Form 561
U. S. COAST AND GEODETIC SURVEY
DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

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

LOCALITY
State: Oregon
General locality: Columbia
Locality: River

1891
494'

CHIEF OF PARTY
Cleveland Rockwell

LIBRARY & ARCHIVES

DATE
U. S. COAST AND GEODETIC SURVEY.

T. C. Mendenhall, Superintendent.

State: Oregon

DESCRIPTIVE REPORT.

Topographic Sheet No. 2085.

LOCALITY:

Columbia River

1891.

CHIEF OF PARTY:

Cleveland Rockwell.
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 bottomland of the river, consisting of rich alluvial deposits of soil and sand, intersected by numerous sloughs, draining ponds and lakes of large areas. Many of these sloughs are very old and contain no water excepting during the high water season, but are gummed up with fresh water marsh grass. The sloughs are always high and raised above the surrounding land. Resemble two parallel embankments formed by man.

Every acre of these lands has been built up by the runnings of the Columbia River. The higher ridges and areas of these bottom lands are covered in smooth places with trees of which the balsam or Cottonwood are the most common.
though the Ash is also found in great numbers.
Large Oak, often in solid groves, occupy the
very highest ridges and in a very few spots the
White-oak has obtained a foothold.
The lowest lands are frequently covered with
Willows. Wild grass, forming succulent grazing
grasses luxuriantly and is annually made into
hay. Herbs, grass, and white clover are frequently
planted on the highest parts through the former
is liable to be killed out by high water. Standing
long on the ground.

Grasses 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, pears, and peaches
well adapted to the soil. Peaches yield well
and will endure the highest water 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 cottonwood of the bottom lands is very extensivly used to make into wood pulp for
the manufacture of paper and for the production known as excelsior. White fir is also used
for the same purpose.
The public roads on the bottom lands are
very much of the grading being merely wagon
tracks across the bottom.
The bridges are generally slightly built tem-
porary structures of piles and planks weighted
down by large boulders.
The piers formerly of post and sail are now
very generally of cast iron and board, 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 should
and bars which annually grow higher and are
some covered with dense thickets, first of Willows and later of Balm. Such acerulations are seen on the shore south of the upper end of Government Island and 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 latter where the outlets are dammed sufficiently to maintain the water at a suitable height are densely clothed with a growth of Sagittaria or Water Daisy, a submersible edible root valued by the native Indians and Chinese. This vegetation intensely green in Summer is soon cut down by the Autumnal frosts and the lakes then become the watery haunts and feeding grounds of Geese, Pintail, Canvasback, 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 as a narrow ridge between the 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 overlie a deposit of cement gravel.

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 stream 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 creek branch and another.
The most prominent topographical feature is "Prime Hill," a considerable elevation of about five hundred feet near the east end of the flat, which may be said to be the commencement of the perpendicular of the Cascade Mountains.

From this hill the land slopes rapidly to the east and northwest to a level, hilly country of great extent, composed of a succession of plateaus and plains, the first from the river being called Millplain.

Near the river shore, west of Prime Hill for a mile or so, a perpendicular rock cliff separates the plain above; this cliff breaks down into hilly sides strewn with immense boulder and gravel to some distance below Fishers Landing.

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

The land is very fertile and being very largely an original prairie 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 Fishercslanding they operated a small water-power grist-mill. The same company had also a small saw-mill near this locality. Poono Hill and the Country back there 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 the grass and grain but also extensively in orchards of peaches and other fruits. In this view, the destruction of the forests by fire has not been an unmitigated evil as the land 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-brown, well drained for fruit growing. 

Fishercslanding is the principal outlet and shipping point for the Eastern portion of the 

elaid. Cortesville is also one of the prominent 

Corps of the County, being landed a distance of
several miles and piled upon are the banks of the river, and the country is being gradually stripped of its timber in this way. Fumel 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 dock at the mouth of the Columbia and for building purposes in the city of Portland. The stone for the 80 foot dam from the top of the cliffs is an homogeneous rock and breaks out in great masses. Below this level a few paces up the quarry the character of the rock changes to columnar basalt of large prisms. The whole middle city of the river bears evidence of being the bottom morain of a great glacier filling the basin of the river throughout Striae have yet been observed in the stone. Occasionally a boulder of granite may be noticed in the drift and a boulder of the red basalts of Fumel Hill as large as a test derrick and there as far down as Fishers Landing.
The most marked feature of the topography is the numberless streams of pure cold water. These streams, as perennial, being fed from large springs having their source on the hillsides in the gravel deposits underlying Willamette. 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 herebefore mentioned do not greatly shape the contours of the ground nor cut deep in the gravel. Towards the lower end of the sheets, the straight course of the shoreline for about two miles is composed of a solid wind of hard cemented gravel or breccia, with an occasional thin stratum of the course sandstone noticed before on the upper end of the sheets on the Oregon side.

The scenery are short generally of rails or of brooks. 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 irregular intervals.
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 hill on either side. It is the fear and uncertainty of this unusual fire 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 are great big, being over a hundred feet high with trunks five feet or more in circumference. The forests on the high land 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 details where also is pine, the elder and the Acer Macrophyllum or western sugar maple. The forests are also occupied with a dense undergrowth of Vine maple, dogwood, blackberry, red buckthorn, hazel and a great variety of thistles and grasses. The undergrowth on the bottom land is of several varieties of Willows, Buttercups and Blackberry vines and hard hick in impenetrable
Sitkii, with settlers and other vessels of great size.

The common thistle has spread over large areas of pasture lands, and but little effort is made to check its advance. In some winter seasons, ice comes down the river in great quantities, and is liable to pile up on the shallows and gorges in the narrowest channels. The very extreme range of the floods in the Columbia is about 3,000, and ice-gorges occur generally where the river is at about the lower straits. The trade and commerce of the river in this upper part is altogether local, except for the carrying of tourists who take rail or steamer to the Cascades, or by the Government and by a postage railroad by the State. At the same place it 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 Dalles 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 Cascade along the river, indicated also by the names of Mill plain, Fourth plain, Fifth plain etc. Between these elevations river worked gravel in great quantities is found over all the length that I have visited particularly on steep sides hills. The soil on the higher elevations is of good quality and many fine farms are located on lands two thousand feet above the river level. When advance has been taken of the complete destruction of the forests by fire.

Following are the statistics on the topographical plan:

<table>
<thead>
<tr>
<th>River and Islands</th>
<th>Shoreline</th>
<th>% of Stump Miles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lakes, ponds and sloughs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roads</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Marsh line

Approximate area — in square — 3.24

Number of triangulation points on the sheet — 19

Occupied on sheet — 13

Completed — 6
of which are: 1 Chimney of house; 2 marked trees; 3 gable of house; 4 gable of barn.

Plane table points on main river 19

on channel south of Fort 1 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 Fort Island, the points were fixed by intersection and by the three points problem and considered the length of the narrow channel are reasonably accurate.

Where the nature of the detail renders it desirable they are determined with much precision.

The contours through dense forest represent the general shape of the ground and do not pretent 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 1887, I found most of them in good condition and in some cases were able to use.
them additionally secure. Station Lower pond on the lower end of Lesmores Island was found to have been washed away by the ebbing of the Alluvial bank and by a witness. It was standing the station was sufficiently recorded for the stage to be used for topographical purposes.

There will be found and developed by the hydrographic survey boat and shows which appeared above the surface of the water after the flood. With 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 time on the ship. Regarding the scheme of triangulation considerable work was done to open the view Neatton—Harlow to improve the condition of the scheme Neatton—Hord—Broome Hill. At times the work was done the smoke rose to denote that the invisibility of the line Neatton—Harlow could never be made out and upon occupying the points it was found that a little more work at or near the Neatton would be required.

Respectfully submitted,

Chedland Rockwell
Assistant