U. S. COAST AND GEODENTIC SURVEY.

A.M. Thorne, Superintendent.

State: Oregon.

DESCRIPTIVE REPORT.

Topographic Sheets Nos. 1777 & 1778.

Locality:
Coast of Oregon.
From Cascade Head to Tillamook Bay.

1887.

Chief of Party:
Cleveland Rockwell.
Descriptive Report

to accompany Original Sketch of plantable re-
connaissance No. 2 extending from Cascade Head
to Tillamook Bay - Coast of Oregon.

July and August, 1887

Cleveland Redmile, Observer

The general direction of the Coast shown upon
this sketch is straight and about 11 11.10 magnetic.
The topographical features are very broken
and complex. The highest summits of the
Coast range of mountains are not shown upon
the sketch as they are from 12 to 20 miles back
from the ocean shore. The most prominent
Topographical and geological features, are,
the great transverse spur ending in Cascade
Head, the high basaltic mass terminating in
the long trap dike of Cape Lookout, and the iso-
lated mass of hills ending in Cape Meares.
The great ridge of Cascade Head appears to
maintain its continuity and transverse char-
acter well towards the Coast Mountains.
The isolated range terminating in Cape Lookout
culminates in a peak about 3 miles from
the shore, which is shown upon the chart; the country to the eastward falling to a low elevation. The isolated mass of Cape Meares culminates in height about two miles back from the shore, and from this point a low ridge or divide between the waters of Tillamook river and Netaats Bay runs around to the culminating peak of Look-out mountain mentioned above. A sea beach extends generally from the north face of Cascade Head to the three arch rocks, broken in continuity by the entrance to Neskowin Bay, Saul Cape, and Lake Cape Lookout, and Netaats Bay. The isolated rock named Haystack rock, and the interesting group called the three arch rocks, constitute prominent features, and landmarks. Cascade Head has a sea face of 4 miles, reckoned around from Salmon river. It is very high and bold, and cut by deep gorges through which run thin, considerable streams discharging their waters directly into the surf from Cascade 100 to 200 feet high. There is a group of three or four large rocks called under the most prominent peak of the Cape, the middle one of which is pierced by two arches.
This arched rock is probably 40 or 50 feet high, and the arches would probably be a prominent distinguishing mark from a southerly direction when the fog hangs low on the Cape. The base of this Cape is basaltic conglomerate, but little subject to wear from the waves, and resembles the bases of Cape Fulmaroth and Yaquina Head. Superimposed on this base rock is a reddish drift, often exposed in fresh slides near the top of the cliffs. The whole Cape from the summits of the principal ridge north of Salmon River is densely wooded, with the exception of the steep slopes near the ocean which are bare in places. The forests are pure groves of Sitka and Hemlock trees and in places considerable groves of Alder, and the undergrowth is very dense. From the north face of the Cape to the entrance of Nitinook bay a wide sea beach extends—a distance of 4½ miles. This beach is of coarse gravel and moderately banked. Slab Creek, a considerable stream enters the ocean about ½ mile north of the Cape. There are considerable quantities of good land up the valley of this stream, and 8 or 10 settlements have been
made there. A great rock stands opposite the mouth
of this creek, and within the low water line, it is about
120 feet high and covered with grass and a few
low trees, but it would not show as a prominent
landmark. The hills back of Slab Creek are very much
broken and covered with forests. The beach between the
Nestucca entrance and Cascade Head is quite wild
and there a few low sandhills, and a narrow strip
of fresh seaweed and pebbles of fresh water inter-
mingling between high water mark and the back of the
hills. The hills around Nestucca Bay are very gen-
erally clothed with trees covered with grass, ferns
and with a good soil. They often reach an elevation
of 500 feet. Hard beech underlies most of the
hills and crope out near the shore at Nestucca
Shoestring and at Southport and often places.
There are numerous settlements around the bay
and good crops of hay and potatoes are raised.
The entrance to the bay I consider very poor,
and probably not more than 5 feet of water could
be developed on the bar at low water. Samuelson
made by the owner of a small Clean schooner running
there that the beach always touches going in or out.
The outer bay is formed by the elongation of the beach on the north side into a narrow peninsula which has forced the entrance down against the bluff of rocks at Nestucca A. The strong N.W. winds of the summer blow the drifting sand into the Big Nestucca and into the bay, with a constant tendency to fill the whole place up. The Big Nestucca emerged from the hills nearly opposite Haystack Rock, and probably at one time entered the ocean near that point. Little Nestucca Bay is separated from Nestucca Bay by a hilly peninsula, the northern part of which is covered with an original forest of very large and old spruce trees. This part of the bay is mostly sand and mud flats and large areas of salt marshes occupy the southern and eastern sides, through which flows the Little Nestucca river. Large areas of these salt marshes are susceptible of reclamation by diking. The hills back of Nestucca Bay rise quite abruptly and are generally timbered with spruce interspersed with groves of Alder with here and there large spaces of fern covered prairies. A good wagon road comes down the south side of the Little
Hastucca, from the Grande Ronda valley and is a means of Communication with all the Settlement around the bay. There having been no saw-mills in the neighborhood the houses and barns of the settlers are built of drift woods from the beach and from shaker or shingle-river from the spruce trees. The fences are generally wooden rails or of pickets driven from the cedar or redwood logs washed up on the beach, the latter material being quite common, though the nearest redwood forests are in the vicinity of Redwood, near Petrolia in California. The principal occupation of the inhabitants is raising of cattle and sheep and dairying. About one and a half miles back from the ocean on the north side of the Big Hastucca is the village of Crook. Containing about 200 persons. A good wagon road leads from this settlement back up the Big Hastucca, joining the road to the Little Hastucca from the Grande Ronda valley. Salmon in large numbers enter the Hastucca in the fall and ascend both those rivers to the spawning grounds. A large cannery, with a capacity of freezing twenty thousand cases in a season was completed this
summer and is now in operation. It is located on the outer bay about half a mile about the entrance near a shoaling ground. A little further up the shore a small sawmill was in process of construction and another small sawmill was also being erected at the village of Woods. The spit on the peninsula between Mistletoe Bay and river and the ocean is a waste of drifting sand dunes, 50 or 60 feet high, generally travelling to the south-east. Little or no vegetation is found among the sandhills. The sand beach extends from the mouth of Mistletoe Bay to Sand Cape or Cape Reinaud. This beach is a dune, generally narrow and much washed up in ridges and consequently rosy. Sand Cape is of sandstone, rocky formation, much eroded by the waves covered on top with loose drifting sand. The hills to the east and north-east appear to have a base of rock but are to all appearance sandhills. They have been covered with spruce and bull pine but have been swept by fires and are now covered with dead and whitened clumps standing and prostrate, the vegetation of fern and osier and a little grass being sparse and low. These sand
hills reach an elevation along the banks of the Big Nesteeec River of 800 feet by a line from the Village of Wood, and along the shore of that river is set on the limbs of large spruce trees buried in loose drifting sand. 150 feet above the original surface of the ground out of which they grew. These buried trees would generally die, the limbs drop off, decay and blow away, leaving the sand in undisturbed possession of its line of march. A broad sand beach extends north from Sand Cape a distance of 53 miles to Sand Lake and for a mile and a half sandy and rocky bluffs occur. Large streams on springs of water issue from under these hills or bluffs of sand, carrying great quantities of sand and by their action have worked great excavations of sand around their sources. Sand Lake is a very inconsiderable body of salt water an high tide and at low tide is drained nearly bare and can be easily forded, though there is much danger from quicksand except as the place marked as fords on the chart. The short peninsula on the south side is made up of a ridge of loose sand
hills generally rest with low, scrubby, saltbrush and fern. The northern side of the entrance, on the north rift is a flat sandy waste. Narrow and irregular tracts of salt marshes fringe nearly all the shores of the bay and sand creek. A stream of considerable size enters these salt marshes from a track of bog or fresh
marsh at the North East end. Steep hills rise immediately from the eastern side of the bay or lake to a height of 200 or 300 feet, bare of timber, but covered with brush. A wagon road from the Village of Woods Cove over the hills and strikes the beach at the south end of the long pond shown upon the sketch. The hills back of this region from Nanticoke to Cape Lookout rise higher and higher to the Eastward until the Culmination Point summit of Mt. St. Mary is reached, and the whole range has been repeatedly burned over except in the gulches and north sides of ravines and ridges with enormous trunks of whiteming
trees. An unbroken sand beach extends from Sand Lake to the walls of Cape Lookout, growing narrower toward the northern end, and changing
also in materials from sand to gravel and cobble stone, the debris from Cape Lookout. A continuous wall of perpendicular sandstone cliffs stands along near high water mark with bed of sand on top. These cliffs are from 30 to 125 ft. high and along their whole course the water leaks and trickles from the junction of the bed of sand and the solid sandstones underlying. The soil at top of these cliffs is floor and sandy and the waters of drifting sand extend from the northern edge at Sand Lake in a direction nearly north in sand about half a mile wide to the base of the mountain back of Cape Lookout, forming a prominent feature in the topography. Cape Lookout is a remarkable basaltic dike projecting into the ocean nearly two miles from the average line of beaches on either side on a course about W. S. W. (magnetic.) The width of the Cape is about one and a quarter miles between beaches at the foot of the cliffs and but a fourth of a mile at the point. The highest part of this ridge is along the southern face which is a nearly perpendicular wall of rocks 430 ft. high at the point and over 800 ft. near the base.
The basalt of Cape Lookout, unlike those of the Cape to the southward, are solid and homogeneous, and in some places prismatic and columnar, and hence it has been much less worn away by the action of the sea. Lying against the southern face near the base are deep deposits of drift of a bright yellow soil and clay which have parted from the solid face of the mountain in great slides. One enormous slide of very recent date should be a very conspicuous land mark from sea. 
Along and around the south side near the base and extending to the cause of the ridge are areas of bare prairie, covered with fern. Two or more springs of water are found on the Cape, and the north side is cut by deep gorged ravines. Numerous large caves occur near the base on the north side. The whole cape, with the exception of the prairies mentioned is covered with a dense spruce forest to the very edge of the cliff and the underbrush is particularly dense and impenetrable rendered worse by numerous wind falls of prostrate trees. Many of the spruce trees are 6 feet upwards
with enormous limbs of fantastic shape near
the ground. The whole mountain range for
rises. Cape Lookout Culminates in a peak, prob-
able 2500 feet high lying nearly in the axis of
the Cape about two miles from the ocean shore.
and the Country east of this peak falls away
rapidly to an elevation of probably not more
than 50 feet. The whole mountain as far as
Natalico Bay is densely wooded and has never
been touched by fire. The debris from the sides
on the south side of the Cape forms a bulder
thrown beach extending out rather snow than
half a mile and beyond this point the water is
apparently of great depth. An excellent sea
and anchorage would be found under the
south side of the Cape in heavy North west
weather which would be untenable in any
winds to the south of west. Small numbers of
Elks frequent the dense forests of Cape Lookout.
The sand beach forming the south spit of Natali-
Bay Commences at the foot of the Cliff on the
north side of the Cape the beach is 5/2 miles long.
The only means of Communication between
The north and south side is by a very bad trail which rises over the Cape at the lowest face near the base at an elevation of 324 feet. A wagon may be driven from Woods up the beach, fording Sand Lake and up the beach to the base of Cape Lookout. The trail which is very steep can only be traveled on foot and by a horse. Mataatoa Bay is quite a large body of very salt water at high tide and at low water nearly the whole area is bare sand and mud. The water falling into narrow and crooked channels. The bay is about 4 miles long by 1 mile. No creeks or streams of any considerable size enter the bay, as the water shed is very narrow and small. The country east of being drained by streams entering Tillamook River. A small area of tide marsh occupied the south end of the bay, and it could be very easily reclaimed at small expense. The entrance to the Bay is at the extreme northern end, high sand hills and cliffs forming the north shore. These cliffs are covered with rank and Clothes with coarse pine and brush. The entrance is narrow but the course is straight and directly towards the sea.
The shores of the Bay are low bluffs of clay and sand interrupted by many small arms of salt-marsh and small streams. Continuous and horizontal beds of bog muck, in places turned into a semi-coal or lignite in which are found great numbers of the roots and stumps of spruce trees, occur through the bluffs. This wood, though preserving its natural appearance except being colored by the oxides of iron, will not burn like wood but record like coal, leaving a rusty ash. The flats of the Bay are the natural home of the oyster and clam. Fourteen years' lines, many cargoes of oysters were taken from this bay at the San Francisco market, and I have been informed that a schooner of 100 tons but then entered here and departed. From all the information I obtained I think there may be as much as 9 ft. of water on the bar at low tide. There is but one break in at low water and never at high tide. The country back of the bay is heavily wooded except the slopes running down to the Bay between streams which are generally bare on covered with thick groves of Alder. About two miles north of the entrance to this bay the sand beach ends abruptly against
the rocks of Cape Meares. The bulge grassy hill at the end of the beach is called by the settlers Bald Hill, but it may properly be considered as a part of Cape Meares. A narrow beach of cobble stones of about half a mile long connects this bulge rocky point with Cape Meares. The beach from Molate Bay to Cape Meares is wide flat and beaten very hard by the sea and the sand hills and hills covered with sand which lie back of it are from 150 to 200 feet high with poor sandy soil and sparsely wooded. The sand hills look everywhere at their base and in many places large springs and streams of water rise from under the sand and have excavated large cavities around their sources. The interesting group of rocks called the three arch rocks lie directly abreast the end of this beach. These rocks at the end of this beach as well as the shore of Cape Meares are of basalt of the same character as the basalts of Cape Disappointment and it is probable that the group of arch rocks is of the same materials. These outlying rocks and also Haystack Rock have been coloring the shore of great numbers of sea birds that they are stances.
with the coaling of thin maculae, or grano, etc.

in sunlight, have a very lovely yellow color.
The largest of these rocks is rearward from and
is 304 feet high. The middle rock is 258 feet high,
with two pinnacles and is pierced by a great
arch probably 130 or 150 feet high. The inner rock is
pierced with a low arch, perhaps 50 feet high.
The outer rock is larger, and 270 feet high, but no
arch through it could be observed from the shore.
120 meters to the east. Much of the outer rock is a
low ledge, perhaps 30 feet high. A group of rocks
lies around the base of the inner rock, towards the
shore, which were occupied by a tribe of oceaniaes
timited at from 500 to 600, and their lunch barking
could be heard for two or three miles. The beach
was strown with the dead Calved born upon the
ledge and rocks and probably destroyed by the
old males. A Colony of seals containing perhaps
250 frequents the sand spit at the mouth of Hitose
Bay. The ends of the sand spit on peninsula en-

closing Hitose Bay is narrower at the point and
for the distance of about a mile is perfectly flat
and but little raised above high-water mark.
but here it expands to about half a mile wide, and in covered with low sand hills of 30 or 25' elevation covered with coarse grass, low salt and scrub, and small\nbull pines. Brackish fresh water can be found here. The spit gradually contracts in width to the head of the bay with a sandy ridge of 30 or 25' feet elevation. The Country back of the arch rocks is high and hilly, mostly burned over and covered with grass, fern, and dense growth of salmonberry among a wilderness of fallen dead trees impenetrable even for a bear. Cape Meares is a 3\n1/4 mile wide between the Cobb Beach and the Tillamook beach, composed of hard basaltic capped with reddish drift and clay, constantly being eroded and slipping into the ocean. Tidal \nrocks are off this Cape, one directly abreast and one about 2\n1/2 a mile distant. The latter rock is about 100\nfeet high. The most prominent headland in a firm and brush covered narrow penninsula running down with a gentle slope to the creek about 30 of high. The northern half of the \nCape recedes from the ocean and is much higher covered with a thick forest of small spruce and
very precipitous. An immense fresh slide of very recent date on the North West Corner of the Cape would be a prominent object at sea. There is no communication between Halaats Bay and Tillamook Bay except on foot by a very bad trail which crosses the lowest part over the Cape at an altitude of 515 feet. A wagon road with very steep grades runs from Halaats Bay to the Village of Lincoln on the tide though making up from Tillamook Bay and a horse trail runs from Halaats Bay over the dividing ridge to the Delta—innocuous. There are a number of old settlers around the shores of Halaats Bay as also a round St. Paul Lake. They are not progressive. They have often left more civilized communities from having killed a man or two and served his term in the penitentiary. This class of people do not count much—they do not want neighbours, rail-roads, common highways or schools, and if they can open a trail wide enough for a horse to pack in two sacks of flour on to drive out a few head of cattle, there is so much the more likely hood that this land
Hunter will pass by and hear their melodious song. An uninterrupted sand beach extends from Cape Meares to the entrance of Tillamook Bay. The north side of Cape Meares is a perpendicular wall of basalt about 100 feet high, or more, which is pierced near the sea level with a row of deep holes which look like the embrasures of a fortification. The coves of Tillamook Bay at high tide form somewhat like the peninsula or sand beach, narrow at the north end, and quite wide at the southern end. Sand hills from 30 to 80 feet high lie close along the high-water mark, covered with a thick mat of sallab, shuck and stiff and in many places with thick growth of large ephedra. The northern end of the spit is flat, barren, sand. A large part of Tillamook Bay at low tide is taken up with sand and mud flats and other large areas are covered with eel grass. The shore along the south side of the bay are high precipitous cliffs of sandstone cut up with deep gulches, heavily timbered and covered with vegetation where ever it can cling. Five streams enter the Bay.
the most southern of which is the Pillarwash river, next in order going north are the Trask, the Wilson, the Kecley and the Miami. Large areas of salt marshes border the east side of the bay and back of these islands are still greater areas of low land, thickly covered with prairie and subject to overflow, both from extremely high tides and from freshets in the Wilson and Trask rivers. The hills surrounding the bay are very high, the peak of Saddle mountain being visible from the southwest end. Great areas of snow-capped tops are covered with a grizzly array of white tree trunks left standing by the frozen fires.

The end.

Cleveland Rockwell
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