	8.3	9.0	15.2	5.7	1.4	1.5	1.2	1.1	1.6
10	9.2	9.0	16.5	5.1	2.4	1.5	1.1	1.1	1.7
11	10.0	10.0	17.9	3.0	2.5	1.4	1.0	1.1	1.6
12	11.5	11.0	17.9	2.5	2.6	1.3	.8	1.2	1.7
13	12.2	11.8	17.9	3.2	2.7	1.3	1.0	1.2	1.6
14	13.0	12.3	16.1	4.2	2.5	1.6	1.0	1.3	1.7
15	14.1	11.6	14.7	5.3	1.7	1.7	1.1	1.2	2.0
16	16.5	10.8	13.1	5.1	1.4	1.9	1.2	1.1	2.6
17	17.8	10.4	10.6	3.2	2.6	2.0	1.3	1.1	2.6
18	19.6	14.9	9.1	2.8	2.2	1.8	1.3	1.3	2.7
19	19.0	19.8	9.1	2.0	2.8	1.6	1.1	1.1	2.7
20	16.4	22.8	8.9	1.7	3.6	1.8	1.1	1.1	2.8
21	15.0	22.7	8.9	2.0	4.1	1.8	1.0	1.1	2.9
22	13.0	22.7	8.9	2.4	5.1	1.6	1.0	1.1	2.9
23	11.0	24.1	8.3	3.6	6.8	1.5	1.2	1.1	3.2
24	10.4	25.7	8.3	3.2	6.3	1.5	1.4	1.3	2.0
25	9.0	31.6	5.1	4.3	6.5	1.4	1.2	1.2	2.0
26	8.9	30.9	4.7	5.3	7.0	1.3	1.2	1.1	2.8
27	7.1	28.0	3.7	4.7	7.2	1.1	1.0	1.1	2.6
28	6.9	26.5	3.7	3.7	6.7	1.1	.8	.9	2.3
29	-----	25.5	3.4	1.9	4.1	1.1	.9	.9	2.3
30	-----	23.6	3.4	1.8	3.2	1.3	.9	1.1	2.3
31	-----	21.3	-----	1.7	2.2	-----	.9	-----	2.3

a No records for May or June.

Daily gage height, in feet, of Flint River at Albany, Georgia, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.9	2.2	1.7	1.2	4.3	1.6	3.7	3.4	16.0	0.8	2.0	6.1
2	1.9	2.0	1.6	1.4	3.7	1.4	3.6	4.0	17.2	0.8	2.0	7.4
3	1.8	1.9	1.9	1.3	2.9	1.0	3.4	5.8	16.3	1.0	2.00	8.2
4	1.7	1.9	2.2	1.3	2.6	.9	3.4	6.4	15.1	2.0	1.7	9.6
5	1.6	1.9	2.8	1.2	2.3	.8	3.0	7.0	14.3	5.4	1.4	10.3
6	1.6	2.1	3.2	2.3	2.0	.6	3.0	6.7	13.0	6.5	1.4	9.4
7	1.6	2.0	3.7	3.6	1.8	.5	2.6	6.8	12.2	7.8	1.3	9.6
8	1.6	1.8	4.0	5.2	1.8	.5	2.5	7.5	10.3	9.5	1.2	9.8
9	1.7	1.8	4.0	6.1	1.6	.5	2.4	8.0	9.6	10.5	1.4	10.3
10	1.8	1.8	3.2	7.0	1.6	.5	2.4	8.4	10.5	12.0	1.6	11.1
11	1.8	1.7	2.8	6.1	1.6	.6	2.3	8.3	10.8	12.0	2.2	12.0
12	1.9	1.7	2.4	5.0	1.4	.7	2.4	7.6	10.8	10.1	2.6	11.5
13	1.9	1.7	2.2	4.6	1.3	.7	2.6	5.5	10.8	8.8	3.4	10.3
14	1.9	1.7	2.1	3.9	1.3	.7	3.0	5.7	8.6	8.8	3.6	9.4
15	2.0	1.5	1.9	3.6	1.2	.8	3.5	6.1	6.9	8.1	4.2	8.3
16	2.2	1.5	1.9	3.2	1.2	.9	4.0	7.4	5.1	7.2	5.7	7.8
17	1.6	1.4	1.9	2.0	1.2	.9	4.5	8.9	4.0	6.6	7.2	6.7
18	1.8	1.8	2.3	1.9	1.1	.9	4.6	9.9	3.6	6.6	8.7	5.4
19	1.9	2.0	2.6	1.9	1.1	.9	4.6	9.7	3.0	7.0	10.2	4.6
20	2.2	1.8	2.7	1.8	1.0	1.2	4.4	8.9	2.7	7.3	12.5	5.5
21	2.3	1.6	2.4	1.6	1.0	1.4	4.2	7.3	2.7	7.6	13.8	6.3
22	2.3	2.0	2.1	2.0	1.0	2.0	4.0	5.0	2.6	7.0	15.6	7.4
23	2.3	2.3	2.0	2.0	1.1	2.6	3.8	4.5	2.5	6.0	16.1	8.0
24	2.2	2.2	1.8	2.0	1.2	3.0	3.8	3.6	2.3	5.2	15.3	8.0
25	2.2	2.0	1.7	2.6	1.2	3.0	3.5	2.8	2.3	4.6	13.0	8.0
26	2.2	1.9	1.6	3.0	1.6	3.1	3.3	2.0	2.0	4.2	13.0	7.7
27	2.3	1.7	1.5	3.9	1.7	3.2	3.0	2.9	1.7	3.0	12.0	7.3
28	2.3	1.7	1.5	4.6	1.8	3.4	2.8	6.1	1.4	2.5	10.2	7.3
29	2.1	-----	1.3	5.4	1.8	3.5	2.6	10.5	1.0	2.0	8.0	7.0
30	2.0	-----	1.2	5.4	1.8	3.6	2.4	13.1	.8	2.0	6.7	6.8
31	2.1	-----	1.2	-----	1.9	-----	2.8	14.0	-----	2.0	-----	6.8

Daily gage height, in feet, of Chattahoochee River at Oakdale, Georgia, for 1898.

Day.	Upper gage.						Lower gage.					
	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.75	1.50	0.40	5.50	1.85	0.25	0.95	2.90	3.10	2.40	3.10	3.70
2	.55	1.30	.40	3.45	1.60	.30	1.10	2.00	20.00	2.50	3.00	3.40
3	.55	1.05	.55	2.60	1.55	.25	.75	1.90	27.75	2.90	2.90	3.60
4	.50	1.00	.80	3.05	1.45	.20	.70	8.50	27.00	15.00	3.00	4.10
5	.55	.95	.85	8.70	1.35	.09	1.40	14.00	22.00	19.25	3.10	5.50
6	.55	1.00	.70	11.15	1.20	.03	1.10	16.00	15.00	23.50	3.80	4.75
7	.55	.95	.55	5.80	1.20	.00	1.85	9.00	12.00	16.25	3.50	4.10
8	.60	.80	.45	3.80	1.10	-.05	3.70	6.00	7.50	7.50	3.30	3.75
9	.65	.75	.35	2.95	1.10	-.02	5.10	3.80	5.50	6.50	2.90	3.40
10	.55	.70	.30	2.35	.90	-.10	4.75	4.30	5.10	5.50	2.80	3.10
11	.55	.70	.30	2.30	.90	-.13	3.50	4.50	4.75	4.90	3.10	3.00
12	.55	.70	.30	2.00	.90	-.20	2.80	5.80	4.00	4.50	3.80	3.30
13	.85	.65	.30	1.75	1.20	.00	1.85	4.10	4.20	4.30	3.10	3.10
14	1.25	.65	.50	1.75	.95	.13	2.50	7.50	3.90	4.00	3.60	2.95
15	1.00	.55	1.05	1.90	.85	.08	4.20	5.50	3.75	3.90	4.10	2.90
16	.85	.55	1.40	1.60	.80	.93	4.10	2.90	3.60	3.70	3.60	2.80
17	.80	.45	3.50	1.45	.70	-.05	2.50	2.85	3.40	3.50	3.70	2.75
18	.75	.60	1.75	1.33	.65	+1.50	1.85	2.40	3.30	5.70	4.05	2.85
19	.75	.90	1.50	1.15	.60	1.65	1.75	2.90	3.20	7.90	4.75	2.95
20	.90	1.05	1.05	1.20	.60	1.53	1.50	6.00	3.10	4.70	5.10	3.25
21	1.30	.75	.85	1.40	.60	1.75	1.40	6.50	3.30	4.30	4.50	3.95
22	2.30	.75	.75	1.35	.55	.35	1.45	4.50	2.90	4.90	3.75	3.50
23	1.50	.55	.55	1.40	1.20	.10	1.50	3.90	3.10	5.30	3.50	7.10
24	1.35	.55	.45	3.65	1.15	-.05	12.40	2.90	5.30	4.10	4.75	8.50
25	2.95	.45	.40	4.55	1.25	-.15	6.30	2.75	3.25	3.80	3.75	6.75
26	7.70	.40	.40	2.65	.80	-.15	3.40	2.90	2.95	3.50	3.50	4.10
27	6.90	.45	.40	2.25	.80	-.20	3.80	7.50	2.80	3.45	3.10	3.75
28	5.05	.60	1.15	2.85	.60	-.05	6.40	3.40	2.70	3.45	3.10	3.50
29	4.35	-----	2.50	2.35	.30	-.07	5.85	2.80	2.60	3.30	3.75	2.95
30	3.05	-----	6.30	1.85	.30	-.10	6.30	3.20	2.50	3.45	4.05	2.75
31	2.70	-----	8.40	-----	.25	-----	3.75	3.20	-----	3.30	-----	3.10

Daily gage height, in feet, of Chattahoochee River at West Point, Georgia, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.40	3.05	2.90	6.30	3.20	1.70	1.25	3.40	3.75	1.80	3.38	3.65
2	2.35	2.90	2.90	5.10	3.15	1.65	1.15	2.90	3.90	1.85	3.35	3.60
3	2.20	2.80	2.90	3.40	3.15	1.65	1.10	3.00	12.00	2.90	3.35	5.25
4	2.20	2.60	2.80	3.20	3.00	1.65	1.10	6.00	14.50	5.60	3.30	5.00
5	2.20	2.20	3.10	7.00	2.80	1.50	1.05	7.60	15.30	11.00	3.30	4.00
6	2.15	2.20	3.15	9.20	2.60	1.50	2.20	9.15	18.20	14.50	3.45	4.00
7	2.15	2.20	3.00	9.50	2.40	1.45	2.35	8.20	17.50	12.00	3.50	4.00
8	2.15	2.10	2.90	8.20	2.30	1.45	2.70	6.30	9.00	13.00	3.55	3.80
9	2.15	2.10	2.50	6.00	2.30	1.40	3.50	5.10	6.20	10.00	3.60	3.75
10	2.10	2.10	2.20	5.40	2.30	1.40	4.00	4.30	4.50	7.50	3.75	3.70
11	2.15	2.10	2.10	5.00	2.20	1.40	3.30	8.00	4.00	4.10	3.75	3.60
12	3.00	2.10	2.10	3.50	2.20	1.40	3.00	8.40	3.75	3.90	3.75	3.60
13	2.75	2.05	2.10	2.95	2.20	1.60	2.80	6.75	3.60	3.20	3.85	3.60
14	2.60	2.05	2.10	2.80	2.20	1.65	2.70	5.20	3.40	3.20	3.80	3.40
15	2.60	2.00	3.30	2.60	2.15	1.90	3.00	4.60	3.40	3.15	3.90	3.35
16	2.75	2.00	3.20	2.40	2.15	2.00	3.30	4.00	3.40	3.00	5.60	3.35
17	2.90	2.00	3.00	2.40	2.15	1.80	4.00	4.10	3.20	3.00	5.75	3.35
18	2.95	2.10	2.80	2.35	2.15	1.80	3.60	5.00	3.00	5.00	5.00	3.30
19	2.75	2.60	2.60	2.35	2.10	1.70	3.00	4.20	2.40	5.50	5.00	3.30
20	2.70	2.60	2.40	3.00	2.10	1.55	2.70	3.80	2.00	5.40	4.90	3.25
21	2.80	2.50	2.15	2.75	2.10	1.50	2.20	3.50	1.90	4.90	4.80	3.25
22	3.20	2.50	2.15	2.60	2.10	1.75	2.30	3.40	1.90	4.80	4.30	4.00
23	2.80	2.50	2.15	4.00	2.00	2.00	2.40	3.30	1.90	4.50	4.00	5.65
24	2.90	2.50	2.15	7.00	1.90	2.10	4.00	3.25	2.90	4.50	3.70	5.00
25	2.90	2.45	2.10	5.30	1.85	2.00	7.60	3.20	3.00	4.00	3.70	4.50
26	3.00	2.40	2.10	4.00	2.50	2.10	5.50	3.20	2.75	3.60	3.70	4.40
27	6.00	2.30	2.10	3.60	2.00	2.20	4.10	5.60	2.50	3.40	3.65	4.20
28	5.50	2.30	2.10	3.40	1.80	1.75	4.00	10.60	2.05	3.40	3.60	4.00
29	4.05	-----	3.20	3.40	1.70	1.50	5.60	5.40	1.90	3.40	3.80	3.80
30	3.60	-----	4.10	3.20	1.70	1.40	6.00	3.80	1.80	3.38	3.70	3.80
31	3.10	-----	4.30	-----	1.70	-----	4.20	3.50	-----	3.38	-----	3.75

Daily gage height, in feet, of Etowah River at Canton, Georgia, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.50	0.80	0.30	1.60	0.60	0.60	0.30	0.40	0.40	0.40	0.80	1.60
2	.50	.80	.30	1.40	.60	.40	.20	.40	11.50	.40	.80	1.60
3	.30	.80	.60	1.20	.60	.30	.20	2.00	9.00	.30	.70	1.60
4	.30	.70	.60	1.00	.50	.20	.20	3.40	4.00	9.00	.70	2.00
5	.20	.60	.40	2.00	.50	.20	.40	3.00	2.00	13.50	.70	2.40
6	.20	.60	.40	3.63	.40	.20	.40	2.00	3.00	4.00	.80	2.40
7	.30	.60	.40	3.00	.40	.20	.80	3.00	2.40	2.40	.70	2.20
8	.30	.60	.30	1.80	.40	.20	1.80	3.00	1.60	2.00	.60	2.20
9	.40	.50	.20	1.00	.40	.20	.80	2.00	1.40	1.60	.60	2.10
10	.40	.50	.20	.80	.40	.10	.80	4.00	1.40	1.40	.70	2.00
11	.60	.40	.20	.80	.30	.10	.90	6.00	1.60	1.20	.80	2.00
12	.80	.40	.20	.60	.30	.10	2.90	4.00	1.40	1.20	.70	1.80
13	.80	.40	.20	.60	.30	.10	2.00	3.50	1.40	1.10	.70	1.80
14	.60	.40	.10	.60	.30	.70	1.80	2.00	1.00	1.10	.60	1.80
15	.60	.40	.40	.50	.30	.60	1.60	1.80	1.00	1.00	.80	1.70
16	.80	.40	4.00	.50	.30	.60	1.40	1.60	1.00	1.00	.80	1.70
17	.80	.40	3.00	.40	.30	.50	1.20	1.40	.80	1.00	.80	1.70
18	.80	.30	.80	.40	.20	.50	.60	1.20	.80	4.20	.90	1.60
19	.90	.30	.60	.80	.20	.40	.20	1.00	.60	3.00	1.00	1.60
20	.90	.40	.60	.60	.20	.40	.20	.80	.60	2.00	1.20	1.60
21	.80	.50	.40	.70	.20	.40	.20	.60	.40	2.00	1.20	1.60
22	.80	.40	.40	.60	.20	.40	.30	.40	.40	2.00	1.60	1.50
23	.90	.40	.40	.80	.80	.30	.30	.40	.40	1.80	2.00	1.40
24	.90	.40	.30	2.00	.80	.30	7.30	.40	.80	1.60	1.80	1.40
25	2.00	.30	.20	.90	.60	.30	2.00	.40	.60	1.40	1.60	1.40
26	5.60	.30	.20	.80	.60	.30	2.00	.40	.60	1.20	1.60	1.40
27	4.00	.30	.10	.80	.50	.30	1.80	3.60	.40	1.00	1.50	1.40
28	2.60	.30	.20	.80	.40	.30	1.80	2.40	.40	1.00	1.50	1.40
29	1.30	-----	5.00	.60	.40	.30	1.80	1.80	.40	.90	2.00	1.20
30	1.00	-----	4.00	.60	.40	.30	1.80	1.00	.40	.80	1.80	1.20
31	.90	-----	3.00	-----	.80	-----	1.80	.60	-----	.80	-----	1.80

Daily gage height, in feet, of Coosawattee River at Carters, Georgia, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.20	2.00	1.40	2.90	2.05	1.20	0.95	2.00	2.00	1.40	2.05	2.50
2	1.10	2.00	1.40	2.90	2.00	1.20	.90	2.05	13.20	1.60	2.00	2.40
3	1.00	2.00	1.30	2.90	1.95	1.10	.90	2.00	11.50	1.75	2.00	2.00
4	1.00	1.95	1.30	3.00	1.93	1.10	.90	2.10	7.00	20.50	2.00	1.90
5	1.00	1.95	1.20	13.50	1.80	1.10	1.00	2.00	5.00	23.00	1.90	1.80
6	.90	1.90	1.10	7.00	1.80	1.05	1.10	2.15	4.00	11.50	2.00	1.70
7	.90	1.90	1.10	5.00	1.80	1.05	1.05	1.95	3.20	5.00	1.90	1.70
8	.95	1.80	1.10	4.20	1.70	1.09	1.10	2.00	3.00	3.50	1.90	1.60
9	.95	1.80	1.05	3.50	1.70	1.00	1.10	2.00	2.50	3.00	1.80	1.70
10	1.10	1.80	1.00	3.00	1.60	1.05	1.00	2.25	2.20	3.90	1.70	1.50
11	1.50	1.70	1.00	2.30	1.60	1.00	1.00	4.70	2.00	2.80	1.80	1.60
12	2.00	1.70	1.05	2.00	1.50	1.10	1.10	3.50	1.90	2.60	1.90	1.60
13	2.50	1.60	1.10	2.00	1.50	1.40	1.10	3.00	1.80	2.40	2.00	1.70
14	2.00	1.60	2.00	1.90	1.45	1.60	1.30	2.50	1.50	2.30	2.10	1.70
15	1.80	1.60	1.90	2.05	1.45	1.70	1.40	2.25	1.40	2.30	2.05	1.60
16	1.80	1.55	1.80	2.10	1.40	1.60	1.10	2.10	1.30	2.20	2.00	1.80
17	1.70	1.55	1.80	2.10	1.40	1.60	1.20	2.50	1.20	2.20	1.90	1.90
18	1.70	1.50	1.70	2.10	1.40	1.50	1.10	3.00	1.25	4.70	1.90	1.80
19	3.05	1.50	1.70	2.05	1.30	1.80	1.10	2.50	1.30	3.20	2.00	1.70
20	2.30	1.50	1.60	2.10	1.30	2.00	1.05	2.30	1.30	3.00	1.90	1.70
21	2.10	1.45	1.60	2.05	1.30	1.80	1.00	9.50	1.20	2.50	1.80	1.80
22	2.50	1.30	1.50	2.00	1.35	1.70	1.00	3.00	1.20	2.50	2.50	2.00
23	2.50	1.30	1.40	2.50	1.35	1.40	1.10	2.00	1.25	2.50	2.40	2.10
24	2.10	1.20	1.40	3.50	1.40	1.20	1.10	1.60	1.30	2.50	2.40	2.00
25	8.00	1.20	1.60	4.00	1.60	1.05	1.20	1.80	1.20	2.40	2.50	2.00
26	6.10	1.20	1.60	3.00	1.50	1.00	1.30	1.60	1.20	2.40	2.30	1.90
27	3.50	1.50	1.50	2.20	1.50	1.00	1.50	1.50	1.20	2.30	2.40	1.90
28	2.80	1.50	1.50	2.20	1.50	1.05	3.50	1.50	1.20	2.30	2.50	1.80
29	2.50	-----	3.50	2.10	1.40	.90	2.50	1.50	1.30	2.20	2.80	1.70
30	2.50	-----	6.50	2.10	1.30	.95	2.00	1.60	1.30	2.10	2.70	1.70
31	2.10	-----	4.00	-----	1.25	-----	3.00	1.80	-----	2.10	-----	1.80

Daily gage height, in feet, of Oostanaula River at Resaca, Georgia, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.10	5.15	3.10	10.05	4.50	2.65	1.90	5.90	2.65	2.70	3.65	5.30
2	2.95	4.60	2.90	7.00	4.25	2.30	2.00	4.90	12.80	2.55	3.50	4.80
3	2.70	4.20	3.00	5.70	4.10	2.25	1.90	3.80	19.10	2.50	3.50	4.60
4	2.60	3.90	3.10	5.05	3.90	2.20	1.75	3.80	21.00	6.65	3.50	4.50
5	2.60	3.80	2.05	11.95	3.80	2.10	1.70	7.00	20.10	18.70	3.40	6.00
6	2.60	3.80	2.90	17.70	3.65	2.00	2.20	4.30	19.20	22.00	3.45	6.20
7	2.80	3.80	2.75	15.10	3.55	2.00	2.50	4.10	17.10	23.30	3.80	5.40
8	3.00	3.70	2.70	12.10	3.55	1.90	4.75	3.70	11.60	21.75	3.90	4.90
9	2.85	3.55	2.65	9.75	3.40	1.90	2.90	3.40	7.00	16.70	3.55	4.60
10	2.75	3.45	2.65	5.85	3.35	1.85	3.20	3.70	5.40	6.90	3.40	4.30
11	2.70	3.40	2.65	5.45	3.20	1.85	2.90	7.15	5.00	5.65	3.70	4.20
12	6.85	3.30	2.60	5.50	3.20	1.75	2.60	6.70	4.60	5.15	3.70	4.00
13	6.70	3.30	2.60	5.00	3.10	2.40	2.10	5.40	4.40	4.70	3.70	4.00
14	6.85	3.15	2.70	5.10	3.10	3.50	2.20	4.75	3.95	4.55	4.40	4.00
15	5.85	3.10	4.10	5.50	3.05	2.80	3.40	3.85	3.80	4.30	4.15	3.70
16	6.30	3.05	8.15	5.30	2.90	2.50	3.70	3.40	3.70	4.10	4.65	3.60
17	6.50	2.90	9.40	5.00	2.85	2.40	2.75	4.00	3.50	4.00	4.10	3.60
18	5.10	2.90	5.95	4.60	2.80	3.85	2.40	3.20	3.35	8.00	4.40	3.70
19	4.70	3.00	5.35	4.45	2.75	4.00	2.10	4.30	3.20	9.50	6.75	3.70
20	8.90	3.00	4.60	5.60	2.75	5.30	2.00	4.00	3.10	6.30	7.15	4.70
21	10.65	3.00	4.10	5.65	2.60	5.00	1.90	3.35	3.00	5.00	6.00	5.50
22	9.00	2.95	3.85	4.55	2.60	4.45	1.75	5.30	3.00	5.00	5.15	4.90
23	7.30	2.90	3.60	4.20	2.50	3.90	1.90	3.50	5.35	5.85	7.80	5.30
24	7.05	2.80	3.45	10.60	2.55	2.65	1.80	2.90	4.70	4.90	7.10	5.30
25	8.80	2.80	3.55	9.40	3.00	2.40	2.20	2.90	4.40	4.40	5.95	4.55
26	17.10	2.70	3.95	7.15	2.70	2.20	3.20	3.45	4.30	4.25	5.10	4.25
27	16.00	3.00	3.50	6.50	2.55	2.30	3.40	4.65	3.00	4.40	4.40	4.10
28	13.65	3.25	3.30	5.90	2.35	2.30	5.30	3.75	2.90	4.20	4.60	3.85
29	8.20	-----	6.00	5.30	2.30	2.10	4.20	5.25	2.80	4.00	4.60	3.85
30	6.05	-----	11.85	4.90	2.25	2.00	4.20	2.60	2.70	3.90	5.60	3.80
31	5.50	-----	12.50	-----	2.25	-----	5.20	2.65	-----	3.80	-----	3.80

Daily gage height, in feet, of Coosa River at Rome, Georgia, for 1897.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.0	2.8	3.3	7.1	4.1	1.8	1.7	0.8	1.0	0.0	0.5	1.1
2	1.0	9.7	3.2	7.5	4.0	2.3	1.5	.7	.5	.0	.9	1.0
3	1.0	11.5	3.1	8.2	3.5	2.0	1.0	1.2	.3	.0	1.0	1.2
4	1.0	9.6	3.3	9.4	3.3	3.0	0.9	1.0	.5	.1	1.0	2.3
5	1.0	8.2	3.5	14.8	3.0	2.4	2.0	.8	.4	.1	1.0	3.2
6	1.3	5.2	7.6	18.9	3.0	2.0	1.9	.8	.3	.1	.8	3.7
7	1.1	5.0	19.7	17.0	3.0	2.0	1.9	1.9	.3	.1	.8	3.2
8	1.1	4.3	18.9	14.7	2.8	2.0	3.0	2.0	.2	.1	.8	2.2
9	1.0	5.0	15.4	12.1	2.6	2.0	2.1	2.0	.1	.1	.8	1.9
10	1.0	4.4	13.5	9.6	2.6	1.9	1.9	1.6	.0	.1	.7	1.7
11	.9	4.5	12.0	7.2	2.6	1.9	2.5	2.4	.0	.1	.7	1.5
12	.9	7.4	11.5	6.2	3.0	1.9	2.8	1.8	.0	1.1	.7	1.4
13	.9	8.7	18.6	5.8	3.4	1.8	2.0	1.3	.0	1.6	.7	1.3
14	2.8	7.2	21.3	5.0	4.0	1.7	1.6	.8	.0	1.3	.6	2.2
15	6.2	5.5	23.8	6.0	5.0	1.7	1.3	.6	.0	1.0	.6	4.0
16	5.0	4.5	23.4	7.4	4.0	2.0	1.0	.6	.0	.8	.6	3.5
17	3.5	4.0	22.6	7.0	3.3	2.8	5.2	2.1	.0	.7	.6	2.5
18	3.9	3.7	21.4	5.0	2.8	2.3	4.2	3.2	.1	.6	.6	2.2
19	5.0	3.4	19.7	4.5	2.7	2.0	4.8	2.4	.2	.6	.6	1.8
20	3.5	3.0	18.9	4.0	2.6	1.8	8.8	1.4	.2	.6	.6	1.7
21	8.7	4.0	17.7	3.8	2.5	1.6	12.8	1.3	.2	1.5	.6	3.2
22	9.5	3.9	15.3	3.7	2.4	1.5	7.3	1.5	.2	1.3	.5	4.1
23	5.7	5.6	13.7	3.5	2.4	1.5	4.4	1.5	.2	1.0	.5	5.8
24	4.0	11.7	12.9	3.5	2.4	1.4	3.9	1.5	.2	.8	.5	5.3
25	3.5	8.6	9.1	3.5	2.3	1.3	2.6	1.1	.3	.8	.5	3.7
26	3.0	6.7	6.0	3.5	2.2	1.2	2.6	.8	.3	.7	.5	2.8
27	2.5	4.7	5.2	3.4	2.1	1.2	3.8	.5	.4	.7	.5	3.0
28	2.5	3.5	4.8	3.4	2.0	1.0	3.0	.4	.4	.7	.9	2.8
29	2.5	-----	4.5	3.4	2.0	1.1	2.4	.4	.4	.6	1.1	2.3
30	2.3	-----	4.2	3.2	1.9	2.0	1.4	.4	.4	.5	1.1	2.0
31	2.2	-----	4.0	-----	1.9	-----	1.2	.5	-----	.5	-----	2.0

Daily gage height, in feet, of Coosa River at Rome, Georgia, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.8	3.6	1.2	9.0	2.8	1.4	1.2	4.8	2.0	2.0	2.2	4.2
2	1.8	3.1	1.2	6.1	2.6	1.4	1.0	4.4	7.8	2.0	2.2	4.0
3	1.7	2.8	1.2	4.2	2.4	1.4	1.0	3.2	21.7	2.0	2.2	3.8
4	1.7	2.6	1.2	3.6	2.3	1.4	1.0	4.4	24.3	4.9	2.2	3.8
5	1.6	2.4	1.2	9.9	2.2	1.3	1.0	8.0	22.2	22.0	2.0	4.3
6	1.6	2.2	1.2	17.2	2.1	1.3	1.3	5.6	20.0	23.8	2.2	5.0
7	1.3	2.0	1.2	14.5	2.0	1.3	2.0	4.4	17.6	19.0	2.6	4.3
8	1.3	1.8	1.2	10.9	2.0	1.3	2.8	4.4	16.4	18.4	2.4	4.0
9	1.3	1.8	1.2	7.0	2.0	1.3	3.2	3.4	9.7	16.6	2.3	3.7
10	1.3	1.7	1.2	4.1	2.0	1.3	1.7	3.0	5.0	14.0	2.1	3.4
11	1.4	1.5	1.2	4.0	2.0	1.3	2.8	9.9	5.4	5.6	2.0	3.3
12	2.0	1.5	1.2	3.8	1.9	1.2	2.0	7.2	4.6	4.2	2.0	3.3
13	4.0	1.3	1.2	3.6	1.8	1.4	1.8	4.2	3.8	3.8	2.0	3.2
14	4.0	1.3	1.3	3.5	1.8	1.8	1.6	3.4	3.2	3.7	2.3	3.0
15	3.8	1.3	1.6	3.5	1.7	1.8	3.7	3.0	3.0	3.5	2.3	3.0
16	3.6	1.3	3.7	3.4	1.6	1.7	3.7	2.5	2.9	3.2	2.9	2.8
17	3.6	1.2	7.3	3.0	1.5	1.8	2.2	2.0	2.7	3.1	2.9	2.7
18	3.2	1.2	5.8	3.0	1.5	1.8	1.9	2.2	2.5	6.5	4.0	2.6
19	2.8	1.2	3.7	3.0	1.5	2.2	1.7	2.2	2.3	9.0	5.0	2.6
20	4.4	1.2	3.0	3.6	1.4	3.6	1.6	3.2	2.2	6.0	4.5	2.6
21	6.5	1.2	2.5	3.6	1.4	3.2	1.5	2.8	2.2	4.2	5.0	2.8
22	6.4	1.2	2.5	3.2	1.4	3.0	1.4	3.9	2.3	3.9	4.0	2.9
23	5.0	1.2	2.3	3.0	1.4	2.8	1.3	2.2	2.6	4.0	5.0	3.2
24	4.5	1.2	2.2	7.2	1.4	2.6	1.8	2.2	4.1	3.9	7.0	3.6
25	7.0	1.2	2.1	8.2	1.4	2.0	3.7	1.9	3.1	3.5	4.7	3.0
26	14.0	1.2	2.0	6.0	1.4	1.8	3.8	2.7	3.0	3.3	3.9	2.9
27	14.6	1.2	1.9	4.6	1.4	1.8	2.9	4.0	2.7	3.1	4.5	2.7
28	11.6	1.2	1.8	4.0	1.4	1.8	3.7	4.4	2.5	3.0	4.3	2.6
29	8.6	-----	2.0	3.7	1.4	1.6	4.2	3.4	2.3	2.8	4.3	2.5
30	4.6	-----	8.5	3.2	1.4	1.4	4.1	2.0	2.1	2.6	3.9	2.4
31	3.9	-----	11.4	-----	1.4	-----	4.2	2.3	-----	2.4	-----	2.4

Daily gage height, in feet, of Coosa River at lower gage, Lock No. 4, 3 miles above Riverside, Alabama, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.0	6.3	1.5	8.2	4.5	1.1	0.9	4.8	2.1	1.4	3.0	4.5
2	3.0	4.9	1.5	9.0	4.0	1.0	.8	4.5	1.8	1.4	2.8	4.4
3	2.4	4.2	1.8	8.0	3.6	1.0	.7	4.5	2.0	1.6	2.7	4.3
4	2.1	3.4	1.8	6.2	3.3	1.1	.7	4.5	6.4	2.0	2.6	4.1
5	1.7	3.4	1.7	7.1	3.1	1.1	.4	3.7	10.4	8.1	2.4	4.0
6	1.6	3.1	1.6	10.5	2.8	1.0	.5	4.3	12.0	12.8	2.5	4.3
7	1.5	2.8	1.7	12.1	2.8	.9	.7	6.5	12.7	13.6	2.4	4.6
8	1.5	2.7	1.7	12.3	2.4	.8	.7	6.6	13.0	18.0	2.5	4.8
9	1.4	2.6	1.5	11.7	2.3	.7	1.0	5.0	13.5	17.0	2.9	4.3
10	1.4	2.6	1.5	10.0	2.2	.7	1.6	4.9	12.4	15.0	3.0	4.0
11	1.6	2.5	1.5	8.0	2.2	.6	2.7	4.8	10.0	14.8	2.8	3.6
12	1.9	2.4	1.4	6.0	2.2	.6	2.6	5.7	6.7	13.5	2.6	3.3
13	2.0	2.3	1.4	5.0	2.0	.7	2.1	8.0	5.5	9.4	2.8	3.2
14	2.5	2.3	1.4	4.5	1.9	.9	1.7	7.0	4.6	6.0	3.3	3.1
15	3.6	2.2	1.4	4.2	1.9	.9	2.0	5.3	3.7	4.6	3.3	3.0
16	4.1	2.0	1.7	4.0	1.9	1.0	2.4	4.1	3.1	4.1	3.4	2.8
17	4.2	1.9	2.8	3.9	1.7	1.0	3.4	3.3	2.8	3.7	3.6	2.7
18	4.1	1.8	4.0	3.7	1.5	1.0	3.4	2.8	2.7	4.9	3.5	2.5
19	3.9	1.8	5.7	3.7	1.4	1.3	2.7	2.5	2.4	6.5	3.6	2.6
20	4.1	1.8	5.4	6.2	1.4	1.2	1.9	2.4	2.3	7.6	4.2	5.1
21	4.6	1.8	4.2	6.9	1.4	1.5	1.4	2.4	2.0	7.9	4.5	5.7
22	6.3	1.8	3.4	6.0	1.4	2.1	1.4	2.5	2.0	7.0	5.9	5.5
23	7.0	1.7	3.7	6.2	1.4	2.5	1.0	2.5	2.8	6.0	7.3	4.6
24	7.0	1.7	2.4	6.8	1.3	2.5	1.0	2.5	5.0	5.0	6.8	4.3
25	7.0	1.6	2.4	8.2	1.2	2.0	1.2	2.7	4.8	4.5	6.5	4.2
26	9.5	1.6	2.2	8.9	1.2	1.6	2.2	2.2	3.9	4.0	6.2	4.0
27	11.0	1.6	2.1	8.8	1.2	1.6	2.3	1.8	3.4	4.0	5.4	3.7
28	11.7	1.5	2.1	7.2	1.5	1.6	3.6	1.7	3.2	3.6	4.6	3.4
29	11.6	-----	2.1	5.9	1.1	1.4	3.6	1.7	2.3	3.6	4.4	3.2
30	10.4	-----	3.8	5.0	1.9	1.1	3.8	3.8	2.0	3.2	4.4	3.2
31	8.6	-----	5.7	-----	.8	-----	4.9	3.0	-----	3.0	-----	3.1

Daily gage height, in feet, of Coosa River at Riverside, Alabama, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.30	6.00	1.65	6.80	3.90	1.30	1.15	4.25	2.20	2.20	2.60	3.70
2	2.15	5.25	1.70	7.50	3.60	1.25	1.05	4.00	1.80	1.80	2.50	4.00
3	2.10	4.00	1.80	6.80	3.30	1.20	1.00	4.10	1.75	1.70	2.50	3.90
4	2.00	3.25	1.80	5.50	3.05	1.20	.95	4.00	5.80	2.00	2.45	3.70
5	1.90	3.00	1.80	5.80	2.90	1.30	.95	3.30	9.30	6.80	2.40	3.70
6	1.85	2.80	1.75	9.30	2.70	1.25	.90	4.00	10.20	11.20	2.40	3.90
7	1.75	2.75	1.70	10.50	2.55	1.20	.95	5.50	11.00	11.90	2.40	4.00
8	1.70	2.70	1.70	10.80	2.40	1.10	1.00	5.30	11.30	15.80	2.40	4.00
9	1.65	2.60	1.65	10.40	2.30	1.05	1.15	4.50	11.60	14.70	2.45	3.70
10	1.60	2.50	1.65	8.90	2.20	1.05	1.65	4.30	10.80	12.50	2.55	3.30
11	1.60	2.40	1.60	7.50	2.15	1.00	2.15	4.50	8.70	12.00	2.75	3.25
12	1.65	2.30	1.60	6.00	2.10	1.48	2.15	4.70	5.80	11.20	2.75	3.10
13	1.80	2.30	1.70	5.00	2.00	1.10	2.10	6.70	4.75	8.80	2.70	3.00
14	2.00	2.20	1.80	4.40	1.95	1.25	2.15	5.90	4.10	5.50	2.65	2.90
15	3.10	2.10	2.00	4.00	1.90	1.15	2.05	4.70	3.40	4.40	2.70	2.80
16	3.00	2.00	2.25	3.70	1.85	1.00	2.30	3.70	3.00	3.60	2.80	2.65
17	2.80	1.95	3.00	3.50	1.80	1.65	3.10	3.00	2.70	3.00	3.00	2.60
18	2.60	1.90	4.75	4.00	1.75	1.70	3.05	2.75	2.50	3.50	3.15	2.60
19	2.80	1.85	5.50	5.00	1.70	1.65	2.50	2.55	2.25	5.40	3.25	2.70
20	3.00	1.80	4.70	5.80	1.60	1.55	1.90	2.45	2.20	6.40	3.70	2.90
21	4.10	1.80	4.00	5.50	1.70	1.95	1.65	2.40	2.15	6.30	4.20	4.00
22	5.80	1.80	3.25	4.00	1.65	2.10	1.50	2.40	2.20	6.00	5.15	3.80
23	6.05	1.75	3.00	4.50	1.55	2.30	1.35	2.35	2.55	5.80	7.00	3.40
24	6.50	1.75	2.75	5.75	1.50	2.50	1.25	2.90	3.55	5.00	5.90	3.00
25	7.20	1.70	2.30	7.10	1.45	2.05	1.20	2.15	4.30	4.35	5.20	2.75
26	9.00	1.70	2.15	7.80	1.40	1.75	1.40	1.80	3.90	4.00	4.90	2.70
27	10.20	1.70	2.00	7.45	1.55	1.50	2.35	1.80	3.40	3.75	4.60	2.50
28	10.65	1.65	2.00	6.45	1.70	1.60	3.15	2.00	3.15	3.30	4.20	2.40
29	10.45	-----	2.30	5.50	1.60	1.45	3.10	2.50	3.00	3.00	4.00	2.30
30	9.45	-----	3.00	4.75	1.45	1.30	3.40	3.00	2.75	2.75	3.80	2.30
31	7.55	-----	4.50	-----	1.35	-----	4.00	2.60	-----	2.70	-----	2.40

Daily gage height, in feet, of Coosa River, at Lock No. 5 (Collins Ferry, Alabama), for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.0	3.6	0.5	5.0	2.4	0.4	0.3	2.5	1.0	0.7	1.4	2.4
2	1.9	2.6	.5	5.7	2.0	.3	.1	2.5	.7	.7	1.3	2.4
3	.8	2.0	.5	5.1	1.8	.3	.1	2.3	.8	.6	1.2	2.4
4	.7	1.9	.5	3.8	1.6	.3	.1	2.3	3.1	1.5	1.2	2.3
5	.6	1.6	.6	4.5	1.4	.2	.1	1.9	7.1	5.2	1.2	2.0
6	.6	1.4	.6	7.5	1.3	.2	.1	2.2	8.5	10.3	1.4	2.2
7	.5	1.3	.6	8.6	1.2	.1	.1	3.8	8.9	10.3	1.3	2.4
8	.5	1.2	.6	8.8	1.1	.1	.8	3.5	9.4	14.7	1.2	2.5
9	.5	1.1	.5	8.4	1.0	.1	.4	3.1	9.5	13.7	1.3	2.3
10	.5	1.1	.5	7.2	.9	.1	.6	2.7	8.6	12.7	1.4	2.0
11	.7	1.0	.5	6.3	.9	.1	.8	3.0	7.1	11.0	1.4	1.9
12	.7	1.0	.5	3.5	.8	.1	.4	3.2	4.1	9.9	1.3	1.7
13	.8	1.0	.5	2.4	.8	.1	.8	3.0	3.1	7.0	.5	1.6
14	.9	.9	.5	2.4	.7	.3	.9	3.0	2.5	4.4	1.7	1.5
15	1.6	.8	.5	2.0	.7	.3	1.0	3.0	1.9	2.6	1.7	1.5
16	2.0	.8	.6	2.0	.7	.3	1.0	2.2	1.5	2.6	1.7	1.5
17	2.1	.7	1.2	1.9	.7	.5	1.0	1.7	1.3	1.9	1.7	1.3
18	2.1	.7	1.8	1.8	.6	.6	1.5	1.3	1.2	2.5	1.8	1.8
19	1.9	.6	3.0	1.8	.6	.4	1.2	1.5	1.1	3.6	2.0	1.3
20	2.1	.6	3.0	3.2	.5	.4	.8	1.4	1.0	4.6	2.7	2.0
21	2.7	.6	2.3	4.0	.5	.4	.7	1.3	1.0	5.0	3.6	3.3
22	3.5	.6	1.6	3.5	.5	.5	.7	1.2	.9	4.4	3.3	3.2
23	4.0	.7	1.3	2.9	.5	.5	.3	1.1	1.2	3.6	4.2	3.8
24	4.1	.7	1.1	4.1	.5	.5	.3	1.0	2.7	2.8	4.3	2.5
25	4.1	.6	1.0	5.0	.5	.5	.3	1.3	2.6	2.5	4.0	2.3
26	6.5	.6	.9	5.6	.5	.6	.5	1.2	2.0	2.1	3.7	2.2
27	7.7	.6	.8	5.3	.4	.4	1.3	1.0	1.6	2.0	3.1	2.1
28	8.4	.5	.9	4.4	.5	.5	1.6	.8	1.1	1.8	2.6	1.8
29	8.2	.8	.8	3.4	.5	.5	1.6	1.1	1.0	1.6	2.4	1.6
30	7.3	.8	1.5	2.9	.4	.4	1.8	1.9	.8	1.5	2.4	1.5
31	5.5	.8	3.3	.8	.4	.4	2.0	1.4	.8	1.4	2.4	1.6

Daily gage height, in feet, of Coosa River 3 miles above Wetumpka, Alabama, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.0	7.3	1.9	5.1	4.6	0.9	1.4	5.3	2.0	1.9	2.4	4.8
2	2.0	5.9	2.0	6.7	4.1	.9	.9	5.8	2.0	1.6	2.6	4.4
3	1.9	5.0	2.0	7.0	3.7	.9	.6	6.1	1.7	1.4	2.6	5.4
4	1.8	4.3	1.8	7.5	3.5	.9	.5	6.7	1.7	1.4	2.6	5.4
5	1.7	3.5	1.7	8.7	3.2	.9	.5	5.3	1.7	5.8	2.5	4.9
6	1.7	4.3	1.8	9.3	3.0	.8	.9	4.1	3.1	8.4	2.4	4.4
7	1.6	4.0	1.7	12.1	2.7	.8	1.2	4.6	4.7	12.5	2.9	4.0
8	1.5	3.8	1.7	11.3	2.4	.7	1.6	4.8	5.9	12.8	2.9	4.2
9	1.7	3.5	1.6	10.5	2.4	.5	1.9	5.0	7.5	17.5	2.5	4.3
10	1.7	3.0	1.6	9.9	2.2	.5	1.8	5.7	10.1	16.0	3.5	4.7
11	1.8	2.7	1.6	8.1	2.0	.5	1.5	9.8	9.9	13.8	4.6	4.2
12	1.9	2.3	1.4	7.3	2.0	.5	1.4	8.6	8.5	12.2	3.7	3.9
13	2.1	2.2	1.4	6.1	1.8	.5	1.6	7.4	7.6	10.0	3.2	3.7
14	2.3	2.0	1.4	5.0	1.7	.3	1.7	7.8	6.8	8.2	4.0	3.5
15	2.5	2.0	1.3	4.3	1.7	.3	2.5	7.0	4.6	5.5	4.3	3.2
16	1.8	1.8	1.2	3.7	1.7	.8	3.0	6.3	3.8	4.2	4.0	3.0
17	1.8	1.7	1.2	3.6	1.6	.9	1.8	5.2	3.0	1.3	3.9	2.9
18	2.0	1.6	1.4	3.4	1.6	1.0	1.8	4.7	2.6	2.7	4.1	2.9
19	2.4	1.4	1.8	3.7	1.4	1.2	2.1	4.1	2.3	4.0	6.0	3.0
20	2.9	1.4	3.4	3.9	1.4	1.2	2.6	3.3	2.1	5.2	5.0	5.8
21	3.4	1.4	2.9	4.3	1.3	1.5	2.9	2.5	1.9	6.8	4.8	5.9
22	4.8	1.3	2.7	5.7	1.3	1.9	1.4	2.4	1.9	7.0	5.3	5.9
23	5.5	1.3	2.7	5.9	1.3	2.3	1.2	2.4	1.9	6.3	7.3	5.7
24	6.1	1.3	2.4	7.1	1.1	2.5	1.4	2.1	1.8	4.5	7.4	5.2
25	7.5	1.3	2.4	7.9	1.1	2.5	1.4	2.9	3.8	4.7	6.6	4.7
26	8.1	1.2	2.2	8.1	1.0	2.3	2.1	3.2	3.8	4.2	6.0	4.4
27	8.7	1.8	2.0	7.0	.9	2.0	1.7	3.8	3.5	4.1	5.8	4.0
28	9.5	1.8	1.8	6.3	.9	2.0	2.0	2.8	3.0	3.7	5.2	4.0
29	10.0	.8	1.8	5.7	.9	1.8	3.2	2.8	2.5	3.5	5.3	3.7
30	9.0	.8	2.7	5.2	.9	1.5	4.2	2.4	2.3	2.6	5.3	3.5
31	8.5	.8	3.9	.8	.9	.9	4.9	2.4	.8	2.5	5.3	3.5

Daily gage height, in feet, of Tallapoosa River at Milstead, Alabama, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.90	2.30	1.90	4.80	2.60	1.10	1.50	3.60	4.30	1.30	2.30	4.90
2	1.90	2.20	1.80	3.90	2.30	1.10	1.30	2.90	3.20	1.30	2.20	4.40
3	1.80	2.10	1.90	3.10	2.20	1.10	1.20	2.80	2.70	1.40	2.20	7.70
4	1.70	2.00	2.40	3.00	2.10	1.10	1.10	11.50	2.70	16.00	2.10	10.00
5	1.70	2.00	2.90	17.00	2.00	1.10	1.20	14.00	4.00	32.00	2.10	8.60
6	1.80	2.00	2.30	18.80	2.00	1.10	1.30	8.90	4.60	23.50	2.20	6.80
7	1.80	2.00	2.50	12.10	1.90	1.00	1.70	10.10	6.00	16.40	2.70	5.60
8	1.80	2.00	2.20	7.10	1.90	.90	2.80	8.50	5.60	22.80	4.20	4.80
9	1.90	2.00	2.20	5.20	1.80	.90	4.90	7.90	4.50	14.00	2.80	4.60
10	1.90	1.90	2.00	4.00	1.80	.90	3.60	5.30	3.50	7.90	3.00	6.70
11	1.90	1.90	2.00	3.40	1.70	.80	4.40	17.30	2.90	5.90	7.10	6.10
12	2.40	1.80	2.00	3.10	1.70	.90	2.00	22.60	2.60	4.90	5.10	5.50
13	2.40	1.90	1.90	3.00	1.70	1.20	1.70	10.10	2.50	3.80	5.00	5.00
14	2.60	1.60	1.90	2.90	1.60	1.20	2.70	7.70	2.40	3.40	5.90	4.40
15	2.40	1.80	2.20	2.80	1.60	1.10	3.50	6.10	2.20	3.00	5.50	4.40
16	2.40	1.80	2.50	2.60	1.60	1.20	5.10	4.20	2.00	2.70	5.40	3.80
17	2.40	1.80	2.60	2.40	1.60	2.10	2.40	3.40	1.80	2.60	6.20	3.60
18	2.30	1.90	2.60	2.20	1.60	1.80	2.80	2.80	1.70	4.40	6.10	3.40
19	2.20	2.20	2.50	2.20	1.50	1.40	3.05	2.60	1.60	5.00	14.40	4.30
20	2.20	2.30	2.40	2.40	1.50	1.40	2.40	2.80	1.60	4.40	12.20	7.60
21	3.10	2.30	2.20	2.80	1.40	1.40	1.90	2.50	1.50	3.70	10.00	7.20
22	3.10	2.10	2.00	2.70	1.40	3.00	1.60	2.30	1.50	3.30	8.00	5.20
23	3.00	2.00	1.90	2.80	1.30	2.40	1.60	2.20	1.50	3.10	10.00	4.40
24	2.90	2.00	1.90	14.50	1.30	2.20	1.50	2.00	1.80	2.70	8.80	6.40
25	2.60	1.90	1.80	11.60	1.20	2.10	1.50	2.10	1.80	2.60	7.90	6.00
26	2.90	1.80	1.80	5.90	1.20	1.80	2.50	8.10	2.00	2.50	5.30	6.60
27	3.60	1.90	1.80	4.30	1.20	1.50	2.60	10.20	1.80	2.40	4.60	4.20
28	3.90	1.90	1.70	3.30	1.30	1.80	4.10	8.40	1.60	2.40	4.10	3.90
29	3.10	-----	2.20	2.95	1.20	2.70	2.80	7.00	1.50	2.40	4.90	3.80
30	2.65	-----	4.20	2.80	1.20	1.90	2.90	5.20	1.50	2.40	5.40	3.70
31	2.40	-----	5.30	-----	1.10	-----	3.80	5.10	-----	2.30	-----	4.00

Daily gage height, in feet, of Black Warrior River at Tuscaloosa, Alabama, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	7.10	21.68	3.67	25.50	11.34	0.23	0.66	2.45	1.20	-0.60	0.90	5.40
2	6.28	18.30	3.78	22.40	9.82	.08	.43	1.95	.82	-.70	.70	5.50
3	5.52	14.90	4.03	18.50	8.67	.23	.30	2.45	.70	-.80	.60	5.40
4	4.96	12.12	4.05	15.31	7.68	.27	.53	2.80	.30	-.90	.40	5.00
5	4.41	10.15	3.98	20.82	6.88	.27	.16	2.96	.00	-1.00	.00	4.70
6	4.17	9.42	3.90	38.70	6.20	.15	.10	3.90	-.10	-.90	.30	4.50
7	4.13	8.90	3.57	38.55	5.59	.02	-.18	3.40	-.30	-.90	.50	5.00
8	4.18	8.43	3.33	32.83	5.00	-.10	-.04	3.10	-.20	-.70	.40	5.00
9	4.17	7.84	3.12	27.70	4.50	-.29	-.04	3.98	.00	-.30	.40	4.70
10	3.97	7.30	3.00	23.04	4.20	-.41	+1.10	6.20	.20	+2.00	.50	4.20
11	4.00	6.68	2.90	19.50	3.91	-.54	.08	12.20	.40	3.30	.50	3.70
12	4.18	6.30	2.83	17.03	3.50	-.62	-.07	14.10	.20	2.60	.40	3.30
13	6.70	6.20	2.80	15.01	3.21	-.71	-.10	10.60	.00	2.00	.50	3.00
14	9.70	6.08	3.00	12.93	2.88	-.62	-.07	7.30	-.30	1.40	.80	2.80
15	11.97	5.86	4.80	11.65	2.58	-.53	-.11	5.00	-.30	1.00	1.10	2.60
16	11.71	5.40	8.00	10.78	2.30	-.38	-.07	3.50	-.40	.80	1.30	2.50
17	15.00	5.00	15.40	9.60	2.08	-.48	-.14	2.62	-.60	.40	1.50	2.40
18	15.53	4.90	14.10	8.63	1.97	-.56	.00	1.91	-.70	.80	1.60	2.10
19	14.32	4.83	11.92	8.15	1.64	-.30	1.24	1.50	-.70	.80	1.90	4.40
20	24.50	4.84	10.08	27.80	1.43	-.21	1.30	1.46	-.80	1.20	2.20	18.80
21	33.54	4.70	8.82	35.11	1.23	.00	1.12	1.12	-.90	3.10	2.50	23.90
22	31.42	4.48	7.90	28.45	1.07	.07	.88	1.26	-.50	3.80	4.00	21.30
23	28.50	4.30	6.86	23.77	1.00	.18	.47	1.20	-.60	4.10	8.60	17.40
24	30.38	4.00	6.30	22.72	.93	.30	1.08	.90	-.70	4.80	11.70	13.90
25	30.12	3.83	6.00	24.04	.78	.17	1.95	.50	-.80	4.30	11.60	10.50
26	42.50	3.64	5.96	22.62	.57	.06	2.50	1.10	-.90	3.90	9.50	8.60
27	43.48	3.56	5.53	19.67	.43	1.30	2.00	1.02	-.90	2.90	7.40	7.30
28	39.41	3.72	5.12	17.12	.43	1.10	1.80	.98	-.80	2.30	5.90	6.20
29	33.80	-----	5.23	15.05	.52	.46	2.03	1.30	-.80	2.00	5.50	5.60
30	28.50	-----	13.40	13.03	.44	.68	2.55	1.52	-.60	1.40	5.30	5.00
31	24.90	-----	25.68	-----	.30	-----	2.86	1.56	-----	1.10	-----	4.70

EASTERN GULF DRAINAGE.

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List of discharge measurements.

Date.	Stream.	Locality.	Hydrographer.	Gage height.	Dis-charge.
				<i>Feet.</i>	<i>Sec.-feet.</i>
1898.					
Feb. 23	Flint River.....	Molina, Ga.....	Max Hall.....	1.80	458
Apr. 21	do.....	do.....	do.....	2.00	877
May 23	do.....	do.....	do.....	1.25	313
Jan. 21	Chattahoochee River.	Oakdale, Ga.....	do.....	1.71	2,165
Feb. 23	do.....	do.....	do.....	.65	1,446
Apr. 5	do.....	do.....	do.....	9.95	12,578
May 16	do.....	do.....	do.....	.85	1,501
May 26	do.....	do.....	do.....	.80	1,459
May 28	do.....	do.....	B. M. Hall.....	1.30	a1,088
June 1	do.....	do.....	Max Hall.....	1.35	a1,137
June 30	do.....	do.....	do.....	.80	a782
July 23	do.....	do.....	do.....	2.45	a2,.92
Aug. 20	do.....	do.....	do.....	4.90	a4,157
Sept. 5	do.....	do.....	do.....	20.10	a24,414
Nov. 19	do.....	do.....	do.....	4.77	a4,735
Jan. 18	do.....	West Point, Ga.....	do.....	2.45	2,648
Feb. 18	do.....	do.....	do.....	2.43	2,464
Mar. 17	do.....	do.....	do.....	3.03	3,571
Apr. 6	do.....	do.....	do.....	9.20	19,886
Apr. 26	do.....	do.....	do.....	4.52	6,704
May 17	do.....	do.....	do.....	2.15	1,975
June 11	do.....	do.....	do.....	1.40	1,161
July 6	do.....	do.....	do.....	2.27	2,451
Aug. 5	do.....	do.....	do.....	8.82	18,506
Sept. 2	do.....	do.....	do.....	7.55	15,067
Sept. 3	do.....	do.....	do.....	11.25	25,202
Oct. 5	do.....	do.....	B. M. Hall.....	13.90	37,579
Oct. 29	do.....	do.....	do.....	3.38	4,409
Nov. 29	do.....	do.....	do.....	4.00	5,394
Jan. 13	Etowah River.....	Canton, Ga.....	Max Hall.....	.60	761
Mar. 5	do.....	do.....	do.....	.33	621
Mar. 29	do.....	do.....	B. M. Hall.....	5.60	5,124
May 20	do.....	do.....	do.....	.60	627
June 4	do.....	do.....	Max Hall.....	.22	495
July 19	do.....	do.....	B. M. Hall.....	.25	413
Aug. 30	do.....	do.....	do.....	.65	1,062
Sept. 6	do.....	do.....	do.....	3.25	3,190
Sept. 7	do.....	do.....	do.....	2.00	2,104
Nov. 18	do.....	do.....	do.....	.90	1,223
Dec. 10	do.....	do.....	do.....	.70	1,064
Jan. 16	Coosawattee River	Carters, Ga.....	Olin P. Hall.....	5.70	3,052
Mar. 18	do.....	do.....	do.....	1.80	697
Mar. 30	do.....	do.....	do.....	5.87	3,079
Do.....	do.....	do.....	do.....	5.35	2,782
May 28	do.....	do.....	do.....	1.36	495
June 25	do.....	do.....	do.....	1.12	385
July 23	do.....	do.....	do.....	2.55	1,019
Aug. 25	do.....	do.....	Max Hall.....	1.77	686
Oct. 5	do.....	do.....	Olin P. Hall.....	12.10	4,909
Nov. 22	do.....	do.....	do.....	4.05	2,006
May 21	Oostanaula River.....	Resaca, Ga.....	do.....	2.65	1,100
July 29	do.....	do.....	do.....	5.41	2,567
Aug. 20	do.....	do.....	Max Hall.....	3.79	1,811
Aug. 27	do.....	do.....	do.....	4.65	2,397
1896.					
Sept. 29	Coosa River.....	Rome, Ga.....	do.....	.20	1,209
1897.					
May 7	do.....	do.....	do.....	2.75	4,646
Oct. 5	do.....	do.....	do.....	.15	990
1898.					
May 11	do.....	do.....	do.....	1.90	2,946
Sept. 17	do.....	do.....	B. M. Hall.....	2.60	3,913
Oct. 11	do.....	do.....	J. C. Conn.....	5.05	8,324
Oct. 22	do.....	do.....	B. M. Hall.....	4.10	6,489
Nov. 30	do.....	do.....	J. C. Conn.....	3.90	6,039
Jan. 27	do.....	Riverside, Ala.....	Max Hall.....	10.00	30,359
Mar. 9	do.....	do.....	do.....	1.60	3,538
May 3	do.....	do.....	do.....	3.22	7,758
May 25	do.....	do.....	B. M. Hall.....	1.39	3,172
Aug. 3	do.....	do.....	Max Hall.....	3.32	9,524
Sept. 7	do.....	do.....	do.....	11.05	37,811
Oct. 19	do.....	do.....	J. C. Conn.....	6.80	14,484
Nov. 22	do.....	do.....	B. M. Hall.....	5.85	16,384
Jan. 19	Tallapoosa River.....	Milstead, Ala.....	Max Hall.....	2.13	1,889
Feb. 19	do.....	do.....	do.....	2.20	2,045
Mar. 18	do.....	do.....	do.....	2.56	2,646
Apr. 26	do.....	do.....	do.....	5.83	6,648
May 17	do.....	do.....	do.....	1.55	1,059
June 22	do.....	do.....	do.....	3.05	3,421
July 7	do.....	do.....	do.....	1.62	1,262
Aug. 5	do.....	do.....	do.....	13.67	15,295
Sept. 3	do.....	do.....	do.....	2.76	3,010
Nov. 29	do.....	do.....	B. M. Hall.....	5.16	5,477

a1 mile below Oakdale, at Mason and Turner's ferry.

Rating tables.

Molina.		Oakdale. a		Oakdale. b		West Point.		Canton. c		Canton. d	
Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1.0	275	—0.4	820	0.7	730	1.2	1,000	0.0	270	0.0	657
1.1	285	.2	920	0.8	780	1.6	1,380	.2	380	.2	788
1.2	301	.0	1,020	0.9	840	2.0	1,840	.4	560	.4	922
1.3	324	.2	1,130	1.0	900	2.4	2,380	.6	742	.6	1,059
1.4	354	.4	1,240	1.5	1,215	2.8	3,000	.8	924	.8	1,207
1.5	390	.6	1,350	2.0	1,560	3.2	3,700	1.0	1,106	1.0	1,340
1.6	436	.8	1,470	3.0	2,300	3.6	4,480	1.2	1,288	1.2	1,498
1.7	496	1.0	1,590	4.0	3,250	4.0	5,370	1.4	1,470	1.4	1,655
1.8	566	1.5	1,920	5.0	4,400	4.4	6,400	1.6	1,652	1.6	1,818
1.9	646	2.0	2,270	6.0	5,700	4.8	7,490	1.8	1,834	1.8	1,984
2.0	736	2.5	2,650	7.0	7,000	5.2	8,592	2.0	2,016	2.0	2,150
2.2	980	3.0	3,070	8.0	8,300	5.6	9,696	2.2	2,198	2.2	2,316
2.4	1,305	3.5	3,530	9.0	9,600	6.0	10,800	2.4	2,380	2.4	2,483
2.6	1,645	4.0	4,030	10.0	10,900	6.4	11,904	2.6	2,562	2.6	2,648
2.8	1,985	4.5	4,580	11.0	12,200	6.8	13,008	2.8	2,744	2.8	2,814
3.0	2,325	5.0	5,160	12.0	13,500	7.2	14,112	3.0	2,926	3.0	2,980
3.2	2,665	5.5	5,850	13.0	14,800	7.6	15,240	3.5	3,375	3.5	3,395
3.4	3,005	6.0	6,600	14.0	16,100	8.0	16,400	4.0	3,800	4.0	3,810
3.6	3,350	6.5	7,350	15.0	17,400	8.5	17,850	4.5	4,220	4.5	4,225
3.8	3,690	7.0	8,100	16.0	18,700	9.0	19,300	5.0	4,640	5.0	4,640
4.0	4,030	7.5	8,850	17.0	20,000	9.5	20,750	5.5	5,055	5.5	5,055
4.2	4,370	8.0	9,600	18.0	21,300	10.0	22,200	6.0	5,470	6.0	5,470
4.4	4,710	8.5	10,350	19.0	22,600	10.5	23,650	6.5	5,885	6.5	5,885
4.6	5,050	9.0	11,100	20.0	23,900	11.0	25,100	7.0	6,300	7.0	6,300
4.8	5,390	9.5	11,850	22.0	26,500	11.5	26,590	7.5	6,715	7.5	6,715
5.0	5,730	10.0	12,600	24.0	29,100	12.0	28,800	8.0	7,130	8.0	7,130
-----	-----	10.5	13,350	26.0	31,700	12.5	31,110	8.5	7,545	8.5	7,545
-----	-----	11.0	14,100	28.0	34,300	13.0	33,410	9.0	7,960	9.0	7,960
-----	-----	-----	-----	-----	-----	13.5	35,710	-----	-----	-----	-----
-----	-----	-----	-----	-----	-----	14.0	38,030	-----	-----	-----	-----

a Applicable from January 1 to June 30, 1898. Gage heights refer to upper gage.
 b Applicable from July 1 to December 31, 1898. Gage heights refer to lower gage.
 c Applicable from October 11, 1897, to July 23, 1898.
 d Applicable from July 24, 1898, to December 31, 1898.

Carters.		Resaca.		Rome.		Riverside.		Milstead.		Tuscaloosa.	
Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1.0	355	1.0	350	0.0	1,070	1.0	2,320	0.8	540	—2.0	88
1.5	641	1.2	408	.5	1,440	1.5	3,340	1.0	770	—1.0	130
2.0	771	1.4	475	1.0	1,900	2.0	4,400	1.2	1,000	.0	280
2.5	1,031	1.6	552	1.5	2,450	2.5	5,540	1.4	1,230	1.0	600
3.0	1,320	1.8	637	2.0	3,060	3.0	6,800	1.6	1,460	2.0	1,000
3.5	1,625	2.0	727	2.5	3,760	3.5	8,200	1.8	1,690	3.0	1,470
4.0	1,970	2.2	823	3.0	4,540	4.0	9,900	2.0	1,920	4.0	2,000
4.5	2,350	2.4	924	3.5	5,340	4.5	11,615	2.2	2,380	5.0	2,555
5.0	2,680	2.6	1,030	4.0	6,200	5.0	13,330	2.4	2,840	6.0	3,110
5.5	3,015	2.8	1,140	4.5	7,275	5.5	15,045	2.6	3,300	8.0	4,220
6.0	3,125	3.0	1,250	5.0	8,250	6.0	16,760	2.8	3,760	10.0	5,330
6.5	3,800	3.2	1,365	5.5	9,225	6.5	18,475	3.0	4,220	12.0	6,440
7.0	3,430	3.4	1,485	6.0	10,200	7.0	20,190	3.2	4,735	14.0	7,550
7.5	3,575	3.6	1,615	6.5	11,175	7.5	21,905	3.4	5,200	16.0	8,660
8.0	3,720	3.8	1,745	7.0	12,150	8.0	23,620	3.6	5,665	18.0	9,770
8.5	3,865	4.0	1,875	7.5	13,125	8.5	25,335	3.8	6,130	20.0	10,880
9.0	4,010	4.2	2,005	8.0	14,100	9.0	27,050	4.0	6,595	22.0	12,500
9.5	4,155	4.4	2,135	9.0	16,050	9.5	28,965	4.2	7,060	24.0	14,700
10.0	4,300	4.6	2,275	10.0	18,000	10.0	31,200	4.4	7,525	26.0	17,600
11.0	4,590	4.8	2,420	11.0	19,950	10.5	34,062	4.6	7,990	28.0	21,500
12.0	4,880	5.0	2,585	12.0	21,900	11.0	37,600	4.8	8,455	30.0	26,500
13.0	5,170	5.2	2,765	13.0	23,850	11.5	41,200	5.0	8,920	32.0	31,700
14.0	5,460	5.4	2,955	14.0	25,800	12.0	44,800	5.2	9,385	34.0	38,000
15.0	5,750	5.6	3,140	15.0	27,750	12.5	48,400	5.4	9,850	36.0	45,000
16.0	6,040	5.8	3,335	16.0	29,700	13.0	52,000	5.6	10,315	38.0	53,000
17.0	6,330	6.0	3,525	17.0	31,650	13.5	55,600	5.8	10,780	40.0	61,000
18.0	6,620	6.2	3,715	18.0	33,600	14.0	59,200	6.0	11,245	42.0	70,000
19.0	6,910	6.4	3,910	20.0	37,500	14.5	62,800	6.2	11,710	44.0	80,000
20.0	7,200	6.6	4,110	22.0	41,400	15.0	66,400	6.4	12,175	46.0	91,000
22.0	7,780	6.8	4,380	24.0	45,300	15.5	70,000	6.6	12,640	48.0	103,000

OHIO RIVER DRAINAGE.

DESCRIPTION OF RIVER STATIONS.

Friendsville station on Youghiogheny River.—This station at Friendsville, Garrett County, Maryland, was established August 17, 1898, by E. G. Paul. The observer is J. H. Cuppet, a merchant residing within a short distance of the gage. The height of water is obtained by means of a wire attached to the floor timber on the lower side of the highway iron bridge connecting the east and west portions of the village. This wire is 20 feet long from zero to the extreme end of the weight. The scaleboard is 14 feet long, graduated to tenths of a foot. The stream channel is straight for several hundred feet above and below the bridge, and it has a solid bottom with high banks on the right-hand side.

Radford station on New River.—This is located on the New River (highway) Bridge, close by Radford Station, on the Norfolk and Western Railway. It was established August 1, 1898, by D. C. Humphreys. The observer of river heights is A. J. Killinger, Radford, Virginia. The gage used was erected by the United States Weather Bureau, and consists of a vertical board, graduated to tenths of a foot, attached to the iron framework connecting the pair of iron concrete cylinders which form the first pier from the right bank, close to the upper of the two cylinders. The bench mark is the bottom of the lowest horizontal brace, connecting the two cylinders; the elevation above the zero of the gage is 3.88 feet. The discharge measurements were made from the lower edge of the bridge, and the initial point for soundings is the right bank of the river, 40 feet from the first pier. The channel is remarkably uniform and nearly straight for about half a mile above and below the station. The bottom is of solid rock and gravel, and is smooth and regular. On the left bank there is a very narrow bottom, and then a steep rocky bluff; on the right bank the bottom, which is overflowed in extreme high water, is about 100 yards wide, but all water must go under the bridge, which is about 85 feet above low water.

Alderson station on Greenbrier River.—Described on page 58 of Paper No. 15; results for 1897 given on pages 253 and 254 of the Nineteenth Annual Report, Part IV.

Fayette station on New River.—Described on page 59 of Paper No. 15; results for the year 1897 given on pages 255–266, of the Nineteenth Annual Report, Part IV.

Asheville station on French Broad River.—Described on page 60 of Paper No. 15; results for 1897 given on pages 257–259 of the Nineteenth Annual Report, Part IV.

Bryson station on Tuckaseegee River.—Described on page 61 of Paper 15.

Judson station on Little Tennessee River.—Described on page 62 of Paper No. 15.

Murphy station on Hiwassee River.—Described on page 63 of Paper No. 15; results for 1897 given on page 259 of the Nineteenth Annual Report, Part IV.

Blueridge station on Toccoa River.—This station, at Morganton Bridge, about 4 miles east of the town of Blue Ridge, was established on November 25, 1898, and J. L. Seabolt, mail carrier from Blue-ridge to Morganton, Georgia, was employed as observer. He has since died, and his son, H. M. Seabolt, who is now the mail carrier, has been employed in his stead. He crosses the bridge twice every day except Sunday. No readings are had on this day, but figures have been interpolated in the list. The gage is a 14-foot rod in two 7-foot sections, nailed to a tree on the right bank just below the bridge. It is graduated to feet and tenths, and is set to conform to bench marks which were established October 15, 1896, and August 26, 1898. The measurement in 1896 was made at the railroad bridge, about 3 miles below, but is referred to the present gage by comparison of bench marks at the two bridges on August 26, 1898. The bench mark at Morganton Bridge is on the top of the bridge floor on the downstream side, 50 feet from the initial point, and is 18 feet above zero of gage. Morganton Bridge is a wooden, queen-bolt open bridge in three spans, with a total length between abutments of 153 feet. The width of the river, including two piers, at ordinary stage, is 143 feet between the banks, the three channels being 50, 38, and 33 feet, respectively.

Chattanooga station on Tennessee River.—Described on page 64 of Paper No. 15; results for 1897 given on pages 260 to 262 of the Nineteenth Annual Report, Part IV.

Columbus station on Olentangy River.—This station, established on November 22, 1898, by H. A. Pressey, Prof. C. N. Brown, and B. H. Flynn is located at the Fifth Avenue Bridge, in Columbus, Ohio. The gagings are made from the downstream side of the bridge, the initial point being on the left bank. The gage is a wooden post, graduated to feet and tenths, driven in the bed of the stream near the bridge. The gage rod is referred to a scale cut in the face of the left abutment, from which the high-water readings can be taken directly. The bed is rocky and the banks high and never overflowed. This is the only available section at Columbus on this river at which the banks are not overflowed at high water. The observer is Prof. C. N. Brown, University of Ohio, Columbus.

Columbus station on Scioto River.—This station, established on November 22, 1898, by H. A. Pressey, Prof. C. N. Brown, and B. H. Flynn is located at the Grand View Avenue Bridge, in Columbus, Ohio. The wire gage is on the upstream side of the bridge and is referred to a scale cut in the face of the left abutment, from which high-water reading can be taken directly. The bed is rocky and the banks seldom overflow. The observer is A. T. Scurman, Columbus, Ohio.

TABLES OF DAILY GAGE HEIGHT.

Daily gage height, in feet, of Youghiogheny River at Friendsville, Maryland, for 1898.

Day.	Aug.	Sept.	Oct.	Nov.	Dec.	Day.	Aug.	Sept.	Oct.	Nov.	Dec.
1.....		4.20	4.00	4.90	4.90	17.....	4.90	4.00	4.20	5.20	5.20
2.....		4.10	4.00	4.90	4.90	18.....	4.80	4.00	4.40	5.20	5.10
3.....		4.10	4.00	4.80	4.80	19.....	4.70	4.00	4.40	5.20	5.10
4.....		4.10	4.00	4.70	4.70	20.....	5.90	4.00	4.90	5.70	6.10
5.....		4.10	4.00	4.70	4.70	21.....	5.20	4.00	4.70	5.60	7.60
6.....		4.90	4.10	4.80	4.70	22.....	4.90	4.00	7.90	5.40	7.60
7.....		4.40	4.20	4.70	4.70	23.....	4.70	4.00	7.00	5.40	7.70
8.....		4.50	4.20	4.90	4.70	24.....	4.60	4.40	6.10	5.20	7.10
9.....		4.40	4.20	5.10	4.70	25.....	4.60	4.30	5.60	5.10	6.50
10.....		4.40	4.10	5.10	4.80	26.....	4.50	4.30	5.60	5.00	5.60
11.....		4.10	4.10	6.30	4.90	27.....	4.50	4.20	5.50	4.80	5.60
12.....		4.00	4.10	5.90	5.10	28.....	4.40	4.00	5.30	4.80	5.60
13.....		4.00	4.10	5.70	5.10	29.....	4.30	4.00	5.10	4.80	5.40
14.....		4.00	4.20	5.50	5.10	30.....	4.20	4.00	5.00	4.80	5.30
15.....		4.00	4.20	5.40	5.20	31.....	4.20		5.00		5.20
16.....		4.00	4.30	5.30	5.20						

Daily gage height, in feet, of New River at Radford, Virginia, for 1898.

Day.	Aug.	Sept.	Oct.	Nov.	Dec.	Day.	Aug.	Sept.	Oct.	Nov.	Dec.
1.....	0.90	0.60	0.50	1.00	0.80	17.....	0.50	0.50	0.80	0.90	0.90
2.....	.50	.60	.60	.90	.90	18.....	.60	.40	.90	1.00	.80
3.....	.40	.50	.70	1.00	.70	19.....	.50	.40	6.60	1.20	1.20
4.....	.50	2.00	.80	.90	.80	20.....	.80	.30	2.90	1.20	1.00
5.....	3.40	3.90	3.90	.80	2.60	21.....	.80	.30	2.00	1.00	1.20
6.....	1.30	1.80	3.85	.90	2.00	22.....	.90	.30	9.90	1.10	1.30
7.....	1.50	1.00	3.00	.80	1.90	23.....	.80	6.30	4.00	1.00	1.50
8.....	1.00	.80	1.80	1.00	1.80	24.....	.60	5.80	2.90	.90	1.90
9.....	.90	.70	.90	.70	1.30	25.....	.50	1.80	2.00	.80	1.30
10.....	1.00	.60	.80	.60	1.20	26.....	.80	1.00	1.90	.90	1.20
11.....	1.40	.50	1.00	.60	1.10	27.....	.90	9.00	1.80	.80	.90
12.....	1.90	.50	.90	.90	1.10	28.....	1.00	.80	1.60	.90	.80
13.....	1.80	.40	.80	.80	.90	29.....	.90	.70	1.20	.80	.70
14.....	1.80	.60	.60	.70	.80	30.....	.80	.60	1.60	.70	.80
15.....	1.00	.70	.50	.60	.90	31.....	.60		1.50		.90
16.....	.70	.60	.60	.50	1.00						

Daily gage height, in feet, of Greenbrier River at Alderson, West Virginia, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1.....	2.32	2.82	2.62	5.40	2.85	2.63	1.95	2.20	1.85	1.62	2.60	2.67
2.....	2.35	2.42	2.58	4.50	2.70	2.50	1.87	2.65	1.85	1.62	2.60	2.63
3.....	2.77	2.27	2.54	4.10	2.60	2.38	1.81	2.25	1.63	1.57	2.55	2.43
4.....	2.20	2.40	2.52	3.73	2.55	2.30	1.78	2.20	1.75	1.57	2.40	2.37
5.....	2.12	2.79	2.60	3.48	2.48	2.20	2.00	6.15	1.68	1.58	2.38	3.25
6.....	2.15	2.42	2.54	3.53	3.03	2.15	2.35	5.35	1.75	1.60	2.34	3.95
7.....	2.18	2.41	2.55	3.40	8.03	2.07	2.10	5.35	1.80	1.86	2.34	3.35
8.....	2.17	2.50	2.65	3.30	7.33	2.02	2.06	3.67	2.00	1.78	2.42	3.05
9.....	2.19	2.40	2.60	3.30	5.20	1.98	1.95	3.10	1.90	1.70	2.37	2.78
10.....	3.58	2.50	2.65	3.25	4.23	1.95	1.87	3.08	1.85	1.70	2.30	2.72
11.....	6.95	2.85	2.60	3.95	3.20	1.90	1.82	7.90	1.80	1.70	2.40	3.00
12.....	4.90	3.15	2.63	7.08	3.45	2.33	1.70	15.50	1.75	1.72	3.88	2.37
13.....	4.20	3.65	2.70	5.33	3.17	2.13	1.63	5.56	1.70	1.70	3.40	2.50
14.....	4.00	3.45	2.75	4.65	3.00	2.02	1.73	4.28	1.65	1.70	3.05	2.55
15.....	3.80	3.22	2.77	4.57	2.85	2.55	1.70	3.55	1.65	1.70	2.90	2.67
16.....	7.65	3.05	2.68	4.50	2.90	2.45	1.79	3.15	1.63	1.65	2.72	2.48
17.....	5.45	2.87	2.67	5.00	2.95	2.38	1.88	2.85	1.63	1.65	2.60	2.13
18.....	4.20	2.70	5.25	4.30	3.34	2.40	1.90	2.85	1.58	1.65	2.68	2.25
19.....	3.60	2.80	5.93	3.80	3.20	2.36	2.47	2.50	1.58	2.26	4.60	2.25
20.....	3.25	3.65	5.15	3.40	3.10	2.55	2.35	2.55	1.58	2.56	6.15	2.42
21.....	3.26	4.06	4.20	3.20	2.95	2.60	2.20	2.65	1.58	2.93	5.15	2.73
22.....	3.37	4.66	3.67	3.00	2.82	2.45	2.03	2.60	1.60	9.83	4.22	3.45
23.....	3.67	3.93	3.40	2.90	5.04	2.40	1.94	2.35	1.65	6.60	3.80	5.70
24.....	4.60	3.45	3.25	2.80	5.50	2.15	2.05	2.20	1.70	4.30	3.92	5.66
25.....	4.00	3.18	5.32	3.36	4.60	2.03	2.27	2.25	1.80	3.43	3.60	4.40
26.....	4.00	2.98	5.28	3.40	3.85	1.96	2.05	2.15	1.82	3.03	3.27	3.70
27.....	3.98	2.83	4.43	3.43	3.38	1.92	2.08	2.05	1.76	3.02	3.08	3.32
28.....	3.62	2.68	3.85	3.30	3.05	1.93	3.51	2.05	1.73	2.62	2.88	3.05
29.....	3.30		4.19	3.15	2.90	2.10	3.38	2.00	1.70	2.60	2.68	2.90
30.....	3.13		7.95	3.00	2.75	2.02	2.80	1.95	1.68	2.50	2.68	2.73
31.....	2.90		6.40		2.75		2.45	1.90		2.58		2.70

Daily gage height, in feet, of New River at Fayette, West Virginia, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.40	4.00	2.95	15.43	4.10	4.20	1.30	4.50	2.45	2.20	4.25	5.05
2	2.20	3.30	2.30	11.70	3.85	3.50	1.22	4.50	2.20	2.10	4.20	4.50
3	2.20	2.70	2.65	8.90	3.40	3.10	1.15	4.10	1.95	2.05	4.25	4.20
4	2.15	2.00	2.65	8.00	3.00	2.60	1.07	4.20	1.80	1.80	4.30	4.15
5	2.10	1.55	2.65	7.40	2.85	2.10	1.40	9.55	2.10	1.75	2.50	4.05
6	2.25	1.50	2.68	7.30	3.00	2.05	1.30	12.85	8.20	6.18	2.55	7.40
7	2.40	1.55	2.80	6.80	9.45	1.90	1.35	9.65	5.00	8.20	4.05	6.25
8	2.70	1.50	2.85	7.65	14.95	1.50	1.40	7.10	3.95	6.55	3.90	6.35
9	2.80	1.50	2.95	6.10	10.80	1.35	1.65	7.05	3.65	4.20	3.95	5.00
10	3.60	1.40	2.90	6.05	7.40	1.15	1.60	13.05	3.20	3.55	4.10	4.05
11	4.55	3.10	2.75	6.80	6.10	1.15	1.50	19.15	2.20	3.50	4.05	3.30
12	6.40	4.20	2.70	10.85	5.55	1.50	1.45	16.10	2.40	3.35	3.95	3.40
13	6.80	5.40	2.65	9.80	4.95	1.50	1.40	10.85	2.20	3.10	3.80	3.45
14	5.85	4.85	2.60	8.40	4.55	1.40	1.30	9.05	1.95	3.00	3.90	3.45
15	5.60	4.80	2.80	8.35	4.25	1.30	1.25	8.00	1.65	2.65	3.90	3.40
16	7.40	3.70	3.05	10.30	4.30	1.35	1.20	6.80	1.55	2.60	3.55	3.40
17	10.00	3.20	3.60	8.15	4.58	1.48	1.15	5.55	1.30	2.40	3.50	3.35
18	7.05	3.00	4.00	6.80	4.50	2.50	1.00	4.80	1.30	2.30	3.35	3.30
19	6.80	2.85	8.55	6.00	4.45	5.40	3.00	4.35	1.30	2.25	3.45	4.35
20	6.10	3.10	8.30	5.70	4.30	8.10	3.20	4.25	1.20	12.05	5.75	6.50
21	4.25	5.45	6.70	5.30	3.95	6.30	3.45	4.05	1.15	11.70	8.10	8.10
22	5.85	6.15	6.00	5.00	3.80	6.00	2.15	4.00	1.20	14.10	7.40	7.20
23	6.10	5.70	6.80	4.30	11.40	4.80	2.05	3.40	1.20	21.25	5.50	7.45
24	6.70	5.10	7.35	4.50	13.90	3.25	2.00	3.20	8.43	14.40	5.55	9.00
25	8.10	4.40	8.60	4.55	11.25	2.55	2.48	2.95	9.35	9.00	5.60	6.55
26	7.35	3.65	10.15	5.10	9.10	2.20	5.15	2.60	8.10	6.55	6.10	6.10
27	8.90	3.40	10.05	5.15	7.00	1.95	4.80	2.45	7.00	5.10	4.80	5.25
28	8.60	3.10	7.25	5.05	5.95	1.60	4.45	2.20	5.30	4.15	4.65	4.10
29	6.95	-----	10.00	4.60	5.45	1.55	4.60	3.15	4.60	3.40	4.60	4.00
30	5.40	-----	13.90	4.35	5.40	1.40	4.65	3.30	2.70	3.30	4.45	3.65
31	5.05	-----	17.85	-----	4.80	-----	4.60	3.20	-----	3.30	-----	5.10

Daily gage height, in feet, of French Broad River at Asheville, North Carolina, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.25	3.52	2.77	4.60	3.30	2.70	2.55	3.70	3.60	3.45	3.50	3.60
2	3.25	3.47	2.75	4.05	3.30	2.67	2.35	3.90	3.50	3.33	3.60	3.55
3	3.15	3.45	2.73	4.05	3.27	2.63	2.65	4.10	3.45	5.25	3.50	3.30
4	3.03	3.35	2.70	4.10	3.25	2.63	2.63	8.55	6.33	8.10	3.43	3.25
5	2.87	3.15	2.70	4.20	3.17	2.60	2.60	7.23	6.00	7.50	3.40	3.30
6	2.93	3.10	2.70	4.23	3.10	2.60	2.60	6.40	5.75	6.75	3.35	3.35
7	2.90	3.05	2.65	4.10	3.03	2.55	2.55	5.77	5.90	7.03	3.03	3.40
8	2.90	3.00	2.63	3.30	3.03	2.55	2.55	5.60	5.00	6.05	3.25	3.35
9	2.80	3.00	2.63	3.40	3.00	2.55	2.55	5.00	4.65	6.00	3.02	3.25
10	2.80	2.90	2.60	3.40	3.00	2.53	3.40	4.40	4.30	5.60	3.15	3.20
11	2.90	2.85	2.60	3.40	2.90	2.50	2.85	6.60	4.25	5.40	3.01	3.15
12	3.00	2.80	2.60	3.37	4.00	2.50	2.80	7.20	3.95	4.70	3.01	3.13
13	3.00	2.85	2.63	3.25	4.00	2.60	4.95	6.95	3.90	3.80	3.10	3.10
14	2.93	2.77	2.60	3.27	3.40	2.65	7.00	6.50	3.80	3.80	3.50	3.00
15	2.90	2.73	2.60	3.25	3.30	2.70	6.65	6.00	3.75	3.80	3.10	2.97
16	2.85	2.75	2.90	3.25	3.05	2.90	6.50	5.00	3.65	3.60	3.15	2.95
17	2.85	2.75	2.75	3.23	3.00	3.00	6.50	4.40	3.57	3.80	3.20	2.90
18	2.77	3.00	2.73	3.20	2.95	3.35	6.00	4.40	3.55	6.30	3.30	2.93
19	3.20	3.15	2.70	3.17	2.95	4.50	5.00	4.40	3.50	6.20	3.20	3.10
20	3.30	3.10	2.70	3.15	2.93	4.50	3.85	4.37	3.45	6.10	3.20	3.25
21	4.20	3.07	2.85	2.97	2.90	4.00	4.10	4.35	3.40	6.10	3.25	3.30
22	4.30	3.05	2.85	2.95	2.90	3.90	5.30	4.30	3.40	7.00	3.27	4.80
23	4.30	2.95	2.83	3.95	3.10	3.55	5.20	4.23	7.30	6.50	3.23	5.50
24	4.40	2.90	2.80	3.90	3.05	2.70	4.90	4.15	6.60	5.00	3.30	5.00
25	4.50	2.80	2.77	3.90	2.90	2.55	4.50	4.03	5.70	4.10	3.25	4.90
26	5.30	2.80	2.73	4.27	2.80	2.50	4.20	4.00	4.90	4.00	3.25	4.50
27	4.00	2.83	2.71	4.25	2.70	2.60	4.00	3.90	3.85	4.00	3.20	4.00
28	3.75	2.80	2.70	4.20	2.75	3.20	3.80	3.80	3.80	3.35	3.30	5.50
29	3.65	-----	5.00	3.70	2.75	3.15	3.70	3.73	3.70	3.80	3.40	5.20
30	3.60	-----	6.00	3.30	2.75	3.12	3.60	3.70	3.50	3.33	3.53	5.10
31	3.55	-----	5.70	-----	2.73	-----	3.53	3.70	-----	3.30	-----	4.70

Daily gage height, in feet, of Tuckasegee River at Bryson, North Carolina, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.50	1.80	1.50	3.10	2.00	1.50	1.40	2.30	2.00	1.85	2.00	2.20
2	1.20	1.75	1.40	2.80	1.90	1.40	1.35	2.40	3.10	1.70	1.95	2.15
3	1.30	1.75	1.40	2.60	1.85	1.35	1.30	2.50	8.50	1.70	1.90	2.00
4	1.40	1.85	1.40	2.50	1.80	1.35	1.40	7.80	4.50	7.60	1.80	2.70
5	1.40	1.70	1.35	2.80	2.00	1.30	1.50	4.10	6.00	5.70	1.80	2.50
6	1.35	1.60	1.35	2.50	1.90	1.30	1.55	3.50	3.80	4.30	1.95	2.25
7	1.40	1.65	1.35	2.40	1.85	1.30	1.60	2.80	3.60	3.60	1.90	2.20
8	1.50	1.60	1.35	2.40	1.85	1.30	1.60	2.60	3.50	3.20	1.90	2.00
9	1.50	1.60	1.30	2.25	1.80	1.30	1.50	2.50	3.25	2.90	2.15	2.00
10	1.60	1.60	1.30	2.65	1.80	1.30	1.40	2.30	2.70	2.80	2.50	1.90
11	1.60	1.55	1.30	2.40	1.80	1.25	1.30	5.30	2.50	2.90	2.00	1.80
12	2.25	1.65	1.35	2.25	1.80	1.40	1.30	3.50	2.90	2.90	2.00	1.75
13	2.25	1.55	1.60	2.20	1.75	1.40	1.30	3.20	2.10	2.40	2.00	1.75
14	2.00	1.55	1.60	2.40	1.60	1.40	1.50	3.00	2.10	2.30	2.00	1.65
15	1.90	1.45	1.70	2.30	1.60	1.30	2.00	2.90	2.00	2.25	1.90	1.70
16	2.10	1.40	1.65	2.25	2.00	1.50	2.00	2.50	2.00	2.25	2.00	1.70
17	1.90	1.40	1.70	2.15	1.60	1.90	1.70	2.40	2.00	5.30	2.10	1.90
18	1.75	1.50	2.10	2.10	1.60	1.70	1.70	2.50	1.90	2.80	2.50	1.80
19	2.20	1.60	1.90	2.20	2.00	1.70	1.50	2.30	1.80	2.80	2.50	1.70
20	3.50	1.60	1.70	2.10	1.90	1.60	1.40	2.30	1.85	2.80	2.40	2.25
21	2.50	1.55	1.60	2.00	1.60	1.40	1.50	2.20	1.70	2.70	2.20	2.00
22	2.20	1.50	1.50	1.95	1.60	1.30	1.55	2.10	4.30	2.55	2.50	2.00
23	2.60	1.40	1.50	2.10	1.80	1.30	1.60	2.00	3.30	2.45	2.40	1.90
24	2.80	1.45	1.70	2.05	1.80	1.35	1.60	2.10	2.80	2.45	2.25	2.35
25	4.50	1.40	1.50	2.50	1.55	1.40	1.90	2.00	2.30	2.20	2.40	2.85
26	3.80	1.40	1.50	2.40	1.55	1.30	1.90	1.90	2.00	2.30	2.20	2.50
27	2.70	1.40	1.60	2.40	1.50	1.30	2.10	1.90	1.90	2.15	2.00	2.25
28	2.50	1.35	1.70	2.20	1.50	1.40	2.40	1.80	1.90	2.10	2.00	2.90
29	2.20	-----	6.70	2.10	1.50	1.85	2.00	1.75	1.85	2.05	2.40	2.80
30	2.10	-----	5.50	2.00	1.50	1.30	2.00	2.00	1.85	2.10	2.25	2.80
31	2.00	-----	3.80	-----	1.50	-----	2.20	2.20	-----	2.00	-----	2.60

Daily gage height, in feet, of Little Tennessee River at Judson, North Carolina, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.83	2.57	2.92	5.78	3.42	2.41	2.71	3.35	5.28	3.58	4.58	3.89
2	2.90	2.90	2.80	5.60	3.63	2.42	2.18	3.42	7.22	3.56	4.52	3.89
3	2.73	2.84	2.90	4.32	3.62	2.42	2.19	4.21	11.93	3.82	4.53	3.88
4	2.75	2.93	2.73	3.38	3.60	2.38	2.17	10.38	9.52	3.71	4.53	3.86
5	2.76	2.56	3.00	5.50	3.68	2.39	2.16	5.72	7.21	13.50	4.59	3.81
6	2.70	2.80	2.98	4.58	3.61	2.39	2.13	6.82	6.82	10.22	4.57	3.80
7	2.80	2.59	2.74	3.96	4.23	2.37	2.20	4.52	5.91	8.28	4.58	3.74
8	2.73	2.56	2.78	3.85	3.56	2.36	2.21	4.31	4.51	6.71	4.51	3.74
9	2.71	2.58	2.37	3.88	3.58	2.36	2.20	4.28	4.28	5.89	4.52	3.71
10	2.70	2.38	2.30	3.40	3.53	2.38	2.15	5.78	3.91	5.82	3.95	3.72
11	2.68	2.30	2.34	3.00	3.98	2.37	2.16	7.91	3.92	4.20	3.98	3.70
12	2.89	2.36	2.36	3.56	3.98	2.39	2.78	8.53	3.81	4.00	3.97	3.69
13	2.73	2.60	2.39	3.53	3.70	2.20	3.00	9.02	3.59	3.52	3.98	3.68
14	2.78	2.74	2.40	3.59	3.69	2.33	3.98	8.93	3.58	3.58	3.91	3.68
15	2.76	2.73	2.98	3.52	3.68	2.30	6.81	5.58	3.58	3.54	3.92	3.67
16	2.79	2.76	2.96	3.90	3.62	2.72	4.20	4.93	3.52	3.48	3.92	3.64
17	2.78	2.80	2.96	3.46	3.67	2.71	3.28	4.92	3.49	3.44	3.90	3.63
18	3.00	3.00	3.48	3.40	3.49	2.78	3.00	4.71	3.44	6.95	3.88	3.60
19	3.56	3.11	3.00	3.49	3.51	2.70	2.78	4.83	3.43	4.53	3.87	3.58
20	3.58	3.23	2.98	3.92	3.56	2.62	2.71	4.38	3.48	4.52	3.89	3.59
21	3.59	3.28	2.90	3.90	3.00	2.63	2.68	4.78	3.49	3.98	3.89	3.59
22	4.42	3.00	2.92	3.58	3.90	2.60	2.41	4.91	3.47	3.91	3.88	3.57
23	4.40	3.00	2.93	3.98	3.72	2.70	3.52	4.58	3.42	3.91	3.86	3.57
24	3.58	2.90	2.90	3.52	3.45	2.71	3.21	4.53	3.48	3.84	3.86	4.98
25	3.59	2.29	2.97	3.54	3.42	2.74	3.00	4.51	3.47	3.98	4.84	3.59
26	3.48	2.70	2.97	3.50	3.44	2.70	3.21	4.51	3.46	4.41	3.83	3.57
27	5.58	2.78	2.56	3.28	3.87	2.73	3.58	4.52	3.44	4.52	3.85	3.58
28	5.20	2.78	3.04	3.29	3.33	2.70	3.28	4.53	3.45	4.57	3.88	3.56
29	3.39	-----	8.30	3.24	3.30	2.78	3.29	4.38	3.48	4.61	3.89	3.52
30	3.86	-----	7.79	3.40	2.27	2.79	3.22	4.38	3.52	4.52	3.88	3.53
31	2.94	-----	6.39	-----	2.30	-----	3.30	4.59	-----	4.58	-----	3.50

Daily gage height, in feet, of Hivawsee River at Murphy, North Carolina, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	5.30	5.60	5.22	7.00	5.80	5.12	4.95	5.82	5.40	5.60	5.85	6.00
2	5.20	5.45	5.20	6.50	5.80	5.12	4.95	5.60	12.05	5.60	5.85	5.90
3	5.10	5.62	5.32	6.21	5.70	5.10	4.90	5.82	13.97	5.50	5.80	5.85
4	5.30	5.50	5.30	6.10	5.65	5.10	4.90	5.80	10.10	14.40	5.80	5.90
5	5.25	5.50	5.21	8.75	5.65	5.10	5.50	9.35	9.75	11.60	5.80	6.10
6	5.30	5.42	5.20	7.00	5.51	5.20	5.20	6.75	7.50	8.30	6.10	6.10
7	5.30	5.40	5.20	6.55	5.60	5.10	5.10	6.50	7.10	7.90	5.85	6.10
8	5.30	5.40	5.20	6.30	5.60	5.10	5.31	7.02	6.85	7.00	5.80	6.00
9	5.20	5.40	5.20	6.11	5.50	5.10	5.10	6.80	6.60	6.70	5.80	5.95
10	5.25	5.40	5.20	6.05	5.50	5.10	5.30	8.30	6.60	6.50	5.72	5.90
11	5.30	5.40	5.20	6.10	5.50	5.05	5.10	10.00	6.30	6.40	5.90	5.90
12	6.00	5.30	5.20	6.00	5.50	5.00	5.00	7.50	6.12	6.32	5.85	5.85
13	5.85	5.30	5.20	5.90	5.40	5.00	4.91	7.15	6.12	6.20	5.80	5.80
14	5.80	5.30	5.30	5.95	5.40	5.01	5.90	6.81	6.05	6.20	5.90	5.75
15	5.60	5.30	5.35	5.95	5.40	5.10	6.12	6.40	6.00	6.05	5.85	5.70
16	5.80	5.25	5.32	5.85	5.50	5.15	5.70	6.20	5.90	6.00	5.85	5.70
17	5.70	5.25	5.40	5.81	5.40	5.50	5.50	6.20	6.00	6.00	5.85	5.70
18	5.60	5.22	5.40	5.80	5.40	5.45	5.30	6.30	5.80	9.20	6.00	5.70
19	5.60	5.30	5.40	5.75	5.35	5.20	5.21	6.25	5.70	6.70	6.70	5.70
20	5.90	5.25	5.40	5.85	5.30	5.15	5.15	6.10	5.70	6.40	6.40	6.00
21	6.10	5.35	5.36	5.70	5.30	5.10	5.01	6.10	5.65	6.23	6.20	5.70
22	5.90	5.30	5.35	5.70	5.30	5.10	5.30	5.90	5.70	6.30	6.10	5.70
23	6.00	5.30	5.30	5.65	5.35	5.05	5.40	5.75	6.05	6.20	6.50	6.10
24	5.78	5.27	5.25	6.20	5.60	5.02	5.60	5.70	5.80	6.10	6.25	6.00
25	7.75	5.30	5.40	6.10	5.32	5.05	6.00	5.65	5.70	6.10	6.10	5.90
26	7.20	5.22	5.40	5.95	5.25	5.00	5.90	5.80	5.70	6.10	6.10	5.80
27	6.50	5.22	5.30	6.20	5.25	5.05	5.60	5.70	5.65	6.05	6.00	5.80
28	6.18	5.25	5.30	6.10	5.21	5.01	6.20	5.70	5.60	6.00	6.00	5.75
29	6.00	-----	11.10	6.00	5.20	5.00	5.80	5.60	5.60	6.00	6.20	5.70
30	5.82	-----	9.40	5.90	5.20	4.95	5.65	5.60	5.60	5.95	6.00	5.70
31	5.71	-----	7.70	-----	5.10	-----	6.20	5.60	-----	5.90	-----	5.90

Daily gage height, in feet, of Toccoa River at Blueridge, Georgia, for 1898.

Day.	Nov.	Dec.	Day.	Nov.	Dec.	Day.	Nov.	Dec.	Day.	Nov.	Dec.
1	-----	3.10	9	-----	3.10	17	-----	2.80	25	3.15	3.00
2	-----	3.00	10	-----	3.00	18	-----	2.70	26	3.20	2.80
3	-----	3.00	11	-----	3.00	19	-----	2.90	27	3.40	2.80
4	-----	3.20	12	-----	2.80	20	-----	3.10	28	3.40	2.80
5	-----	3.40	13	-----	2.80	21	-----	3.00	29	3.40	2.80
6	-----	3.40	14	-----	2.80	22	-----	2.80	30	3.40	2.80
7	-----	3.10	15	-----	2.80	23	-----	2.40	31	-----	3.20
8	-----	3.00	16	-----	2.80	24	-----	3.10	-----	-----	-----

Daily gage height, in feet, of Tennessee River at Chattanooga, Tennessee, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.45	7.55	3.30	17.45	6.40	3.35	2.45	8.15	3.55	3.55	4.60	5.10
2	3.25	6.70	3.15	17.80	5.80	3.30	2.35	7.55	3.95	3.30	4.30	5.05
3	3.05	6.15	3.00	15.00	5.40	3.30	2.25	6.45	9.15	3.20	4.25	4.90
4	2.90	5.40	2.95	11.45	5.05	3.30	2.05	5.35	18.50	3.90	4.05	5.00
5	2.75	5.00	3.30	10.35	4.70	2.85	2.35	6.25	25.00	3.80	3.90	5.05
6	2.65	4.55	3.45	12.15	4.45	2.55	2.10	11.85	22.15	16.90	3.90	5.60
7	2.70	4.45	3.50	11.60	4.35	2.35	2.10	14.65	15.70	16.50	4.25	5.95
8	2.50	4.35	3.40	10.30	4.10	2.20	2.15	12.55	11.25	10.75	4.45	5.90
9	3.05	4.30	3.25	9.30	4.20	2.05	2.60	10.15	9.50	8.90	4.50	5.85
10	3.25	4.15	3.05	8.30	4.15	1.95	3.05	8.50	8.60	8.40	4.45	5.55
11	3.25	4.00	2.90	8.60	4.45	1.80	3.50	9.05	7.45	7.55	4.65	5.10
12	5.50	3.90	2.85	9.50	4.65	1.95	3.40	12.30	6.45	6.55	5.05	4.75
13	13.20	3.80	2.80	9.40	4.40	1.80	3.20	14.85	5.70	6.00	5.30	4.55
14	14.40	3.80	2.85	9.00	4.15	1.75	2.80	15.85	5.20	5.70	4.95	4.30
15	12.25	3.80	3.15	9.05	3.95	1.65	2.85	14.95	4.80	5.35	4.55	4.00
16	12.20	3.70	5.10	9.15	3.90	1.75	3.50	11.60	4.45	4.90	4.40	3.85
17	12.35	3.55	5.05	8.60	3.80	2.00	4.55	8.90	4.25	4.70	4.50	3.70
18	10.00	3.50	5.20	8.20	3.70	2.35	5.35	7.10	3.75	5.25	4.75	3.60
19	9.20	3.30	5.00	8.00	3.70	3.50	4.60	6.40	3.75	6.70	4.95	3.75
20	11.70	3.30	6.10	7.95	3.65	4.05	4.15	6.05	3.55	7.75	5.30	5.20
21	13.80	3.20	5.70	7.40	3.60	5.35	4.00	5.95	3.45	9.30	5.85	5.35
22	13.40	3.25	5.45	7.05	3.60	5.55	3.30	5.65	3.55	8.90	6.05	6.00
23	12.55	3.40	5.15	6.60	3.50	5.05	3.30	5.40	5.00	7.65	6.55	5.85
24	12.35	3.50	4.65	6.85	3.40	4.55	3.40	4.75	5.05	7.25	6.85	5.35
25	12.35	3.60	4.30	6.65	3.45	3.70	3.55	4.30	6.40	7.20	6.55	5.20
26	16.05	3.80	4.15	6.60	3.70	3.40	3.55	4.05	7.20	7.60	6.10	5.40
27	18.20	3.50	4.45	6.45	4.95	2.90	4.55	4.00	6.15	6.90	5.65	5.90
28	16.70	3.35	4.45	7.10	5.60	2.80	5.55	4.10	5.00	6.20	5.15	5.70
29	14.15	-----	4.65	7.05	4.90	2.80	5.35	4.30	4.30	5.65	4.80	5.15
30	11.20	-----	5.55	6.75	4.20	2.55	5.90	4.10	3.85	5.15	4.95	4.80
31	8.95	-----	13.25	-----	3.70	-----	7.90	3.85	-----	4.85	-----	4.50

OHIO RIVER DRAINAGE.

Daily gage height, in feet, of Olentangy River at Columbus, Ohio, for 1898.

Day.	Nov.	Dec.	Day.	Nov.	Dec.	Day.	Nov.	Dec.	Day.	Nov.	Dec.
1		1.30	9		1.56	17		1.20	25	1.34	2.45
2		1.25	10		1.80	18		1.17	26	1.31	2.10
3		1.20	11		1.75	19		1.18	27	1.32	1.88
4		1.28	12		1.40	20		2.38	28	1.25	1.70
5		1.62	13		1.50	21		6.20	29	1.20	1.65
6		1.75	14		1.55	22		5.20	30	1.25	1.73
7		1.80	15		1.41	23	1.43		31		2.40
8		1.70	16		1.40	24	1.41	3.00			

Daily gage height, in feet, of Scioto River at Columbus, Ohio, for 1898.

Day.	Nov.	Dec.	Day.	Nov.	Dec.	Day.	Nov.	Dec.	Day.	Nov.	Dec.
1		9.70	9		9.75	17		9.30	25	9.90	13.65
2		9.65	10		9.75	18		9.25	26	9.80	12.65
3		9.70	11		10.00	19		9.45	27	9.85	12.10
4		9.75	12		9.45	20		11.75	28	9.65	11.80
5		9.90	13		9.40	21		15.10	29	9.75	11.05
6		9.90	14		9.55	22	10.20	16.65	30	9.80	11.15
7		9.80	15		9.20	23	10.05	15.65	31		11.75
8		9.95	16		9.25	24	9.95	14.70			

List of discharge measurements.

Date.	Stream.	Locality.	Hydrographer.	Gage height.	Discharge.
1898.				<i>Feet.</i>	<i>Sec.-feet.</i>
May 12	Youghiogheny River.	Friendsville, Md.	E. G. Paul	4.90	571
Aug. 17	do	do	do	4.90	581
July 21	New River	Radford, Va.	D. C. Humphreys	0.20	1,812
July 29	do	do	do	1.28	3,814
June 20	Greenbrier River.	Alderson, W. Va.	do	2.02	403
Aug. 3	do	do	do	2.20	665
Aug. 3	do	do	do	4.43	5,124
Dec. 22	do	do	do	3.45	2,817
June 25	New River	Fayette, W. Va.	do	2.60	3,492
Aug. 5	do	do	do	9.15	19,027
Do.	do	do	do	10.08	21,149
Aug. 6	do	do	do	13.02	31,533
Do.	do	do	do	12.95	a 32,128
Dec. 22	do	do	do	5.94	10,902
Jan. 18	French Broad River.	Asheville, N. C.	E. W. Myers	2.75	918
Sept. 9	do	do	do	4.45	3,332
Jan. 19	Tuckasegee River.	Bryson, N. C.	do	2.20	2,175
Jan. 20	do	do	do	3.30	3,695
Sept. 3	do	do	do	6.93	18,959
Sept. 4	do	do	do	3.93	6,059
Sept. 4	do	do	do	4.50	9,086
Sept. 5	do	do	do	5.00	11,777
Do.	do	do	do	7.80	9,821
Sept. 6	Tennessee River	Judson, N. C.	do	6.05	1,170
Jan. 21	Hiwassee River	Murphy, N. C.	do	6.80	1,620
Sept. 8	do	do	do		
1896.					
Oct. 15	Toccoa River	Blueridge, Ga.	B. M. Hall	2.00	148
1898.					
Aug. 26	do	do	do	2.95	624
Nov. 25	do	do	do	3.15	797
May 10	Tennessee River	Chattanooga, Tenn.	Max Hall	4.14	22,066
July 29	do	do	do	5.30	29,693
Aug. 19	do	do	do	6.37	36,671
Oct. 6	do	do	J. C. Conn	17.60	120,359
Oct. 23	do	do	do	6.00	35,953
Nov. 29	do	do	do	4.75	29,569
Do.	do	do	do	4.70	31,340
Nov. 30	Olentangy River.	Columbus, Ohio	C. N. Brown	1.20	77

a Approximate.

Mexico station on Sandusky River.—This station, established on November 17, 1898, by H. A. Pressey and B. H. Flynn, is at the highway bridge, near Mexico, about 40 miles above Fremont, Ohio, by river. The wire gage is on the upstream side of the bridge. It is referred to a bench mark, a cross cut in the top of upstream wing of right abutment of bridge. The elevation of bench mark is 30 feet above the datum of the gage. The gagings are made from the downstream side of bridge, the zero being on the right bank, marked by a nail in the guard rail. The bed of the river is rocky and the section unobstructed by piers. The observer is M. L. Estep.

Fremont station on Sandusky River.—This station, established on November 18, 1898, by H. A. Pressey and B. H. Flynn, is at the bridge of the Lake Shore Railway at Fremont. The gagings are made from board walk on lower cord of bridge, zero being a cross cut on bottom lateral at west end of bridge. The gage, an iron pipe graduated to feet and tenths, is located at the waterworks intake and referred to a bench mark cut on top of south end of west abutment of bridge. The elevation of bench mark is 20.1 feet above the datum of the gage. The bed is rocky and the banks high and not subject to overflow. The observer is Charles F. Reiff.

TABLES OF DAILY GAGE HEIGHT.

Daily gage height, in feet, of Maumee River at Waterville, Ohio, for 1898.

Day.	Nov.	Dec.	Day.	Nov.	Dec.	Day.	Nov.	Dec.	Day.	Nov.	Dec.
1		2.55	9		3.10	17		3.80	25	2.90	8.45
2		2.50	10		2.50	18		3.60	26	3.05	6.90
3		2.60	11		3.85	19		2.90	27	2.55	6.70
4		2.60	12		3.40	20	3.80	3.60	28	2.70	6.00
5		2.70	13		3.25	21	3.60	5.60	29	2.65	5.10
6		2.50	14		3.85	22	3.55	7.80	30	2.60	4.70
7		2.45	15		3.95	23	3.15	9.40	31		4.35
8		2.40	16		4.15	24	3.05	8.45			

Daily gage height, in feet, of Sandusky River at Mexico, Ohio, for 1898.

Day.	Nov.	Dec.	Day.	Nov.	Dec.	Day.	Nov.	Dec.	Day.	Nov.	Dec.
1		1.50	9		1.80	17		1.50	25	1.60	5.10
2		1.50	10		1.80	18	2.20	1.50	26	1.80	4.50
3		1.50	11		1.80	19	2.10	1.60	27	1.80	3.40
4		1.50	12		1.80	20	2.00	6.30	28	1.50	3.10
5		1.50	13		1.80	21	1.90	11.80	29	1.50	3.00
6		1.60	14		1.70	22	1.80	13.00	30	1.50	2.90
7		1.80	15		1.70	23	1.80	9.80	31		3.10
8		1.80	16		1.60	24	1.70	6.30			

Daily gage height, in feet, of Sandusky River at Fremont, Ohio, for 1898.

Day.	Nov.	Dec.	Day.	Nov.	Dec.	Day.	Nov.	Dec.	Day.	Nov.	Dec.
1		1.10	9		1.20	17		1.00	25	1.25	2.65
2		1.05	10		1.00	18	2.00	.90	26	1.20	2.20
3		1.00	11		1.25	19	1.85	1.05	27	1.15	1.85
4		1.10	12		1.15	20	1.70	3.75	28	1.05	2.05
5		1.35	13		1.00	21	1.65	5.60	29	1.15	1.90
6		1.60	14		1.05	22	1.55	5.25	30	1.10	2.00
7		1.50	15		1.00	23	1.40	4.80	31		2.10
8		1.15	16		1.00	24	1.30	3.50			

List of discharge measurements, 1898.

Date.	Stream.	Locality.	Hydrographer.	Gage height.	Dis-charge.
Nov. 19	Maumee River.....	Waterville, Ohio..	H. A. Pressey.....	<i>Feet.</i> 4.00	<i>Sec.-feet.</i> 5,628
Nov. 17	Sandusky River...	Mexico, Ohio.....	.....do.....	2.30	386
Nov. 18	.....do.....	Fremont, Ohio.....	.....do.....	2.00	645

UPPER MISSOURI RIVER DRAINAGE.

DESCRIPTION OF RIVER STATIONS.

Salesville station on West Gallatin River.—Described on page 66 of Paper No. 15; results for 1897 shown on pages 275–277 of the Nineteenth Annual Report, Part IV.

Bozeman station on Middle Creek.—Described on page 67 of Paper No. 15, and on page 271 of the Nineteenth Annual Report, Part IV. A wire cable was placed across the stream in 1898, 250 yards north of the gage station, and current meter measurements are made from this.

Logan station on Gallatin River.—Described on page 68 of Paper No. 15; results for 1897 shown on pages 277–278 of the Nineteenth Annual Report.

Redbluff station on Madison River.—Described on page 69 of Paper No. 15; results for 1897 shown on pages 279–280 of the Nineteenth Annual Report, Part IV.

Sappington station on Jefferson River.—Described on page 70 of Paper No. 15; results for 1897 shown on pages 281–283 of the Nineteenth Annual Report, Part IV. The observer since March 26, 1898, has been W. D. McClellan.

Townsend station on Missouri River.—Described on page 65 of Paper No. 15; results for 1897 shown on pages 283–285 of the Nineteenth Annual Report, Part IV.

Havre station on Milk River.—This station is at a point on Milk River about one-quarter mile northwest of Havre, Montana. Owing to the river changing its channel so often and banks dropping in, a special form of gage rod was erected by Mr. Cyrus C. Babb. This consists of a 4-inch by 4-inch timber placed horizontally on supports and extending out over the river 20 feet. This is graduated in feet and tenths, and over it is run a wire with a weight attached, which is lowered to the surface of the water when measurements are made. The wire gage has a length of 24.8 feet. The measurements for discharge are made by means of a cable of 200 feet span, swung across the river, on which a box is run by pulleys. This is so located that an excellent result can be obtained. No readings were had in 1898 when the water was above the normal height, as the “June rise” had subsided before the station was established, May 15, 1898. The observer is Henry O’Herren, rancher. The discharge measurements were made by C. W. Ling and others.

The old station at Chinook, described on page 73 of Paper No. 15, was maintained through 1897, but was found to be of doubtful value on account of the poor section and from the fact that a number of canals diverted water at points above. It was decided to move the station to Havre, the wire gage erected being similar to the one in use at Whitman station, on Wallawalla River, Washington. The horizontal timber or boom noted above extends over the bank, being made fast to two posts set firmly in the ground about 6 feet apart.

Livingston station on Yellowstone River.—Described on page 74 of Paper No. 15; results for 1897 shown on pages 287–289 of the Nineteenth Annual Report, Part IV.

Lovell station on Shoshone River.—Described on page 76 of Paper No. 15; results for 1897 shown on pages 290–293 of the Nineteenth Annual Report, Part IV.

Buffalo station on Clear Creek.—Described on page 78 of Paper No. 15; results for 1897 given on pages 297–298 of the Nineteenth Annual Report, Part IV.

Fort Niobrara station on Niobrara River.—Described on page 80 of Paper No. 15; results for 1897 shown on page 299 of the Nineteenth Annual Report, Part IV. No gage heights were observed during 1898.

TABLES OF DAILY GAGE HEIGHT.

Daily gage height, in feet, of West Gallatin River at Salesville, Montana, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1				2.80	3.85	5.20	4.80	3.70	3.40	3.20	3.20	3.00
2	2.90	4.10		2.80	3.70	5.30	4.80	3.70	3.40	3.20	3.20	3.00
3			2.90	2.80	3.55	5.30	4.80	3.65	3.40	3.20	3.10	3.00
4				2.90	3.50	5.30	4.80	3.60	3.35	3.20	3.10	3.00
5	3.00		2.90	2.80	3.50	5.30	4.80	3.60	3.30	3.20	3.10	3.00
6		3.60	2.90	2.80	3.50	5.25	4.80	3.60	3.30	3.20	3.10	3.00
7			2.90	2.90	3.70	5.10	4.80	3.50	3.30	3.20	3.10	2.00
8			2.90	2.90	3.80	5.15	4.80	3.50	3.30	3.20	3.10	3.00
9			2.90	3.00	3.90	5.30	4.70	3.50	3.30	3.20	3.00	2.95
10	2.90		2.90	3.00	3.90	5.45	4.60	3.50	3.30	3.20	3.00	2.90
11		3.10	2.90	3.10	4.20	5.95	4.50	3.50	3.30	3.20	3.05	2.90
12			2.90	3.10	4.40	6.45	4.60	3.50	3.25	3.20	3.10	2.90
13			2.80	3.20	4.50	6.80	4.85	3.50	3.20	3.20	3.10	2.90
14	2.90		2.80	3.30	4.80	7.20	4.65	3.50	3.20	3.20	3.10	2.90
15			2.80	3.40	4.80	6.95	4.55	3.45	3.20	3.20	3.10	3.00
16		3.00	2.80	3.40	5.00	7.45	4.45	3.40	3.20	3.20	3.10	3.15
17			2.80	3.40	5.00	7.45	4.40	3.40	3.20	3.20	3.10	3.30
18			2.80	3.40	5.00	7.15	4.30	3.40	3.20	3.20	3.10	3.40
19	3.00		2.80	3.20	4.80	7.05	4.20	3.40	3.20	3.20	3.05	3.40
20		2.90	2.70	3.20	4.80	6.85	4.10	3.40	3.20	3.20	3.00	3.50
21			2.70	3.30	4.80	6.60	4.10	3.30	3.20	3.20	3.00	3.50
22			2.70	3.20	4.80	6.30	4.10	3.30	3.20	3.20	3.00	3.50
23	3.10	2.90	2.70	3.15	5.30	6.20	4.10	3.30	3.20	3.20	3.10	3.50
24			2.70	3.20	5.40	6.55	4.00	3.30	3.20	3.20	3.10	3.50
25			2.80	3.50	5.60	6.20	3.95	3.30	3.20	3.20	3.00	3.40
26			2.80	3.90	5.80	5.55	3.90	3.30	3.20	3.20	3.00	3.40
27			2.80	4.05	5.80	5.05	3.90	3.30	3.20	3.20	3.00	3.35
28	3.10	2.90	2.70	4.05	5.90	4.95	3.80	3.30	3.20	3.20	3.00	3.15
29			2.70	4.00	6.20	4.80	3.80	3.40	3.20	3.20	3.00	3.00
30			2.70	3.90	5.85	4.80	3.80	3.40	3.20	3.30	3.00	3.00
31			2.70		5.80		3.75	3.40		3.30		3.00

Daily gage height, in feet, of Middle Creek at Bozeman, Montana, for 1898.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1		0.40	0.80	0.60	0.15	0.05	0.00		
2		.35	.90	.55	.15	.05	— .01		
3		.45	.80	.50	.15	.05	.00		
4		.35	.90	.50	.15	.03	.00		
5		.30	1.10	.70	.15	.03	.00	0.00	
6		.35	.80	.60	.10	.03	.00		
7		.40	.75	.65	.10	.05	.00		
8		.40	.75	.57	.10	.05	.00		
9		.43	.80	.60	.10	.03	.03		
10		.50	.40	.60	.10	.03	.03		
11		.60	.80	.60	.10	.03	.03		
12		.65	.95	.75	.10	.03	.03	.90	1.10
13		.70	.80	.65	.08	.03	.03		
14		.70	2.10	.50	.08	.03	.00		
15		.70	2.00	.50	.10	.03	— .01		
16		.80	1.90	.50	.10	.03	.01		
17		1.00	1.30	.45	.10	.03	.00		
18	0.30	1.10	1.20	.40	.10	.03	.03		
19	.30	.90	1.20	.35	.10	.00	.05		.05
20	.30	.80	1.10	.30	.10	— .01	.03		
21	.35	.80	1.00	.30	.08	— .01	.00	.90	
22	.40	.80	1.00	.30	.05	.00	.03		
23	.42	.90	1.00	.30	.05	.00			
24	.46	.90	1.10	.30	.05	.00			
25	.65	.80	1.00	.30	.03	— .03			
26	.95	.75	.90	.25	.03	— .01			
27	.80	.90	1.00	.20	.03	.00		.03	
28	.60	.83	.90	.20	.03	.00			
29	.50	.75	.70	.20	.03	.00		1.00	
30	.46	.80	.65	.20	.03	.00			
31		.80		.18	.05				

Daily gage height, in feet, of Gallatin River at Logan, Montana, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.30		1.10	1.00	1.85	3.80	2.55	0.70	0.70	1.20	1.20	(a)
2			1.10	1.00	1.80	4.10	2.40	.70	.70	1.15	1.20	(a)
3			1.10	1.00	1.70	3.80	2.15	.70	.70	1.10	1.20	(a)
4			1.10	1.00	1.55	3.70	2.00	.70	.70	1.10	1.20	(a)
5			1.10	1.10	1.50	3.60	1.85	.70	.70	1.10	1.20	(a)
6			1.10	1.00	1.40	3.50	1.75	.70	.70	1.10	1.20	(a)
7		(b)	1.10	1.00	1.40	3.50	1.65	.70	.80	1.10	1.20	(a)
8	1.00		1.00	1.00	1.40	3.50	1.60	.70	.80	1.10	1.15	(a)
9			1.00	1.10	1.40	3.55	1.55	.70	.80	1.10	1.10	(a)
10			.95	1.35	1.55	3.70	1.50	.70	.90	1.10	1.10	(a)
11			1.00	1.55	1.55	3.95	1.50	.70	.90	1.10	1.10	(a)
12		1.00	1.00	1.45	1.80	4.30	1.50	.70	1.00	1.10	1.10	(a)
13		1.00	1.00	1.40	2.15	4.55	1.50	.70	1.00	1.20	1.10	(a)
14			1.00	1.50	2.25	4.75	1.60	.70	1.00	1.20	1.10	(a)
15	1.60		1.00	1.65	2.30	5.05	1.50	.70	1.00	1.20	1.10	(a)
16			1.00	1.80	2.50	5.20	1.40	.70	1.00	1.20	1.10	(a)
17		1.00	.90	1.50	2.80	5.15	1.35	.70	1.00	1.20	1.10	(a)
18			.90	1.40	3.00	5.20	1.15	.70	1.00	1.20	1.10	(a)
19		1.10	1.00	1.40	3.08	5.25	1.10	.70	1.00	1.20	1.10	(a)
20			1.00	1.40	3.00	5.25	1.00	.70	1.00	1.20	1.10	(a)
21			1.00	1.40	2.90	5.00	1.00	.70	1.00	1.20	1.10	(a)
22	1.60		1.00	1.40	2.70	4.30	.90	.70	1.00	1.20	(a)	(a)
23			1.00	1.40	2.85	4.10	.90	.70	1.00	1.20	(a)	(a)
24			1.00	1.40	3.00	4.30	.90	.70	1.00	1.20	(a)	(a)
25			1.00	1.50	3.00	4.15	.80	.70	1.00	1.20	(a)	(a)
26		1.00	1.00	1.70	3.15	3.90	.80	.70	1.00	1.20	(a)	(a)
27			1.00	1.95	3.50	3.55	.80	.70	1.10	1.20	(a)	(a)
28			1.00	2.00	3.60	3.30	.70	.70	1.10	1.20	(a)	(a)
29	(a)		1.00	1.90	3.90	2.85	.70	.70	1.10	1.20	(a)	(a)
30			1.00	1.90	4.25	2.65	.70	.70	1.10	1.20	(a)	(a)
31			1.00		3.90		.70			1.20		(a)

a Frozen at gage.

b Ice flowed out February 7.

UPPER MISSOURI RIVER DRAINAGE.

Daily gage height, in feet, of Madison River at Redbluff, Montana, for 1898.

Day.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1		2.50	1.90	1.60	1.60	1.40	1.40	(a)
2		2.60	1.90	1.60	1.60	1.40	1.40	(a)
3		2.80	2.00	1.60	1.60	1.40	1.40	(a)
4		2.50	2.00	1.60	1.60	1.40	1.40	(a)
5		2.30	2.00	1.60	1.55	1.40	1.40	(a)
6		2.30	2.00	1.60	1.45	1.40	1.40	(a)
7	1.65	2.20	2.00	1.60	1.40	1.40	1.40	(a)
8	1.70	2.20	1.90	1.60	1.40	1.40	1.40	(a)
9	1.70	2.20	1.95	1.60	1.40	1.40	1.40	(a)
10	1.70	2.35	2.00	1.60	1.40	1.40	1.40	(a)
11	1.70	2.40	2.00	1.60	1.40	1.40	1.40	(a)
12	1.90	2.50	2.00	1.60	1.40	1.40	1.40	(a)
13	2.00	2.55	2.10	1.60	1.40	1.40	1.40	(a)
14	2.00	2.95	2.00	1.60	1.40	1.40	1.40	(a)
15	2.10	2.95	2.00	1.60	1.40	1.40	(a)	(a)
16	2.30	3.05	2.00	1.60	1.40	1.40	(a)	(a)
17	2.50	3.15	2.00	1.70	1.40	1.40	(a)	(a)
18	2.55	3.20	1.85	1.70	1.40	1.40	(a)	(a)
19	2.60	3.20	1.80	1.70	1.40	1.40	(a)	(a)
20	2.55	3.10	1.80	1.50	1.40	1.40	(a)	(a)
21	2.35	3.00	1.80	1.50	1.40	1.40	(a)	(a)
22	2.10	2.95	1.70	1.50	1.40	1.40	(a)	(a)
23	2.10	2.65	1.75	1.50	1.40	1.40	(a)	(a)
24	2.40	2.60	1.70	1.40	1.40	1.40	(a)	(a)
25	2.30	2.50	1.70	1.40	1.40	1.40	(a)	(a)
26	2.30	2.55	1.60	1.40	1.40	1.40	(a)	(a)
27	2.50	2.30	1.60	1.40	1.40	1.40	(a)	(a)
28	2.70	2.20	1.60	1.60	1.40	1.45	(a)	(a)
29	2.70	2.00	1.60	1.55	1.40	1.45	(a)	(a)
30	2.70	1.80	1.60	1.50	1.40	1.40	(a)	(a)
31	2.55		1.60	1.50		1.40	(a)	(a)

a Frozen at gage.

Daily gage height, in feet, of Jefferson River at Sappington, Montana, for 1898.

Day.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	a 2.00	1.60	3.50	5.75	3.60	1.50	1.00	1.30	1.70	(b)
2	1.70	1.60	3.35	5.60	3.75	1.40	1.00	1.30	1.70	(b)
3	1.60	1.60	3.20	5.55	4.05	1.40	1.00	1.30	1.70	(b)
4	1.60	1.65	3.05	5.35	4.05	1.30	1.75	1.30	1.70	(b)
5	1.60	1.65	2.95	5.25	3.70	1.30	1.55	1.30	1.70	(b)
6	1.60	1.70	2.85	5.05	3.40	1.30	1.50	1.30	1.70	(b)
7	1.60	1.80	2.70	4.85	3.15	1.30	1.50	1.40	1.70	(b)
8	1.65	1.80	2.70	4.65	2.95	1.20	1.50	1.40	1.70	(b)
9	1.70	1.80	2.70	4.60	2.75	1.20	1.50	1.40	1.60	(b)
10	1.60	1.80	2.70	4.55	2.70	1.20	1.50	1.45	1.60	(b)
11	1.60	2.00	2.80	4.65	2.70	1.20	1.40	1.50	1.60	(b)
12	1.60	2.10	2.85	4.75	2.75	1.10	1.40	1.50	1.60	(b)
13	1.60	2.10	3.10	4.90	2.85	1.10	1.40	1.50	1.60	(b)
14	1.60	2.15	3.30	5.40	2.95	1.10	1.40	1.50	1.60	(b)
15	1.55	2.45	3.50	5.60	2.85	1.10	1.30	1.50	1.60	(q)
16	1.50	2.75	3.75	5.75	2.80	1.10	1.30	1.55	1.60	(b)
17	1.50	3.20	4.10	5.80	2.80	1.10	1.30	1.60	1.70	(b)
18	1.50	3.65	4.25	5.80	2.80	1.00	1.30	1.60	1.70	(b)
19	1.50	4.30	4.50	5.80	2.70	1.00	1.30	1.60	1.70	(b)
20	1.50	3.85	4.65	5.75	2.55	1.00	1.30	1.60	1.70	(b)
21	1.50	3.50	4.65	5.65	2.35	1.00	1.25	1.60	1.70	(b)
22	1.50	3.50	4.60	5.50	2.25	1.00	1.20	1.60	1.70	(b)
23	1.40	3.40	4.55	5.05	2.15	1.00	1.20	1.65	1.70	(b)
24	1.35	3.30	4.85	4.85	2.00	1.00	1.20	1.70	1.70	(b)
25	1.30	3.30	4.95	4.55	1.90	1.00	1.20	1.70	1.70	(b)
26	1.30	3.40	4.75	4.35	1.80	1.00	1.20	1.70	1.70	(b)
27	1.30	3.50	4.65	4.10	1.70	1.00	1.30	1.70	1.70	(b)
28	1.45	3.55	4.95	3.80	1.70	1.00	1.30	1.70	1.70	(b)
29	1.55	3.70	5.65	3.55	1.70	1.00	1.30	1.70	1.70	(b)
30	1.65	3.65	6.05	3.50	1.60	1.00	1.30	1.70	1.85	(b)
31	1.60		5.90		1.60	1.00		1.70		(b)

a River frozen from January 1 to February 23.

b Frozen at gage.

Daily gage height, in feet, of Missouri River, at Townsend, Montana, for 1898. (a)

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.
1	92.04	91.79	89.49	88.84	90.34	93.04	90.84	88.74	88.54	88.64	88.99
2	92.01	91.84	89.34	88.91	90.21	92.79	90.84	88.74	88.54	88.64	89.04
3	91.94	91.89	89.14	88.96	90.04	92.59	90.89	88.69	88.54	88.64	89.04
4	91.84	91.99	89.89	89.01	89.81	92.49	90.91	88.64	88.54	88.64	89.04
5	91.87	92.04	88.84	89.04	89.69	92.41	90.74	88.64	88.59	88.64	89.04
6	91.64	92.04	88.84	89.04	89.64	92.31	90.49	88.64	88.64	88.64	88.99
7	91.46	92.04	88.84	89.04	89.64	92.19	90.51	88.64	88.74	88.64	88.94
8	91.44	92.04	88.79	89.04	89.69	91.99	90.11	88.64	88.74	88.64	88.94
9	91.44	92.04	88.74	89.04	89.84	91.91	90.01	88.64	88.74	88.64	88.91
10	91.44	92.04	88.74	89.04	89.89	92.01	89.94	88.64	88.74	88.64	88.84
11	91.44	92.04	88.74	89.26	90.04	92.04	89.89	88.64	88.74	88.69	88.84
12	91.44	92.04	88.74	89.39	90.14	92.09	89.84	88.59	88.74	88.74	88.84
13	91.44	92.04	88.74	89.56	90.34	92.29	89.84	88.54	88.74	88.76	88.84
14	91.44	92.04	88.74	89.61	90.59	92.64	89.84	88.54	88.74	88.84	88.84
15	91.51	92.04	88.74	89.64	90.69	92.96	89.84	88.54	88.74	88.84	88.79
16	91.54	92.04	88.74	89.71	90.64	93.29	89.84	88.54	88.74	88.84	88.74
17	91.54	91.99	88.74	90.06	90.54	93.49	89.84	88.54	88.69	88.84	88.74
18	91.54	91.94	88.74	90.24	90.46	93.64	89.71	88.54	88.69	88.84	88.74
19	91.54	91.94	88.74	90.49	90.44	93.54	89.51	88.54	88.66	88.89	88.74
20	91.56	91.94	88.74	90.46	90.41	93.46	89.44	88.54	88.64	88.91	-----
21	91.61	92.01	88.74	90.26	90.34	93.29	89.39	88.54	88.64	88.94	-----
22	91.71	92.04	88.74	90.21	90.59	93.09	89.34	88.54	88.64	88.96	-----
23	91.74	92.04	88.74	90.19	90.89	92.89	89.26	88.54	88.64	88.99	-----
24	91.74	92.04	88.74	90.16	91.24	92.49	89.16	88.54	88.64	88.99	-----
25	91.74	92.04	88.86	90.14	91.54	92.09	89.09	88.54	88.64	89.04	-----
26	91.74	89.79	92.04	90.21	91.74	91.91	89.04	88.54	88.64	89.04	-----
27	91.74	89.59	92.04	90.24	92.29	91.81	88.96	88.49	88.64	89.04	-----
28	91.74	89.54	92.04	90.24	92.59	91.34	88.89	88.49	88.64	89.04	-----
29	91.74	-----	88.74	90.31	92.79	90.74	88.81	88.54	88.64	89.04	-----
30	91.74	-----	88.74	90.34	92.86	90.79	88.74	88.54	88.64	89.04	-----
31	91.74	-----	88.79	-----	92.99	-----	88.74	88.54	-----	89.04	-----

a Readings taken to surface of ice from January 1 to February 25, and from March 22 to 28.
 b Discontinued.

Daily gage height, in feet, of Milk River at Havre, Montana, for 1898.

Day.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	-----	3.75	1.90	1.30	1.00	0.50	1.30	-----
2	-----	3.70	1.90	1.30	1.00	.50	1.30	-----
3	-----	3.90	1.85	1.25	1.20	.85	1.30	-----
4	-----	3.75	1.70	1.20	1.30	1.05	1.30	-----
5	-----	3.60	1.70	1.20	1.20	1.10	1.30	1.50
6	-----	3.40	1.65	1.30	1.35	1.20	1.30	1.50
7	-----	3.30	1.70	1.30	1.20	1.20	1.30	1.50
8	-----	3.10	1.50	1.20	1.10	1.20	1.40	1.50
9	-----	3.00	.50	1.10	1.00	1.20	1.40	1.50
10	-----	2.90	.40	1.10	.90	1.25	1.30	1.50
11	-----	2.90	.40	1.10	1.00	1.30	1.30	1.40
12	-----	2.75	.40	1.10	1.00	1.40	1.30	1.40
13	-----	2.65	.30	1.00	.80	1.50	1.40	1.40
14	-----	2.70	.80	1.00	.80	1.40	1.30	1.40
15	-----	2.75	1.30	.90	.85	1.30	1.25	1.40
16	2.90	3.10	.90	.90	.85	1.30	1.25	1.40
17	3.40	2.75	(a)	.80	.80	1.20	1.30	1.40
18	3.25	2.65	(a)	.80	.80	1.10	1.35	1.40
19	3.10	2.60	(a)	.80	.80	1.10	1.30	1.40
20	3.80	2.75	1.35	.80	.75	1.10	-----	1.40
21	3.20	2.85	1.70	.80	.70	1.00	-----	1.40
22	3.00	2.60	1.60	.70	.70	1.15	-----	1.40
23	3.00	2.50	1.60	.70	.70	1.30	-----	1.40
24	2.85	2.45	2.50	2.45	.65	1.25	-----	1.40
25	2.70	2.45	1.90	2.05	.70	1.40	-----	-----
26	2.40	2.40	1.90	1.75	.70	1.40	-----	1.40
27	2.55	2.30	1.80	1.60	.70	1.50	-----	1.40
28	2.50	2.20	1.65	1.30	.70	1.40	-----	-----
29	2.60	2.05	1.45	1.15	.60	1.40	-----	-----
30	2.50	1.80	1.35	1.00	.50	1.40	-----	-----
31	2.50	-----	1.30	1.00	-----	1.30	-----	1.40

a July 16, 17, 18 river changed channel, leaving gage without water.

Daily gage height, in feet, of Yellowstone River at Livingston, Montana, for 1893.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1			1.15	1.10	2.65	5.05	5.25	3.13	2.38	1.60	1.20	0.95
2			1.10	1.10	2.45	4.88	5.25	3.08	2.25	1.60	1.20	
3			1.08	1.10	2.33	4.75	5.13	3.03	2.23	1.48	1.20	
4		0.90	1.05	1.10	2.20	4.50	5.03	2.98	2.33	1.48	1.20	
5			1.05	1.08	2.15	4.60	4.98	2.90	2.25	1.45	1.20	
6			1.10	1.05	2.08	4.38	4.98	2.90	2.13	1.45	1.20	
7	0.90		1.10	1.05	2.15	4.38	4.88	2.85	2.05	1.40	1.20	
8			1.10	1.10	2.43	4.53	4.83	2.78	2.00	1.40	1.20	
9			1.10	1.08	2.63	4.83	4.83	2.75	2.00	1.40	.90	
10			1.00	1.15	2.70	5.05	4.65	2.70	1.90	1.45	.90	
11		.85	1.00	1.25	3.38	5.33	4.60	2.65	1.85	1.50	1.15	
12			1.00	1.25	3.33	5.45	4.63	2.60	1.85	1.55	1.10	
13			.95	1.25	3.88	5.68	4.83	2.55	1.85	1.60	1.05	
14	.65		.95	1.40	3.93	6.30	4.63	2.55	1.80	1.48	1.05	
15			.90	1.55	4.18	6.70	4.58	2.55	1.80	1.45	1.05	
16			.90	1.80	4.25	6.85	4.50	2.58	1.80	1.40	1.10	
17			.82	1.83	4.40	7.15	4.35	2.60	1.80	1.40	1.13	
18		.90	.85	1.85	4.30	7.55	4.20	2.58	1.75	1.40	1.10	.80
19			.90	1.78	4.25	7.55	4.10	2.48	1.75	1.35	1.10	
20			.90	1.70	4.10	7.38	3.85	2.43	1.70	1.30	(α)	
21	.85		.80	1.75	3.90	6.65	3.85	2.35	1.68	1.30	(α)	
22			(α)	1.83	3.75	6.25	3.75	2.30	1.65	1.30	(α)	.80
23			(α)	1.95	4.05	6.35	3.70	2.30	1.60	1.30	.95	
24			(α)	1.88	4.78	6.50	3.65	2.28	1.60	1.30	.90	
25		1.15	(α)	1.95	4.78	6.40	3.60	2.20	1.60	1.25	.90	
26			(α)	2.48	4.98	5.85	3.53	2.15	1.55	1.25	(α)	
27			(α)	3.15	5.33	5.55	3.48	2.15	1.53	1.20	(α)	
28	.90		(α)	3.03	5.90	5.53	3.38	2.60	1.50	1.20	.95	
29			(α)	2.85	5.68	5.38	3.33	2.30	1.50	1.20	.98	.80
30			1.10	2.83	5.38	5.25	3.23	2.30	1.50	1.20	.95	
31			1.10		5.30		3.15	2.68		1.20		

α Ice gorge in river.

Daily gage height, in feet, of Shoshone River at Lovell, Wyoming, for 1893.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Day.	Apr.	May.	June.	July.	Aug.	Sept.
1	-0.80	0.00	1.30	1.60	0.10	+0.40	17	+0.20	1.70	3.00	1.60	-0.40	-0.90
2	-.80	.00	1.40	1.40	.20	-.30	18	+.00	1.70	3.50	1.30	+ .10	-1.00
3	-.90	-.40	1.40	1.30	.30	+ .50	19	-.80	3.00	3.60	.80	-.30	-1.00
4	-.80	-.30	1.20	1.30	.50	-.10	20	-.80	2.70	3.50	.70	-.50	-1.10
5	-.80	-.40	1.40	1.70	.30	-.40	21	-.90	1.80	3.30	.70	-.60	-1.10
6	-.80	-.40	1.00	2.00	.30	-.40	22	-.80	1.80	3.00	.70	-.60	-1.10
7	-.60	-.40	.90	2.20	.10	-.80	23	-.80	1.70	3.40	.60	-.60	-1.20
8	-.70	-.30	.90	2.10	.20	-.80	24	-.30	2.80	3.20	.60	-.70	-1.20
9	-.70	-.30	1.30	2.10	.30	-.80	25	-.30	2.30	3.20	.60	-.80	-1.20
10	-.50	+.10	1.80	2.30	.40	-.80	26	+.70	2.20	3.00	.40	-.90	-1.20
11	-.50	.80	1.90	2.40	.40	-.90	27	1.00	2.20	2.50	.40	-.90	-1.20
12	-.50	.70	2.20	2.20	.50	-.90	28	.70	4.00	2.50	.30	+ .10	-1.20
13	-.30	.50	2.10	2.60	.60	-.90	29	.20	2.20	2.00	.20	.70	-1.30
14	-.20	1.00	2.70	2.40	.50	-.90	30	.10	2.20	2.30	.10	.30	-1.30
15	+.10	1.00	2.80	2.10	.40	-.90	31		1.60		.10	.40	
16	+.30	.70	3.20	2.00	-.40	-.90							

Daily gage height, in feet, of Clear Creek at Buffalo, Wyoming, for 1893.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1						2.45	1.35	0.80	0.30			
2						2.48	1.30	.85	.30			
3						2.10	1.30	.80	.30		0.43	0.36
4						2.10	1.30	.80	.35			
5						1.70		.80	.35			
6	0.37		0.35			1.95		.80	.35	0.60		
7		0.32				1.70		.80	.35			
8						1.60		.85	.35	.55		
9						2.00		.80	.40	.55		
10						2.10	1.22	.70	.40	.55	.42	
11						1.90	1.15	.65	.40	.55		.35
12			.34			2.20	1.15	.70	.40	.55		
13			.35			2.60	1.25	.70	.40	.55		

Daily gage height, in feet, of Clear Creek at Buffalo, Wyoming, for 1898—Cont'd.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
14						(a)	1.25	.50	.40	.55		
15	.35				0.95	2.45	1.30	.45	.40	.55		
16					1.15	2.45	1.45	.45	.45	.55		
17					1.47	2.20	1.25	.50	.45	.50	.40	
18					1.35	2.20	1.15	.50	.45	.55		.32
19					1.30	2.10	1.10	.50	.45	.55		
20					1.45	2.10	1.05	.50	.45	.55		
21		.34	.37		1.30	2.10	1.00	.45	.50	.55		
22	.35				1.30	1.95	1.00	.40	.50	.55		
23					1.30	1.95	1.00	.40	.50	.55		
24					2.65	1.90	1.00	.40	.50	.50		
25					2.70	1.75	.95	.40	.50	.50	.40	
26					2.60	1.70	.95	.40	.45	.50		.32
27		.35	.40			1.55	.90	.40	.45	.50		
28						1.50	.90	.40				
29					3.00	1.45	.85	.40				
30	.30				(a)	1.45	.85	.35				
31					2.09		.80	.30				

a High water.

List of discharge measurements, 1898.

Date.	Stream.	Locality.	Hydrographer.	Gage height.	Discharge.
				<i>Feet.</i>	<i>Sec.-feet.</i>
Apr. 17	West Gallatin River.	Salesville, Mont.	Roe Emery	3.40	942
June 9	do	do	do	5.40	3,626
June 18	do	do	C. C. Babb	7.20	6,759
July 18	do	do	Roe Emery	4.30	1,734
Aug. 12	do	do	do	3.50	985
Sept. 7	do	do	do	3.35	1,010
Sept. 23	do	do	do	3.25	931
Oct. 9	do	do	do	3.20	653
Oct. 26	do	do	do	3.30	622
Nov. 16	do	do	do	3.10	480
Apr. 16	Middle Creek	Bozeman, Mont.	do	.80	65
May 22	do	do	do	.85	225
June 17	do	do	C. C. Babb	1.20	482
July 17	do	do	Roe Emery	.40	223
Aug. 2	do	do	do	.15	86
Aug. 4	do	do	do	.12	79
Aug. 14	do	do	do	.07	51
Sept. 6	do	do	do	.05	71
Sept. 21	do	do	do	.00	81
Oct. 9	do	do	do	.05	76
Oct. 25	do	do	do	.02	79
Nov. 5	do	do	do	.05	80
Apr. 21	Gallatin River	Logan, Mont.	do	1.40	989
May 18	do	do	do	3.05	2,823
June 7	do	do	do	3.50	3,718
June 23	do	do	C. C. Babb	4.10	4,900
July 23	do	do	Roe Emery	.90	595
Aug. 6	do	do	do	.70	356
Aug. 17	do	do	do	.70	381
Sept. 11	do	do	do	.90	567
Sept. 24	do	do	do	1.00	1,025
Oct. 5	do	do	do	1.10	861
Oct. 29	do	do	do	1.20	779
Nov. 12	do	do	do	1.10	689
Apr. 30	Madison River	Redbluff, Mont.	do	1.40	2,680
June 10	do	do	do	2.40	5,542
June 25	do	do	C. C. Babb	2.60	5,895
July 20	do	do	Roe Emery	1.60	2,849
Aug. 10	do	do	do	1.40	a 2,120
Sept. 9	do	do	do	1.40	1,956
Sept. 29	do	do	do	1.40	1,928
Oct. 10	do	do	do	1.40	2,299
Nov. 17	do	do	do	1.40	1,784
Apr. 21	Jefferson River	Sappington, Mont.	do	3.52	5,007
June 24	do	do	C. C. Babb	4.70	7,700
July 23	do	do	Roe Emery	2.17	2,551
Aug. 8	do	do	do	1.20	1,079
Sept. 10	do	do	do	1.35	1,109
Sept. 16	do	do	do	1.30	1,184
Oct. 7	do	do	do	1.40	1,209

a Cherry Creek at Redbluff on August 10 discharged 5 second-feet.

UPPER MISSOURI RIVER DRAINAGE.

List of discharge measurements, 1898—Continued.

Date.	Stream.	Locality.	Hydrographer.	Gage height.	Dis-charge.
Oct. 29	Jefferson River	Sappington, Mont.	Roe Emery	<i>Feet.</i> 1.70	<i>Sec.-feet.</i> 1,538
Nov. 11	do	do	do	1.60	1,386
Apr. 20	Missouri River	Townsend, Mont.	do	90.52	1,775
May 26	do	do	do	91.80	15,976
July 2	do	do	C. C. Babb	90.90	8,954
July 26	do	do	Roe Emery	89.10	4,778
Aug. 5	do	do	do	88.70	2,494
Aug. 30	do	do	do	88.60	2,421
Sept. 17	do	do	do	88.75	2,721
Oct. 8	do	do	do	88.70	3,084
Oct. 22	do	do	do	89.00	3,749
Nov. 10	do	do	do	88.90	3,709
Apr. 26	Milk River	Havre, Mont.	do	5.70	1,701
May 24	do	do	do	2.80	1,306
June 29	do	do	C. C. Babb	1.95	171
July 29	do	do	do	1.40	145
Aug. 4	do	do	C. W. Ling	.60	118
Aug. 13	do	do	do	.40	77
Aug. 24	do	do	do	2.00	457
Aug. 26	do	do	do	1.70	194
Sept. 5	do	do	do	1.20	106
Sept. 24	do	do	do	.60	44
Sept. 30	do	do	do	.80	31
Oct. 4	do	do	do	1.40	96
Oct. 6	do	do	do	1.50	105
Oct. 10	do	do	do	1.60	119
Oct. 12	do	do	do	1.70	132
Oct. 13	do	do	do	1.80	158
Oct. 14	do	do	do	1.70	125
Oct. 20	do	do	do	1.10	89
Oct. 24	do	do	do	1.30	120
Oct. 26	do	do	do	1.50	133
Nov. 1	do	do	do	1.40	115
Nov. 14	do	do	do	1.10	64
Nov. 15	do	do	do	1.20	84
Nov. 16	do	do	do	1.10	86
Nov. 17	do	do	do	1.10	92
Nov. 18	do	do	do	1.10	83

Rating tables.

Salesville.		Bozeman.		Logan.		Redbluff.		Sappington.	
Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.
<i>Feet.</i>	<i>Sec.-feet.</i>	<i>Feet.</i>	<i>Sec.-feet.</i>	<i>Feet.</i>	<i>Sec.-feet.</i>	<i>Feet.</i>	<i>Sec.-feet.</i>	<i>Feet.</i>	<i>Sec.-feet.</i>
4.3	1,745	—0.5	355	0.5	200	1.0	850	1.2	1,080
4.4	1,919	— .4	350	.6	280	1.1	1,175	1.3	1,150
4.5	2,093	— .3	365	.7	370	1.2	1,500	1.4	1,230
4.6	2,267	— .2	380	.8	460	1.3	1,825	1.5	1,310
4.7	2,441	— .1	395	.9	550	1.4	2,150	1.6	1,390
4.8	2,615	.0	410	1.0	640	1.5	2,475	1.7	1,540
4.9	2,789	.1	425	1.1	730	1.6	2,800	1.8	1,700
5.0	2,963	.2	440	1.2	820	1.7	3,125	1.9	1,900
5.1	3,137	.3	455	1.3	910	1.8	3,450	2.0	2,100
5.2	3,311	.4	470	1.4	1,000	1.9	3,775	2.1	2,300
5.3	3,485	.5	485	1.5	1,120	2.0	4,100	2.2	2,500
5.4	3,659	.6	500	1.6	1,240	2.1	4,425	2.3	2,700
5.5	3,833	.7	515	1.7	1,360	2.2	4,750	2.4	2,900
5.6	4,007	.8	530	1.8	1,480	2.3	5,075	2.5	3,100
5.7	4,181	.9	545	1.9	1,600	2.4	5,400	2.6	3,300
5.8	4,355	1.0	560	2.0	1,720	2.5	5,725	2.7	3,500
5.9	4,529	1.1	575	2.2	1,900	2.6	6,050	2.8	3,700
6.0	4,703	1.2	590	2.4	2,260	2.7	6,375	2.9	3,900
6.2	5,051	1.3	605	2.6	2,550	2.8	6,700	3.0	4,100
6.4	5,399	1.4	620	2.8	2,800	2.9	7,025	3.2	4,500
6.6	5,747	1.5	635	3.0	3,070	3.0	7,350	3.4	4,900
6.8	6,095	1.6	650	3.2	3,340	3.1	7,675	3.6	5,300
7.0	6,443	1.7	665	3.4	3,610	3.2	8,000	3.8	5,700
7.2	6,791	1.8	680	3.6	3,880	3.3	8,325	4.0	6,120
7.4	7,139	1.9	695	3.8	4,150	3.4	8,650	4.2	6,520
7.6	7,487	2.0	710	4.0	4,420	3.5	8,975	4.4	6,920
7.8	7,835	2.1	725	4.2	4,690	-----	-----	4.6	7,320
8.0	8,183	2.2	740	4.4	4,960	-----	-----	4.8	7,720
-----	-----	2.3	755	4.6	5,230	-----	-----	5.0	8,130
-----	-----	2.4	770	4.8	5,500	-----	-----	-----	-----

Rating tables—Continued.

Townsend.		Havre.		Livingston.		Lovell.		Buffalo.	
Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.
<i>Feet.</i>	<i>Sec.-feet.</i>	<i>Feet.</i>	<i>Sec.-feet.</i>	<i>Feet.</i>	<i>Sec.-feet.</i>	<i>Feet.</i>	<i>Sec.-feet.</i>	<i>Feet.</i>	<i>Sec.-feet.</i>
88.0	1,200	0.4	0	1.0	1,900	—0.8	310	0.1	4
88.2	1,500	.5	11	1.2	2,192	— .7	360	.2	9
88.4	1,900	.6	22	1.4	2,484	— .6	430	.3	17
88.6	2,300	.7	33	1.6	2,776	— .5	500	.4	25
88.8	3,030	.8	44	1.8	3,068	— .4	600	.5	33
89.0	3,670	.9	55	2.0	3,360	— .3	700	.6	46
89.2	4,310	1.0	66	2.2	3,652	— .2	800	.7	64
89.4	4,950	1.1	77	2.4	3,944	— .1	920	.8	82
89.6	5,620	1.2	88	2.6	4,236	— 0	1,080	.9	104
89.8	6,320	1.3	99	2.8	4,528	.1	1,250	1.0	134
90.0	7,020	1.4	110	3.0	4,820	.2	1,450	1.1	169
90.2	7,720	1.5	125	3.2	5,112	.3	1,650	1.2	209
90.4	8,420	1.6	140	3.4	5,404	.4	1,900	1.3	246
90.6	9,120	1.7	165	3.6	5,750	.5	2,190	1.4	286
90.8	9,820	1.8	200	3.8	6,200	.6	2,480	1.5	323
91.0	10,570	1.9	280	4.0	6,850	.7	2,770	1.6	365
91.2	11,410	2.0	380	4.2	7,773	.8	3,060	1.7	406
91.4	12,360	2.1	494	4.4	8,696	.9	3,350	1.8	447
91.6	13,380	2.2	608	4.6	9,620	1.0	3,640	1.9	504
91.8	14,460	2.3	722	4.8	10,543	1.2	4,220	2.0	558
92.0	15,680	2.4	836	5.0	11,467	1.4	4,800	2.1	607
92.2	16,770	2.5	950	5.2	12,390	1.6	5,380	2.2	657
92.4	17,900	2.6	1,064	5.4	13,313	1.8	5,960	2.3	705
92.6	19,030	2.7	1,178	5.6	14,237	2.0	6,540	2.4	752
92.8	20,160	2.8	1,292	5.8	15,160	2.2	7,120	2.5	803
93.0	21,290	2.9	1,406	6.0	16,084	2.4	7,700	-----	-----
93.2	22,420	3.0	1,520	6.2	17,008	2.6	8,280	-----	-----
93.4	23,560	-----	-----	6.4	17,931	2.8	8,860	-----	-----
93.6	24,720	-----	-----	6.6	18,854	3.0	9,440	-----	-----
93.8	25,880	-----	-----	6.8	19,778	-----	-----	-----	-----

PLATTE RIVER DRAINAGE.

DESCRIPTION OF RIVER STATIONS.

Woods Landing station on Laramie River.—Described on page 81 of Paper No. 15; results for 1897 given on pages 300–302 of the Nineteenth Annual Report, Part IV.

Uva station on Laramie River.—Described on page 82 of Paper No. 15; results for 1897 given on pages 302–304 of the Nineteenth Annual Report, Part IV.

Orin Junction station on North Platte River.—Described on page 83 of Paper No. 15; results for 1897 given on pages 304–307 of the Nineteenth Annual Report, Part IV.

Gering station on North Platte River.—Described on page 84 of Paper No. 15; results for 1897 given on pages 304–308 of the Nineteenth Annual Report, Part IV. This station was discontinued October 31, 1898.

Camp Clarke station on North Platte River.—Described on page 85 of Paper No. 15; results for 1897 given on pages 308–310 of the Nineteenth Annual Report, Part IV.

North Platte station on North Platte River.—Described on page 86 of Paper No. 15; results for 1897 given on page 310 of the Nineteenth Annual Report, Part IV. The observer since May 7, 1898, has been H. E. Dress.

Morrison station on Bear Creek.—Described on page 91 of Paper No. 15; results for 1897 given on page 317 of the Nineteenth Annual Report, Part IV. It is located in the upper part of the town of Morrison, Colorado, but has not been maintained in 1898, owing to the fact that the Denver Union Water Company has given a report of the discharge of the creek at their head gates, about one-half mile above the town.

Marshall station on South Boulder Creek.—Described on page 91 of Paper No. 15; results for 1897 shown on page 318 of the Nineteenth Annual Report, Part IV. The discharges of the Community, and of the South Boulder and Coal Creek ditches should be added to that of the creek in order to obtain the total discharge at this point.

Boulder station on Boulder Creek.—Described on page 92 of Paper No. 15; results for 1897 given on pages 319–320 of the Nineteenth Annual Report, Part IV.

Lyons station on St. Vrain Creek.—Described on page 93 of Paper No. 15; results for 1897 given on pages 320–321 of the Nineteenth Annual Report, Part IV. The discharge of Supply ditch should be added to that of St. Vrain Creek to obtain the total discharge of the latter.

Arkins station, on Big Thompson Creek.—Described on page 94 of Paper No. 15; results for 1897 given on pages 321–322 of the Nineteenth Annual Report, Part IV. The discharges of Home Supply and Handy ditches should be added to that of Big Thompson River to obtain total discharge of the latter.

Denver station on South Platte River.—Described on page 88 of Paper No. 15; results for 1897 given on pages 311–315 of the Nineteenth Annual Report, Part IV. Another inclined gage rod reading the same as the one on the right bank was placed on the left side in August and is now in use. It consists of a 4 by 4 inch by 12 foot timber fastened to posts driven into the left bank and graduated to vertical feet and tenths.

Orchard station on South Platte River.—Described on page 89 of Paper No. 15; results for 1897 given on pages 315–316 of the Nineteenth Annual Report, Part IV. Another rod was placed at the wagon bridge on April 24, 1898, and is now in use. It consists of a vertical 2 by 6 inch by 5 feet 4 inch timber, fastened by spikes to a pile of the bridge at about the center of the channel, on the downstream side of the bridge. The rod is marked in tenths. The new gage rod is securely fastened by means of heavy spikes driven into a pile on east side of bridge near the 300-foot mark. The channel is straight for several hundred feet above and below, but both banks are low and liable to overflow. The bed of the stream is sandy and shifting and liable to serious changes. The gagings are aken either from the lower side of the bridge or by wading. The

gauge observer is still Mrs. U. E. Foley, who lives at a distance of about one-fourth mile and who reads the rod once each day.

Columbus station on Loup River.—Described on page 97 of Paper No. 15; results for 1897 given on pages 323–333 of the Nineteenth Annual Report, Part IV. No rating table was constructed for this station, there being no constant relation between discharge and gage height. The mean daily discharges were computed by the indirect method outlined in the Nineteenth Annual Report, Part IV, pages 324–333.

Columbus station on Platte River.—Described on page 98 of Paper No. 15; results for 1897 given on pages 333–334 of the Nineteenth Annual Report, Part IV. No rating table was constructed for this station, there being no constant relation between discharge and gage height. The mean daily discharges were computed by the indirect method outlined in the Nineteenth Annual Report, Part IV, pages 324–331.

Norfolk station on Elkhorn River.—Described on page 99 of Paper No. 15; results for 1897 given on pages 334–335 of the Nineteenth Annual Report, Part IV. The observer is Burr Taft. No rating table was constructed for this station, there being no constant relation between discharge and gage height. The mean daily discharges were computed by the indirect method outlined in the Nineteenth Annual Report, Part IV, pages 324–331.

TABLES OF DAILY GAGE HEIGHT.

Daily gage height, in feet, of Laramie River at Woods Landing, Wyoming, for 1898.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.
1.....	0.80	1.30	2.35	1.20	0.50	0.30	0.40
2.....	.80	1.25	2.50	1.20	.40	.30	.40
3.....	.80	1.20	2.55	1.10	.40	.30	.40
4.....	.80	1.10	2.40	1.10	.40	.30	.40
5.....	.80	1.00	2.45	1.00	.40	.30	.40
6.....	.80	1.00	2.50	1.00	.40	.30	.40
7.....	.80	1.05	2.45	1.00	.40	.30	.40
8.....	.80	1.15	2.55	.90	.40	.30	.40
9.....	.80	1.20	2.35	.90	.40	.30	.40
10.....	.80	1.30	2.20	.85	.40	.30	.40
11.....	.80	1.40	2.30	.80	.40	.30	.40
12.....	.80	1.50	2.35	.80	.40	.30	.40
13.....	.90	1.55	2.35	.80	.40	.30	.40
14.....	.95	1.70	2.60	.80	.40	.30	.40
15.....	1.05	2.00	2.50	.70	.40	.30	.40
16.....	1.00	2.20	2.50	.70	.40	.30	.40
17.....	1.10	2.35	2.40	.70	.40	.30	.40
18.....	1.05	1.90	2.40	.70	.40	.30	.40
19.....	.95	1.70	2.35	.70	.40	.30	.40
20.....	1.00	1.75	2.30	.70	.40	.30	.40
21.....	1.00	1.85	2.20	.70	.40	.30	.....
22.....	1.00	1.95	2.15	.70	.40	.30	.....
23.....	1.00	2.00	2.05	.60	.40	.30	.....
24.....	1.00	2.30	1.95	.60	.40	.30	.....
25.....	1.00	2.65	1.75	.60	.40	.30	.....
26.....	1.05	2.75	1.60	.60	.30	.30	.....
27.....	1.15	2.65	1.45	.50	.30	.30	.....
28.....	1.35	2.40	1.40	.50	.30	.30	.....
29.....	1.50	2.20	1.30	.50	.30	.30	.....
30.....	1.40	2.40	1.30	.50	.30	.30	.....
31.....	.....	2.45	.....	.50	.30	.....	.....

Daily gage height, in feet, of Laramie River at Uva, Wyoming, for 1898.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1.	1.10	1.10	3.50	1.20	0.20	0.30	0.30		0.70
2.	1.10	1.10	3.30	1.10	.20	.30	.30		
3.	1.20	1.20	3.10	1.10	.20	.30	.35		
4.	1.20	1.40	3.10	1.10	.20	.30	.35		
5.	1.20	1.40	3.20	1.00	.15	.30	.35		
6.	1.20	1.40	3.30	1.00	.10	.30	.30	0.40	
7.	1.10	1.30	3.40	1.00	.20	.30	.30	.45	
8.	1.10	1.30	3.20	.90	.20	.30	.30	.45	.80
9.	1.05	1.30	3.00	1.20	.20	.30	.30	.50	.70
10.	1.10	1.40	2.80	1.10	.25	.30	.35	.55	
11.	1.40	1.30	2.80	1.00	.30	.30	.35	.60	
12.	1.70	1.30	3.20	1.00	.30	.30	.35	.60	
13.	1.80	1.30	3.40	1.00	.40	.30	.40	.60	
14.	1.60	1.60	3.10	.90	.40	.35	.40	.60	
15.	1.50	2.40	3.20	1.00	.50	.35	.40	.70	.80
16.	1.50	2.10	3.40	.90	.50	.35	.40	.70	
17.	1.50	2.00	3.30	.90	.50	.30	.40	.70	
18.	1.40	2.00	3.20	.80	.45	.30	.45	.60	.70
19.	1.40	2.20	3.10	.80	.40	.30	.45	.60	
20.	1.20	2.60	3.00	.70	.40	.30	.45	.60	
21.	1.20	2.70	2.90	.60	.40	.30	.40	.60	
22.	1.20	2.40	2.80	.60	.40	.30	.40	.60	.80
23.	1.10	2.50	2.60	.60	.40	.30	.40	.55	
24.	1.10	2.80	2.40	.60	.35	.35	.40	.55	
25.	1.10	3.00	2.20	.60	.30	.35	.40	.60	
26.	1.10	3.10	2.00	.50	.30	.35	.35	.60	
27.	1.10	3.40	1.90	.40	.30	.30	.35		
28.	1.10	3.80	1.70	.40	.30	.30	.35		.70
29.	1.10	3.80	1.50	.30	.30	.30	.30		.80
30.	1.10	3.70	1.30	.30	.30	.30			
31.		3.70		.20	.30				

Daily gage height, in feet, of North Platte River at Orin, Wyoming, for 1898.

Day.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1.			0.90		4.63	3.45	0.85	0.35	0.68	0.85	
2.			.90	3.03	4.35	3.10	.80	.35		.85	
3.			.90	3.10	4.25		.75	.35		.85	
4.			.90	3.10	4.20	2.75	.75			.90	
5.		1.30	.90	3.25		2.43	.75			.95	
6.			.90	3.20	4.50	2.28	.75	.30			
7.			1.03	3.13	4.55	2.20		.30			
8.			1.08		4.45	2.08	.70	.30			0.85
9.			1.17	3.00	4.18	1.93	.65	.30			
10.			1.17	3.00	4.08		1.15	.25	.70		
11.			1.25	3.00	4.00	1.83	.98				
12.		.90	1.30	3.00		1.68	.80	.20			
13.			1.45	3.10	4.28	1.63	.88	.20		.85	
14.			1.80	3.25	4.30	1.80		.20			.90
15.			2.20		4.45	2.10	.80	.20			
16.			2.50	3.60	4.70	1.85	.80	.20			
17.				4.00	4.50		.73	.20			
18.			2.75	4.10	4.40	1.73	.70				
19.		.75	3.00	4.05		1.63	.65	.20	.75		
20.			3.40	4.10	4.50	1.63	.60	.20			
21.			3.60	4.25	4.50	1.43		.20		.90	
22.			3.60		4.35	1.33	.55	.20			.95
23.			3.60	4.00	4.30	1.23	.50	.20			
24.				3.95	4.15		.45	.20	.65		
25.	1.70		3.30	6.45	4.05	1.10	.50				
26.			3.23	6.50		1.03	.50	.20			
27.			3.05	5.65		3.93	1.00	.40			
28.			2.93	5.65		3.83	.98	.38		.82	
29.			2.90			3.73	.95	.48			.95
30.			2.90	5.05	3.60	.90	.35	.58	.85		
31.				4.90			.35				

Daily gage height, in feet, of North Platte River at Gering, Nebraska, for 1898.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.
1	1.10	1.70	2.50	1.80	0.90	0.70	0.70
2	1.10	1.60	2.40	1.70	.90	.70	.70
3	1.10	1.70	2.40	1.60	.90	.70	.70
4	1.10	1.80	2.30	1.50	.80	.70	.70
5	1.10	1.90	2.30	1.45	.80	.60	.70
6	1.20	1.80	2.20	1.50	.80	.60	.75
7	1.20	1.70	2.20	1.40	.90	.70	.75
8	1.20	1.70	2.20	1.30	.80	.70	.75
9	1.20	1.70	2.20	1.30	.80	.80	.75
10	1.20	1.70	2.10	1.30	.80	.70	.75
11	1.20	1.60	2.10	1.30	.80	.70	.80
12	1.20	1.60	2.10	1.30	.70	.70	.80
13	1.30	1.50	2.00	1.30	.70	.70	.80
14	1.30	1.50	2.10	1.40	.70	.70	.80
15	1.30	1.50	2.10	1.30	.70	.70	.80
16	1.30	1.60	2.35	1.30	.70	.70	.80
17	1.40	1.70	2.40	1.30	.80	.70	.90
18	1.40	1.80	2.40	1.30	.80	.70	.90
19	1.40	1.90	2.30	1.30	.80	.70	.90
20	1.50	1.90	2.30	1.30	.70	.70	.90
21	1.70	2.00	2.20	1.20	.80	.70	.90
22	1.80	2.00	2.10	1.10	.80	.70	.90
23	1.80	2.10	2.10	1.10	.80	.70	.90
24	1.80	2.10	2.10	1.10	.80	.70	.90
25	1.80	2.00	2.10	1.10	.70	.70	.95
26	1.80	1.90	2.00	1.10	.70	.70	.95
27	1.80	3.00	2.00	1.00	.70	.70	.90
28	1.90	2.90	2.00	1.00	.70	.70	.90
29	1.90	3.00	1.90	1.00	.70	.70	.90
30	1.90	2.80	1.80	1.00	.70	.70	.90
31		2.70		.95	.70		.90

Daily gage height, in feet, of North Platte River at Camp Clarke, Nebraska, for 1898.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.
1	2.27	2.91	3.89	3.20	2.33	1.65	1.72
2	2.27	2.84	3.86	3.05	2.32	1.65	1.80
3	2.37	2.91	3.69	2.98	2.30	1.60	1.80
4	2.44	3.07	3.60	2.95	2.23	1.60	1.81
5	2.45	3.12	3.59	2.95	1.98	1.62	1.80
6	2.35	3.17	3.49	2.86	2.30	1.62	1.80
7	2.37	3.17	3.47	2.75	2.31	1.65	1.81
8	2.35	3.05	3.47	2.72	1.90	1.65	1.81
9	2.39	3.02	3.34	2.68	1.95	1.65	1.83
10	2.40	3.00	3.50	2.65	1.90	1.87	1.87
11	2.42	3.02	3.49	2.60	1.86	1.81	1.89
12	2.49	2.93	3.45	2.70	1.81	1.80	1.89
13	2.38	3.02	3.45	2.55	1.80	1.80	1.87
14	2.40	3.04	3.44	2.50	1.78	1.81	1.87
15	2.42	2.88	3.54	2.50	1.75	1.80	1.85
16	2.50	2.90	3.56	2.50	1.80	1.80	1.82
17	2.44	2.92	3.60	2.50	1.85	1.80	1.80
18	2.55	2.92	3.65	2.50	1.86	1.80	1.80
19	2.65	2.96	3.55	2.55	1.85	1.75	1.78
20	2.72	3.17	3.56	2.55	1.80	1.67	1.75
21	2.85	3.34	4.59	2.50	1.76	1.70	2.05
22	2.87	3.38	3.57	2.48	1.78	1.70	2.05
23	3.00	3.45	3.60	2.52	1.78	1.68	2.06
24	3.06	2.93	3.59	2.47	1.75	1.65	2.04
25	2.97	3.40	3.55	2.46	1.75	1.72	2.05
26	2.97	3.44	3.47	2.45	1.72	1.73	2.07
27	2.97	4.10	3.40	2.35	1.60	1.73	2.10
28	2.87	4.40	3.34	2.33	1.68	1.79	2.09
29	2.93	4.35	3.29	2.33	1.68	1.65	2.08
30	2.96	4.11	3.25	2.35	1.68	1.65	2.07
31		3.94		2.32	1.66		2.10

Discontinued October 31, 1898.

Daily gage height, in feet, of North Platte River at North Platte, Nebraska, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.80	2.90	2.40	2.40	2.55	3.75	2.65	1.50	.35	1.20	1.70	2.20
2	2.90	2.90	2.30	2.30	2.60	3.50	2.60	1.90	.45	1.10	1.70	2.20
3	2.90	2.80	2.15	2.25	2.70	3.35	2.60	1.95	.55	1.00	1.70	2.20
4	2.80	2.90	2.15	2.15	2.70	3.30	2.70	1.75	.55	1.10	1.70	2.20
5	2.90	2.90	2.10	2.30	2.70	3.25	2.55	1.45	.65	1.10	1.80	2.30
6	2.90	2.90	2.05	2.40	2.70	3.20	2.50	1.40	.50	1.20	1.80	2.30
7	2.90	2.90	2.05	2.30	2.75	3.20	2.45	1.50	.60	1.20	1.80	2.30
8	3.00	3.00	2.15	2.35	2.70	3.10	2.25	1.40	.75	1.20	1.70	2.30
9	3.00	3.05	2.25	2.25	2.70	3.10	2.20	1.30	.90	1.35	1.80	2.30
10	2.90	3.00	2.25	2.05	2.70	3.10	2.50	1.20	1.20	1.30	1.65	2.30
11	2.90	3.05	2.25	2.15	2.60	3.10	2.30	1.15	1.35	1.30	1.70	2.50
12	2.80	3.20	2.25	2.25	2.60	3.10	3.40	1.10	1.65	1.35	1.80	2.50
13	2.85	3.20	2.20	2.30	2.55	3.05	2.10	1.00	1.50	1.30	1.80	2.50
14	2.90	3.25	2.15	2.20	2.50	3.25	2.00	.90	1.70	1.30	1.80	2.50
15	2.80	3.20	2.25	2.10	2.55	3.15	1.90	.80	1.80	1.30	1.70	2.50
16	2.85	3.05	2.15	2.20	2.65	3.05	1.80	.80	1.70	1.30	1.85	2.50
17	2.80	2.90	2.20	2.00	3.10	3.00	1.85	.80	1.65	1.30	1.80	2.50
18	2.90	2.85	2.10	2.05	2.90	3.05	1.80	.80	1.50	1.30	1.90	2.50
19	2.85	2.80	2.25	2.05	2.80	3.10	1.80	.75	1.40	1.40	2.10	2.50
20	2.80	2.80	2.25	2.15	2.80	3.15	1.70	.60	1.30	1.50	2.00	2.50
21	2.80	2.80	2.30	2.15	2.90	3.10	1.70	.60	1.25	1.50	1.85	2.60
22	2.80	2.70	2.15	2.15	2.85	3.00	1.70	.60	1.20	1.50	1.80	2.60
23	2.85	2.65	2.00	2.25	2.90	3.00	1.60	1.00	1.20	1.60	1.80	2.60
24	2.90	2.55	2.00	2.20	2.80	3.00	1.60	1.05	1.20	1.60	1.80	2.60
25	2.80	2.50	1.95	2.25	2.80	3.00	1.65	.85	1.20	1.60	1.80	2.60
26	2.90	2.45	1.90	2.25	2.90	2.90	1.60	.75	1.20	1.65	1.80	2.60
27	2.90	2.45	2.05	2.25	3.10	2.90	1.60	.70	1.20	1.70	1.80	2.70
28	2.90	2.35	2.05	2.25	3.10	2.85	1.45	.55	1.10	1.70	2.10	2.70
29	2.90	-----	2.45	2.55	3.00	2.70	1.30	.65	1.10	1.70	2.20	2.70
30	2.90	-----	2.35	2.55	3.95	2.75	1.20	.55	1.15	1.70	2.20	2.70
31	2.90	-----	2.30	-----	3.60	-----	1.40	.50	-----	1.70	-----	2.70

Daily discharge, in cubic feet per second, of Bear Creek at Morrison, Colorado, for 1898.

[Furnished by the Denver Union Water Company.]

Day.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.
1	-----	117	156	91	78	31	29
2	-----	117	156	83	57	31	29
3	60	117	151	83	47	31	26
4	73	117	151	78	47	31	26
5	78	117	151	117	47	31	26
6	78	117	156	91	44	31	26
7	91	130	156	91	44	31	25
8	104	156	182	78	44	31	25
9	117	143	182	78	44	31	25
10	117	143	182	73	57	29	25
11	130	143	182	70	55	29	26
12	143	130	195	70	55	29	26
13	143	130	208	68	52	29	26
14	130	182	182	68	47	29	26
15	130	156	169	68	47	29	25
16	130	156	156	57	47	29	a 20
17	130	156	156	52	47	26	20
18	130	156	143	52	47	26	20
19	130	156	143	47	44	26	20
20	130	156	143	47	44	26	20
21	130	156	143	47	44	26	20
22	130	156	130	47	43	29	20
23	117	151	130	78	39	29	20
24	117	151	130	65	39	29	20
25	117	151	130	60	37	29	20
26	117	148	130	57	31	29	20
27	117	148	117	57	34	29	20
28	130	146	104	52	31	29	20
29	130	146	104	50	31	29	20
30	117	146	104	50	31	29	20
31	117	-----	91	47	-----	29	-----

a Approximated after November 15; no reports sent in.

Daily gage height, in feet, of South Boulder Creek at Marshall, Colorado, for 1898.

Day.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.
1.....	1.05	2.15	2.15	1.30	1.20	.75	.90
2.....	1.15	2.30	2.10	1.25	1.15	.70	.85
3.....	1.30	2.50	1.95	1.25	1.05	.80	.85
4.....	1.25	2.45	1.85	1.20	.95	.80	.90
5.....	1.35	2.25	1.85	1.20	.95	.85	.90
6.....	1.55	2.10	1.80	1.30	.95	.85	.90
7.....	1.70	2.15	1.80	1.25	.90	.75	.90
8.....	1.90	2.20	1.85	1.25	.90	.75	.90
9.....	2.05	2.20	1.85	1.20	.90	.80	.80
10.....	2.15	2.15	1.85	1.20	.90	.80	.85
11.....	2.20	2.25	1.90	1.20	.80	.80	.95
12.....	2.30	2.35	1.85	1.15	.90	.85	.90
13.....	2.20	2.35	2.05	1.15	.85	.90	.90
14.....	2.15	2.60	1.95	1.15	.85	.90	.85
15.....	2.15	2.55	1.80	1.15	.95	.90	.80
16.....	2.15	2.50	1.75	1.40	.95	.85	.75
17.....	2.15	2.65	1.70	.95	.90	.80	.70
18.....	2.15	2.55	1.70	.90	.80	.80	.70
19.....	2.05	2.60	1.65	1.05	.85	.85	.70
20.....	2.00	2.55	1.65	1.10	.85	.90	.70
21.....	2.00	2.55	1.60	.85	.80	.90	.75
22.....	1.85	2.45	1.60	.90	.80	1.00	.80
23.....	1.85	2.45	1.55	.85	.85	1.00	.80
24.....	2.05	2.25	1.55	.95	.85	1.00	.85
25.....	2.15	2.20	1.45	1.00	.85	1.00	.85
26.....	2.10	2.15	1.40	1.00	.85	1.00	.85
27.....	2.15	2.25	1.40	1.00	.80	.90	.90
28.....	2.25	2.15	1.35	1.00	.80	.90	.90
29.....	2.25	2.15	1.30	1.00	.75	.90	.90
30.....	2.30	2.10	1.30	.95	.75	.90	.85
31.....	2.25		1.30	.95		.90	

Daily gage height, in feet, of Boulder Creek at Boulder, Colorado, for 1898.

Day.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.
1.....	0.92	1.80	1.80	0.92	0.95	0.25	0.25
2.....	.93	1.85	1.73	.90	.98	.30	.22
3.....	.92	2.00	1.68	.92	.98	.28	.28
4.....	.90	2.03	1.60	.95	.90	.30	.25
5.....	.95	1.85	1.50	.98	.75	.30	.22
6.....	.95	1.65	1.52	1.30	.65	.50	.28
7.....	1.15	1.72	1.58	1.15	.63	.35	.25
8.....	1.40	1.85	1.52	1.03	.60	.33	.30
9.....	1.43	1.90	1.52	.93	.55	.30	.32
10.....	1.60	1.90	1.55	.83	.65	.30	.42
11.....	1.67	1.95	1.73	.78	.70	.28	.85
12.....	1.70	2.05	1.65	.73	.65	.25	1.05
13.....	1.65	2.35	1.60	.70	.62	.28	.85
14.....	1.60	2.43	1.58	.73	.60	.30	.65
15.....	1.57	2.43	1.53	.73	.55	.30	.73
16.....	1.60	2.43	1.50	.73	.53	.25	.82
17.....	1.62	2.40	1.43	.68	.50	.20	1.00
18.....	1.53	2.43	1.33	.65	.50	.23	1.15
19.....	1.42	2.43	1.35	.63	.45	.33	1.12
20.....	1.33	2.28	1.33	.63	.40	.30	1.00
21.....	1.20	2.20	1.28	.75	.48	.30	.92
22.....	1.22	2.23	1.15	.82	.45	.33	.82
23.....	1.30	2.25	1.08	.85	.40	.35	.70
24.....	1.42	2.28	1.08	.78	.33	.38	.60
25.....	1.60	2.30	1.05	.75	.30	.35	.62
26.....	1.68	2.08	1.02	.70	.28	.30	.65
27.....	1.78	1.95	1.02	.65	.28	.28	.50
28.....	1.85	1.93	.98	.63	.28	.25	.32
29.....	1.83	1.83	.95	.60	.28	.23	.25
30.....	1.83	1.83	.90	.60	.25	.22	.20
31.....	1.85		.92	.78		.22	

Daily gage height, in feet, of St. Vrain Creek at Lyons, Colorado, for 1898.

Day.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.
1	1.98	2.90	3.10	2.15	2.30	1.80	1.90
2	2.25	3.20	3.15	2.00	2.35	1.80	1.90
3	1.95	3.50	3.05	2.10	2.30	1.80	1.90
4	2.00	3.45	3.10	2.05	2.30	1.80	1.90
5	2.05	2.95	3.15	2.45	2.25	1.80	1.90
6	2.25	2.85	3.05	2.40	2.15	1.80	1.90
7	2.55	3.10	3.10	2.40	2.15	1.80	1.90
8	2.72	3.40	3.00	2.35	2.10	1.80	1.80
9	2.92	3.45	3.10	2.30	2.10	1.80	1.80
10	3.05	3.45	2.95	2.20	2.20	1.80	1.80
11	3.05	3.55	3.30	2.20	2.20	1.80	1.80
12	3.15	3.60	3.30	2.25	2.20	1.80	1.80
13	3.00	3.75	3.00	2.20	2.20	1.80	1.80
14	2.90	3.90	2.95	2.30	2.10	1.80	1.80
15	2.95	3.90	2.85	2.25	2.10	1.80	1.80
16	2.90	3.85	2.80	2.20	2.10	1.80	1.80
17	2.95	4.00	2.75	2.35	2.00	1.90	1.90
18	2.70	3.85	2.65	2.25	2.00	1.90	1.90
19	2.70	3.85	2.55	2.30	2.00	1.90	1.90
20	2.55	3.90	2.45	2.30	2.00	1.90	1.80
21	2.50	3.90	2.45	2.30	2.00	1.90	1.70
22	2.50	3.90	2.35	2.25	2.00	1.90	1.70
23	2.45	3.80	2.45	2.30	1.90	1.80	1.70
24	2.55	3.95	2.50	2.30	1.90	1.80	1.65
25	2.75	3.70	2.55	2.30	1.80	1.80	1.60
26	2.90	3.60	2.45	2.25	1.80	1.80	1.60
27	2.70	3.30	2.45	2.25	1.80	1.85	1.60
28	3.10	3.15	2.15	2.20	1.90	1.90	1.60
29	3.05	3.15	2.10	2.20	1.90	1.90	1.70
30	2.85	3.10	2.15	2.20	1.90	1.90	1.70
31	3.00		2.20	2.20		1.90	

Daily gage height, in feet, of Big Thompson Creek at Arkins, Colorado, for 1898.

Day.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.
1	0.45	1.30	1.40	1.00	0.75	0.30	0.10
2	.35	1.55	1.35	.75	.75	.20	.10
3	.30	1.60	1.25	.80	.75	.30	.10
4	.35	1.60	1.20	.70	.50	.35	.20
5	.25	1.40	1.05	.65	.50	.25	.15
6	.35	1.35	1.05	.80	.50	.30	.15
7	.45	1.30	1.20	.85	.55	.30	.35
8	.50	1.35	1.20	.85	.55	.35	.25
9	.75	1.60	1.20	.80	.50	.30	.10
10	.95	1.55	1.25	.70	.50	.30	.10
11	1.15	1.60	1.25	.60	.50	.30	.10
12	1.10	.70	1.60	.60	.50	.30	.10
13	1.10	.85	1.60	.65	.50	.25	.10
14	1.10	.95	1.50	.65	.65	.25	.10
15	1.10	1.20	1.40	.80	.60	.25	.10
16	1.20	1.20	1.40	.60	.30	.20	.10
17	1.20	1.25	1.35	.65	.30	.25	.10
18	1.10	1.40	1.30	.70	.25	.30	.10
19	.85	1.95	1.20	.60	.25	.20	.10
20	.85	1.75	1.05	.60	.25	.25	.10
21	.75	1.65	1.00	.60	.20	.25	.10
22	.70	1.80	.90	.65	.25	.15	.10
23	.85	1.95	.90	.60	.20	.20	.10
24	.95	2.00	.90	.65	.20	.10	.15
25	1.20	1.85	.90	.60	.25	.10	.20
26	1.20	1.60	.85	.60	.20	.15	.30
27	1.25	1.45	.90	.60	.20	.25	.30
28	1.30	1.35	.80	.50	.20	.10	.30
29	1.40	1.35	.75	.55	.25	.10	.35
30	1.35	1.35	.70	.50	.25	.10	.35
31	1.35		.80	.50		.10	

Daily gage height, in feet, of South Platte River at Fifteenth Street Bridge, Denver, Colorado, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	5.45	5.40	5.10	4.80	6.00	7.05	5.30	5.40	5.35	5.30	5.25	5.15
2	5.40	5.30	5.05	4.80	6.20	7.00	5.55	5.35	5.40	5.20	5.30	5.05
3	5.35	5.40	5.00	4.85	6.30	7.25	5.60	5.40	5.40	5.15	5.30	5.05
4	5.30	5.50	4.95	5.05	6.35	7.45	5.70	5.30	5.35	5.25	5.25	5.10
5	5.40	5.40	5.00	5.25	6.45	7.35	5.85	5.50	5.25	5.35	5.30	5.00
6	5.60	5.20	5.05	5.40	6.75	7.35	6.05	6.20	5.40	5.25	5.30	5.10
7	5.60	5.10	5.15	5.35	6.80	7.65	6.25	6.40	5.30	5.15	5.30	5.00
8	5.70	5.20	5.20	5.40	7.35	7.60	6.30	6.30	5.20	5.10	5.25	5.10
9	5.55	5.20	5.25	5.45	7.65	7.55	6.60	6.30	5.25	5.05	5.30	5.10
10	5.50	5.10	5.30	5.50	7.55	7.50	6.35	6.20	5.30	5.00	5.20	5.10
11	5.45	5.20	5.15	5.55	7.45	7.55	6.50	6.00	5.25	4.95	5.10	5.00
12	5.40	5.30	5.10	6.30	7.40	7.60	6.45	5.70	5.20	4.90	5.20	5.10
13	5.35	5.30	4.95	6.00	7.25	7.55	7.15	5.80	5.65	4.95	4.95	5.20
14	5.30	5.35	5.05	5.90	7.10	7.50	7.35	5.70	5.45	4.90	4.90	5.30
15	5.25	5.40	5.30	6.15	7.05	7.45	7.25	5.60	5.30	4.95	4.95	5.20
16	5.25	5.35	5.25	6.20	6.95	7.45	6.95	5.55	5.30	5.05	5.05	5.20
17	5.25	5.25	5.30	6.10	6.80	7.40	6.75	5.65	5.35	5.45	5.45	5.10
18	5.20	5.10	5.25	6.20	6.80	7.35	6.55	5.55	5.40	5.50	5.50	5.10
19	5.10	5.00	5.20	6.15	7.00	7.25	6.50	5.45	5.50	5.35	5.45	5.10
20	5.05	5.05	5.25	6.10	7.00	7.20	6.35	5.35	5.45	5.35	4.95	5.00
21	4.95	5.15	5.25	6.05	7.00	7.10	6.15	5.35	5.45	5.30	4.95	5.00
22	4.90	5.25	5.20	5.95	7.00	7.05	6.10	5.40	5.30	5.35	5.00	4.90
23	4.90	5.40	5.15	6.30	7.00	7.00	5.85	5.50	5.25	5.40	4.95	4.80
24	4.90	5.35	5.15	6.05	7.00	6.95	5.65	5.60	5.30	5.35	5.00	4.90
25	4.90	5.20	5.25	5.70	7.25	6.90	5.50	5.50	5.40	5.25	4.90	5.00
26	5.00	5.15	5.30	5.60	7.55	6.80	5.60	5.40	5.40	5.20	5.00	5.00
27	5.00	5.10	5.15	5.60	7.75	6.60	5.55	5.35	5.35	5.30	5.05	4.90
28	5.10	5.05	4.95	5.55	7.95	6.35	5.45	5.35	5.35	5.30	5.10	4.80
29	5.20	-----	4.80	5.55	7.40	6.10	5.40	5.40	5.40	5.30	5.20	4.90
30	5.30	-----	4.90	5.50	7.10	5.65	5.35	5.35	5.35	5.30	5.25	4.80
31	5.30	-----	4.85	-----	7.10	-----	5.40	5.40	-----	5.30	-----	4.80

Daily gage height, in feet, of South Platte River at Orchard, Colorado, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	4.50	4.25	3.60	3.70	2.10	4.00	2.40	2.20	2.20	2.40	2.90	4.50
2	4.45	4.20	3.60	3.65	2.20	3.90	2.40	2.20	2.20	2.40	2.90	4.50
3	4.40	4.20	3.60	3.65	2.30	3.70	2.40	2.20	2.20	2.40	2.85	4.50
4	4.45	4.20	3.60	3.65	3.00	3.50	2.40	2.20	2.20	2.40	2.85	4.50
5	4.50	4.20	3.60	3.65	3.50	3.50	2.40	2.20	2.20	2.45	2.80	4.50
6	4.40	4.10	3.60	3.60	3.70	3.70	2.40	2.20	2.20	2.45	2.80	4.50
7	4.50	4.05	3.60	3.60	4.00	3.50	2.40	2.20	2.20	2.50	2.80	4.50
8	4.50	4.10	3.60	3.65	3.70	3.30	2.40	2.20	2.20	2.50	2.85	4.50
9	4.50	4.05	3.60	3.65	3.90	3.40	2.20	2.20	2.20	2.50	2.85	4.00
10	4.40	4.00	3.60	3.60	4.00	3.50	2.20	2.20	2.20	2.50	2.90	4.00
11	4.30	3.95	3.60	3.60	4.30	3.50	2.30	2.20	2.25	2.60	3.10	4.00
12	4.20	3.90	3.60	3.60	4.20	3.40	2.70	2.20	2.30	2.60	3.00	4.00
13	4.10	3.90	3.60	3.60	4.25	3.30	3.00	2.20	2.40	2.60	3.00	4.00
14	4.05	3.80	3.60	3.60	4.30	3.30	3.20	2.20	2.40	2.60	3.10	4.00
15	4.00	3.85	3.60	3.60	4.30	3.40	3.30	2.20	2.40	2.60	3.10	4.30
16	4.00	3.90	3.60	3.60	4.25	3.30	3.20	2.20	2.35	2.60	3.20	4.40
17	4.00	3.85	3.60	3.60	4.20	3.40	3.00	2.20	2.35	2.60	3.20	4.50
18	4.20	3.80	3.60	3.55	4.10	3.30	2.80	2.20	2.30	2.60	3.10	4.50
19	4.30	3.85	3.60	3.80	4.00	3.00	2.70	2.20	2.30	2.60	3.20	4.40
20	4.20	3.70	3.60	3.00	4.00	3.00	2.60	2.20	2.30	2.65	3.20	4.40
21	4.10	3.70	3.65	2.90	4.00	3.00	2.50	2.20	2.30	2.65	3.30	4.35
22	4.00	3.70	3.70	2.90	3.90	2.80	2.20	2.20	2.30	2.70	3.30	4.30
23	4.00	3.70	3.75	2.90	3.80	2.60	2.20	2.20	2.30	2.70	3.30	4.30
24	3.85	3.70	3.75	2.20	3.80	2.60	2.20	2.20	2.30	2.75	3.50	4.25
25	3.70	3.70	3.80	2.25	3.80	2.60	2.20	2.20	2.30	2.80	3.70	4.20
26	3.65	3.70	3.80	2.10	3.80	2.60	2.20	2.20	2.30	2.80	3.80	4.20
27	3.60	3.60	3.80	2.10	4.40	2.60	2.20	2.20	2.30	2.85	4.00	4.20
28	3.80	3.55	3.80	2.10	4.30	2.60	2.20	2.20	2.30	2.90	4.00	4.20
29	4.00	-----	3.75	2.10	4.60	2.00	2.20	2.20	2.35	3.00	4.00	4.20
30	4.20	-----	3.75	2.10	4.50	2.00	2.20	2.20	2.35	2.95	4.50	4.30
31	4.30	-----	3.70	-----	4.20	-----	2.20	2.20	-----	2.95	-----	4.30

Daily gage height, in feet, of Loup River at Columbus, Nebraska, for 1898.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.
1	4.51	4.78	5.00	4.64	4.20	4.37	4.56	4.90
2	4.77	4.77	4.95	4.64	4.24	4.34	4.58	4.85
3	4.75	4.86	5.02	4.60	4.28	4.30	4.59	4.80
4	4.77	5.07	5.14	4.62	4.63	4.31	4.66	4.75
5	4.79	5.33	5.66	4.83	4.95	4.30	4.63	4.75
6	4.82	5.28	5.95	4.88	5.24	4.30	4.64	4.80
7	4.86	5.25	5.68	4.83	5.16	4.30	4.67	4.80
8	4.81	5.22	5.63	4.83	4.97	4.32	4.67	4.85
9	4.76	5.18	5.56	4.74	4.85	4.31	4.72	4.90
10	4.80	5.16	5.46	4.66	4.77	4.36	4.74	4.90
11	4.79	5.19	5.35	4.68	4.68	4.42	4.84	4.94
12	4.86	5.19	5.26	4.65	4.64	4.48	4.97	4.90
13	4.83	5.16	5.32	4.63	4.61	4.82	4.90	-----
14	5.06	5.07	5.36	4.67	4.58	5.03	4.82	-----
15	5.02	4.91	5.42	4.66	4.57	4.93	4.78	-----
16	4.93	4.95	5.36	4.65	4.59	4.89	4.76	-----
17	4.83	4.96	5.35	4.62	4.67	4.85	4.76	-----
18	4.77	5.15	5.30	4.54	4.83	4.81	4.77	-----
19	4.86	5.19	5.30	4.49	4.78	4.80	4.86	-----
20	4.93	5.18	5.33	4.44	4.66	4.73	4.92	-----
21	4.87	5.41	5.40	4.43	4.63	4.65	4.86	-----
22	4.75	5.44	5.50	4.41	4.65	4.49	4.82	-----
23	4.71	5.48	5.39	4.45	4.63	4.41	4.80	-----
24	4.73	5.68	5.00	4.35	4.62	4.50	4.85	-----
25	4.77	5.40	4.77	4.31	4.62	4.57	4.90	-----
26	4.85	5.64	4.71	4.30	4.63	4.58	4.80	-----
27	4.83	5.46	4.68	4.30	4.63	4.57	4.90	-----
28	4.83	5.34	4.67	4.28	4.56	4.56	4.90	-----
29	4.87	5.11	4.65	4.26	4.45	4.56	4.85	-----
30	4.81	5.10	4.66	4.26	4.41	4.56	4.80	-----
31	-----	4.98	-----	4.22	4.39	-----	4.95	-----

Daily gage height, in feet, of Platte River at Columbus, Nebraska, for 1898.

Day.	Apr.	May.	June.	July.	Day.	Apr.	May.	June.	July.	Day.	Apr.	May.	June.	July.
1	2.50	3.90	3.60	12	-----	3.45	4.35	2.80	23	2.25	3.98	3.50	(a)	
2	2.80	5.10	3.40	13	-----	3.34	4.28	2.60	24	2.10	4.12	3.60	(a)	
3	3.22	4.50	3.42	14	-----	3.27	4.22	2.55	25	2.00	3.98	3.60	(a)	
4	3.40	5.00	3.45	15	-----	3.24	4.15	2.50	26	2.06	3.85	3.50	(a)	
5	3.70	4.90	3.40	16	-----	3.27	4.35	2.55	27	1.97	4.04	3.40	(a)	
6	3.75	4.72	3.38	17	2.36	3.34	4.20	2.50	28	1.95	3.93	3.42	(a)	
7	3.80	4.85	3.20	18	2.42	3.50	4.05	2.45	29	1.95	3.75	3.45	(a)	
8	3.70	4.65	3.15	19	2.55	3.28	3.96	2.20	30	2.60	3.85	3.50	(a)	
9	3.56	4.45	3.20	20	2.60	3.90	3.78	2.00	31	-----	4.03	-----	(a)	
10	3.55	4.52	3.00	21	2.65	4.30	3.56	(a)	-----	-----	-----	-----	(a)	
11	3.35	4.48	2.90	22	2.40	4.10	3.58	(a)	-----	-----	-----	-----	(a)	

a River dry.

Daily gage height, in feet, of Elkhorn River at Norfolk, Nebraska, for 1898.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.
1	1.66	1.53	2.64	1.75	1.03	1.08	.93	1.37
2	1.53	1.53	2.53	1.73	1.03	1.00	.99	1.35
3	1.65	1.66	2.40	1.53	1.02	1.00	1.03	1.35
4	1.64	1.67	2.77	1.66	1.02	1.00	1.03	1.35
5	1.63	1.76	4.44	1.67	1.01	.98	1.04	1.35
6	1.63	1.82	4.70	1.66	1.02	.98	1.02	1.35
7	1.57	1.93	3.62	1.67	1.03	.97	1.02	1.35
8	1.58	1.87	3.36	1.71	1.33	.98	1.02	1.36
9	1.56	1.95	3.28	1.68	1.36	1.01	1.03	1.33
10	1.55	1.97	3.78	1.65	1.56	1.05	1.04	1.33
11	1.55	1.90	3.47	1.63	1.60	1.03	1.15	1.34
12	1.59	1.84	3.15	1.57	1.70	1.17	1.17	1.34
13	1.61	1.82	3.00	1.55	1.56	1.18	1.18	1.34
14	1.61	1.87	2.92	1.49	1.56	1.14	1.18	1.39
15	1.60	1.96	2.77	1.45	1.49	1.15	1.19	1.42
16	1.60	1.85	2.67	1.48	1.44	1.13	1.13	1.42
17	1.59	1.86	2.62	1.28	1.42	1.13	1.23	1.43
18	1.61	2.06	2.58	1.26	1.37	1.13	1.23	1.41
19	1.63	2.08	2.52	1.26	1.39	1.19	1.30	1.43
20	1.65	2.68	2.54	1.18	1.42	1.07	1.33	1.50
21	1.64	2.69	2.49	1.10	1.37	1.03	1.30	1.65
22	1.60	2.65	2.34	1.13	1.21	.96	1.32	1.72
23	1.60	2.56	2.25	1.10	1.22	.98	1.33	1.76
24	1.60	2.63	2.15	1.10	1.26	1.02	1.37	1.80
25	1.57	3.23	2.13	1.13	1.27	1.03	1.36	1.80
26	1.53	3.13	2.10	1.03	1.24	1.01	1.36	1.80
27	1.52	3.10	2.04	1.01	1.24	1.12	1.39	1.87
28	1.49	3.02	1.96	1.00	1.24	.97	1.38	1.87
29	1.47	2.99	1.91	.98	1.22	.97	1.38	1.87
30	1.52	2.89	1.85	1.03	1.16	.97	1.37	1.87
31	-----	2.72	-----	1.07	1.15	-----	1.37	-----

List of discharge measurements, 1898.

Date.	Stream.	Locality.	Hydrographer.	Gage height.	Discharge.
				<i>Feet.</i>	<i>Sec.-feet.</i>
Apr. 30	Laramie River	Woods Landing, Wyo.	C. T. Johnston	1.40	362
May 22	do	do	do	2.00	758
June 4 ^a	do	do	do	2.30	1,017
Do. ^b	do	do	do	2.40	1,123
June 5	do	do	do	2.10	823
Apr. 23	do	Uva, Wyo.	do	1.10	60
May 12	do	do	do	1.40	87
May 27	do	do	do	3.50	1,007
June 8	do	do	do	3.20	819
June 22	do	do	do	2.95	682
Apr. 21	North Platte River	Orin Junction, Wyo.	do	3.45	3,924
May 10	do	do	do	3.00	2,565
May 26	do	do	do	6.30	14,972
June 5	do	do	do	4.50	6,950
June 21	do	do	do	4.56	6,977
July 2	do	do	do	3.10	2,688
May 13	do	Gering, Nebr.	Robt. H. Willis	1.50	3,572
June 6	do	do	do	2.20	9,317
June 22	do	do	do	2.20	8,751
July 2	do	do	do	1.70	5,237
May 13	do	Camp Clarke, Nebr.	do	3.17	4,541
May 24	do	do	do	3.45	6,170
June 8	do	do	do	3.54	7,553
June 17	do	do	do	3.61	7,991
June 29	do	do	do	3.30	5,171
Sept. 23	do	do	do	1.79	150
Apr. 15	do	North Platte, Nebr.	Charles P. Ross	2.10	1,844
May 2	do	do	do	2.60	4,230
May 14	do	do	do	2.50	4,288
May 23	do	do	do	2.90	5,296
May 31	do	do	do	3.60	10,074
June 4	do	do	do	3.25	8,270
June 23	do	do	do	3.00	5,848
July 22	do	do	do	1.70	697
July 30	do	do	do	1.20	324
Aug. 15	do	do	do	1.80	241
Aug. 23	do	do	do	1.00	197
Sept. 9	do	do	do	1.90	219
Sept. 27	do	do	do	1.20	364
Oct. 11	do	do	do	1.30	306
Oct. 26	do	do	do	1.65	801
Nov. 7	do	do	do	1.80	1,014
Apr. 22	Bear Creek	Morrison, Colo.	A. L. Fellows	2.26	1
Apr. 23	South Boulder Creek.	Marshall, Colo.	do	1.35	72
May 29	do	do	do	2.29	c 274
July 11	do	do	do	1.70	130
Aug. 6	do	do	do	1.15	47
Oct. 10	do	do	do	.55	2
Apr. 17	Boulder Creek	Boulder, Colo.	do	.78	69
May 28	do	do	do	1.85	367
July 16	do	do	J. E. Field	1.50	266
Aug. 8	do	do	A. L. Fellows	.86	62
Oct. 11	do	do	do	.28	12
May 27	St. Vrain Creek	Lyons, Colo.	do	2.80	256
July 12	do	do	do	3.10	308
Aug. 5	do	do	do	2.20	73
Oct. 12	do	do	do	1.85	20
May 26	Big Thompson Creek.	Arkins, Colo.	do	1.25	263
July 13	do	do	do	1.60	444
Aug. 4	do	do	do	.70	87
Oct. 14	do	do	do	.40	30
Apr. 21	South Platte River	Denver, Colo.	do	5.90	504
July 6	do	do	do	6.10	443
Sept. 2	do	do	do	5.50	195
Oct. 8	do	do	do	5.00	90
Oct. 29	do	do	F. Cogswell	5.32	234
Apr. 24	do	Orchard, Colo.	A. L. Fellows	2.20	71
May 30	do	do	do	4.60	3,214
July 9	do	do	do	2.25	32
Aug. 9	do	do	do	2.25	36
Nov. 6	do	do	F. Cogswell	2.80	302
Nov. 17	do	do	do	3.15	491

a 6 a. m.

b 7.30 p. m.

c South Boulder and Coal Creek ditch, gage height 0.9 feet, discharge 21 second-feet; Community ditch, gage height 2.00 feet, discharge 34 second-feet.

List of discharge measurements, 1898—Continued.

Date.	Stream.	Locality.	Hydrographer.	Gage height.	Discharge.
				<i>Feet.</i>	<i>Sec.-feet.</i>
Apr. 17	Loup River	Columbus, Nebr.	Glenn E. Smith	4.80	2,790
May 8	do	do	do	5.15	3,231
May 19	do	do	do	5.20	3,542
May 29	do	do	do	5.05	3,337
June 8	do	do	do	5.50	5,181
June 19	do	do	O. V. P. Stout	5.03	3,284
July 10	do	do	Glenn E. Smith	4.60	1,900
July 22	do	do	do	4.40	1,691
July 31	do	do	do	4.15	1,560
Aug. 21	do	do	Adna Dobson	4.65	2,542
Sept. 4	do	do	do	4.20	1,389
Sept. 17	do	do	do	4.81	2,448
Sept. 25	do	do	do	4.59	2,117
Oct. 16	do	do	do	4.76	2,381
Oct. 30	do	do	do	4.80	2,519
Nov. 20	do	do	Glenn E. Smith	4.90	2,862
Apr. 17	Platte River	do	do	2.37	1,994
May 9	do	do	do	3.65	5,612
May 19	do	do	do	3.33	3,619
May 29	do	do	do	3.82	7,104
June 8	do	do	do	4.69	16,543
June 19	do	do	O. V. P. Stout	3.95	9,123
July 10	do	do	Glenn E. Smith	3.00	3,006
July 29	do	do	do	(a)	285
July 31	do	do	do	(a)	45
Aug. 21	Main channel	do	Adna Dobson		(b)
	Middle channel	do	do		
	South channel	do	do		2 ¹ / ₂
Sept. 4	Main channel	do	do		(b)
	Middle channel	do	do		(b)
	South channel	do	do		2
Sept. 18	Main channel	do	do		(b)
	Middle channel	do	do		6
	South channel	do	do		4
Oct. 16	Main channel	do	do		(b)
	Middle channel	do	do		6
	South channel	do	do		8
Oct. 30	Main channel	do	do		(b)
	Middle channel	do	do		5
	South channel	do	do		8
Nov. 11	Main channel	do	Glenn E. Smith		(b)
	Middle channel	do	do		6
	South channel	do	do		10
Nov. 20	Main channel	do	do		(b)
	Middle channel	do	do		10
	South channel	do	do		15
Apr. 24	Elkhorn River	Norfolk, Nebr.	do	1.60	451
May 12	do	do	do	1.84	493
May 23	do	do	do	2.56	782
June 10	do	do	do	2.86	1,319
June 20	do	do	O. V. P. Stout	2.46	760
July 28	do	do	Glenn E. Smith	1.05	228
Aug. 20	do	do	do	1.28	288
Sept. 10	do	do	do	1.00	175
Sept. 27	do	do	do	1.00	205
Oct. 22	do	do	do	1.34	256
Oct. 28	do	do	do	1.40	287
Nov. 16	do	do	do	1.40	330
Dec. 16	do	do	do	Frozen	216
Dec. 27	do	do	do	do	217
May 10	North Fork of Elkhorn River.	do	do	do	109
July 28	do	do	do	do	63
Aug. 20	do	do	do	do	87
Sept. 10	do	do	do	do	97
Sept. 27	do	do	do	do	79
Oct. 28	do	do	do	do	98
Nov. 16	do	do	do	do	104
Dec. 27	do	do	do	do	106

a Gage out of water.

b Dry.

List of miscellaneous discharge measurements, 1898.

Date.	Stream.	Locality.	Hydrographer.	Gage height.	
				Feet.	Sec.-feet.
Apr. 23	Beaver River	Albion, Nebr.	Glenn E. Smith		89
Apr. 26	Niobrara River	Lavaca, Nebr.	do		210
Apr. 27	White River	Crawford, Nebr.	do		18
Do.	do	do	do		11
Do.	Soldier Creek	do	do		4
Do.	Fort Ditch	Fort Robinson, Nebr.	do		2
Apr. 28	Middle Loup River	Dunning, Nebr.	do		410
Do.	do	Seneca, Nebr.	do		222
Do.	Dismal River	Dunning, Nebr.	do		369
May 13	Minnehadusa River	Valentine, Nebr.	do		23
May 24	do	do	do		89
May 26	Elkhorn River	Arlington, Nebr.	do		1,808
June 11	do	O'Neill, Nebr.	do		288
June 12	Minnehadusa River	Valentine, Nebr.	do		53
July 7	Frenchman River	Palisade, Nebr.	do		33
Do.	Stinking Water River	do	do		24
July 27	Minnehadusa River	Valentine, Nebr.	do		15
Aug. 21	Long Pine River	Long Pine, Nebr.	do		44
Do.	Minnehadusa River	Valentine, Nebr.	do		18
Sept. 7	do	do	do		19
Sept. 8	Plum Creek	Johnstown, Nebr.	do		10
Sept. 9	Elk Creek	Bassett, Nebr.	do		2
Sept. 10	Bone Creek	Long Pine, Nebr.	do		14
Sept. 26	Minnehadusa River	Valentine, Nebr.	do		22
Oct. 15	do	do	do		23
Oct. 29	do	do	do		27
Oct. 30	Niobrara River	Lavaca, Nebr.	do		203
Oct. 31	White River	Crawford, Nebr.	do		13
Do.	do	6 miles west of Crawford, Nebr.	do		21
Do.	Soldier Creek	Fort Robinson, Nebr.	do		4
Do.	Niobrara River	Marsoland, Nebr.	do		23
Nov. 1	Dismal River	Dunning, Nebr.	do		351
Do.	Middle Loup River	do	do		433
Do.	do	Seneca, Nebr.	do		198
Nov. 2	Platte River	Grand Island, Nebr.	do		(a)
Nov. 17	Minnehadusa River	Valentine, Nebr.	do		21
Dec. 15	Elkhorn River	Arlington, Nebr.	do		432
Dec. 17	Minnehadusa River	Valentine, Nebr.	do		23
Dec. 28	do	do	do		39

a Dry.

NOTE.—Additional measurements will be given in the Twentieth Annual Report, Part IV.

Rating tables.

Woods Land- ing.		Uva.		Orin.		Gering.		Camp Clarke.		North Platte.	
Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
0.4	45	0.5	5	0.0	300	0.6	50	1.6	60	0.3	43
.5	50	.6	10	.2	370	.7	100	1.7	105	.4	60
.6	60	.7	15	.4	450	.8	200	1.8	150	.5	80
.7	70	.8	21	.6	550	.9	350	1.9	230	.6	100
.8	85	.9	30	.8	650	1.0	650	2.0	325	.7	140
.9	100	1.0	40	1.0	750	1.1	1,000	2.1	425	.8	179
1.0	125	1.1	50	1.2	850	1.2	1,450	2.2	570	.9	219
1.1	155	1.2	62	1.4	950	1.3	2,000	2.3	725	1.0	254
1.2	200	1.3	80	1.6	1,050	1.4	2,700	2.4	950	1.2	324
1.3	245	1.4	100	1.8	1,150	1.5	3,400	2.5	1,200	1.4	473
1.4	290	1.5	120	2.0	1,300	1.6	4,100	2.6	1,500	1.6	622
1.5	350	1.6	140	2.2	1,450	1.7	4,900	2.7	1,800	1.8	984
1.6	410	1.7	160	2.4	1,675	1.8	5,700	2.8	2,200	2.0	1,557
1.7	475	1.8	190	2.6	1,930	1.9	6,500	2.9	2,600	2.2	1,275
1.8	550	1.9	220	2.8	2,220	2.0	7,400	3.0	3,050	2.4	3,133
1.9	630	2.0	260	3.0	2,550	2.1	8,300	3.1	3,600	2.6	4,001
2.0	710	2.2	340	3.2	2,935	2.2	9,200	3.2	4,200	2.8	4,864
2.1	825	2.4	425	3.4	3,390	2.3	10,100	3.3	4,900	3.0	5,843
2.2	940	2.6	520	3.6	3,895	2.4	11,100	3.4	5,900	3.2	7,786
2.3	1,055	2.8	620	3.8	4,465	2.5	12,150	3.5	6,900	3.4	9,043
2.4	1,170	3.0	720	4.0	5,090	2.6	13,300	3.6	7,900	3.6	10,074
2.5	1,285	3.2	820	4.5	7,000	2.7	14,500	3.7	8,900	3.8	12,687
2.6	1,400	3.4	920	5.0	9,200	2.8	15,700	3.8	9,900	4.0	15,300
2.7	1,515	3.6	1,040	5.5	11,400	2.9	17,100	3.9	10,900		
2.8	1,630	3.8	1,220	6.0	13,600	3.0	18,500	4.0	12,000		
2.9	1,745	4.0	1,400	6.5	15,870			4.1	13,300		
3.0	1,860	4.5	1,850	7.0	18,220			4.2	14,600		
3.5	2,435	5.0	2,300					4.3	15,900		
4.0	3,300	5.5	2,750					4.4	17,200		

Rating tables—Continued.

Marshall.		Boulder.		Lyons.		Arkins.		Denver.		Orchard.a	
Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
0.5	1	0.2	3	2.0	40	0.2	8	4.8	50	2.0	0
.6	4	.3	7	2.1	64	.3	18	4.9	69	2.1	10
.7	9	.4	13	2.2	89	.4	30	5.0	90	2.2	40
.8	15	.5	20	2.3	115	.5	45	5.1	113	2.3	75
.9	22	.6	29	2.4	141	.6	63	5.2	139	2.4	113
1.0	31	.7	41	2.5	166	.7	85	5.3	168	2.5	153
1.1	41	.8	56	2.6	192	.8	111	5.4	201	2.6	195
1.2	52	.9	75	2.7	218	.9	142	5.5	239	2.7	240
1.3	64	1.0	98	2.8	243	1.0	177	5.6	283	2.8	288
1.4	78	1.1	124	2.9	269	1.1	215	5.7	334	2.9	346
1.5	93	1.2	153	3.0	295	1.2	255	5.8	392	3.0	408
1.6	110	1.3	184	3.1	320	1.3	297	5.9	456	3.1	482
1.7	130	1.4	216	3.2	346	1.4	341	6.0	525	3.2	593
1.8	152	1.5	250	3.3	372	1.5	385	6.1	599	3.3	781
1.9	176	1.6	283	3.4	397	1.6	429	6.2	677	3.4	968
2.0	201	1.7	316	3.5	423	1.7	473	6.3	759	3.5	1,155
2.1	226	1.8	350	3.6	449	1.8	517	6.4	844	3.6	1,342
2.2	251	1.9	383	3.7	474	1.9	561	6.5	932	3.7	1,529
2.3	276	2.0	416	3.8	500	2.0	605	6.6	1,022	3.8	1,716
2.4	301	2.2	483	3.9	526	-----	-----	6.7	1,114	3.9	1,903
2.5	326	2.4	550	4.0	551	-----	-----	6.8	1,207	4.0	2,090
2.6	352	2.6	616	4.1	577	-----	-----	6.9	1,301	4.1	2,277
2.7	377	2.8	683	-----	-----	-----	-----	7.0	1,396	4.2	2,464
2.8	402	3.0	750	-----	-----	-----	-----	7.1	1,492	4.3	2,651
2.9	427	3.2	816	-----	-----	-----	-----	7.2	1,588	4.4	3,838
3.0	452	3.4	883	-----	-----	-----	-----	7.3	1,684	4.5	3,026
-----	-----	3.6	950	-----	-----	-----	-----	7.4	1,780	4.6	3,214
-----	-----	3.8	1,016	-----	-----	-----	-----	7.5	1,876	-----	-----
-----	-----	4.0	1,083	-----	-----	-----	-----	7.6	1,972	-----	-----
-----	-----	-----	-----	-----	-----	-----	-----	7.7	2,068	-----	-----

a Applicable from April 24 to December 31, 1898.

KANSAS RIVER DRAINAGE.

DESCRIPTION OF RIVER STATIONS.

Superior station on Republican River.—Described on page 107 of Paper No. 16; results for 1897 shown on page 338 of the Nineteenth Annual Report, Part IV. The observer was Carl Schaer. The station was discontinued on December 1, 1898. Flashboards were kept on the dam from September 13 to October 12. As noted in descriptions in Paper No. 16, the gage rod was first placed just above the river highway bridge, which is itself some 75 or 100 yards above the dam which diverts water into the mill race. This gage remained in place during the season of 1898, and was read by the hydrographer in connection with measurements of discharge, the reading being noted under the head of "river gage." At the beginning of the season of 1898 two other gages were installed at this station, one being placed in the river a few feet upstream from the crest of the dam, and the other being placed in the mill race where it is crossed by a wagon bridge about 50 yards below the head of the race. The former of these two additional gages has been called the "dam gage," to distinguish it from the "river gage" previously noted. Its zero was placed as nearly as practicable at the height of the crest of the dam. The gage in the mill race was set so that at the time of setting its reading was 2 feet in excess of that on the "dam gage." The observer was instructed to make daily one set of observations, consisting of the following: Reading on "dam gage," reading of gage in

mill race, and length of time required for float in midstream in mill race to traverse a range of 50 feet which had been staked on the banks.

Measurements of discharge were made, as in previous years, at the highway bridge, thus determining at once the sum of the discharges over the dam and through the mill race. The discharge of the mill race was measured in order that it might be deducted from the total measured discharge of the river to give the amount passing over the dam. It was hoped that the relation between water height on "dam gage" and the amount of water passing over the dam would be stable and regular. It was also hoped that the daily observations of gage height and midstream surface velocity in the mill race would furnish data for the reliable estimation of the amount to be added to that passing over the dam in order to give the total discharge of the river. On computing the results for the season, it appears that while there is not the regularity and degree of certainty hoped for, yet the scheme, with slight modifications, is the best that can be devised for this station. The accompanying table of daily gage heights gives the reading of the gage at the dam, and the computations of discharge for 1898 are based upon the readings at this gage. The height on this gage is also given in the list of discharge measurements rather than that on the river gage.

Junction City station on Republican River.—Described on page 109 of Paper No. 16; results for 1897 given on page 339 of the Nineteenth Annual Report, Part IV.

Niles station on Solomon River.—Described on page 111 of Paper No. 16; results for 1897 given on page 342 of the Nineteenth Annual Report, Part IV.

Salina station on Saline River.—Described on page 113 of Paper No. 16; results for 1897 given on page 343 of the Nineteenth Annual Report, Part IV.

Ellsworth station on Smoky Hill River.—Described on page 114 of Paper No. 16; results for 1897 given on page 346 of the Nineteenth Annual Report, Part IV.

Manhattan station on Blue River.—Described on page 115 of Paper No. 16; results for 1897 given on page 347 of the Nineteenth Annual Report, Part IV.

Lawrence station on Kansas River.—Described on page 116 of Paper No. 16; results for 1897 given on page 349 of the Nineteenth Annual Report, Part IV. The quantity of water passing through the flume leading to the water wheels at this station is very variable. There are eight of these water wheels of several different sizes. They may all be in use at one time, causing a discharge of several hundred second-feet; or only two of them may be running, using a much smaller quantity of water. Even though this flume be carefully rated for any number of these wheels in use, it is difficult to determine which are in use each day and the number of hours they are in use. For these reasons it has been decided to establish a gage at Lecom-

ton, about 11 miles by rail up the river, where a new carriage bridge across the river will furnish a convenient place for measuring the discharge.

TABLES OF DAILY GAGE HEIGHT.

Daily gage height, in feet, of Republican River at Superior, Nebraska, for 1898 (on gage at dam). (a)

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.
1		0.69	1.21	0.70	0.30	0.09	1.27	0.47
2		1.23	1.06	.73	.34	(b)	1.34	.49
3		.85	1.04	.68	.31	(b)	1.21	.50
4		.86	1.02	.51	.30	2.00	1.21	.54
5		.90	1.04	.61	.30	(b)	1.22	.50
6		1.00	1.19	.61	.30	.59	1.21	.59
7		1.04	1.03	.60	.24	.53	1.24	.53
8		1.14	1.44	.60	.34	.52	1.28	.52
9		1.02	1.26	.72	.26	.53	1.31	.53
10		1.16	1.27	1.24	.24	.09	1.39	.51
11		1.03	1.70	1.04	.21	1.17	1.40	.52
12		.99	1.41	.72	.17	1.35	1.45	.59
13		1.14	1.34	.74	.18	1.42	.43	.64
14		1.22	1.38	.99	.94	1.35	.41	.59
15		.93	1.38	.87	.20	1.34	.40	.60
16		.99	1.36	.74	.21	1.24	.49	.60
17		.96	1.40	.73	.21	1.25	.53	.65
18		.98	1.26	.67	.17	1.35	.43	.63
19		.95	1.47	.61	.18	1.30	.45	.63
20	0.77	1.04	1.29	.55	.05	1.30	.43	.72
21	.77	1.33	1.20	.51	.16	1.65	.42	(c)
22	1.02	1.42	1.11	.60	(b)	1.59	.44	(c)
23	1.63	1.24	1.18	.50	(b)	1.55	.54	(c)
24	1.00	1.00	1.07	.50	.55	1.40	.44	(c)
25	.81	.98	.99	.40	.40	1.47	.43	(c)
26	.76	1.07	.88	.50	.31	1.35	.47	(c)
27	.74	.99	.89	.41	.29	1.32	.39	(c)
28	.74	1.05	.84	.40	.35	1.32	.49	(c)
29	.68	1.50	.80	.40	.28	1.31	.47	(c)
30	.71	1.39	.74	.32	(b)	1.29	.59	(c)
31		1.13		.41	(b)		.49	

a Station discontinued December 1.

b Water below gage.

c Frozen.

Daily gage height, in feet, of mill race on Republican River at Superior, for 1898.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.
1		2.68	3.20	2.81	2.29	0.92	3.50	2.44
2		3.57	3.07	2.61	2.34	1.53	3.40	2.52
3		2.90	3.21	2.30	2.31	1.49	3.20	2.51
4		2.95	2.95	2.22	2.23	2.70	3.20	2.53
5		2.99	3.10	2.60	2.30	(a)	3.22	2.50
6		3.03	3.24	2.60	2.29	(a)	3.21	2.67
7		3.23	3.12	2.60	2.30	(a)	3.25	2.52
8		3.29	3.69	2.55	2.33	1.60	3.29	2.53
9		3.17	3.42	2.70	2.26	(a)	3.41	2.52
10		3.39	3.58	2.38	2.23	1.95	3.41	2.53
11		3.22	4.11	2.14	2.21	3.18	3.40	2.52
12		3.18	3.64	2.72	2.17	3.38	3.50	2.60
13		3.11	3.40	2.70	2.14	3.43	2.43	2.72
14		3.18	3.50	2.00	2.35	3.35	2.39	2.61
15		3.15	3.59	2.90	2.16	3.34	2.42	2.64
16		3.20	3.57	2.71	2.21	3.25	2.50	2.66
17		3.17	3.60	2.87	2.20	3.25	2.54	2.70
18		3.11	3.35	2.62	2.12	3.40	2.46	2.68
19		3.25	3.70	2.59	2.18	3.30	2.41	2.67
20	2.79	3.18	3.32	2.50	2.05	3.35	2.41	2.81
21	2.79	3.65	3.18	2.49	2.17	3.63	2.40	
22	3.37	3.89	3.00	2.45	1.70	4.69	2.40	
23	3.66	3.47	3.33	2.40	1.61	3.58	2.60	
24	3.17	3.08	3.12	2.50	2.55	3.50	2.41	
25	2.79	3.19	3.03	2.38	2.41	3.50	2.40	
26	2.69	3.12	2.55	2.51	2.29	3.39	2.43	
27	2.67	3.20	2.91	2.07	2.28	3.36	2.10	
28	2.65	3.12	2.87	2.38	2.35	3.32	2.50	
29	2.69	3.87	2.80	2.40	2.61	3.31	2.44	
30	2.70	3.60	2.77	2.51	1.11	3.30	2.60	
31		3.29		2.44	1.62		2.49	

a Lower than gage board.

Daily gage height, in feet, of Republican River at Junction City, Kansas, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.80	3.85	4.00	3.70	5.50	5.20	3.70	2.90	2.40	2.90	2.90	3.30
2	3.85	3.85	3.90	3.80	5.65	5.10	3.70	2.85	2.50	2.80	2.95	3.30
3	3.90	3.90	3.85	3.75	5.30	5.05	3.70	2.85	2.50	2.75	2.95	3.50
4	3.95	4.20	3.85	3.85	4.70	4.70	3.50	2.80	2.50	2.75	3.00	3.45
5	4.10	4.20	3.85	3.85	4.15	4.35	3.60	2.75	2.55	2.75	2.95	3.30
6	4.10	4.15	3.85	3.85	4.55	4.15	3.45	2.70	2.55	2.75	3.00	3.25
7	4.10	4.00	3.85	3.80	4.20	5.35	3.45	2.90	2.55	2.85	3.00	3.45
8	4.10	3.80	3.75	3.85	4.20	6.25	3.55	2.85	2.45	2.70	3.00	3.40
9	4.05	3.80	3.70	4.00	4.20	5.70	3.55	2.75	2.40	2.65	3.00	3.35
10	4.10	4.00	3.85	3.90	4.20	5.85	3.45	2.85	2.60	2.85	3.10	3.40
11	4.10	5.15	3.85	3.90	4.30	5.30	3.40	2.80	2.70	2.80	3.05	3.40
12	4.20	5.10	3.90	3.90	4.35	7.45	3.30	2.80	2.70	2.70	3.10	3.35
13	4.05	4.85	3.85	4.05	4.30	6.75	3.30	2.70	2.75	2.75	3.10	3.25
14	4.10	4.80	3.85	4.10	6.80	6.25	3.30	2.80	2.75	2.85	3.10	3.25
15	4.10	4.75	3.90	3.85	7.90	5.55	3.80	2.65	3.20	2.90	3.20	3.20
16	4.10	4.85	3.85	3.90	6.35	5.35	3.70	2.70	3.20	2.85	3.10	3.30
17	4.00	4.95	3.85	3.95	5.50	5.70	3.50	2.75	3.10	2.90	3.05	3.35
18	3.95	4.75	3.85	4.00	4.90	5.45	3.50	3.00	3.00	2.85	3.20	3.40
19	3.85	4.70	3.95	4.05	5.00	5.20	3.65	2.70	2.80	2.85	3.20	3.40
20	4.05	4.70	4.10	4.15	5.35	5.10	3.50	2.65	2.90	2.85	3.20	3.30
21	4.05	4.35	3.85	4.25	6.95	4.90	3.40	2.60	2.85	2.90	3.20	3.35
22	4.00	4.15	3.70	4.30	6.50	5.65	3.50	2.60	2.85	2.85	3.50	3.30
23	4.00	4.00	3.75	4.30	5.65	5.20	3.30	2.50	2.80	2.85	3.45	3.85
24	3.95	4.00	3.75	4.35	4.95	4.70	3.20	2.50	2.70	2.80	3.35	3.35
25	3.75	3.90	3.65	4.50	4.80	4.35	3.20	2.55	2.60	2.90	3.25	3.35
26	3.75	4.00	3.50	4.30	4.85	4.20	3.10	2.60	2.60	2.95	3.20	3.35
27	3.60	4.00	3.75	4.70	4.80	4.20	3.10	2.50	2.70	3.00	3.25	3.25
28	3.50	4.00	3.80	4.25	4.85	4.10	3.00	2.40	2.75	2.95	3.30	3.35
29	3.55	-----	3.75	4.05	5.00	3.90	3.00	2.45	2.85	2.90	3.35	3.30
30	3.80	-----	3.75	4.20	5.60	3.90	2.90	2.40	2.85	3.00	3.40	3.40
31	3.80	-----	3.65	-----	5.00	-----	2.90	2.50	-----	2.95	-----	3.35

Daily gage height, in feet, of Solomon River at Niles, Kansas, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	5.30	5.40	5.10	5.05	7.25	7.15	5.60	4.60	4.15	4.40	4.15	5.00
2	5.30	5.40	5.35	5.05	5.80	6.40	5.55	4.60	4.10	4.40	4.65	4.95
3	5.30	5.40	5.15	5.00	5.55	6.20	5.50	4.55	4.10	4.45	4.50	4.80
4	5.30	5.40	5.05	5.05	5.60	6.30	5.45	4.50	4.20	4.30	4.55	4.85
5	5.35	5.30	5.05	4.95	5.55	6.05	5.35	4.55	4.10	4.25	4.30	4.80
6	5.40	5.10	5.20	5.00	5.40	5.90	5.25	4.55	4.05	4.40	4.20	4.75
7	5.30	5.10	5.20	5.05	5.45	8.10	5.30	4.50	4.10	4.35	4.45	4.85
8	5.30	5.10	5.10	5.10	5.40	9.40	5.40	4.70	4.05	4.30	4.25	5.05
9	5.30	4.95	5.05	5.10	5.45	8.85	5.70	4.90	4.05	4.25	4.55	5.00
10	5.30	5.15	5.15	4.95	5.50	10.30	5.75	4.60	4.10	4.35	4.55	5.00
11	5.30	5.20	5.20	4.95	5.55	9.10	5.90	4.45	4.05	4.35	4.35	5.00
12	5.40	5.10	5.30	5.00	5.65	8.90	6.15	4.30	4.25	4.30	4.70	5.00
13	5.40	5.40	5.20	5.25	5.75	9.45	6.60	4.30	4.25	4.65	4.30	5.00
14	5.40	5.40	5.30	5.20	6.00	9.30	6.20	4.05	4.15	4.40	4.65	5.00
15	5.40	5.35	5.65	5.15	5.75	8.25	5.75	4.00	4.55	4.40	4.70	5.00
16	5.40	5.60	5.15	5.15	5.55	8.00	5.55	3.95	4.85	4.25	4.60	5.20
17	5.50	5.60	5.05	4.95	6.15	7.60	5.60	3.90	5.35	4.45	4.25	5.20
18	5.50	6.10	5.00	5.10	7.65	7.20	5.45	3.95	4.85	4.25	4.50	5.20
19	5.50	6.15	5.25	5.30	6.15	7.95	5.15	4.05	4.50	4.30	4.70	5.20
20	5.50	6.05	5.35	6.35	5.70	9.25	5.10	4.10	5.40	4.25	4.80	6.10
21	5.50	5.90	5.25	6.70	5.60	8.20	5.10	4.05	5.55	4.40	4.75	6.00
22	5.40	5.65	5.05	5.55	5.60	7.35	5.05	4.10	5.65	4.45	4.45	6.00
23	5.40	5.55	5.15	5.35	5.85	6.95	5.00	4.05	5.30	4.20	4.55	6.20
24	5.40	5.40	5.25	5.15	5.85	6.60	4.95	4.10	4.80	4.20	4.35	6.20
25	5.40	5.35	5.00	5.10	5.70	6.40	4.85	4.15	4.70	4.25	4.35	5.40
26	5.10	5.30	4.90	5.10	6.00	6.20	4.75	4.20	4.65	4.65	4.55	5.50
27	5.10	5.20	5.00	5.05	6.25	6.05	4.75	4.20	4.65	4.40	4.60	5.50
28	5.10	5.25	4.95	4.95	5.90	5.90	4.70	4.15	4.70	4.15	4.70	5.40
29	5.40	-----	4.85	5.90	5.80	5.80	4.70	4.30	4.55	4.15	4.90	5.40
30	5.40	-----	5.10	6.00	7.25	5.70	4.70	4.20	4.50	4.25	5.05	5.40
31	5.40	-----	5.15	-----	8.25	-----	4.65	4.25	-----	4.30	-----	5.30

Daily gage height, in feet, of Saline River at Salina, Kansas, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.20	2.90	3.10	2.90	4.35	9.45	3.40	2.65	2.30	3.15	2.60	2.75
2	3.20	3.00	3.05	2.95	4.80	7.15	3.45	2.75	2.20	3.20	3.00	2.80
3	3.20	3.05	2.85	2.90	3.70	5.60	3.50	2.70	2.25	3.15	2.85	2.90
4	3.20	2.90	3.00	2.75	4.00	4.80	3.30	2.70	2.35	3.00	2.80	2.95
5	3.20	2.90	3.05	2.80	3.95	4.45	3.20	2.50	2.55	2.85	2.80	2.80
6	3.20	2.90	2.95	2.95	3.65	4.20	3.30	2.30	2.20	2.85	2.75	2.85
7	3.20	2.85	3.05	2.85	3.35	7.40	3.20	2.80	2.25	3.00	2.80	2.95
8	3.20	2.95	2.95	2.75	3.40	12.60	3.40	2.50	2.30	3.05	2.60	3.05
9	3.25	3.20	2.90	2.80	3.10	8.90	6.40	2.50	2.00	2.90	2.80	3.05
10	3.40	3.40	2.90	2.80	2.90	6.85	7.35	2.70	2.30	3.10	2.75	3.05
11	3.55	3.80	3.00	2.70	3.15	5.40	7.50	2.65	2.30	3.00	2.60	3.05
12	3.65	3.35	3.00	2.80	2.90	4.85	5.20	2.55	2.30	2.75	2.80	2.80
13	3.30	3.70	3.05	3.00	2.90	5.60	3.90	2.60	2.25	2.75	2.85	2.80
14	3.35	3.35	3.00	2.95	2.90	6.65	3.40	2.65	2.45	2.80	2.75	2.80
15	3.45	3.35	2.95	2.75	2.85	5.90	3.25	2.65	2.35	3.05	2.65	2.80
16	3.35	3.40	2.95	2.65	2.90	5.65	3.25	2.65	2.35	2.95	2.65	2.80
17	3.35	3.35	2.85	2.65	3.00	5.05	3.30	2.70	3.80	2.95	2.75	2.80
18	3.25	3.30	2.90	3.00	2.95	4.90	3.25	2.75	3.40	2.85	2.75	2.80
19	3.50	3.20	2.95	2.90	4.75	5.00	3.10	2.45	5.95	2.70	2.75	4.30
20	3.25	3.20	2.95	2.65	3.85	5.80	3.00	2.50	10.65	2.65	2.60	10.15
21	3.35	3.15	2.80	2.80	3.30	4.70	2.90	2.40	10.85	2.60	2.60	7.10
22	3.30	3.10	2.90	2.90	3.25	4.40	2.80	2.35	7.05	2.85	2.40	5.85
23	3.30	3.15	2.95	3.35	3.20	4.40	2.90	2.20	5.10	2.75	2.40	5.75
24	3.55	3.15	2.85	3.15	3.45	4.10	2.95	2.25	4.40	2.80	2.40	5.80
25	3.25	2.95	2.95	3.30	3.60	3.95	2.90	2.60	4.00	2.65	2.40	5.80
26	3.20	2.95	2.85	2.95	3.25	3.90	2.90	2.35	3.85	2.75	2.40	5.20
27	3.30	3.05	2.95	2.75	3.30	3.70	2.65	2.50	3.60	2.70	2.40	5.20
28	3.20	3.10	2.85	2.65	3.45	3.65	2.75	2.75	3.50	2.60	2.40	4.30
29	3.15	-----	2.65	2.85	4.15	3.55	2.85	2.30	3.45	2.80	2.40	4.30
30	3.10	-----	2.65	2.95	4.95	3.50	2.60	2.05	3.40	2.75	2.75	4.30
31	3.00	-----	2.75	-----	11.00	-----	2.60	2.35	-----	2.90	-----	4.10

Daily gage height, in feet, of Smoky Hill River at Ellsworth, Kansas, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.28	1.15	1.20	1.00	1.56	2.65	1.50	1.03	.85	1.40	1.00	1.30
2	1.20	1.25	1.18	1.00	1.33	2.35	1.48	1.00	.83	1.33	1.00	1.25
3	1.25	1.25	1.15	1.00	1.23	2.15	1.50	1.00	.83	1.33	1.00	1.25
4	1.30	1.35	1.10	1.00	1.30	1.98	1.43	1.00	.80	1.30	1.00	1.10
5	1.35	1.40	1.10	1.00	1.28	3.00	1.40	.98	.80	1.30	1.00	1.20
6	1.50	1.35	1.10	1.00	1.25	2.30	1.43	.95	.80	1.28	1.00	1.30
7	1.33	1.20	1.10	1.00	1.23	2.25	1.40	1.15	.80	1.25	1.00	1.10
8	1.25	1.25	1.10	1.00	1.20	3.34	1.40	1.00	.80	1.23	1.00	1.25
9	1.18	1.28	1.10	1.00	1.30	2.95	1.38	.98	.80	1.20	1.00	1.15
10	1.20	1.28	1.15	.98	1.30	2.83	1.43	.98	1.00	1.20	1.00	1.10
11	1.23	1.35	1.20	.95	1.30	3.48	1.55	.95	1.35	1.20	1.00	1.10
12	1.23	1.50	1.18	.95	1.30	3.27	1.43	.95	1.35	1.20	1.00	1.10
13	1.23	1.58	1.15	1.00	1.30	2.95	1.38	.98	1.40	1.18	1.00	1.10
14	1.23	1.65	1.13	.95	1.30	2.75	1.33	1.05	1.53	1.15	1.00	1.10
15	1.00	1.55	1.10	.93	1.30	2.65	1.30	1.18	1.50	1.13	1.00	1.10
16	1.10	1.43	1.10	.90	1.30	2.55	1.23	1.13	2.30	1.10	1.00	1.10
17	1.03	1.40	1.08	.85	1.35	2.38	1.25	1.10	3.60	1.10	1.00	1.10
18	.98	1.35	1.10	1.00	1.40	2.25	1.20	1.25	2.45	1.10	1.00	1.10
19	1.23	1.15	1.10	1.03	1.75	2.18	1.20	1.15	2.65	1.10	1.00	1.10
20	1.13	1.15	1.08	1.10	2.05	2.05	1.20	1.10	2.45	1.10	1.00	1.10
21	1.25	1.03	1.05	1.15	1.88	1.98	1.18	1.08	2.65	1.10	1.10	1.90
22	1.25	1.35	.98	1.13	1.75	1.88	1.10	1.03	2.35	1.05	1.10	1.90
23	1.30	1.35	1.05	1.10	1.63	1.80	1.10	1.10	2.50	1.15	1.05	1.20
24	1.25	1.38	1.05	1.08	1.58	1.75	1.10	1.68	1.95	1.05	1.10	1.60
25	1.23	1.28	1.00	1.05	1.53	1.70	1.05	1.03	1.78	1.10	1.10	1.63
26	1.28	1.20	1.00	1.00	1.53	1.68	1.03	.95	1.68	1.10	1.20	1.63
27	1.18	1.20	.93	.98	1.60	1.63	1.00	.93	1.63	1.03	1.20	1.58
28	1.23	1.20	.88	.95	1.85	1.60	1.00	.90	1.58	1.03	1.25	1.50
29	1.20	-----	1.00	.95	4.03	1.55	1.05	.90	1.50	1.00	1.30	1.45
30	1.25	-----	1.00	1.25	3.70	1.53	1.23	.88	1.45	1.00	1.30	1.48
31	1.30	-----	1.00	-----	3.05	-----	1.10	.85	-----	1.00	-----	1.43

Daily gage height, in feet, of Blue River at Manhattan, Kansas, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	4.50	4.05	4.65	4.20	7.95	8.85	5.00	4.00	3.50	3.90	3.65	4.00
2	4.50	4.00	4.60	4.35	7.10	7.90	4.70	4.00	3.45	3.95	3.80	4.10
3	4.60	4.10	4.60	4.30	6.05	7.45	4.35	4.10	3.40	4.00	3.95	4.20
4	4.60	4.20	4.60	4.40	6.45	7.20	4.15	4.05	3.50	3.90	4.05	4.05
5	4.60	4.30	4.50	4.55	6.80	7.20	4.00	4.00	3.60	3.85	3.95	4.00
6	4.50	4.30	4.45	6.00	7.25	6.75	4.20	4.05	3.55	3.75	4.05	3.90
7	4.50	4.40	4.35	5.80	7.40	9.00	4.40	3.90	3.50	3.70	3.95	3.90
8	4.40	4.25	4.25	5.70	7.30	12.00	4.65	3.95	3.60	3.60	3.80	3.85
9	4.40	4.45	4.20	5.40	7.20	13.70	4.95	4.10	3.60	3.55	3.70	4.15
10	4.25	4.60	4.05	5.15	7.00	13.20	5.25	4.00	3.75	3.50	3.70	4.15
11	4.20	9.60	4.10	4.70	6.70	13.00	5.45	3.95	3.85	3.45	3.75	4.10
12	4.20	10.15	4.35	4.60	6.30	13.35	5.35	3.85	3.95	3.40	3.70	4.10
13	4.30	9.85	4.55	4.90	5.95	12.80	5.10	3.80	4.15	3.45	3.80	4.00
14	4.30	9.25	4.70	5.05	7.95	11.50	4.70	3.90	4.30	3.45	3.90	4.05
15	4.30	8.80	4.75	5.40	7.80	10.75	4.50	3.95	4.25	3.35	3.80	4.15
16	4.45	8.20	4.70	5.45	6.40	10.10	4.40	4.00	4.15	3.40	3.70	4.15
17	4.50	7.55	4.80	5.30	5.85	9.70	4.40	4.00	4.00	3.55	3.75	4.10
18	4.60	7.35	4.90	6.20	5.75	9.40	4.30	4.10	3.85	3.60	3.85	4.05
19	4.60	7.25	4.95	8.15	6.20	9.05	4.25	4.20	3.75	3.75	3.90	4.35
20	4.50	7.15	5.00	7.65	10.30	8.75	4.10	4.10	3.65	3.65	3.80	4.40
21	4.50	7.05	4.75	7.35	12.45	8.40	4.00	4.05	3.60	3.70	3.85	4.45
22	4.60	7.00	4.60	6.40	11.50	8.05	4.00	4.00	3.55	3.75	3.85	4.40
23	4.60	6.70	4.45	5.65	11.65	7.40	4.20	3.95	3.55	3.75	3.85	4.30
24	4.60	6.35	4.30	5.90	10.90	6.90	4.30	3.85	3.75	4.25	3.95	4.45
25	4.50	6.00	4.25	6.75	10.05	6.25	4.20	3.75	3.75	4.15	4.10	4.40
26	4.45	5.70	4.25	6.10	9.70	5.90	4.15	3.65	3.60	3.95	4.00	4.35
27	4.35	5.40	4.15	5.80	9.40	5.55	4.10	3.60	3.55	3.85	4.00	4.45
28	4.25	4.70	4.25	5.60	9.25	5.45	4.00	3.50	3.50	3.70	4.05	4.45
29	4.20	-----	4.30	5.85	9.05	5.20	4.10	3.45	3.65	3.55	4.00	4.50
30	4.15	-----	4.30	6.20	8.55	5.05	4.00	3.40	3.80	3.45	3.95	4.45
31	4.10	-----	4.30	-----	8.10	-----	4.10	3.45	-----	3.45	-----	4.50

Daily gage height, in feet, of Kansas River at Lawrence, Kansas, for 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.10	0.20	0.80	0.60	3.70	3.70	1.50	0.40	-0.40	0.00	0.10	-1.30
2	.20	.10	.80	.60	4.90	3.60	1.40	.40	-.40	.20	-.05	-1.15
3	.10	.43	.80	.70	4.00	2.90	1.60	.30	-.40	.00	-.10	+ .10
4	.20	.00	.70	.80	3.10	2.50	1.60	.20	+.40	-.30	-.05	-2.00
5	.20	.00	.60	1.80	2.50	2.60	1.50	.20	.40	-.60	+.05	-1.60
6	.20	.40	.60	1.40	2.50	2.15	1.40	.20	.40	-1.10	.15	-.20
7	.20	.60	.60	1.10	2.90	2.00	1.40	.20	.60	-1.20	.10	-1.20
8	.20	.60	.60	1.00	2.60	2.40	1.40	.20	.60	-1.00	.00	-.90
9	.40	.60	.60	1.00	2.10	5.10	1.10	.20	.80	.00	.15	-2.25
10	.30	.60	.60	1.00	2.00	5.60	1.00	.20	1.00	.00	.25	-1.45
11	.30	1.00	.60	1.00	1.90	5.20	1.00	.20	1.00	-.80	.15	-.20
12	.40	1.40	.60	.80	1.70	5.20	.90	.20	1.00	-.90	.20	-.80
13	.40	1.40	.60	1.00	1.70	4.90	.90	.20	1.00	-1.10	+.25	-1.60
14	.40	1.40	.60	1.10	3.20	4.70	.90	.20	.90	-1.00	.15	-1.10
15	.40	2.00	.80	1.10	5.25	4.20	.90	.20	.70	-1.00	.40	-1.10
16	.40	1.80	.70	1.00	5.10	4.40	.80	.20	.20	+.30	-.25	-1.90
17	.40	1.70	.70	1.10	4.60	3.90	.80	.20	1.10	.35	.10	-.40
18	.40	1.40	.80	1.10	3.90	3.20	.80	.80	.20	.20	.10	-.50
19	.40	1.40	1.00	1.00	3.40	3.70	.80	.90	.40	.40	.15	-.60
20	.40	1.40	1.20	.90	3.20	3.60	.80	.80	.40	.30	.15	-.60
21	.30	1.20	1.20	1.70	3.35	3.20	.70	.60	.25	.30	-.10	+.90
22	.30	1.00	1.20	1.90	4.20	2.80	.60	.50	.20	.20	-2.15	1.00
23	.40	1.00	1.20	2.00	4.10	2.50	.60	.30	.05	.35	-1.00	1.00
24	.40	.90	1.10	1.80	4.00	2.30	.60	.20	.00	.25	-.90	1.30
25	.40	.80	.90	1.70	3.70	2.40	.60	.20	.20	.30	-1.00	1.40
26	.20	.80	.80	1.50	2.90	2.30	.50	.00	.30	-1.40	-1.70	1.20
27	.20	.80	1.60	1.40	3.90	2.20	.40	.00	.35	-.80	+ .10	1.20
28	.40	.80	2.00	1.30	5.10	1.90	.40	.00	.50	-.15	-.90	1.00
29	.40	-----	1.40	1.20	4.70	1.70	.40	.00	.35	-.10	-1.00	1.05
30	.40	-----	.90	1.80	3.80	1.60	.40	-.40	.10	+.20	-1.10	1.00
31	.30	-----	.60	-----	3.20	-----	.60	-.40	-----	.30	-----	.70

KANSAS RIVER DRAINAGE.

List of discharge measurements, 1898.

Date.	Stream.	Locality.	Hydrographer.	Gage	Dis-
				height.	charge.
				Feet.	Sec.-feet.
Apr. 20	Mill race, Republican River.	Superior, Nebr	Glenn E. Smith	2.79	87
May 10	do	do	do	3.39	65
May 27	do	do	do	3.12	50
June 17	do	do	do	3.00	52
June 27	do	do	do	2.91	52
July 19	do	do	do	2.50	85
Aug. 6	do	do	do	2.29	56
Aug. 28	do	do	do	2.35	11
Sept. 13	do	do	do	3.40	68
Oct. 9	do	do	do	3.40	8
Nov. 5	do	do	do	2.50	86
Apr. 20	Republican River	do	do	.79	628
May 10	do	do	do	1.19	1,337
May 27	do	do	do	1.05	1,030
June 17	do	do	do	1.40	1,373
June 27	do	do	do	do	679
July 19	do	do	O. V. P. Stout	.89	416
Aug. 6	do	do	Glenn E. Smith	.60	119
Aug. 28	do	do	do	.30	76
Sept. 13	do	do	Adna Dobson	.15	252
Oct. 9	do	do	Glenn E. Smith	1.40	143
Nov. 5	do	do	Adna Dobson	1.18	380
Feb. 16	do	do	Glenn E. Smith	.50	1,409
Mar. 2	do	Junction City, Kans.	W. G. Russell	4.80	686
Apr. 27	do	do	do	3.90	1,327
May 6	do	do	do	4.90	1,226
May 23	do	do	do	4.50	2,179
July 28	do	do	do	5.35	355
Sept. 13	do	do	do	3.00	139
Oct. 18	do	do	do	2.70	159
Feb. 17	Solomon River	Niles, Kans	do	5.70	227
Mar. 2	do	do	do	5.40	157
Apr. 27	do	do	do	5.10	116
May 7	do	do	do	5.50	156
May 24	do	do	do	6.00	235
July 29	do	do	do	4.70	94
Sept. 14	do	do	do	4.20	50
Oct. 20	do	do	do	4.30	49
Feb. 17	Saline River	Salina, Kans.	do	3.30	50
Mar. 3	do	do	do	2.80	32
Apr. 28	do	do	do	2.70	39
May 7	do	do	do	3.20	71
May 24	do	do	do	3.50	76
July 29	do	do	do	2.70	33
Sept. 14	do	do	do	2.20	14
Sept. 19	do	do	do	6.80	a 355
Do	do	do	do	8.15	b 512
Sept. 20	do	do	do	10.45	c 718
Oct. 21	do	do	do	2.60	20
Feb. 4	Smoky Hill River	Ellsworth, Kans.	do	1.30	26
Apr. 25	do	do	do	1.05	28
May 4	do	do	do	1.30	42
May 21	do	do	do	1.85	134
May 29	do	do	do	4.20	1,083
June 25	do	do	do	1.80	142
July 29	do	do	do	1.10	29
Aug. 24	do	do	do	1.40	39
Sept. 15	do	do	do	1.50	75
Sept. 16	do	do	do	2.15	206
Oct. 24	do	do	do	1.05	16
Apr. 18	Blue River	Manhattan, Kans.	O. P. Hood	5.00	1,056
Apr. 25	do	do	do	7.00	2,419
May 23	do	do	do	13.70	10,780
Oct. 19	do	do	do	3.80	423
Feb. 22	Kansas River	Lawrence, Kans.	E. C. Murphy	1.08	3,226
July 8	do	do	do	1.43	4,529
Nov. 19	do	Lecompton, Kans.	do	.32	954

a 2 p. m.
b 6 p. m.

c 7 a. m.
d Miscellaneous measurements.

Rating tables.

Junction City.		Niles.		Salina.		Ellsworth.		Manhattan.		Lawrence.	
Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
2.0	28	4.0	40	2.0	6	0.8	14	3.0	50	—1.9	542
2.2	44	4.2	50	2.2	10	.9	16	3.2	140	—1.8	552
2.4	69	4.4	62	2.4	15	1.0	18	3.4	230	—1.6	572
2.6	110	4.6	75	2.6	22	1.1	24	3.6	320	—1.4	592
2.8	175	4.8	92	2.8	32	1.2	32	3.8	410	—1.2	612
3.0	252	5.0	115	3.0	40	1.3	42	4.0	500	—1.0	632
3.2	325	5.2	137	3.2	52	1.4	55	4.5	775	—	652
3.4	425	5.4	160	3.4	63	1.5	70	5.0	1,050	— .6	672
3.6	530	5.6	184	3.6	79	1.6	86	5.5	1,365	— .4	692
3.8	645	5.8	209	3.8	94	1.7	105	6.0	1,680	— .2	712
4.0	760	6.0	238	4.0	109	1.8	126	6.5	2,050	.0	787
4.2	900	6.2	268	4.2	125	1.9	147	7.0	2,420	.2	967
4.4	1,055	6.4	299	4.4	139	2.0	170	7.5	2,810	.4	1,255
4.6	1,220	6.6	335	4.6	157	2.1	196	8.0	3,200	.6	1,643
4.8	1,420	6.8	371	4.8	175	2.2	225	8.5	3,650	.8	2,123
5.0	1,675	7.0	406	5.0	193	2.3	253	9.0	4,100	1.0	2,687
5.2	1,970	7.2	441	5.2	209	2.4	283	9.5	4,615	1.5	4,412
5.4	2,250	7.4	480	5.4	225	2.5	312	10.0	5,130	2.0	6,490
5.6	2,560	7.6	522	5.6	243	2.6	343	10.5	5,760	2.5	8,840
5.8	2,900	7.8	570	5.8	261	2.7	376	11.0	6,390	3.0	11,440
6.0	3,245	8.0	619	6.0	279	2.8	410	11.5	7,080	3.5	14,290
6.2	3,610	8.2	664	6.2	294	2.9	450	12.0	7,770	4.0	17,390
6.4	3,975	8.4	718	6.4	313	3.0	490	12.5	8,465	4.5	20,740
6.6	4,350	8.6	760	6.6	321	3.2	573	13.0	9,500	5.0	24,340
6.8	4,780	8.8	808	6.8	334	3.4	670	13.5	10,410	5.5	28,190
7.0	5,200	9.0	854	7.0	349	3.6	763	14.0	11,320	6.0	32,290
7.2	5,610	9.5	973	7.2	369	3.8	875	14.5	12,215	6.5	36,640
7.4	6,050	10.0	1,100	7.4	392	4.0	975	15.0	13,110	7.0	41,230
-----	-----	-----	-----	10.0	673	-----	-----	15.5	14,005	-----	-----
-----	-----	-----	-----	10.5	732	-----	-----	16.0	14,900	-----	-----

CONVERSION TABLES.

The following tables for converting common units employed in water measurement have been inserted for the purpose of facilitating computations. At the head of each table is placed the factor used, this in the case of decimals being carried out usually to seven places.

Cubic feet into gallons.

1 cubic foot = 1,728 cubic inches = $\frac{1,728}{231}$ gallons = 7.4805194 gallons.

[In gallons.]

1 cubic foot.....	7.4805194	6 cubic feet.....	44.8831164
2 cubic feet.....	14.9610388	7 cubic feet.....	52.3636358
3 cubic feet.....	22.4415582	8 cubic feet.....	59.8441552
4 cubic feet.....	29.9220776	9 cubic feet.....	67.3246746
5 cubic feet.....	37.4025970		

	0.	1.	2.	3.	4.	5.	6.	7.	8.	9.
0		7.48	14.96	22.44	29.92	37.40	44.88	52.36	59.84	67.32
10	74.81	82.26	89.77	97.25	104.73	112.21	119.69	127.17	134.65	142.13
20	149.61	157.09	164.57	172.05	179.53	187.01	194.49	201.97	209.45	216.94
30	224.42	231.90	239.38	246.86	254.34	261.82	269.30	276.78	284.26	291.74
40	299.22	306.70	314.18	321.66	329.14	336.62	344.10	351.58	359.06	366.55
50	374.03	381.51	388.99	396.47	403.95	411.43	418.91	426.39	433.87	441.35
60	448.83	456.31	463.79	471.27	478.75	486.23	493.71	501.19	508.68	516.16
70	523.64	531.12	538.60	546.08	553.56	561.04	568.52	576.00	583.48	590.96
80	598.44	605.92	613.40	620.88	628.36	635.84	643.32	650.81	658.29	665.77
90	673.25	680.73	688.21	695.69	703.17	710.65	718.13	725.61	733.09	740.57

CONVERSION TABLES.

Gallons into cubic feet.

1 United States liquid gallon = $\frac{231}{1,728}$ cubic foot = 0.133680555 cubic feet.

[In cubic feet.]

1 gallon.....	0.13368055	6 gallons.....	0.80208330
2 gallons.....	.26736110	7 gallons.....	.93576385
3 gallons.....	.40104165	8 gallons.....	1.06944440
4 gallons.....	.53472220	9 gallons.....	1.20312495
5 gallons.....	.66840275		

	0.	1.	2.	3.	4.	5.	6.	7.	8.	9.
0	-----	0.1337	0.2674	0.4010	0.5347	0.6684	0.8021	0.9358	1.0694	1.2031
10	1.3368	1.4705	1.6042	1.7378	1.8715	2.0052	2.1389	2.2726	2.4062	2.5399
20	2.6736	2.8073	2.9410	3.0746	3.2083	3.3420	3.4757	3.6094	3.7430	3.8767
30	4.0104	4.1441	4.2778	4.4114	4.5451	4.6788	4.8125	4.9462	5.0798	5.2135
40	5.3472	5.4809	5.6146	5.7482	5.8819	6.0156	6.1493	6.2830	6.4166	6.5503
50	6.6840	6.8177	6.9514	7.0850	7.2187	7.3524	7.4861	7.6198	7.7534	7.8871
60	8.0208	8.1545	8.2882	8.4218	8.5555	8.6892	8.8229	8.9566	9.0902	9.2239
70	9.3576	9.4913	9.6250	9.7586	9.8923	10.0260	10.1597	10.2934	10.4270	10.5607
80	10.6944	10.8281	10.9618	11.0954	11.2291	11.3628	11.4965	11.6302	11.7638	11.8975
90	12.0312	12.1649	12.2986	12.4322	12.5659	12.6996	12.8333	12.9670	13.1006	13.2343

Feet per second into miles per hour.

1 foot per second = 3,600 feet per hour = $\frac{3,600}{5,280}$ or $\frac{15}{22}$ miles per hour

[In miles per hour.]

1 foot per second.....	0.68182	6 feet per second.....	4.09091
2 feet per second.....	1.36364	7 feet per second.....	4.77273
3 feet per second.....	2.04545	8 feet per second.....	5.45455
4 feet per second.....	2.72727	9 feet per second.....	6.13636
5 feet per second.....	3.40909		

(See Smithsonian Meteorological Tables, No. 52.)

	0.	1.	2.	3.	4.	5.	6.	7.	8.	9.
0	-----	0.6818	1.3636	2.0455	2.7273	3.4091	4.0909	4.7727	5.4546	6.1364
10	6.8182	7.5000	8.1818	8.8637	9.5455	10.2273	10.9091	11.5909	12.2728	12.9546
20	13.6364	14.3182	15.0000	15.6819	16.3637	17.0455	17.7273	18.4091	19.0910	19.7728
30	20.4546	21.1364	21.8182	22.5001	23.1819	23.8637	24.5455	25.2273	25.9092	26.5910
40	27.2728	27.9546	28.6364	29.3183	30.0001	30.6819	31.3637	32.0455	32.7274	33.4092
50	34.0910	34.7728	35.4546	36.1365	36.8183	37.5001	38.1819	38.8637	39.5456	40.2274
60	40.9092	41.5910	42.2728	42.9547	43.6365	44.3183	45.0001	45.6819	46.3638	47.0456
70	47.7274	48.4092	49.0910	49.7729	50.4547	51.1365	51.8183	52.5001	53.1820	53.8638
80	54.5456	55.2274	55.9092	56.5911	57.2729	57.9547	58.6365	59.3183	60.0002	60.6820
90	61.3638	62.0456	62.7274	63.4093	64.0911	64.7729	65.4547	66.1365	66.8184	67.5002

Miles per hour into feet per second.

1 mile per hour = 5,280 feet per hour = $\frac{5,280}{3,600}$ or $\frac{22}{15}$ feet per second.

[In feet per second.]

1 mile per hour.....	1.46667	6 miles per hour.....	8.80000
2 miles per hour.....	2.93333	7 miles per hour.....	10.26667
3 miles per hour.....	4.40000	8 miles per hour.....	11.73333
4 miles per hour.....	5.86667	9 miles per hour.....	13.20000
5 miles per hour.....	7.33333		

(See Smithsonian Meteorological Tables, No. 51.)

	0.	1.	2.	3.	4.	5.	6.	7.	8.	9.
0	-----	1.4667	2.9333	4.4000	5.8667	7.3333	8.8000	10.2667	11.7333	13.2000
10	14.6667	16.1333	17.6000	19.0667	20.5333	22.0000	23.4667	24.9333	26.4000	27.8667
20	29.3333	30.8000	32.2667	33.7333	35.2000	36.6667	38.1333	39.6000	41.0667	42.5333
30	44.0000	45.4667	46.9333	48.4000	49.8667	51.3333	52.8000	54.2667	55.7333	57.2000
40	58.6667	60.1333	61.6000	63.0667	64.5333	66.0000	67.4667	68.9333	70.4000	71.8667
50	73.3333	74.8000	76.2667	77.7333	79.2000	80.6667	82.1333	83.6000	85.0667	86.5333
60	88.0000	89.4667	90.9333	92.4000	93.8667	95.3333	96.8000	98.2667	99.7333	101.2000
70	102.6667	104.1333	105.6000	107.0667	108.5333	110.0000	111.4667	112.9333	114.4000	115.8667
80	117.3333	118.8000	120.2667	121.7333	123.2000	124.6667	126.1333	127.6000	129.0667	130.5333
90	132.0000	133.4667	134.9333	136.4000	137.8667	139.3333	140.8000	142.2667	143.7333	145.2000

Second-foot per day into millions of gallons.

1 second-foot, or 7.4805194 gallons per second for 1 day, or 86,400 seconds = 646,316.87616 gallons.

[In gallons.]

1 second-foot for 24 hours.....	646,316.87616	6 second-foot for 24 hours.....	3,877,901.26
2 second-foot for 24 hours.....	1,292,633.75	7 second-foot for 24 hours.....	4,524,218.13
3 second-foot for 24 hours.....	1,938,950.63	8 second-foot for 24 hours.....	5,170,535.01
4 second-foot for 24 hours.....	2,585,267.50	9 second-foot for 24 hours.....	5,816,851.88
5 second-foot for 24 hours.....	3,231,584.38		

	0.	1.	2.	3.	4.	5.	6.	7.	8.	9.
0	0.4632	1.2926	1.9390	2.5853	3.2316	3.8779	4.5242	5.1705	5.8169	
10	6.4632	7.1095	7.7558	8.4022	9.0484	9.6947	10.3411	10.9874	11.6337	12.2800
20	12.9263	13.5727	14.2190	14.8653	15.5116	16.1579	16.8042	17.4505	18.0968	18.7432
30	19.3895	20.0358	20.6821	21.3285	21.9748	22.6211	23.2674	23.9137	24.5600	25.2064
40	25.8527	26.4991	27.1454	27.7918	28.4380	29.0843	29.7307	30.3770	31.0233	31.6706
50	32.3158	32.9622	33.6085	34.2548	34.9011	35.5474	36.1937	36.8401	37.4864	38.1327
60	38.7790	39.4253	40.0716	40.7180	41.3643	42.0106	42.6570	43.3033	43.9495	44.5959
70	45.2422	45.8885	46.5348	47.1812	47.8275	48.4738	49.1201	49.7664	50.4127	51.0590
80	51.7053	52.3517	52.9980	53.6444	54.2906	54.9369	55.5833	56.2296	56.8759	57.5222
90	58.1685	58.8149	59.4612	60.1075	60.7538	61.4001	62.0464	62.6927	63.3391	63.9854

Millions of gallons into second-foot per day.

1 million gallons per 24 hours = $\frac{231,000,000}{1728 \times 86400}$ cubic feet per second, or 1.5472286 second-foot.

[In second-foot per 24 hours.]

1 million gallons.....	1.5472286	6 million gallons.....	9.2833716
2 million gallons.....	3.0944572	7 million gallons.....	10.8306002
3 million gallons.....	4.6416858	8 million gallons.....	12.3778288
4 million gallons.....	6.1889144	9 million gallons.....	13.9250574
5 million gallons.....	7.7361430		

	0.	1.	2.	3.	4.	5.	6.	7.	8.	9.
0	1.5472	3.0945	4.6417	6.1889	7.7361	9.2834	10.8306	12.3778	13.9251	
10	15.4723	17.0195	18.5667	20.1140	21.6612	23.2084	24.7556	26.3029	27.8501	29.3973
20	30.9446	32.4918	34.0390	35.5862	37.1335	38.6807	40.2279	41.7752	43.3224	44.8696
30	46.4169	47.9641	49.5113	51.0585	52.6058	54.1530	55.7002	57.2474	58.7947	60.3419
40	61.8891	63.4364	64.9836	66.5308	68.0781	69.6253	71.1725	72.7197	74.2669	75.8142
50	77.3614	78.9087	80.4559	82.0031	83.5503	85.0976	86.6448	88.1920	89.7393	91.2865
60	92.8337	94.3809	95.9282	97.4754	99.0226	100.5699	102.1171	103.6643	105.2115	106.7588
70	108.3060	109.8532	111.4005	112.9478	114.4949	116.0421	117.5894	119.1366	120.6838	122.2311
80	123.7783	125.3255	126.8727	128.4200	129.9672	131.5144	133.0617	134.6089	136.1561	137.7033
90	139.2506	140.7978	142.3450	143.8923	145.4395	146.9867	148.5339	150.0812	151.6284	153.1756

Second-foot per day into acre-feet.

1 second-foot flow for 1 day = 86,400 cubic feet = $\frac{86,400}{43,560}$ or 1.983471 acre-feet.

[In acre-feet.]

1 second-foot for 24 hours.....	1.98347	6 second-foot for 24 hours.....	11.90822
2 second-foot for 24 hours.....	3.96694	7 second-foot for 24 hours.....	13.88429
3 second-foot for 24 hours.....	5.95041	8 second-foot for 24 hours.....	15.86776
4 second-foot for 24 hours.....	7.93388	9 second-foot for 24 hours.....	17.85123
5 second-foot for 24 hours.....	9.91735		

	0.	1.	2.	3.	4.	5.	6.	7.	8.	9.
0	1.9835	3.9670	5.9505	7.9340	9.9175	11.9010	13.8845	15.8680	17.8515	
10	19.8350	21.8185	23.8020	25.7855	27.7690	29.7525	31.7360	33.7195	35.7030	37.6865
20	39.6700	41.6535	43.6370	45.6205	47.6040	49.5875	51.5710	53.5545	55.5380	57.5215
30	59.5050	61.4885	63.4720	65.4555	67.4390	69.4225	71.4060	73.3895	75.3730	77.3565
40	79.3400	81.3235	83.3070	85.2905	87.2740	89.2575	91.2410	93.2245	95.2080	97.1915
50	99.1750	101.1585	103.1420	105.1255	107.1090	109.0925	111.0760	113.0595	115.0430	117.0265
60	119.0100	120.9935	122.9770	124.9605	126.9440	128.9275	130.9110	132.8945	134.8780	136.8615
70	138.8450	140.8285	142.8120	144.7955	146.7790	148.7625	150.7460	152.7295	154.7130	156.6965
80	158.6800	160.6635	162.6470	164.6305	166.6140	168.5975	170.5810	172.5645	174.5480	176.5315
90	178.5150	180.4985	182.4820	184.4655	186.4490	188.4325	190.4160	192.3995	194.3830	196.3665

CONVERSION TABLES.

Acre-feet into second-feet flow for 24 hours.

One acre-foot each 24 hours = 43,560 cubic feet each 86,400 seconds = $\frac{43,560}{86,400}$ or $\frac{121}{240}$ second-foot flow for 24 hours.

[In second-feet for 24 hours.]

1 acre-foot .....	.50417	6 acre-feet	3.02500
2 acre-feet	1.00833	7 acre-feet	3.52917
3 acre-feet	1.51250	8 acre-feet	4.03334
4 acre-feet	2.01667	9 acre-feet	4.53750
5 acre-feet	2.52084		

	0.	1.	2.	3.	4.	5.	6.	7.	8.	9.
0	-----	.504	1.008	1.513	2.017	2.521	3.025	3.529	4.033	4.538
10	5.042	5.546	6.050	6.554	7.058	7.563	8.067	8.571	9.075	9.579
20	10.083	10.588	11.092	11.596	12.100	12.604	13.108	13.613	14.117	14.621
30	15.125	15.629	16.133	16.638	17.142	17.646	18.150	18.654	19.158	19.663
40	20.167	20.671	21.175	21.679	22.183	22.688	23.192	23.696	24.200	24.704
50	25.209	25.713	26.217	26.721	27.225	27.729	28.234	28.738	29.242	29.746
60	30.250	30.754	31.259	31.763	32.267	32.771	33.275	33.779	34.284	34.788
70	35.292	35.796	36.300	36.804	37.308	37.813	38.317	38.821	39.325	39.829
80	40.334	40.838	41.342	41.846	42.350	42.854	43.359	43.863	44.367	44.871
90	45.375	45.880	46.384	46.888	47.392	47.896	48.400	48.905	49.409	49.913

Acre-feet into millions of gallons.

1 acre-foot = 43,560 cubic feet = $\frac{43,560 \times 1,728}{231}$ or $\frac{75,271,680}{231}$, or 325,851.428 gallons.

[In gallons.]

	Millions.	Thousands.		Millions.	Thousands.
1 acre-foot	0.325851428	325.9	6 acre-feet	1.95510858	1,955.1
2 acre-feet .....	.65170286	651.7	7 acre-feet	2.28096001	2,281.0
3 acre-feet .....	.97755429	977.6	8 acre-feet	2.60681144	2,606.8
4 acre-feet	1.30340572	1,303.4	9 acre-feet	2.93266287	2,932.7
5 acre-feet	1.62925715	1,629.3			

	0.	1.	2.	3.	4.	5.	6.	7.	8.	9.
0	-----	0.3259	0.6517	0.9776	1.3034	1.6293	1.9551	2.2810	2.6068	2.9327
10	3.2585	3.5844	3.9102	4.2361	4.5619	4.8878	5.2136	5.5395	5.8653	6.1912
20	6.5170	6.8429	7.1687	7.4946	7.8204	8.1463	8.4721	8.7980	9.1238	9.4497
30	9.7755	10.1014	10.4272	10.7531	11.0789	11.4048	11.7306	12.0565	12.3823	12.7082
40	13.0341	13.3599	13.6857	14.0116	14.3374	14.6633	14.9891	15.3150	15.6408	15.9667
50	16.2926	16.6184	16.9443	17.2701	17.5960	17.9218	18.2477	18.5735	18.8994	19.2252
60	19.5511	19.8769	20.2028	20.5286	20.8545	21.1803	21.5062	21.8320	22.1579	22.4837
70	22.8096	23.1354	23.4613	23.7871	24.1130	24.4388	24.7647	25.0905	25.4164	25.7422
80	26.0681	26.3939	26.7198	27.0456	27.3715	27.6973	28.0232	28.3490	28.6749	29.0007
90	29.3266	29.6524	29.9783	30.3041	30.6300	30.9558	31.2817	32.6075	31.9334	32.2592

Millions of gallons into acre-feet.

One million United States liquid gallons or 231 million cubic inches = 133,680,555 cubic feet, or

$\frac{133,680}{43,560} = 3.0688832$ acre-feet.

[In acre-feet.]

1 million gallons	3.0688832	6 million gallons	18.4132993
2 million gallons	6.1377664	7 million gallons	21.4821826
3 million gallons	9.2066496	8 million gallons	24.5510659
4 million gallons	12.2755328	9 million gallons	27.6199492
5 million gallons	15.3444160		

	0.	1.	2.	3.	4.	5.	6.	7.	8.	9.
0	-----	3.069	6.138	9.207	12.276	15.344	18.413	21.482	24.551	27.620
10	30.689	33.758	36.827	39.895	42.964	46.033	49.102	52.171	55.240	58.309
20	61.378	64.446	67.515	70.584	73.653	76.722	79.791	82.860	85.929	89.998
30	92.066	95.135	98.204	101.273	104.342	107.411	110.480	113.549	116.618	119.686
40	122.755	125.824	128.893	131.962	135.031	138.100	141.169	144.238	147.306	150.375
50	153.444	156.513	159.582	162.651	165.720	168.789	171.857	174.926	177.995	181.064
60	184.133	187.202	190.271	193.340	196.409	199.477	202.546	205.615	208.684	211.753
70	214.822	217.891	220.960	224.028	227.097	230.166	233.235	236.304	239.373	242.442
80	245.511	248.580	251.648	254.717	257.786	260.855	263.924	266.993	270.062	273.131
90	276.199	279.268	282.337	285.406	288.475	291.544	294.613	297.682	300.751	303.819

Second-foot into minute-gallons.

Factors: 1 cubic foot contains 1,728 cubic inches; 1 gallon has a capacity of 231 cubic inches; 1 second-foot equals $[(1,728 \div 231) \times 60]$ gallons per minute, or 448.831164 minute-gallons.

[In gallons per minute.]

1 second-foot.....	448.831164	6 second-foot.....	2,692.986984
2 second-foot.....	897.662328	7 second-foot.....	3,141.818148
3 second-foot.....	1,346.493492	8 second-foot.....	3,590.649312
4 second-foot.....	1,795.324656	9 second-foot.....	4,039.480476
5 second-foot.....	2,244.155820		

	0.	1.	2.	3.	4.	5.	6.	7.	8.	9.
0	-----	449	898	1,346	1,795	2,244	2,693	3,142	3,591	4,039
10	4,488	4,937	5,386	5,835	6,284	6,732	7,181	7,630	8,079	8,528
20	8,977	9,425	9,874	10,323	10,772	11,221	11,670	12,118	12,567	13,016
30	13,465	13,914	14,363	14,811	15,260	15,709	16,158	16,607	17,056	17,504
40	17,953	18,402	18,851	19,300	19,749	20,197	20,646	21,095	21,544	21,993
50	22,442	22,890	23,339	23,788	24,237	24,686	25,135	25,583	26,032	26,481
60	26,930	27,379	27,828	28,276	28,725	29,174	29,623	30,072	30,521	30,969
70	31,418	31,867	32,316	32,765	33,214	33,662	34,111	34,560	35,009	35,458
80	35,906	36,355	36,804	37,253	37,702	38,151	38,599	39,048	39,497	39,946
90	40,395	40,844	41,292	41,741	42,190	42,639	43,088	43,537	43,985	44,434

Minute-gallons into second-foot.

Factors: 1 gallon contains 231 cubic inches; 1 cubic foot contains 1,728 cubic inches; 1 gallon per minute equals $[(231 \div 1,728) \div 60]$ second-foot, or .002,228,009, 2 second-foot.

[In second-foot.]

1 minute-gallon.....	0.002,228,009	6 minute-gallons.....	0.013,368,055
2 minute-gallons.....	.004,456,018	7 minute-gallons.....	.015,596,064
3 minute-gallons.....	.006,684,028	8 minute-gallons.....	.017,824,074
4 minute-gallons.....	.008,912,037	9 minute-gallons.....	.020,052,083
5 minute-gallons.....	.011,140,046		

	0.	1.	2.	3.	4.	5.	6.	7.	8.	9.
0	-----	0.0022	0.0045	0.0067	0.0089	0.0111	0.0134	0.0156	0.0178	0.0201
10	0.0223	.0245	.0267	.0290	.0312	.0334	.0356	.0379	.0401	.0423
20	.0446	.0468	.0490	.0512	.0535	.0557	.0579	.0602	.0624	.0646
30	.0668	.0691	.0713	.0735	.0758	.0780	.0802	.0824	.0847	.0869
40	.0891	.0913	.0936	.0958	.0980	1.0023	1.0049	1.0472	1.0694	1.0917
50	1.1140	1.1363	1.1586	1.1808	1.2031	1.2254	1.2477	1.2700	1.2922	1.3145
60	1.3368	1.3591	1.3814	1.4036	1.4259	1.4482	1.4705	1.4928	1.5150	1.5373
70	1.5596	1.5819	1.6042	1.6264	1.6487	1.6710	1.6933	1.7156	1.7378	1.7601
80	1.7824	1.8047	1.8270	1.8492	1.8715	1.8938	1.9161	1.9384	1.9606	1.9829
90	2.0052	2.0275	2.0498	2.0720	2.0943	2.1166	2.1389	2.1612	2.1834	2.2057

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