

REPORT

OF THE

SECRETARY OF WAR;

BEING PART OF

THE MESSAGE AND DOCUMENTS

COMMUNICATED TO THE

TWO HOUSES OF CONGRESS

AT THE

BEGINNING OF THE SECOND SESSION OF THE FORTY-THIRD CONGRESS.

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PART I.

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REPORT
OF
THE CHIEF OF ENGINEERS.

To comply with a resolution of the House of Representatives of December 10, 1873, Lieutenant-Colonel Thom was directed to make an examination of Plymouth Harbor, Massachusetts, with a view to its improvement. His report thereon was also transmitted to Congress, and was printed in Ex. Doc. H. R., No. 161.

(See Appendix Y 25.)

PACIFIC COAST

IMPROVEMENT OF RIVERS IN OREGON.

Officer in charge Maj. N. Michler, Corps of Engineers, since October 22, 1873, previous to which time these improvements were in charge of Maj. H. M. Robert, Corps of Engineers.

1. *Improvement of Lower Willamette River, Oregon.*—A new dredge was completed shortly after the commencement of the fiscal year, and was subsequently employed upon the bar at the mouth of the river, and at Post-Office Bar. At the mouth a channel-way was reopened for a length 1,800 feet and width 120 feet. At Post-Office Bar a cut was made of 1,552 feet in length, with a width of 30 feet and depth 17 feet. At Percy's Slough, near the mouth, a dam is being built. The appropriation for the present fiscal year will be applied to keeping the channel of the Willamette open. A survey of Willamette Slough will be made.

2. *St. Helen's Bar, Columbia River, Oregon.*—Surveys of the bar will be continued, and the channel kept open by dredging.

3. *Mouth of the Columbia River, Oregon.*—The survey and soundings at the "Hog-back," between Tongue Point and Woody Island, were completed by the close of the fiscal year. A new channel was dredged or scraped out, marked by an iron beacon and black and white buoys. It is proposed during the present fiscal year to continue similar operations at this locality.

Balance in Treasury of United States July 1, 1873:		
Lower Willamette	\$10,793 36	
Obstructions	9,206 64	
		20,000 00
Amount appropriated by act approved June 23, 1874.		20,000 00
Amount expended during the fiscal year ending June 30, 1874		14,678 15
Amount available July 1, 1874*		5,321 85
Amount required for the fiscal year ending June 30, 1876.		20,000 00

(See Appendixes Z 1 and Z 4.)

4. *Improvement of the Willamette River above Oregon City, Oregon.*—The operations consisted in the removal of dangerous snags and other serious obstructions. Two hundred and eighty snags were removed during the season, among them at Luckamutte, the "Big Pine," with those adjacent. In addition to the continuation of the work of removal of snags during the present fiscal year, the construction of wing-dams will be undertaken at certain points.

Balance in Treasury of United States July 1, 1873	\$1,500 00
Amount appropriated by act approved June 23, 1874	7,500 00
Amount expended during the fiscal year ending June 30, 1874	1,500 09
Amount required for the fiscal year ending June 30, 1876	25 000 00

(See Appendixes Z 2 and Z 4.)

5. *Improvement of the Upper Columbia River, Oregon.*—The removal of rock in John Day, Devil's Bend, and Umatilla rapids of this river

*Of the amount available July 1, 1874, must be deducted \$4,800 for building dam across Percy's Slough, which is not yet completed.

has been continued. Rocks were removed from Devil's Bend and Umatilla rapids during the working season to the amount of 465 cubic yards. The total quantity of rock removed by contract is 1,425 cubic yards.

The work proposed for the present fiscal year is the widening of the channel of the Upper Umatilla Rapids, and the removal of rock from Homly Rapid, Squally Hook Rapid, Owyhee Rapid, and Rock Creek Rapid, so as to give the same depth of water as that already obtained on the above-named points.

Balance in Treasury of United States July 1, 1873.....	\$9,000 00
Amount in hands of officer and subject to his check	19,183 76
Amount appropriated by act approved June 23, 1874.....	20,000 00
Amount expended during the fiscal year ending June 30, 1874	28,085 11
Amount available July 1, 1874	98 65
Amount required for the fiscal year ending June 30, 1876.....	40,000 00

(See Appendixes Z 3 and Z 4.)

6. *Umpqua River, Oregon.*—No additional work was done toward the improvement of the navigation of this river during the fiscal year.

There is a balance remaining of the appropriation of March 3, 1871, \$4,685.89.

EXAMINATIONS AND SURVEYS FOR IMPROVEMENT.

Provision was made in the act of March 3, 1873, for a "*Survey or examination of the mouth of Coquille River, Oregon,*" and upon investigation of its object, instructions were given to Major Michler to extend the examination so as to embrace the general question of a navigable outlet to Coquille River. His report thereon was transmitted to Congress at its last session, and printed in Ex. Doc. H. R., No. 216.

(See Appendix Z 5.)

BREAKWATER AT WILMINGTON, CALIFORNIA—REMOVAL OF RINCON ROCK IN THE HARBOR OF SAN FRANCISCO.

Officer in charge, Maj. G. H. Mendell, Corps of Engineers, with Lieut. C. B. Sears, Corps of Engineers, under his immediate orders.

1. *Breakwater at Wilmington, California.*—At the date of the last annual report the timber construction was completed and about two-thirds of the stone line was finished. The stone line is 2,000 feet long. It was completed in the past year.

The double-piled work, which is 1,000 feet in length, and which stood in 5 feet of water, was filled with stone to the height of 3 feet above mean low-water, and ballasted on both sides with gravel and stone to half tide. The single line of piled work was ballasted to the same height for a distance of 2,200 feet.

Two stone jetties, aggregating 980 feet in length and rising from 2 to 4 feet above the lowest stage of the tide, were built, with the object of directing and controlling the action of the current. They had the effect to increase the depth of water on the bar.

A number of short jetties, aggregating 700 feet in length, were built along the main line, for the double purpose of preventing the work from undermining and to favor the accumulation of sand along the line. These works, as mentioned, consumed 25,778 tons of stone and gravel.

A careful hydrographic survey of the lower part of the estuary was made and proposals issued for excavating a channel. No bids being