45TH CONGRESS, 3d Session. } HOUSE OF REPRESENTATIVES. { Ex. Doc. No. 97.

ROGUE RIVER, OREGON.

# LETTER

FROM

# THE SECRETARY OF WAR,

TRANSMITTING

*Copy of report of Maj. G. L. Gillespie, Corps of Engineers, of an examination of Rogue River, Oregon.*

FEBRUARY 22, 1879.—Referred to the Committee on Commerce and ordered to be printed.

WAR DEPARTMENT,
*Washington City, February* 17, 1879.

The Secretary of War has the honor to transmit to the House of Representatives a letter from the Chief of Engineers, dated the 15th instant, and accompanying copy of report of Maj. G. L. Gillespie, Corps of Engineers, of the results of an examination, made in compliance with the requirements of the river and harbor act of June 18, 1878, of Rogue River, Oregon.

GEO. W. McCRARY,
*Secretary of War.*

The SPEAKER *of the House of Representatives.*

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OFFICE OF THE CHIEF OF ENGINEERS,
*Washington, D. C., February* 15, 1879.

SIR: I have the honor to submit herewith a copy of a report to this office from Maj. G. L. Gillespie, Corps of Engineers, of the results of an examination made, under his direction, to comply with the requirements of the river and harbor act of June 18, 1878, of Rogue River, Oregon, with a view to the improvement of its navigation.

Very respectfully, your obedient servant,

H. G. WRIGHT,
*Acting Chief of Engineers.*

HON. GEO. W. McCRARY,
*Secretary of War.*

## EXAMINATION OF ROGUE RIVER, OREGON.

UNITED STATES ENGINEER OFFICE,
*Portland, Oreg., January* 21, 1879.

GENERAL: I have the honor to submit herewith my report on the examination of Rogue River, Oregon, made in compliance with the river and harbor act approved June 18, 1878.

The act calls for a *survey*, but by reason of its inaccurate phraseology in placing Scottsburgh upon the Rogue River, this office could not determine whether it referred to the Rogue or to the Umpqua River.

In view of the doubt created by the language of the act, the honorable the Secretary of War, under date of September 20, 1878, directed that no survey be made, and that a report be prepared on Rogue River from the facts already known relative to the river.

This office possessed no information about the river, and could gain none in this vicinity, excepting the passing notice of the harbor, given in the records of the coast survey of the Oregon coast. Many letters were addressed to influential men throughout the State, requesting information, but no reply was elicited. In order, then, to meet the intent of Congress, and to carry out the subsequent instructions of the honorable the Secretary of War, I deemed it incumbent upon me to send a competent engineer to the river to make a hasty examination, and to collect such data as would assist me in reporting upon the general character of the stream, and the agricultural and mining resources of the country traversed by it.

The gentleman selected was Mr. Philip G. Eastwick, assistant engineer, whose ability and previous service in various departments under the general government, dating as far back as 1862, highly recommended him to my attention. The examination was made during a very inclement season of the year, and the difficulties everywhere encountered along the river by reason of its numerous rapids and falls, together with the poverty of the country in furnishing any ready facilities for passing them, made the task one of no usual experience and hardship. Mr. Eastwick deserves great credit for the zeal, energy, and ability displayed in executing the instructions given him. I submit herewith his report. It is so descriptive of the river and the adjacent areas drained by it, that I feel it unnecessary to do anything more than summarize the principal features of the examination, and to embody my views as to the results.

In explanation of the length of the river examined, I have to say that it was impracticable at this season to reach the mouth of the river by sea without taking up more time than I could allow for the examination, and accordingly Mr. Eastwick was directed to go overland to the river by the nearest and most practicable route, and to follow it thence to its mouth by any means he could either hire or readily construct.

Rogue River is approximately 300 miles long; it rises in Crater Lake, in the Cascade Range, runs generally in a southwesterly direction; drains with its various tributaries the three counties located in the southwestern corner of Oregon, adjoining the California line, and finally reaches the ocean near latitude 42° 25′ north, and longitude 124° 21′ west. From Rocky Point, the initial point of the examination, for the first 26 miles the river was found to be a passably good stream 100 to 180 feet wide, and draining a narrow but somewhat rich valley; many small rocky rapids occur, which might possibly admit of slight improve-

ment if the river had a better outlet. For the next 70 miles the river possesses all the features of a mountain stream, steep slopes, swift in its currents, and filled with rapids and falls, choked with detached masses of rocks and bowlders, which discourage any attempts at improvement. In the outer reach of this section the river breaks through the coast range of mountains in a deep, narrow, and rugged cañon about 25 miles long, extending to Big Bend, about 10 miles above the confluence with the waters of the Illinois River, a southern tributary. In this particular part the rapids occur in rapid succession, and in one place the fall is as great as 60 to 80 feet to the mile, the average throughout the section being 15 to 20 feet per mile. From Big Bend to the mouth of the river the channel is from 200 to 400 feet wide, the bends are very abrupt, and the connecting straight reaches short and cut up into frequent shoals and swifts, making navigation impossible for vessels having any commercial importance. Along this portion hydraulic mining has been carried on rather extensively, and the miners have used the river as a dumping ground for their mining *débris*, thereby filling the bed and shortening the tide-way, which extends to about 4 miles from the mouth. The river is practicably navigable only 2 miles from its mouth, and for the smallest grade of vessels, drawing not to exceed 6 feet of water. Its improvement will not therefore be considered as worthy of any thought or attention.

As regards the harbor, it scarcely merits any better consideration. It is very small in capacity, possessing only 200 to 250 acres, with the greatest depth, in the center, of 15 feet at low-water. It has on the south side a long, low, and sandy shore, and on the north side a range of high hills from which project to the southward a long, low sand-spit, confining the channel to a crooked course across the bar. During moderate winds from any point, the sea breaks heavily over the wide banks of shifting sand that cover the entrance, and the channel over the bar, under the most favorable circumstances, is too narrow for sailing-vessels to turn in, and has but 8 to 10 feet at low-water. The range of the tides is about 5 feet.

There is no settlement of any extent at the harbor, and there is nothing to invite commerce or trade. The eastern and western parts of the river, divided by the Coast Range, cannot be connected by any practicable improvement, and even if the western part were improved so that vessels could reach the western slopes of the Coast Range by an unobstructed navigation, there is no local interest which would encourage vessels to use it.

Rogue River Reef, a prominent group of in-shore rocks, lies 4 miles to the northward of the entrance of the river, and makes this part of the coast dangerous of approach. The inside channel is never used by coasting steamers, as it is considered more dangerous than any other on the coast.

I invite attention to the report of Mr. Eastwick, and desire to say that I agree with him thoroughly in the conclusions he arrives at relative to the propriety and practicability of the improvement of the river, and will not make an estimate for any improvment of the harbor, since there is no commerce there to be benefited or encouraged, and it would never be selected as a suitable place for the construction of a harbor of refuge.

I am, general, very respectfully, your obedient servant,

G. L. GILLESPIE,
*Major of Engineers, Bvt. Lieut. Col., U. S. A.*

CHIEF OF ENGINEERS *U. S. A.*

REPORT OF MR. PHILIP G. EASTWICK, ASSISTANT ENGINEER.

PORTLAND, OREG., *January* 16, 1879.

SIR: In compliance with instructions contained in your communication of December 7, 1878, I proceeded from Portland, by railroad and stage, to Rogue River Valley, reaching that river at Rock Point on the 13th of December. Here I engaged two men to accompany me down the river to the sea. Being unable to find a boat on the river suitable for the work on hand, I was delayed at Woodville, a point on Rogue River at the mouth of Evans's Creek, 6 miles below Rock Point, until the 18th, in building a boat, with the aid of which I descended the river to a point in the heart of the Coast Range of Mountains, 65 miles below Rock Point and 75 miles from the mouth of the river. Here, in lowering the boat over the rapids, it was carried away by the strong current and wrecked on a rock in the river, a short distance below, the entire contents of the boat being emptied into the river and soon carried out of sight.

After unsuccessful attempts to regain the wrecked boat from where it had lodged on the rocks, I abandoned it and proceeded afoot down the river to the mouth of Illinois River, a distance of 44 miles. Here I was fortunate enough to procure a small boat to take me to Ellensburg, at the mouth of Rogue River, a distance of 31 miles; from whence, after making the necessary examinations of the harbor, I returned to Portland.

Rogue River takes its rise in the Cascade Range of Mountains, its highest and principal source being Crater Lake, a lake sunk deep into the crest of the mountain, and occupying the place of an extinct crater. From its source it flows in a general southwesterly direction down the western slope of the Cascade Mountains, until it enters the agricultural basin known as "Rogue River Valley," at a point estimated to be by the meanderings of the river about 175 miles from the sea.

But little is known of the character of the upper part of the river, before it emerges from the mountains, beyond a general knowledge of its ruggedness.

After entering the agricultural district referred to, the river receives many large tributaries, principally from the south, which drain an extensive area of agricultural and grazing country centering around Jacksonville, Ashland, and Applegate, the three principal business centers of the valley. This country is described as an extensive and heavily-undulating tableland, extending from the foot-hills of the Cascade Range on the east to those of the Coast Range on the west, and from the foot-hills of the Siskyou Mountains on the south to Rogue River on the north, embracing an area of 600 to 800 square miles. Much of this country is prairie land, or land covered with a light growth of timber, and it is here that is collected the principal settlements of Rogue River Valley.

My examination of the river embraced that part of it lying between Rock Point to the mouth of the river, a distance estimated to be 140 miles. Twenty-six miles of this, immediately below Rock Point, lies in the western end of the basin heretofore described, the river flowing in a nearly direct westerly course to Green's Bend, having cut a channel throughout this distance deep into a bed of cement-gravel. The banks of the river rise to a height of from 30 to 50 feet above the present low stage of water, and are surmounted on both sides by level or slightly undulating table or bench land, generally of narrow width, but occasionally extending a mile or more back from the river. These tablelands skirt the bases of steep hills. On the tablelands frequent areas are found which have been denuded by floods and the rocky substratum exposed. As a rule, however, they are covered with a deep, rich loam, quite free from stone, to near the bases of the lining hills, where the surface is generally found to be covered with fragments of rock detached and fallen from the hillsides. The hillsides are covered with loose rock and frequently with rock in place. The banks of the river immediately adjoining the water are generally rocky, the rocks being frequently imbedded in the cement-gravel.

On the 26 miles of river from Rock Point to Green's Bend I passed over 33 rapids, many of them, however, showing as such only at the low stage of water prevailing at the time of the examination. A remarkable feature of the river-bed is the entire absence of loose gravel or sand bars. This is no doubt due to the effect of the very strong current which prevails in the river at the time of the freshets, the volume of water and intensity of the current at such times being such as to carry before it all the gravel and sand as soon as it is detached from the cement, leaving the bottom and sides swept clean of all small, loose material, and frequently channeled out in the bed of the river in narrow and deep furrows running with the direction of the river.

At a number of the rapids the channel is obstructed by masses of detached rock irregularly scattered through the river. The average fall of this part of the river is from 8 to 10 feet per mile, the fall being generally concentrated at the rapids over short distances, where the water falls in many cases at the rate of 1 to 1½ feet in 100 feet, the intervals between the rapids having frequently very deep and slack water.

The width of the river throughout the distance here under consideration varies but little from 150 feet, except at a few of the rapids, where the width is frequently somewhat less.

From Green's Bend to Big Bend, a distance of 73 miles, the character of the river is that of a rapidly-falling mountain stream. It is with very few exceptions narrow, rarely exceeding 150 feet in width, and frequently narrowing down to a width of from 25 to 50 feet; the waters in the narrows pouring with great velocity and rapid fall through the gorges. The fall of the river is, as may be expected, very great, though occasional long and slack-water levels are met with, more especially in the close cañons, where, in some cases, the river being very deep, the current was scarcely perceptible. At one place, 58 miles below Rock Point and 82 miles from the sea, the fall of the river over a distance of a half a mile I estimate to be 30 to 40 feet. The average fall of these 73 miles of the river will, I think, be as great as 15 to 20 feet per mile.

This part of the river abounds in rapids and waterfalls, 72 of them occurring in the first 39 miles of this division. At a number of these the fall in a very short distance is as great 10 feet.

Entering this division of the river at Green's Bend, the cement-gravel of the river bed rapidly disappears, occasional and extensive gravel-bars are met with, and these in turn disappear, the mountains closing in upon the river, forming an almost continuous cañon for the balance of the distance, the walls of the cañon being very frequently of barren rocks rising in places perpendicularly to a height of several hundred feet, their summits surmounted by the steep mountain slopes. More generally, however, a narrow beach very much obstructed by large masses of rock is found between the river and the foot of the bluffs.

The division of the river throughout its entire distance cuts through that part of the Coast Range of Mountains known as the Rogue River Mountains. From Green's Bend, the general course, at first north, deflects gradually to the west until in passing throuhg the heart of the mountains it has a generally westerly course. From here the direction is changed to southwest, which direction is maintained as far as Big Bend. The river throughout this entire distance is very crooked and has many very abrupt bends. As a consequence, the distance between the extremities of the division, which, on an air-line, is from 30 to 35 miles, is increased to 73 miles by the river.

Passing Big Bend and entering upon the lower division, the river widens and its fall decreases; numerous gravel bars and shoals are met with, which become more frequent in the lower part of the river.

The distance from Big Bend to the mouth of the river I estimate to be 41 miles, following the meanderings of the river, though in a direct line I do not think it will exceed 25 miles. The course of the river for the first 10 miles below Big Bend is nearly due south to its confluence with Illinois River, a tributary coming in from the left. From Illinois River, Rogue River follows for a short distance a general northwesterly course, turning then to the west and finally to the southwest, which general course it maintains until it reaches the Pacific Ocean. The river from the mouth of the Illinois is very crooked, the bends being very numerous and abrupt, and the intermediate straight parts being with few exceptions very short. The river has a width over nearly the whole distance from Big Bend to the ocean varying from 200 to 400 feet, except at a few of the rapids and swifts, where it narrows, and at and near the mouth of the river, where it widens to a maximum of but little over one-third of a mile. On this division I noted 31 rapids and swifts, but few of them, however, offering much impediment to the free navigation of the river for a distance of 35 miles from its mouth.

The foot-hills of the mountains are here cut through by the river, and the valley loses the cañon-like character which has been characteristic of the river above. Though as a rule the steep hill-sides terminate abruptly on the edge of the river, and in some cases in perpendicular rock-bluffs, yet frequent short and narrow benches of arable land are met with. This character the river valley maintains with great uniformity until the head of tide-water is reached, at a point 4 miles above its mouth.

The river has cut its way through beds of indurated clay-rock, interspersed with occasional beds of sandstone. At places it is shoaled or narrowed by extensive gravel-bars. The fall of the river will not exceed an average of more than 2 or 3 feet per mile, being greatest at the upper end of the division.

The part of Rogue River Valley immediately adjoining the river, and which has been the subject of this examination, is but little settled, the land being as a rule very rocky, and offering but little inducement to thesettlers. In the Upper Valley, or that part lying east of the Rogue River Mountains, the principal settlements lie some distance to the south of the river, on Big Butte, Dead Indian, Bear, Applegate, and other creeks tributary to the Rogue River. This country is very productive in all kinds of agricultural produce, in hogs, cattle, and sheep. Prices of all kinds of domestic produce are very low, the facility for transportation beyond the basin being very limited and the cost high, surrounded as it is on all sides by high mountain ranges. The timber of the country is principally white and yellow pine, with occasional groves of fir-trees and white and black oak. The level part of that part of the valley adjoining the river is generally prairie land, with occasional scattered black pine and black and white oak of stunted growth. Near the base of the hills and up the slopes to the summits the surface is covered with a light growth of pine timber, with many areas of

bald surface. The surface is free from underbrush, and the timber nowhere so dense as to prevent the growth of the native grasses. Beyond the summits of the hills which flank the valley the timber is said to be much better in quality and to be found in larger quantities.

This basin has for many years produced large quantities of gold from placer mines on the banks of the river, and in and adjacent to the beds of the streams which traverse the country. Many of these mines are now being worked on an extensive scale. When water is abundant, the river-banks and the small tributaries afford mining ground for many small companies of miners, many of whom are Chinamen.

Considering the capacity of this country to sustain a large population, it is very thinly settled. This is mainly due to the absence of a market for the surplus products which could be raised there. When it is possible to furnish an outlet that will afford cheap facilities for the exportation of the produce of the valley to a market, the country will furnish homes for a large and industrious agricultural population.

The mountain division of the river, passing as it does through high and lofty mountains, furnishes no agricultural lands, except a limited area among the foot-hills of the eastern slope. A few farmers have located on the isolated areas of arable lands, which they use principally for grazing purposes. The more mountainous parts of this division are uninhabited, except by miners on the river and its tributaries, and occasionally by a solitary sheep-herder, who grazes his flocks on the high, bald hills which are found in the deep recesses of the mountains at "Big Meadows" and "Little Meadows." These districts, adjoining each other, are situated in the heart of the mountains, and contain extended areas of high, bald hills, covered with grass. These hills rise to an altitude of from 2,000 to 3,000 feet. The district occupies a distance of 10 miles on the north side of the river, and extends northerly a distance varying from 5 to 10 miles. It is accessible only by mountain trails, crossing high mountain ridges which surround it on all sides, its accessibility by the river being blocked by the numerous close cañons or rock bluffs, with which the river abounds.

Along the banks of the river I found many miners' cabins, and evidence on the bars and rocky banks of the river of recent mining operations, and in a few cases of quite extensive hydraulic mines. Owing to the scarcity of water at the time of passing down the river, but little mining was being carried on and that principally by Chinamen. When water is abundant for mining purposes, the gold mining carried on at many places on this part of the river and on its tributaries is very extensive. The principal mines are located at Spanish Gulch and at Galice Creek, on the eastern slope of the mountains. Many small companies of miners, however, mine on a small scale along this entire division.

On the mountain slopes of the eastern foothills are large forests of timber, principally pine. Oak timber is found in considerable quantities, while fir is quite scarce. The owners of the saw-mill at Ellensburg, at the mouth of the river, have for a number of years cut from the timbered lands of this section quantities of sugar-pine, and endeavored to drive it down to their mill. They have, however, signally failed in getting many of the logs lodged in their boom at the mill, as they would either land on the bars and among the rocks of the rapids in their descent, remaining there until the next freshet would carry them with uncontrollable velocity down the river and past the mill into the ocean. The last cut, consisting of 750,000 feet, was made in the spring of last year. None of these logs have yet reached the mill, but are to be found scattered along the river from where they were dumped into the river down to Big Bend.

From Big Bend to the head of tide-water, 4 miles above the mouth of the river, the valley is occupied by a few settlers, many of them half-breed Indians, whose houses are scattered at long intervals, occupying most of the available bottom and bench lands near the river. Back from the river and in the smaller valleys shedding into the river, as well as up the slopes of the flanking hills an occasional settlement is found. The population occupying this part of the valley are generally old settlers or their children, who have been located here from the time of the early pioneering days. Their manner of living is generally rude and primitive, and but few of the luxuries, or refinements, or even comforts of civilization have yet found their way among them.

Wherever land is found fit for cultivation it produces abundantly of all manner of fruit and vegetables, and of excellent quality. The less hardy fruits or vegetables which, in the northern part of Oregon, will not stand the more severe climate, grow to great perfection here. But little grain is raised, and this, together with the other products of the soil, is consumed at home. A principal occupation of the settlers is the raising of sheep and cattle, of which large herds are grazed on the slopes of the valley and on the bald hills. For this the country is well adapted, as the bald hills, covered with nutritious grasses, extend for many miles on each side of the river.

Gold-mining is carried on at a few places on the gravel-bars when the supply of water will admit of it. As a rule, however, it does not pay. Ledges of native cop-

per and of other copper ores and of chrome ore have been found on Illinois River, and on Rogue River, below the mouth of the Illinois. Their value as mining-property is little known, as no systematic or intelligent examination of them has been made.

Large quantities of very valuable timber are found growing among the western foot-hills of the mountains. Immediately adjoining the river, and extending back a short distance, the fir timber is of poor quality. Among the oaks, which are numerous in the valley, are found the white and black oaks of Oregon, and three evergreen varieties, designated by the inhabitants as "live-oak." Other varieties of timber of large growth, which in time will be of value, are found in the valley. Pine and cedar are found only in limited quantity.

The country adjacent to the last 4 miles of the river partakes less of the mountainous character than that lying to the east of it. The hills are, however, high, but their slopes more gentle; much less timber is found on them. The proximity to the sea affects the climate in such a manner that fruit and the more tender agricultural products do not thrive. The best of this country is used as pasture-land.

At the time of making the examination of the river the water was at its lowest stage, a long period of dry and frosty weather having preceded the period of my examination. The river generally reaches its lowest stage in the month of September, fluctuates a little during the fall until December or January, when a rapid rise takes place, the high-water continuing, however, only for a short period, after which it falls rapidly at first, and then more slowly, continuing its fall with many fluctuations until the low stage in September.

The winter rise is generally very great, the usual rise at this period in the upper part of the river, east of the Coast Range, being from 30 to 40 feet, while above the gorges in the mountains it is backed up to a much greater height, reaching in some cases as high as 70 feet. In the winter of 1861–'62, after a deep snow, which was followed by a warm rain, the rise of the river was unusually high and flooded the bench-land adjoining the river, carrying away many buildings.

During the prevalence of these freshets all the rapids and falls of the river are lost sight of, and the river assumes the character of a boiling, surging mountain-torrent, filled with strong eddies and whirlpools, and carrying down with it immense quantities of drift-wood to the ocean.

The volume of water passing down the river at its entrance into the mountains at the low stage of water at the time of the examination I estimated to be from 350,000 to 375,000 cubic feet per minute. This is increased by the tributary streams to a volume approximately estimated at 500,000 cubic feet at the mouth of the river.

The harbor at the mouth of the river is but little over a half mile in length, with an average width of a half mile, and has an area of 200 to 250 acres.

At the mouth of the harbor the channel is contracted to a width of 400 feet and confined by sand-spits jutting out from the beach on both sides. The submerged beach of the harbor falls off very gently from the shore-line to the middle of the harbor, where the greatest depth at low-water is 15 feet. The beach at the upper part of the harbor, lying at the base of the low hills, is narrow and low and sandy. This beach widens out at the lower end of the harbor, and connects with the wide and low sandy beach of the Pacific Ocean, throwing out the low sand-spits which contract the channel at the entrance of the harbor.

Passing out of the harbor through the narrow channel, the current is abruptly deflected to the south by a sand bar and spit jutting out from the north shore. From here the channel follows a course nearly parallel to the ocean-beach for a distance of a quarter of a mile, and then crosses the bar diagonally into the open sea, which it reaches at a distance of a half mile from the narrows at the entrance to the harbor. The harbor is marked by no prominent headland, the hills near the ocean at its entrance being low and rolling. The harbor and its entrance are entirely free from submerged rocks that would obstruct the free navigation of the port, the bottom being throughout of sand, shifting under the varying influences of the currents. The sand-bar outside of the harbor is narrow, and the channel through it straight. The greatest depth upon it at low-water is 6 feet. The rise and fall of the tide is but 6 feet, thus affording a depth of channel of 12 feet upon it at high-water.

At the time of the annual freshets the strong current of Rogue River carries away the sand-spit opposite the entrance to the harbor, and opens a straight and direct channel to the sea. This channel, at times, forms near the north margin of the harbor, and at other times near the south margin, or at points intermediate. After the falling of the water, however, the strong northwesterly wind, which prevails during the summer season, throws a bar and sand-spit across the newly-made channel, gradually deflecting it to the south, until it again runs parallel to the ocean-beach.

During the past two years but one vessel, the steamer Alexander Duncan, has entered or left the port. This steamer is owned by Messrs. R. D. Hume & Co., the owners of the salmon-cannery and of the saw-mill and store at Ellensburg, and is run principally in the interests of their business on the river. This vessel has a registered tonnage of 148 tons, draws 9 feet of water, and has thus far had good success in cross-

ing the bar opposite the entrance to the harbor. In the past two years she has averaged one round trip per month between San Francisco and this port. Other small steamers have in former years entered the harbor; the largest of these, the steamer Coquille, 164 tons register, carried a draft of 9 feet. In the earlier days the lumber trade of the port was carried on in small schooners of from 30 to 90 tons burden; at times they experienced great difficulty in crossing the bar, unless under favorable circumstances of wind and weather.

The highest point of the river reached by any sea-going vessel is about 2 miles above its mouth, where is located a fish-packing establishment (now out of use).

No vessels bringing merchandise from foreign ports have entered this harbor, and it has therefore yielded no revenue from foreign imports. For a number of years a deputy collector of the port was stationed here, but the office was a few years ago abolished.

During the year 1878 there was landed at the port general merchandise, principally for domestic consumption, amounting in value to $41,000. Of this, merchandise to the amount of $35,000 was imported by Messrs. R. D. Hume & Co., and the remainder, $6,000, by all others.

The exports during the same period consisted of salmon, wool, hides, and skins, and from $1,500 to $2,000 in gold dust, amounting in the aggregate to $61,000. The entire trade of the port is carried on with San Francisco.

The principal part of the town of Ellensburg is situated on the left bank of the river at the head of the harbor and about a half mile from the ocean. From here a few houses are scattered at intervals down the shore of the harbor and on the ocean-beach for a distance of about three-quarters of a mile. The present population of the town will not exceed 100. The county-seat of Curry County is located here. Messrs. R. D. Hume & Co. carry on a salmon fishery and cannery, the principal industry of the place. This firm are also owners of the saw-mill located here, capable of cutting from 15,000 to 20,000 feet of lumber daily. For the past two years, however, the mill has been in operation only to supply the very small demand of the neighborhood, and has been entirely idle since last July. The buildings of the town are: the saw-mill, the salmon cannery, a general-merchandise store, a hotel, a county building, 4 store buildings (at present unoccupied as such), a school-house, and about 25 dwellings. The buildings are all constructed of wood and in a very rude manner.

The valuable agricultural country adjoining that part of the river east of the Coast Range would be greatly benefited by an outlet for produce of the country; with such an outlet the population of the country and its industries would rapidly increase. The channel of Rogue River, by reason of its ruggedness and forbidding character, at once bars egress from the upper valley by the navigation of that river, the construction of works to admit of its navigation being utterly impracticable, if not impossible.

Below this country and as far as the ocean there is nothing in the country to warrant the expenditure of any money for improvements of the river. The character and population of the country are such that I am of the opinion that were the river now open to free and unobstructed navigation, the country west of the eastern base of the Coast Range would offer no inducements whatever to its navigation by steamers.

The subject of building a narrow-gauge railroad from the upper valley to a seaport is now being agitated by the residents of the agricultural basin east of the mountains. It is designed to avoid the mountainous part of Rogue River Valley by striking the headwaters of the Illinois River and descending that river to its confluence with Rogue River. Should the hopes of the projectors be realized it may be important at a future day, in order to make connection with the ocean by river, to open up to navigation that part of the Rogue River below the mouth of the Illinois. This part of the river, with the addition of a length of 4 miles above the mouth of the Illinois, is the only part of the river that can be made navigable without artificial lifts for light-draft steamers. At the head of this section and 35 miles from the sea is a shoal rapid 1,500 feet long and from 300 to 600 feet wide, falling 10 feet. Here the water passes over a bed of indurated clay rock.

Among the rapids, swifts, and shoals noted below the mouth of the Illinois, and numbering twenty-two at the low stage of water, but five of them will call for any work whereby the river will be rendered navigable for steamers of 3 feet draft at low-water. Two of these will require the removal of 260 cubic yards of rock and 100 cubic yards of gravel which obstruct the channel. At two places the river is confined to narrow channels, close under the left bank, by wide-exposed gravel-bars on the left, while at the foot of these channels are very abrupt bends to the left, the current of the river concentrating in the bends. To render these parts of the river navigable will require in each case the construction of a channel through the gravel bars on the left and of wing-dams at the head of the bars, to divert the current from the old channel. This will involve the removal, in the two cases, of 9,000 cubic yards of gravel, and the construction of 700 linear feet of wing-dam. The lowest obstruction consists in a short and wide gravel shoal, requiring the removal of 1,200 cubic yards of gravel and the construction of 200 feet of wing-dam.

The cost of this improvement I estimate as follows:

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| 260 cubic yards rock, at $25 | $6,500 |
| 10,300 cubic yards gravel, at $1 | 10,300 |
| 900 linear feet wing-dam, at $2 | 1,800 |
| | 18,600 |

Very respectfully, your obedient servant,

PHILIP G. EASTWICK.

Col. G. L. GILLESPIE,
*Corps of Engineers, U. S. A.*

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