

2085

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey *Topographic*
Field No. Office No. *2085*

LOCALITY

State *Oregon*
General locality *Columbia*
Locality *River*

1891

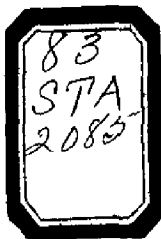
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CHIEF OF PARTY

Cleveland Rockwell

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U. S. COAST AND GEODETIC SURVEY.

T. C. Mendenhall, Superintendent.

State: *Oregon*

DESCRIPTIVE REPORT.

Topographic Sheet No. *2085*.

LOCALITY:

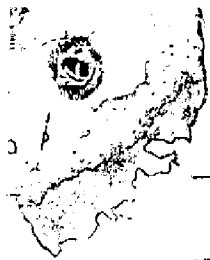
Columbia River.

1891.

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2085



Descriptive Report.

The topographical features of the country embraced within the limits of this sheet are very broad and plain. On the Oregon side of the Columbia, which embraces the large island named Government island, the land is the usual bottom land of the river, consisting of rich alluvial deposits of soil and sand, intersected by numerous sloughs draining ponds and lakes often of large areas. Many of these sloughs are very old and contain no water excepting during the high water season, but are grown up with fresh water marsh grass. The banks are always high and raised above the surrounding lands resemble two parallel embankments ^{constructed} raised by man. Every acre of these lands has been built up by the workings of the Columbia river. The higher ridges and areas of these bottom lands are covered in most places with trees of which the balsam or cottonwood are the most common.

though the Ash is also found in great numbers. Large Oaks, often in solid groves occupy the very highest ridges and in a very few spots the White pine has obtained a foothold.

The lowest lands are frequently covered with Willows. Wild grass, forming excellent grazing grows luxuriantly and is annually made into Hay. Herds grass and white clover are frequently planted on the highest parts though the former is liable to be killed out by high water standing long on the ground.

Crops of rye, oats and wheat are occasionally raised on the bottom lands and when not drowned by high water the yield is abundant.

Potatoes are raised in great quantities, maize yields well in places sheltered from the wind and all the root crops, as well as all garden vegetables produce very large returns. Orchards are generally planted on the highest lands, apples, plums, prunes and pears being well adapted to the soil. Peaches yield well and will endure the highest waters if it does not stand too long on the ground.

The principal business of the farmers however is dairying and grazing of cattle and horses.

The cottonwoods of the bottom lands is very extensively used to make into wood pulp for the manufacture of paper and for the product known as excelsior. White fir is also used for the same purpose.

The public roads on the bottom lands are few, most of the roads being merely wagon tracks across the bottoms.

The bridges are generally slightly built temporary structures of piles and planks weighted down by large boulders.

The fences formerly of post and rail are now very generally of barbed wire and boards, and as every high water is liable to bring drifting trees which lodge and break them down when the water falls, there is a continual expense and labor incurred in their maintenance.

The shores of these bottom lands are constantly changing, the currents cutting away the soil and depositing it elsewhere in great shoals and bars which annually grow higher and are

soon covered with dense thicket, first of willows and later of Balm.

Such accretions are seen on the shore south of the upper end of Government island also above the head of Lemmon's island, the former nearly shutting up the southern channel of the river at low water.

Columbia Slough has its rise as shown, on the upper end of this sheet, in its passage to the mouth of the Willamette draining all the ponds and lakes along its course.

Many of the lakes where the outlets are dammed sufficiently to maintain the water at a suitable height are densely set with a growth of *Sagittarius* or *Najas*, a bulbous edible root much esteemed by the native Indians and Chinese. This vegetation intensely green in summer is soon cut down by the autumn frosts and the lakes then become the favorite haunts and feeding grounds of Geese, Swans, Canvasbacks and other varieties of ducks which abound in incredible numbers. The shooting privileges on these lakes are much sought after. Near the upper end of the sheet on the Oregon

side may be recognized a narrow ridge between two lakes, distinguished by being covered with fir trees. This ridge crops out on the shore of the river at Taggart's bluff, and is composed of a very coarse, and friable yellow sandstone containing boulders of vesicular basalt and other igneous rocks.

At Taggart's bluff there are indications that this sandstone overlies a deposit of cement gravel so abundant on the north side of the river.

About two miles west of the upper end of the sheet is a place where the rising water rushes through with great force and the bed of the reach is strewn with immense boulders worn by glacial action or the erosion of water. There are indications that these boulders underlie a considerable area in this vicinity.

The north side of the Columbia as shown on this sheet is of a wholly different topographical and geological aspect from the south side.

The bottom lands are quite insignificant in extent, only occupying the areas between one rocky point and another.

The most prominent topographical feature is "Pine Hill" a considerable elevation of about five hundred feet near the east end of the sheet which may be said to be the commencement of the foothills of the Cascade Mountains.

From this hill the land slopes rapidly to the west and northwest to a level looking country of great extent, composed of a successive series of plains or plateaus, the first from the river being called Millplain.

Near the river shore west of Pine Hill for a mile or so a perpendicular rocky cliff supports the plain above, this cliff breaking down into hillsides strewn with immense boulders and gravel to some distance below Fishers landing.

The topographical limits of the sheet do not extend towards the north far enough to take in only the edge of Millplain which is a comparatively level plateau about 300 Hundred and fifty or three hundred feet above the river level.

The land is very fertile and being very largely an original open prairie not covered with forest, was one of the earliest

settled districts in the state. The Hudson's Bay company had the first grain and produce farms on the plains and at a point two miles below Fishers Landing they operated a small water-power grist-mill. The same company had also a small saw-mill near this locality. Prune Hill and the country back therefrom has been very largely denuded of its timber by forest fires many years since, and such localities are being rapidly settled up and cultivated in crops generally of herdsgrass and grain but also extensively in orchards of prunes, peaches and other fruits. In this view the destruction of the forests by fire has not been an unmixed evil, as the lands on the high hills in the ordinary course of settlement would not be cleared and cultivated for many years to come. The soil is a light yellow loam, well drained for fruit growing.

Fishers Landing is the principal outlet and shipping point for the Eastern portion of the plain. Cordwood is also one of the prominent crops of the County, being hauled a distance of

several miles and piled up on the bank of the river, and the country is being gradually stripped of its timber in this way. Pum Hill is a solid mass of very red basaltic rock, but the cliffs immediately west along the river are quite different, being composed of a variety of basalts known as augite. These cliffs have been worked very extensively as quarries, great quantities of stone having been taken to build the jetty or dike at the mouth of the Columbia and for building purposes in the city of Portland. The stone for 60 or 80 feet down from the top of the cliffs is a homogeneous rock and breaks out in great masses. Below this level, at one part of the quarry the character of the rock changes to columnar basalt of large prisms. The whole north side of the river bears evidence of being the lateral moraine of a great glacier filling the basin of the river though no striae have yet been observed in the rocks. Occasionally a boulder of granite may be noticed in the drift and a boulder of the red basalt of Pum Hill, as large as a tent lies here and there as far down as Fishers landing.

The most marked feature of the topography is the numerous streams of pure cold water. These streams are perennial, being all fed from large springs having their source on the hillside in the gravel deposit underlying Millplain. In no instance do any of these streams flow across that plateau.

The roads along the river are fairly good, without much labor bestowed upon them; the bridges being unimportant wooden structures, as the streams heretofore mentioned do not greatly shape the contour of the ground nor cut deep in the gravel. Towards the lower end of the sheet, the straight course of the shoreline for about two miles is composed of a solid wall of hard cemented gravel or breccia with an occasional thin stratum of the coarse sandstone noticed before on the upper end of the sheet on the Oregon side.

The fences are very generally of rails or of boards. The Columbia river is subject to an annual rise which reaches its greatest height in the latter part of June. The water at this time is generally confined within the banks of the river, but floods of extraordinary extent occur at infrequent

intervals of years when every foot of land which
 has been formed by the river currents is submerged
 and the river reaches to the foot of the hills on either
 side. It is the fear and uncertainty of this unusual
 rise which prevents the cultivation of the land in
 crops otherwise very productive and profitable.
 The forests on the bottoms of cottonwood, are often
 very old and some of the trees of great size, being
 over a hundred feet high with trunks five feet or
 more in thickness. The forests on the high lands
 are generally of the Douglas spruce, commonly
 called the red and yellow fir, the trees often being
 from one hundred and fifty to two hundred feet in
 height and the trunks four, five and six feet in
 diameter. Some red cedar of valuable quality
 is found in swales where also is seen the alder
 and the acer macrophyllum or western coast
 maple. The forests are also occupied with a
 dense undergrowth of vine maple, dogwood, burn-
 berry, red huckleberry, hazel and a great variety
 of smaller growths. The undergrowth on the bottom
 lands is of several varieties of willows, wild rose
 and blackberry vines and hardhack in impenetrable

thickets with nettles and other weeds of great size. The common thistle has spread over large areas of pastures lands and but little effort is made to check its advances. In some winter seasons, ice comes down the river in great quantities and is liable to pile up on the shallow bars and gorges in the narrowest channels. The very extreme range of the floods in the Columbia is about 2 feet, and ice gorges occur generally when the river is at about the lowest stage. The trade or commerce of the river in this upper part is altogether local except for the carrying of tourists who take advantage of the river boats to view the unsurpassed scenery. The completion of the locks at the Cascades by the Government and of a portage railroad by the State at the same place is expected to revive the large carrying trade from the interior which was destroyed by the building of a railway along the river. Should such improvements be also made at the Falls of the Columbia, the river would again become the great artery of the Country, and be crowded with boats as formerly.

There are unmistakable evidences of successive elevation of the Cascade mountains shown in the topography of the country west of the Cascades along the river, indicated also by the names of Mill plain, Fourth plain, Fifth plain etc.

Between these elevations river washed gravel in great quantities is found on all the heights that I have visited particularly on steep side hills. The soil on the highest elevations is of good quality and many fine farms are located on lands two thousand feet above the river level where advantage has been taken of the complete destruction of the forests by fire.

Following are the statistics on the topographical sheet

River and islands - Shore line 7 1/2 of Stat. miles

Lakes, ponds and sloughs " " " "

Roads " " " "

Marsh line " " " "

Approximate area in Square " " 24

Number of triangulation points on the sheet 19

" " " " (occupied) on sheet 13

" " " " (Concluded) 6

of which are: 1- chimney of house - 2- marked trees.
 - 1- gable of house - 1- gable of barn.

Plane-table points, on main river 19

" " " on channel south of Goot I. 31

On the main river these 19 points were determined by intersection or resection generally from triangulation points, and with great accuracy. On channel south of Goot Island the points were fixed by intersection and by the three point problem and considering the length of the narrow channel are reasonably accurate.

Where the nature of the details render it desirable they are determined with much precision.

The contours through dense forests represent the general shape of the ground and do not pretend to any precision. In size and character of growth the forests and underbrush on both high and bottom lands are drawn to represent a topographical landscape treated in a conventional manner.

In revisiting the triangulation points of 1889, I found most of them in good condition and in some cases means were taken to make

them additionally secure. Station "Lower point" on the lower end of Simmons island was found to have washed away by the caving of the alluvial bank and but one witness stub was standing. This station was sufficiently recovered from this state to be used for topographical purposes.

There will be found and developed by the hydrographical survey rocks and shoals which appeared above the surface of the water after the floods had subsided and after my party had moved up the river, and it was not practicable at that time to go back over the ground and put them on the sheet. Regarding the scheme of triangulation, considerable work was done to open the view Hexter - Harlow, to improve the condition of the scheme Hexter - Hood - Plum Hill. At the time the work was done the smoke was so dense that the intervisibility of the line Hexter - Harlow could not be made out and upon occupying the points it was found that a little more work at or near the Hexter would be required.

Respectfully Submitted

Cleveland Rockwell

Assistant