

4. *The bar at the mouth of Brazos River, Texas, including a report upon the capacity of the harbor at the mouth of the Brazos, and its adaptability as a harbor of refuge and naval station.* (See Appendix K 13.)

5. *Aransas Pass and Bay, up to Rockport and Corpus Christi, Texas; and Corpus Christi Pass and Channel.* (See Appendix K 12.)

And, to comply with provisions of the river and harbor act of March 3, 1879, has been charged with and is now engaged upon the following, the results of which will be duly submitted when received:

1. *Canal connecting Galveston and Brazos River, Texas.*
2. *Bayou Vermillion, Louisiana.*
3. *Bayou Teche, Louisiana.*
4. *Bayou Courtableu, Louisiana.*
5. *Bayou Deglaize, Louisiana.*
6. *Bayou Terrebonne, Louisiana.*
7. *Tehefuneta River, Louisiana.*
8. *Tickfaw River, Louisiana.*
9. *Amite River, Louisiana.*
10. *Resurvey of Sabine River, Texas, from its mouth to East Hamilton.*
11. *Resurvey of Neches River, Texas, from the mouth of the Neches to Bevelport.*
12. *Resurvey of Trinity River, Texas, from its mouth to the bridge of the Great Northern Railroad.*
13. *Survey and estimate for a breakwater to be constructed from a point at or near the new canal outlet near New Orleans, Louisiana, to the Pontchartrain Railroad Wharf, said breakwater to be so constructed as to serve as a harbor of refuge for all vessels.*

Major Howell has been charged with a survey of the *Charenton Canal, in Saint Mary's Parish, Louisiana*, provided for by joint resolution approved June 28, 1879.

WESTERN RIVERS.

REMOVAL OF RAFT IN RED RIVER, AND CLOSING TONE'S BAYOU, LOUISIANA—IMPROVEMENT OF CYPRESS BAYOU, TEXAS; OF THE MOUTH OF RED RIVER, AND OF RED RIVER AND CERTAIN RIVERS IN MISSISSIPPI AND ARKANSAS—PRESERVATION OF THE PORTS OF MEMPHIS AND VICKSBURG—WATER-GAUGES ON THE MISSISSIPPI AND ITS PRINCIPAL TRIBUTARIES.

Officer in charge, Maj. W. H. H. Benyaurd, Corps of Engineers.

1. *Removal of raft in Red River and closing Tone's Bayou, Louisiana.*—*Removal of raft in Red River.*—During the flood season the United States steamer Florence was employed in keeping the river open, freeing the same from rafts and jams formed from drift-wood brought down from the upper river.

An examination was also made of the river within the limits of the raft region for the purpose of determining the effect the removal of the raft has had upon the river itself and the connecting lakes.

Closing Tone's Bayou.—Work was continued upon the brush dam across the bayou, and carried up as far as the available funds would permit. Not being able to reach high-water mark, the top was partially carried away by the immense quantity of drift that came down from the raft region. This work will have to be carried on each year, unless sufficient funds be appropriated to carry the dam to high-water mark at one season; and the officer in charge recommends that this

appropriation be made, for which estimates are submitted; otherwise, funds will have to be appropriated for yearly repairs to the dam. The work is of great importance to the security of low-water navigation of Red River.

As the steamer Aid and crane-boats employed in the raft region are worn out, condemned, and disposed of, the officer in charge recommends that an appropriation be made to replace the plant by a small iron-hull boat adapted for work on Upper Red River.

July 1, 1878, amount available.....	\$26,445 94
Amount appropriated by act approved March 3, 1879.....	15,000 00
	\$41,445 94
July 1, 1879, amount expended during fiscal year.....	28,038 33
	13,407 61
July 1, 1879, amount available.....	13,407 61
Amount (estimated) required for completion of existing project.....	122,500 00
Amount that can be profitably expended in fiscal year ending June 30, 1881:	
For closing Tone's Bayou.....	30,000 00
For removing raft in Red River.....	15,000 00
For building 1 iron-hull steamer, to replace steamer Aid and crane-boats condemned and disposed of.....	30,000 00

(See Appendix L 1.)

2. *Improvement of Cypress Bayou, Texas and Louisiana.*—The new dredge-boat Lone Star was employed in widening the channel at Dougherty's Defeat, making cut-off at Sisco Island, and dredging new channel at Bois d'Arc Pass, leading to Fairy Lake; this channel being 2,312 yards long.

The work now done in the Cypress Bayou completes that part of the improvement contemplated. There are no new cut-offs that can be made to advantage, nor dredging to be done on the bayou; for, after steamboats can pass Sodo Lake, there is sufficient water in the channel above for all purposes of navigation. In the lakes the dredge-boat would be of no service.

It is proposed, during the next low-water season, to send a working party across the lakes, and improve what is known as the cut-roads, by removing all cypress stumps and other obstructions, and to stake out the channel. When this is executed, it will give good navigation to Jefferson.

July 1, 1878, amount available.....	\$15,046 41
Amount appropriated by act approved March 3, 1879.....	6,000 00
	\$21,046 41
July 1, 1879, amount expended during fiscal year.....	13,872 70

July 1, 1879, amount available..... 7,173 71

(See Appendix L 2.)

3. *Improvement of mouth of Red River, Louisiana.*—For the purpose of maintaining navigation through the mouth of Red River during low-water, pending the consideration of a plan for permanent improvement, two tugs and a steamer were employed cutting and washing out a channel through the outer and inner bars.

A survey, with a view to form a plan for the permanent improvement, was commenced in July and finished in January last. Upon the results of the survey being worked up, a result somewhat different from the preconceived idea of the condition of the locality was found, and not very favorable for a permanent plan at that locality within reasonable limits of expense. Accordingly the officer in charge caused a survey of the Plaquemine to be made to ascertain if it was possible to make a route through that bayou, thence via the Atchafalaya to Red River.

This survey was finished the last of June, and upon the result being worked up, a special report will be rendered, with plan, estimates, &c., in time for the action of Congress at its next session.

For the purpose of aiding navigation through the obstruction during the coming season the dredge-boat has been moved from Cypress Bayou, and will be employed in keeping the channel open.

July 1, 1878, amount available	\$150,000 00
Amount appropriated by act approved March 3, 1879	40,000 00
	<hr/>
	\$190,000 00
July 1, 1879, amount expended during fiscal year	16,274 06
July 1, 1879, amount available	173,725 94

(See Appendix L 3.)

4. *Removing snags and other obstructions from Red River, Louisiana.*—The snag-boat O. G. Wagner was employed during the low-water season in the above work.

The wrecking operations consisted in the removal of the wrecks of the steamers Falls City, Era No. 7, and R. T. Bryarly. There were also removed 689 snags, 1,056 trees projecting from the bank, and 1,079 leaning trees cut down.

So much work is needed upon this important stream, and there being no snag-boat especially belonging to it, the officer in charge recommends that provision be made for building a light-draught boat, which can be used upon the Red River and its tributaries.

July 1, 1878, amount available	\$25,000 00
Amount appropriated by act approved March 3, 1879	22,500 00
	<hr/>
	\$47,500 00
July 1, 1879, amount expended during fiscal year	23,098 99
July 1, 1879, amount available	24,401 01
Amount (estimated) required for completion of existing project	127,500 00

Amount that can be profitably expended in fiscal year ending June 30, 1881:

For building one light-draught snag-boat	60,000 00
For running expenses, 8 months, at \$3,000 per month	24,000 00

(See Appendix L 4.)

5. *Improvement of Upper Red River, above the raft.*—In 1875 a party was placed above the raft for the purpose of cutting down such leaning timber as was liable to slide into the river.

During the coming season it is proposed to take the plant (or such portions of it as will be of service) belonging to the appropriation for Red River Raft, and, commencing at Fulton, to cut down all the leaning timber and remove all snags and sunken logs.

Amount appropriated by act approved March 3, 1879	\$10,000 00
July 1, 1879, amount available	10,000 00
Amount (estimated) required for completion of existing project	9,530 00
Amount that can be profitably expended in fiscal year ending June 30, 1881	9,600 00

(See Appendix L 5.)

6. *Improvement of Ouachita River, Arkansas.*—The snag-boat O. G. Wagner was employed in the latter part of the season removing the snags and other obstructions to low-water navigation below Monroe, the stage of water in the upper river not admitting of any work in that stretch.

During the coming season it is proposed to employ the *Wagner* in her usual work.

A survey will also be made of Catahoula Shoals, the most important point on the lower Ouachita, with a view to its improvement, which, if carried out, will give good navigation to Columbia the entire year.

July 1, 1878, amount available	\$10,022 32
Amount appropriated by act approved March 3, 1879	10,000 00
	<hr/>
	\$20,022 32
July 1, 1879, amount expended during fiscal year	5,874 18

July 1, 1879, amount available	14,148 14
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Amount that can be profitably expended in fiscal year ending June 30, 1881. 15,000 00

(See Appendix L 6.)

7. *Improvement of Yazoo River, Mississippi.*—The appropriation for the Yazoo was combined with that for the White and Saint Francis for the purpose of building a light-draught snagboat for several of the streams interested. This boat when finished will be at once transferred to the Yazoo and its tributaries, and employed in removing wrecks and other obstructions.

July 1, 1878, amount available	\$25,156 83
Amount appropriated by act approved March 3, 1879	15,000 00
	<hr/>
	\$40,156 83
July 1, 1879, amount expended during fiscal year	17,797 17

July 1, 1879, amount available	22,359 66
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Amount that can be profitably expended in fiscal year ending June 30, 1881. 24,000 00

(See Appendix L 7.)

8. *Improvement of White and Saint Francis Rivers, Arkansas.*—The new snagboat, building at Saint Louis, for these rivers will be finished during the summer, and will then be taken south for operations on the streams when the stage of water will admit.

July 1, 1878, amount available	\$40,000 00
Amount appropriated by act approved March 3, 1879	12,000 00
	<hr/>
	\$52,000 00
July 1, 1879, amount expended during fiscal year	37,988 88

July 1, 1879, amount available	14,011 12
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Amount that can be profitably expended in fiscal year ending June 30, 1881. 33,000 00

(See Appendix L 8.)

9. *Improvement of White River, Arkansas.*—Three of the dikes at Buffalo Shoals have been completed. It is proposed with the appropriation of March 3, 1879, to complete the remaining four.

Amount appropriated by act approved March 3, 1879	\$10,000 00
July 1, 1879, amount available	10,000 00

(See Appendix L 9.)

10. *Improvement of L'Anquille River, Arkansas.*—No work has heretofore been done upon this river. During the coming season it is proposed to employ the snagboat John R. Meigs in removing the obstructions to its navigation.

July 1, 1878, amount available	\$10,000 00
Amount appropriated by act approved March 3, 1879	5,000 00
	<hr/>
	\$15,000 00
July 1, 1879, amount expended during fiscal year	9,915 83

July 1, 1879, amount available	5,084 17
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Amount (estimated) required for completion of existing project 5,000 00
Amount that can be profitably expended in fiscal year ending June 30, 1881. 5,000 00

(See Appendix L 10.)

11. *Improvement of Big Sunflower River, Mississippi.*—No work has heretofore been done upon this river.

During the coming season it is proposed to operate with the snagboat belonging to the Yazoo River in removing the obstructions in the lower part of the river. A force will also be employed in cutting down the leaning timber along the bank.

Examinations will also be made of Oliphant's Bar and Muscle Shoals, with a view to improving the same by means of the ordinary brush wing-dams; and if the low-water will admit, work will be commenced upon them.

Amount appropriated by act approved March 3, 1879.....	\$20,000 00
July 1, 1879, amount available.....	20,000 00
Amount (estimated) required for completion of existing project.....	46,000 00
Amount that can be profitably expended in fiscal year ending June 30, 1881.	20,000 00

(See Appendix L 11.)

12. *Improvement of Coldwater River, Mississippi.*—No work has heretofore been done upon this stream.

During the coming season it is proposed, in conjunction with the appropriation for Tallahatchie River, to build a flatboat with the necessary machinery thereon, and operate with the same in the removal of the obstructions to navigation.

Amount appropriated by act approved March 3, 1879.....	\$7,000 00
July 1, 1879, amount available.....	7,000 00
Amount (estimated) required for completion of existing project.....	18,000 00
Amount that can be profitably expended in fiscal year ending June 30, 1881.	10,000 00

(See Appendix L 12.)

13. *Improvement of Tallahatchie River, Mississippi.*—No work has heretofore been done upon this stream.

During the coming season the wreck of the *Star of the West* near the mouth of the river will be removed by the snagboat, while for the work of cutting timber and removing other obstructions a flatboat will be built provided with the necessary machinery for such work.

Amount appropriated by act approved March 3, 1879.....	\$6,000 00
July 1, 1879, amount available.....	6,000 00
Amount (estimated) required for completion of existing project.....	34,000 00
Amount that can be profitably expended in fiscal year ending June 30, 1881.	15,000 00

(See Appendix L 13.)

14. *Improvement of Fourche La Pevé River, Arkansas.*—No work has heretofore been done upon this river.

During the coming season it is proposed to remove the snags, rocks, and other obstructions to navigation, and to cut down the leaning timber along the banks. A flatboat, with suitable machinery, will be built and operated for that purpose.

Amount appropriated by act approved March 3, 1879.....	\$10,000 00
July 1, 1879, amount available.....	10,000 00
Amount (estimated) required for completion of existing project.....	13,000 00
Amount that can be profitably expended in fiscal year ending June 30, 1881.	13,000 00

(See Appendix L 14.)

15. *Improvement of the Mississippi River and Harbor at Vicksburg, Mississippi.*—Work was commenced in July, 1878, upon this improvement, the first step being to attempt to hold the Delta Point by applying to the caving bank a protection of brush mattresses loaded with stone. The yellow fever caused a suspension of the work during the summer months, and high-water during the winter, so that little progress was made.

Work was resumed in May last, and was at the close of the fiscal year

in course of prosecution. The success attending the same character of work at Memphis gives reasonable grounds for success at Vicksburg.

During the present season, should nothing interfere, it is proposed to continue the protection of the Delta Point.

The filling up of the inner harbor has progressed at such a rate that the deposit now reaches 20 feet on the gauge above low-water. This will necessarily cause a modification of the plans for that part of the work as proposed by the Board of Engineers. Nothing, however, will be done towards this part until the work at Delta Point is completed.

July 1, 1878, amount available.....	\$84,000 00
Amount appropriated by act approved March 3, 1879.....	50,000 00
	\$134,000 00

July 1, 1879, amount expended during fiscal year.....	35,241 75
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July 1, 1879, amount available.....	95,758 25
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Amount (estimated) required for completion of existing project.....	120,000 00
Amount that can be profitably expended in fiscal year ending June 30, 1881.	60,000 00

(See Appendix L 15.)

16. *Improvement of the Mississippi River and Harbor at Memphis, Tennessee.*—Work was commenced upon the protection of the caving bank at the mouth of Wolf River in July, 1878, but yellow fever caused a suspension of the work. It was resumed in November last and continued until January, when high-water and ice put an end to operations until spring.

Up to the end of the fiscal year some 700 feet of mattress protection had been successfully applied.

During the present season it is proposed to continue the above work to the extent of the available funds.

July 1, 1878, amount available.....	\$46,000 00
Amount appropriated by act approved March 3, 1879.....	37,000 00
	\$83,000 00

July 1, 1879, amount expended during fiscal year.....	36,174 61
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July 1, 1879, amount available.....	46,825 39
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Amount (estimated) required for completion of existing project.....	87,000 00
Amount that can be profitably expended in fiscal year ending June 30, 1881.	30,000 00

(See Appendix L 16.)

17. *Water-gauges on the Mississippi River and its principal tributaries.*—Observations were continued at all the gauges, and repairs made where necessary.

During the present season it is proposed to continue the observations and put up new gauges where needed if the stage of water will permit.

July 1, 1878, amount available.....	\$5,000 00
Amount appropriated by act approved March 3, 1879.....	5,000 00
	\$10,000 00

July 1, 1879, amount expended during fiscal year.....	4,679 30
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July 1, 1879, amount available.....	5,320 70
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Amount that can be profitably expended in fiscal year ending June 30, 1881.	5,000 00
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(See Appendix L 17.)

EXAMINATIONS AND SURVEYS FOR IMPROVEMENT.

To comply with the provisions of the river and harbor act of June 18, 1878, Major Benyaurd was charged with and has completed the following examinations and surveys:

1. *Big Sunflower River, Mississippi.* (See Appendix L 18.)

2. Tallahatchie River, Mississippi. (See Appendix L 18.)
3. Coldwater River, Mississippi. (See Appendix L 18.)
4. Upper Red River, from the raft up to the Missouri, Kansas and Texas Railroad bridge. (See Appendix L 19.)
5. Little River, Arkansas. (See Appendix L 20.)
6. Fourche la Pèvé, Arkansas. (See Appendix L 14.)

The results of the above-named examinations were transmitted to Congress and printed as Senate Ex. Doc. No. 42, Forty-fifth Congress, third session.

7. Tone's Bayou, Louisiana. (See Appendix L 21.)
8. Bayou Pierre, Louisiana. (See Appendix L 21.)
9. Bayou Wincy, Louisiana. (See Appendix L 21.)
10. Lake Bayou Pierre, Louisiana. (See Appendix L 21.)
11. Lake Cannasanier, Louisiana. (See Appendix L 21.)
12. Bayou Bartholomew, Arkansas. (See Appendix L 22.)

The results of the above-named examinations were transmitted to Congress and printed as House Ex. Doc. No. 61, Forty-fifth Congress, third session.

13. Sabine River, Arkansas. (See Appendix L 23.)
14. Falls on Red River, near Alexandria, Louisiana.—The result of which will be duly transmitted when received.

And to comply with provisions of the river and harbor act of March 3, 1879, has been charged with and is now engaged upon the following, the results of which will be duly submitted when received:

1. Yallobusha River, Mississippi.
2. Tchula Lake, Mississippi.
3. Black River, Arkansas.

And also, to comply with joint resolution of June 28, 1879:

4. Mississippi River, near Lake Concordia, Louisiana, and of Cowpen Bend, Mississippi, looking to the protection of the harbor of Natchez and Vidalia, by restraining the river from cutting into Lake Concordia.

IMPROVEMENT OF MISSISSIPPI RIVER BETWEEN THE MOUTHS OF THE ILLINOIS AND OHIO RIVERS—IMPROVEMENT OF OSAGE RIVER IN MISSOURI AND KANSAS.

Officer in charge, Col. J. H. Simpson, Corps of Engineers, having under his immediate orders Capt. O. H. Ernst, Corps of Engineers.

1. *Improvement of the Mississippi River between the mouths of the Illinois and Ohio Rivers.—Piasa and Alton Dams.*—No work has been done at these places during the fiscal year, the dams at Piasa and Ellis Islands being virtually completed.

Pending the execution of the survey of Alton Harbor, recently ordered by Congress, it is deemed advisable to retain the \$35,000, now available, for any work which may be found necessary. The general interests of navigation would be best served by the improvement of the channel at Maple Island, a work closely related to the desired improvement at Alton.

Sawyer and Venice Bends.—A small amount of work was done at Sawyer Bend to repair and secure the old work; no work is contemplated except such as may be necessary for preservation.

Closing Cahokia Chute.—The dam to close this chute was successfully constructed during this fiscal year to a height of 9 feet above low-water.

No further work is contemplated unless Congress should favor the construction of a winter harbor at the locality, for which it is well adapted.

Revetment of west side of Arsenal Island.—This has been rendered necessary by the increased current since the closure of Cahokia Chute. The work will require extension from time to time. For the present year the necessary funds will be allotted from the undistributed balance of the appropriation of March 3, 1879.

Horsetail Bar.—The results of work at this locality have been favorable. The channel has remained within the intended limits, and has assumed a position and direction entirely satisfactory.

Further work will be necessary to perpetuate the results and permanently narrow the river. An allotment of \$70,000 was made to this locality from the appropriation of March 3, 1879.

Fort Chartres and Turkey Island.—No work done or contemplated.

Kaskaskia Bend.—The peculiarly unstable soil at this locality has rendered it necessary to expend more money than Congress specifically set apart for the work, and there is urgent necessity for further allotment from the undistributed part of the recent appropriation.

Protection near Liberty Island.—Was repaired and extended during the year. Work the coming year will be limited to repair and preservation.

Devil's Island.—No work done or contemplated.

Protection between Dicky Island and mouth of the Ohio.—This protection has been materially extended during the year, and with satisfactory success. The work of former years stands well. A portion of the appropriation of \$30,000, of March 3, 1879, was expended during the fiscal year.

The officer in charge submits an estimate of \$500,000 for the fiscal year ending June 30, 1881. The appropriation of this sum is recommended, which will enable the works hitherto commenced to be completed, and several new ones begun.

July 1, 1878, amount available.....	\$256,307 62	
Miscellaneous receipts.....	56 92	
Amount appropriated by act approved March 3, 1879.....	200,000 00	
		\$456,364 54
July 1, 1879, amount expended during fiscal year.....	256,119 27	
July 1, 1879, outstanding liabilities.....	8,889 91	
		265,009 18
July 1, 1879, amount available.....		191,355 36
Amount (estimated) required for completion of existing project.....	6,289,600 00	
Amount that can be profitably expended in fiscal year ending June 30, 1881.....	500,000 00	

(See Appendix N 1.)

2. *Improvement of Osage River in Missouri and Kansas.*—The act of Congress approved June 18, 1878, appropriated \$20,000 for the improvement of the Osage River in Missouri and Kansas. To supply needed information concerning that part of the river above Osceola, Mo., a survey was made from Ottawa, Kans., to Osceola, Mo., a distance by the river of 196 miles.

The work of improving the navigation of the Osage River has been continued by an extension of the improved channel over a distance of 16 miles, making a total improved navigation for a distance of 45 miles from the mouth. The appropriation of March 3, 1879, will be applied to the extension of the improvement to Tuscumbia, Mo., a distance of 15 miles farther.

The amount which can be profitably expended during the fiscal year ending June 30, 1881, is \$50,000.

July 1, 1878, amount available.....	\$20,000 00
Miscellaneous receipts	15 75
Amount appropriated by act approved March 3, 1879	20,000 00
	<hr/>
July 1, 1879, amount expended during fiscal year.....	19,224 65
July 1, 1879, amount available	\$20,791 10
	<hr/>
Amount that can be profitably expended in fiscal year ending June 30, 1881.	50,000 00

(See Appendix N 2.)

EXAMINATIONS AND SURVEYS FOR IMPROVEMENT.

To comply with provisions of the river and harbor act of June 18' 1878, Colonel Simpson was charged with and has completed the following examinations and surveys:

1. *The Mississippi River, to ascertain the practicability, cost, and utility of a dike from Bloody Island, opposite the city of Saint Louis, Missouri, north of the dike or dam opposite Brooklyn, on the Illinois shore.* (See Appendix N 3.)

2. *A survey and estimate of the damages, if any, done or to be done to riparian owners of lands, and improvements thereon, at or in front of the town of Venice, Illinois, near Saint Louis, Missouri, by reason of government improvements made or to be made at or near said town of Venice.*—This report will be submitted for transmission to Congress at the next session.

And to comply with the provisions of the river and harbor act of March 3, 1879, has been charged with and is now engaged upon the following, the result of which will be duly submitted when received:

1. *Alton Harbor, Illinois, and the Mississippi River opposite the mouth of the Missouri.*

REMOVING SNAGS AND WRECKS FROM MISSISSIPPI, MISSOURI, AND ARKANSAS RIVERS—SURVEYS AND IMPROVEMENTS AT VARIOUS POINTS ON MISSOURI RIVER—SURVEY OF MISSOURI RIVER FROM ITS MOUTH TO SIOUX CITY—IMPROVEMENT OF ARKANSAS RIVER AND OF WHITE RIVER AT BUFFALO SHOALS.

Officer in charge, Maj. C. R. Suter, Corps of Engineers, with Capt. Thos. H. Handbury, Corps of Engineers, under his immediate orders.

1. *Removing snags and wrecks from the Mississippi, Missouri, and Arkansas Rivers.*—During the past season, snagging operations have been carried out on the Mississippi, from the mouth of the Missouri to Vicksburg, 846 miles, and on the Missouri from its mouth to Kansas City, 431 miles. No work was done on the Arkansas, owing to low water.

Surveys and observations have been made at various points on the Mississippi, Missouri, and Arkansas Rivers, to furnish information needed in perfecting plans for the improvement of those streams.

The rebuilding of two of the old snagboats has been in progress, and the new boats will soon be ready for service. The officer in charge renews his recommendation that one of the remaining wooden boats be repaired and fitted up for wrecking purposes, and that the other receive an iron hull. Estimates for the purpose are submitted.

During the coming season it is proposed to devote 13 months' snagboat work to the 3 rivers, distributed as follows, viz, Mississippi, 6 months; Missouri, 4 months; Arkansas, 3 months.

Amount required for fiscal year ending June 30, 1881.

For building one small iron-hulled snagboat, to carry the machinery of one of the present wooden boats	\$105,000 00
For repairing one wooden snagboat and fitting it up for wrecking purposes	50,000 00
For working-expenses of five boats, 10 months each, at \$4,000 per month.	200,000 00
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Total	355,000 00
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July 1, 1878, amount available.....	\$250,137 35
Amount appropriated by act approved March 3, 1879.....	190,000 00
	<hr/>
July 1, 1879, amount expended during fiscal year.....	216,013 51
July 1, 1879, outstanding liabilities.....	70,292 78
	<hr/>
	286,306 29
	<hr/>
July 1, 1879, amount available.....	153,831 06
	<hr/>
Amount that can be profitably expended in fiscal year ending June 30, 1881.	355,000 00

(See Appendix O 1.)

2. *Improvement of Missouri River at Cedar City, Missouri.*—During recent years the Missouri River at this point has been effecting a great change in its regimen. At and above Cedar City the river has eroded its banks and destroyed much valuable property. At Jefferson City, immediately opposite, a sand-bar has formed, which, during a greater part of the year, interferes materially with the river communications of that place. The problem is to save the valuable property on the Cedar City side from further destruction and to restore to Jefferson City its former facilities for river communication.

To comply with the provisions of the river and harbor act of June 18, 1878, a survey and examination was made at this point, and plans and estimates submitted for the works of improvement thought to be necessary. These were published in House Ex. Doc. No. 44, Forty-fifth Congress, third session. Congress, by act of March 3, 1879, appropriated \$10,000 for carrying on these works. The work has been prosecuted in accordance with the general plan submitted, and the results so far obtained are satisfactory. It is proposed to expend the present appropriation in the further prosecution of the general plan.

Amount appropriated by act approved March 3, 1879.....	\$10,000 00
July 1, 1879, amount expended during fiscal year.....	\$2 00
July 1, 1879, outstanding liabilities.....	3,681 40
	<hr/>
	6,316 60

July 1, 1879, amount available.....

Amount (estimated) required for completion of existing project.....	60,000 00
Amount that can be profitably expended in fiscal year ending June 30, 1881.	60,000 00

(See Appendix O 3.)

3. *Improvement of Missouri River at Glasgow, Missouri.*—In the vicinity of Glasgow, Mo., there are serious changes taking place in the course of the river. Rapid erosion of the banks has been going on, much valuable agricultural land has been washed away, the approach to the railroad bridge that crosses the river at this point is seriously threatened, and the steamboat landing at the town of Cambridge has been entirely destroyed.

To stop these erosions and to rectify the channel is a matter of serious moment.

To comply with the provisions of the river and harbor act of June 18,