

sion of the present boating season and removal of the chief obstructions which now render navigation more or less insecure at all times. The length of the boating season on the Caney Fork is five months—usually from February to June, inclusive—for vessels of less than 3 feet draught. During the whole of this period the Cumberland is in good stage from Nashville to the mouth of Caney Fork, so that boats reaching the latter point have no difficulty in returning to Nashville (the point of shipment and source of supplies) and discharging their cargoes. Even the larger class of the Upper Cumberland steamers frequently ascend a portion of the distance up Caney Fork during a favorable stage of water.

The nature and extent of the obstructions met with in the course of the examination will be seen in the following detailed statement of islands and shoals.

The depths in the table refer to extreme low-water. The distances are partially estimated.

Name of locality.	Distance from Sligo.		Length.	Least depth.		Nature of obstructions.	Improvement suggested.	Approximate quantities.
	Miles.	Ft.		Ft.	Ft.			
Sligo	0.0							
Sligo Ford	0.02	200	1.0	0.25	Obstruction only at low-water.			
Lockhart's Ford	1.1	300	1.8	0.6	No obstruction.			
Rhea's Ford	3.07	500	2.2	0.5	do			
Eagle Creek Ford	4.13	300	1.5	0.2	do			
Allen's Upper Shoal	5.07	3,300	0.8	3.1	7 gravel reefs, trees, 5 snags.	{ Dredging 500 { 300 feet riprap 600		
Falling-Water Ford	7.79	300	2.1	0.3	No obstruction.			
Darkey's Island	8.25	800	1.3	1.0	1 snag			
Walker's Ford	9.01	250	1.2	0.3	do			
Martin's Island	10.1	5,600	2.3	2.8	Overhanging trees			
Phillip's Island	12.7	3,000	1.0	3.05	25 trees and snags, 2 rock reefs, 1 gravel lump.	{ Rock excavation 45 { Dredging 150 { Dredging 200 { 400 ft. riprap dam 1,000		
Allen's Lower Shoal	13.88	1,750	0.8	1.7	3 gravel reefs			
Howard's Island	14.4	1,000	1.1	0.5	No obstruction.			
Mine-Lick Island	16	2,400	0.7	1.9	3 gravel reefs, snags, and trees.	{ Dredging 150 { 500 ft. riprap dam 750		
James Towhead	18.87	800	1.5	0.5	No obstruction.			
League Island	19.5	2,900	2.0	0.9	Overhanging trees			
Hurricane Island	20.05	3,300	2.3	0.5	No obstruction.			
James Island	22.37	5,000	1.8	2.3	Overhanging trees			
Floating Mill Island	24.2	3,700	1.5	0.9	No obstruction.			
Second Creek Island	27.4	3,000	1.4	1.4	2 snags			
Poster's Island	28.33	1,300	0.6	1.6	1 rock reef, 2 gravel reefs, trees, and logs.	{ Rock excavation 25 { Dredging 200		
Ball Island	29.9	400	2.8	0.2	No obstruction.			
Congo's Ford	30.5	1,700	1.1	0.5	Trees and logs			
Holmes' Creek Shoals	32.06	600	1.5	1.2	Trees and snags			
Hall's Rock Island	32.8	3,600	0.8	2.2	Bad trees, 2 gravel reefs.	{ Dredging 250 { Riprap dam, 500 ft. 1,000		
Ten Islands	35.38	4,100	0.8	2.0	2 gravel reefs, crooked channel.	{ Dredging 200 { Riprap dam, 400 ft. 1,200		
Table Rock Island	37.42	5,300	2.0	0.8	Overhanging trees			
Wolf Creek Island	39.6	3,400	1.5	1.0	Bad trees			
Powell's Island	41.5	5,200	0.9	1.8	1 gravel reef	{ Dredging 50		
Roland's Island	43.3	3,000	2.2	0.5	Trees and logs			
Null's Island	44.92	3,300	2.7	0.9	Trees and snags			
Indian Creek Island	45.8	1,200	1.6	0.6	do			
Moss Island	47.05	2,700	0.9	0.8	1 gravel reef	{ 600 ft. riprap dam 1,200		
Betty's Island	48.85	2,400	2.0	1.5	Snags and trees			
Smith's Fork Island	50.5	4,500	0.7	2.3	Snags and trees, crooked and difficult channel.	{ Dredging 100 { 800 ft. riprap dam 1,200		
Congo's Island	52.33	3,900	3.0	1.0	Overhanging trees			
McDonald's Towhead	54.92	1,000	2.2	0.3	No obstructions.			
Hickman's Island	55.95	4,000	0.8	2.0	Trees and snags, loose and solid rock, 3 gravel reefs.	{ Dredging 200 { Rock excavation 100 { 400 ft. riprap dam 1,000		
Trousdale's Ferry Bar	57.0	1,200	0.8	0.9	Snags and shallow gravel bottom.	{ Dredging 100 { 600 ft. riprap dam 1,200		
Trousdale's Ford	57.7	300	1.9	0.15	No obstruction.			
Winney's Towhead	58.7	4,200	2.2	1.0	No obstructions.			
Owen's Horse Ford	60.0	200	1.6	0.1	No obstruction.			
Bluff Creek Island	61.2	2,100	0.9	0.6	1 large gravel reef	{ 600 ft. riprap dam 1,200		
Granny's Cut-off	63.0	1,500	1.9	0.3	No obstructions.			
Chandler's Islands	66.0	4,100	0.8	2.3	2 reefs, gravel, bad trees	{ 800 ft. riprap dam 1,600		
Lyme's Ford	67.56	200	1.2	0.1	No obstruction.			
Snow Creek Island	67.9	3,900	1.8	0.45	Trees and logs			
Perry's Bar	71.15	1,800	1.5	0.5	No obstruction.			
Mouth Caney Fork	72.0				No obstruction.			

Between the shoals and islands above mentioned are pools ranging from 1/4 mile to 2 miles in length, and having a depth of from 6 feet to 15 feet. High-water marks were found 30 feet above low-water mark. The height is, however, seldom attained by the floods in Caney Fork.

The bed of the river at the shoals and island chutes consists principally of gravel more or less compact, there being but little loose rock, and still less rock in solid reefs.

The fall of the shoals determined approximately with the pocket level, added to an estimated fall in the pools, gives a total fall of about 70 feet in 72 miles of river.

The character of the improvements above suggested is based upon the same plan as those now being constructed on the Upper Cumberland, which the Caney Fork resembles in all its features; they are not intended to give navigation at an extreme low-water; such an attempt would be much more expensive, and apparently uncalled for at present.

A licensed Caney Fork pilot pointed out to me the principal difficulties experienced by boats navigating the stream.

An estimate of the cost of completing the work above specified is as follows:

Character of work.	Approximate quantities.	Cost.
Dredging	2,100 cubic yards, at \$1	\$2,100 00
Rock excavation	170 cubic yards, at \$4	680 00
Riprap dam	11,950 cubic yards, at \$2	23,900 00
Overhanging trees	About 1,050	600 00
Logs and snags	About 100	200 00
Contingencies, 10 per cent		2,748 00
Total		30,228 00

A good deal of produce is annually shipped out of Caney Fork, including considerable tobacco; for this the river is the principal means of transportation, and, as before remarked, the channel through which the inhabitants receive their supplies.

During the examination the river was at a tolerably low stage, and favorable for observation, though the time allotted was brief and limited.

Very respectfully, your obedient servant,

C. A. TURRILL,
Assistant Engineer.

Capt. L. C. OVERMAN,
Corps of Engineers, U. S. A.

OBEY'S RIVER, TENNESSEE.

REPORT OF MR. C. A. TURRILL, ASSISTANT ENGINEER.

NASHVILLE, TENN., February 6, 1879.

SIR: Under your instructions, I commenced an examination of Obey's River (a tributary of the Cumberland River, above Nashville), at Barnes's Landing, Tenn. This point was selected as being the highest landing at which steamers navigating the river are in the habit of touching. On two or three occasions small boats have gone as high as the Forks of Obey's, estimated to be 15 miles by water above Barnes's Landing, but in this distance they encounter many obstructions in the shape of very short bends, swift currents, and narrow channel, and as there is no special business inducement for ascending any higher, Barnes's Landing has been considered the head of navigation of late years.

The character of obstructions found in Obey's River is somewhat similar to those existing in the Cumberland. They consist principally of shallow reefs in island chutes, fords, a few loose rocks, a few remains of old fish-traps, and many overhanging trees, and roots and snags in the channel.

In the hasty examination which was necessary, special attention was paid only to the more serious obstructions which hinder boats at present, and passing note taken of the obstructions of minor importance, which it would be necessary to remove to secure a navigable channel at low-water.

Nearly all freight and produce shipped from Obey's find a market in Nashville, or are reshipped from that point, and as the Cumberland from Nashville to Celina, at the mouth of Obey's, is navigable for vessels of less than 3 feet draught from five to seven

months in the year, it may be inferred that Obey's is navigable for vessels of the same class for a large portion of this period, being affected and deriving its supply from the same source of floods. Its boating period, from the testimony of well-informed persons, may be considered as lasting from four to five months in the year.

I submit below a tabulated statement of results determined by the examination, showing the character of obstructions passed.

Name of locality.	Distance from Barnes's Landing.		Least depth.	Fall.	Nature of obstructions.	Character of improvement suggested.	Approximate quantities.
	Miles.	Feet.					
Barnes's Landing	0						
Barnes's Island	0.25	1,500	0.8	1.3	Overhanging trees; 5 gravel reefs.	Dredging	245
Sublett's Island	0.81	4,100	0.7	1.1	3 gravel reefs; crooked channel.	{ Dredging 300 feet riprap dam	100 500
West's Island	1.5	1,300	0.7	1.7	1 gravel reef; 2 rock reefs.	{ Dredging Rock excavation	30 30
Johnson's Ford	2.6	500	0.7	0.9	2 snags	No other obstruction.	
Rock Reef	3.01	15	0.6	0.3	Rocks loose and solid.	Rock excavation	10
Ford's Island	3.36	600	0.8	1.6	1 gravel reef; overhanging trees.	Dredging	20
Cope's Fish Trap	3.8	15	0.6	0.25	Loose rocks	Rock excavation	25
Harrison's Ford	4.15	300	1.0	0.2	Loose rock	Rock excavation	2
Harrison's Island	5.45	1,400	1.0	1.25	Overhanging trees		
Jolly Ford	6.3	250	0.7	0.2	Broad and shallow place; gravel bottom.	Dredging	100
Burchett's Ford	6.63	500	0.8	0.8	Overhanging trees; very swift current.	200 feet riprap dam	300
Duncan's Island	7.67	1,300	0.9	2.0	20 bad trees; 4 gravel reefs.	Dredging	100
Arney's Island	8.8	850	1.0	1.0	Good water	Needs no improvement.	
Gamewell's Island	9.5	800	0.7	2.65	20 bad trees; 5 gravel reefs.	{ Dredging 200 feet riprap dam	150 300
Speck's Ford	11.2	500	0.9	0.6	1 bad snag	Rock excavation	3
Wolf River Bar	12.6	400	1.0	1.0	2 snags	Remove logs; no other improvement.	
McMillan's Island	13.3	1,700	1.3	0.35	No obstructions.		
Sulphur Creek Bar	14.5	900	0.9	1.25	4 bad roots; 3 gravel reefs.	Dredging	75
Overstreet's Island	15.9	4,600	1.0	2.5	No obstructions.		
Iron's Creek Bar	16.8	500	0.7	0.8	3 gravel reefs	309 feet riprap	500
Hill's Island	19.2	1,500	0.7	2.25	Crooked channel; 3 gravel reefs.	{ Dredging 350 feet riprap dam	80 600
Morgan's Island	20.3	700	1.6	0.6	No obstructions.		
Johnson's Island	20.9	800	0.7	1.4	5 gravel reefs	200 feet riprap	400
Keane's Island	22.9	700	1.0	0.8	Remains of old trap	Rock excavation	10
Gatton Shoals	23.8	900	0.6	1.3	5 snags; 3 gravel reefs	Dredging	75
Jewell's Island	24.7	730	1.2	0.6	No obstructions.		
Mitchel's Creek Bar	26.3	600	1.0	0.8	2 snags		
Dale's Island	27.8	800	1.0	0.6	3 snags; loose rock	Rock excavation	10
Lick Run Ford	28.6	300	1.0	0.3	No obstructions.		
Floating Mill Island	30.0	1,000	1.1	0.9	6 overhanging trees		
Holman's Island	31.7	1,700	0.7	1.5	3 gravel reefs; 1 pile loose rock.	{ 500 feet riprap dam Rock excavation	900 20
Barksdale's Bar	32.4	300	0.9	0.7	2 snags; solid rock	Rock excavation	10
Horse Creek Bar	33.7	700	0.8	0.7	4 snags; 2 gravel reefs	Dredging	60
Davis Island	34.6	600	0.8	0.8	1 gravel reef	300 feet riprap dam	600
Davis's Ford	36.8	150	1.3	0.15	No obstructions.		
Hall's Island	38.9	600	1.0	0.6	2 snags; 10 trees; 1 granite reef.	Dredging	75
Gates's Ford	40.9	200	1.0	0.3	No obstruction		
Shields's Ford	41.7	150	1.0	0.2	No obstruction		
Celina (at mouth Obey's)	43.						

The depths given refer to extreme low-water. The fall at the shoals was found with the aid of a hand-level and is approximately correct. In numerous other places over-

hanging trees and snags were found, besides those above mentioned, which are included in the general estimate for the cost of improvement. This estimate is as follows:

Character.	Approximate quantities.	Cost.
Dredging	1,110 cubic yards, at \$1.....	\$1,110 00
Rock excavation	120 cubic yards, at \$4.....	480 00
Riprap dam	4,100 cubic yards, at \$2.....	8,200 00
Overhanging trees	About 615.....	800 00
Snags, roots, &c	About 75.....	200 00
Add 10 per cent. for contingencies		1,079 00
Total		11,869 00

The valley of Obey's River contains many fine bottoms, which are in a good state of cultivation. Several large branches tributary to it, viz, Wolf River, Ashman's Creek, Sulphur Creek, Iron's Creek, and Mitchell's Creek, are also bordered with fine farms. For all this section Obey's River is the only outlet for shipping. Considerable produce is exported annually, and the inhabitants rely on the river for most of their merchandise and supplies. A large quantity of lumber is rafted, principally walnut, oak, poplar, and cedar. None of the improvements proposed would injure the river for rafts, but would be a benefit to them.

Although most of the smaller class of steamers now plying on the Upper Cumberland are accustomed to ascend Obey's River during its boating stages; still all of the work above specified is essential in order to make the navigation comparatively safe, and I think that the above sum judiciously expended in one year would naturally lengthen the navigable season.

No plan for the improvement of the river at extreme low-water is offered, as there is no object to call for such an attempt at present.

Coal is said to be abundant in the hills near the head of navigation, and coal-oil has been found in many localities in the same neighborhood. Neither of these articles is shipped at present.

Floods on Obey's River range from 15 to 25 feet, the latter being sufficient to overflow its banks in many places. There are no bridges across the river.

Very respectfully,

C. A. TURRILL,
Assistant Engineer.

Capt. L. C. OVERMAN,
Corps of Engineers, U. S. A.

T 10.

SURVEY OF THE FALLS OF THE CUMBERLAND RIVER, KENTUCKY.

UNITED STATES ENGINEER OFFICE,
Chattanooga, Tenn., February 20, 1879.

GENERAL: I have the honor to forward herewith a report of Assistant Engineer Samuel Whinery, on a survey of the falls of the Cumberland River, Kentucky, made in compliance with your letter of August 19, 1878. A preliminary report on this survey was forwarded with my letter of December 27, 1878.

Mr. Whinery is well qualified by former experience in surveying the Cincinnati Southern Railway in the vicinity of the falls, to form an intelligent opinion on the character and merits of the proposed improvement, and I have no doubt his conclusions are correct. The amount of his estimates might possibly be somewhat reduced by substituting an inclined plane similar to that at the new outlet lock at Georgetown, for the locks, but there would still remain the almost insurmountable ob-

structions for many miles below the falls, and the want of an adequate commercial necessity for such an improvement.

Very respectfully, your obedient servant,

W. R. KING,
Captain of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

REPORT OF MR. SAMUEL WHINERY, ASSISTANT ENGINEER.

WHEELER, ALA., February 15, 1879.

MAJOR: The following report of a survey of the falls of Cumberland River, made by me under your direction, is respectfully submitted.

The weather was very unfavorable during the progress of the work, and long continued rains raised the river several feet, thus increasing the difficulties of the work.

The survey extended from a point about 1 mile above to a point about 1 3/4 miles below the great fall, and was made with a party of three men beside myself, and an additional man for handling a boat part of the time. The work was done with a transit instrument, having a telemeter attachment, with which distances were measured. A stadium wire was inserted, and readings taken with that also as a check upon the telemeter. They were found to agree sufficiently well for all practical purposes. The levels were taken with the transit, which had a good level tube attached to the telescope. Soundings were taken in the channel of the river from opposite station 2 of survey to station 18 wherever it was possible to take them. The boat at our disposal could not, if taken below the "Jump" at station 18, be brought back with the force available, and soundings were not attempted below that point. The observations for velocity of current were made by placing floats in the channel of the river and noting the time of their passing the various stations. The accompanying map, with profile, will show the principal facts developed by the survey.

The great falls of the Cumberland River are situated in the southwestern part of Whitley County, Kentucky, about 60 miles by river above Point Burnside, and 12 miles east of the line of the Cincinnati Southern Railroad. The river at and above the falls is a rapidly-descending mountain-stream carrying a large volume of water at flood-tide and shrinking to a mere brook during extremely dry seasons. Geologically, the fall is situated in the "Millstone Grit" or "Cliff Rock" of the Upper Coal Measures, through which it has cut a deep and narrow chasm, with walls often 300 feet high and almost perpendicular. The table-rock, over which the cataract pours, is a very hard, firm sandstone, filled with pebbles of white quartz, and containing iron in various combinations. This is underlaid by a heavy stratum of argillaceous shale, filled with nodules of clay ironstone. The rapid disintegration and carrying away of this shale from under the massive sandstone allows the latter to project and finally break away in enormous masses, which, falling into the chasm, have seriously obstructed the channel of the river below the fall. The iron and the various mineral salts contained in this sandstone, and the shale underneath, serve to supply the several mineral springs in the vicinity, whose waters are reputed to have great medicinal virtues.

The bed of the stream above the fall is solid rock. The soundings immediately below the fall indicated that the shale had been cut down to a stratum of solid rock; but before the end of the pool is reached the water becomes shallow, and the bed is made up of bowlders and gravel. A good summer hotel has been erected just above the fall, and the place bids fair to become a popular watering-place when the completion of the railroad makes it more accessible and its many attractions become better known. The country surrounding the fall, being on the slope of the Cumberland Mountain, is very rough and sterile; very little of the land is capable of improvement and cultivation. At present there are only a few widely-scattered openings or farms, and the population is very sparse, and made up of the most shiftless class of mountaineers. Higher up the stream, where it approaches the top of the Cumberland Plateau, the character of the country improves, and there are good farming settlements and many intelligent and thrifty people.

The course of the river for 100 miles above the fall is easterly through the counties of Whitley Knox, Josh Bell, and Harlan, which four counties embrace all the territory that would be benefited by the improvement of this part of the river. The aggregate area of these counties is about 2,500 square miles, and the census of 1870 shows that their population was 24,718, or about 10 to each square mile; that the total assessed valuation of real estate and personal property was \$2,564,623; that the total valuation of agricultural and manufactured products for 1870 was \$972,204. This, however, does not include timber in the form of saw-logs, of which considerable numbers are sent down the river to market. The agricultural products are barely sufficient for home consumption, and therefore but little finds its way to any market. The slopes and valleys of this region are fairly well timbered with yellow pine, poplar (tulip tree),

white oak, chestnut; and considerable quantities of black walnut are found near the headwaters of the river. The whole area of these counties lies in the coal-field of the Cumberland Mountain, and it is highly probable that large quantities of fine coal will be found; but as yet most of the region has been but imperfectly examined by competent parties, and but little is positively known of the extent and value of the deposits. From the profile of the survey it will be seen that the aggregate descent of the river from the beginning to the end of the survey is 84.5 feet, made up as follows:

Beginning of survey to head of main rapids	Feet.
Head of rapids to brink of fall	5.9
Great Fall at stage of water when survey was made.....	14.1
Foot of fall to end of survey	51.1
	<hr/>
Total	84.5

The levels obtained for extreme high-water above the fall are reliable, but the high-water elevation given below the fall is of questionable accuracy, as we were unable to get any very reliable high-water marks below the fall. At the time the survey was made the stage of the river directly below the fall was, as nearly as could be ascertained, about 4 feet above extreme low-water, so that allowing for some reduction in the elevation of the crest of the fall as the water below recedes, it is probable that the total difference of level between the crest and the foot of the main fall at extreme low-water is between 53 and 54 feet.

The average of four pairs of observations with an aneroid barometer (two of them made at the time of the survey, and two by me several years previous) between a point of known elevation on the Cincinnati Southern Railway and the crest of the fall shows a difference of elevation between the latter point and low-water of the river at the railroad bridge at Point Burnside of 380 feet.

MEANS OF IMPROVEMENT.

The only commercial use at present made of the river in the vicinity of and above the falls is the floating of saw-logs to market from the timbered region above the fall. The logs are rolled into the river at the nearest point and allowed to float down separately to a point 8 or 10 miles below the fall, where they are caught and made into rafts before proceeding. Owing to the great obstructions in the channel caused by the large bowlders and drift, many of the logs are caught and left by the side of the river when it goes down. The clearing of the channel of such obstructions would make this business safer and surer, but this could not probably be done with a less expenditure than \$50,000, and the amount of business done would not justify the expenditure.

To make the river navigable for boats of any description very extensive improvements would be necessary in the way of clearing out the channel, excavating rocks, and building locks and dams to overcome the fall.

Two plans for such improvement are admissible. The first contemplates making the river navigable for flatboats down stream. The second, its further improvement so as to be navigable for small steamboats. In either case it will be necessary to construct a canal around the fall. This canal would be located on the right-hand side of the river, and extend from about station 1 to about station 11a of the survey, and would be about 3,700 feet long. Its location is approximately shown on the map.

To overcome the difference in elevation of the water at the upper and lower ends of the canal there will be required 8 locks, each of 10 feet lift. The locks should be of 35 feet clear width and have an effective length of 100 feet. The canal should have a clear width of 40 feet at the water-line, and a depth of 3 feet below the water's surface. Owing to the character of the topography, curves of 600 feet radius would have to be used for the center line of the canal. It would be necessary to build a low dam across the river just below the head of the canal, to reduce the current at that point and render the handling of boats entering the canal less difficult and dangerous. The stone (sandstone) and timber required for building the canal can be found in the immediate vicinity. It is not thought necessary to go further into the details of construction of the canal in this report. The following is an approximate estimate of the cost of the canal:

30,000 cubic yards earth excavation and embankment, at 20 cents per cubic yard	\$6,000
70,000 cubic yards rock excavation, at \$1 per cubic yard.....	70,000
8 locks complete, at \$30,000 each.....	240,000
Dam at head of canal.....	2,500
	<hr/>
	318,500
Add for engineering, miscellaneous expenses, and contingencies.....	50,000
	<hr/>
	368,500

This canal, when completed, would carry either flatboats or small steamboats around the falls, but it is to be remembered that the river above this point and below to Point Burnside is simply a series of rapids, with intervening quiet pools, and that in many places the channel is obstructed by bowlders and projecting rocks. The clearing out of these obstructions, and the improvement of a few of the worst rapids, would allow flatboats loaded with coal or produce to drop down the river at high stages of water, but nothing short of a complete system of slackwater improvement would make the river above Point Burnside available for steamboat navigation. To give plans and estimates for such improvements above and below the falls is not within the province of this report.

The statistics and description of the country tributary to this part of the river clearly show, I think, that at present such a system of improvement would not be justified by the meager advantages to commerce to be gained thereby. Should the reputed existence of valuable and inexhaustible coal deposits be confirmed in the future, with a great market demand for their products, these improvements may become advisable, but it is safe to say that such a time is far in the future.

Very respectfully, your obedient servant,

Maj. W. R. KING,
Corps of Engineers.

S. WHINERY,
Assistant Engineer.

APPENDIX U.

ANNUAL REPORT OF MAJOR G. WEITZEL, CORPS OF ENGINEERS, FOR THE FISCAL YEAR ENDING JUNE 30, 1879.

UNITED STATES ENGINEER OFFICE,
Detroit, Mich., July 19, 1879.

GENERAL: I have the honor to transmit herewith the annual reports relating to the river and harbor improvements under my charge, for the fiscal year ending June 30, 1879.

Very respectfully, your obedient servant,

G. WEITZEL,
Major of Engineers.

Brig. Gen. H. G. WRIGHT,
Chief of Engineers, U. S. A.

U I.

IMPROVEMENT OF THE FALLS OF THE OHIO RIVER.

The appended report of my assistant, Capt. A. N. Lee, Corps of Engineers, gives the progress of the work during the past fiscal year.

A complete history of this work is given in the last annual report. (See Report of Chief of Engineers, Part 1, pages 776, 781.)

The work still to be done on this improvement can only be economically executed at low stages of the river. As the low-water stage was of but short duration last fall, but little was accomplished.

The original estimate for this work was \$1,243,500. There has been allotted and appropriated for it as follows:

1868, allotted	\$85,000
1869, allotted	178,200
1870, appropriated	450,000
1871, appropriated	250,000
1872, appropriated	300,000
1873, appropriated	100,000
1875, appropriated	100,000
Total	1,463,200

Of this amount \$1,419,533.37 has been expended.

No additional appropriation is required for the next fiscal year.

The reasons for the exceeding of the original estimate for this work have been given in previous reports.

The work is located in the third collection-district of Kentucky. The nearest port of entry is Louisville, Ky.

The amount of revenue collected at this port during the fiscal year was \$35,090.21.

The commerce and navigation of the Mississippi River and all its branches will be benefited by the completion of this work.