



118.

U. S. COAST AND GEODETIC 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 planitable reconnaissance N° 2. extending from Cascade Head to Tillamook Bay - Coast of Oregon.

July and August, 1887

Cleveland Rockwell, Observer

The general direction of the Coast shown upon this sketch is straight and about N. N. W. 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 isolated mass of hills ending in Cape Meares. The great ridge of Cascade Head appears to maintain its continuity and transverse character well towards the Coast Mountains. The isolated range terminating in Cape Lookout culminates in a peak about 2 miles from

the shore, which is shown upon the sketch, the Country to the Eastwards falling to a low elevation. The isolated mass of Cape Mearns 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 Natsats 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 Nistucca bay, Sand Cape, Sand Lake, Cape Lookout and Natsats 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 three considerable creeks discharging their waters directly into the surf from Cascadea 100 to 80 feet high. There is a group of three or four large rocks close under the most prominent part 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 basalts of Cape Foulweather and Yaquina Head. Superimposed on this basalt is a reddish drift, often exposed in fresh slides near the tops of the cliffs. The whole Cape from the summit of the first ridge north of Salmon river is densely wooded with the exception of the steep slopes next to the ocean which are bare in places. The forests are full grown old timber of spruce 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 Nisticea bay a wide sea beach extends - a distance of $4\frac{1}{2}$ miles. This beach is of coarse siliceous sand moderately hard. Slab Creek, a considerable stream enters the ocean about $\frac{1}{2}$ a 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, but 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 Hob Creek are very much broken and covered with forests. The track between the Nistueca entrance and Cascade Head is quite wild and there a few low sandhills, and a narrow strip of fresh marsh and ponds of fresh water intervening between high water marks and the foot of the hills. The hills around Nistueca Bay are very generally devoid of trees, covered with grass and fern and with a good soil. They often reach an elevation of 500 feet. Hard basalt underlies part of these hills and crops out near the shore at Nistueca, Shortridge and Faulconer and other 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. I am informed by the owner of a small steam schooner running there that the vessel 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 Δ. 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 emerges 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 runs down the south side of the Little

Nestucca, from the Grande Ronde valley and is a means of Communication with all the settlements 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 shakes or shingles given from the spruce trees. The fences are generally wooden rails or of pickets given from the cedar or redwood logs cast up on the beach, the latter material being quite common, though the nearest redwood forests are in the vicinity of Pt. St. George in California. The principal occupation of the inhabitants is raising of Cattle and sheep and dairying. About

one mile back from the ocean on the north side of the Big Nestucca is the village of Woods. Containing about 200 persons. A good wagon road leads from this settlement ~~back~~ up the Big Nestucca, joining the road to the Little Nestucca from the Grande Ronde Valley. Salmon in large numbers enter the Nestucca in the fall and ascend both these rivers to the spawning grounds. A large cannery, with a capacity of boxing 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 above the en-
 trained near a Shencingen. A little further up
 the shore a small sawmill was in process of
 construction and a small sawmill was also
 being erected at the Village of Woods. The spit on
 peninsula between Kestueca 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 Kestueca
 Bay to Sand Cape or Cape Kivauda. This beach is of
 siles, generally narrow and much washed up in
 ridges and consequently soft. 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 fire and are now cov-
 ered with dead and whitened stumps standing
 and prostrate the vegetation of fern and sallow and
 a little grass being sparse and low. There sand

hills reach an elevation along the banks of the Big Nistueca river of 300 to 600 feet near the Village of Woods, and along the shore of that river I sat 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 $3\frac{1}{2}$ miles to Sand Lake and for a mile and a half sandy and rocky bluffs occur. Large streams or 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 source. Sand Lake is a very inconsiderable body of salt water at high tide and at low tide is drained nearly bare and can be easily forded, though there is much danger from quick sands except at the places marked as fords on the sketch. The shark peninsula on the south side is made up of a ridge of loose sand

-hills generally set with low scrubby sallow brush and fern. The northern side of the cutwater, on the north spit 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 600 or 700 feet, bare of timber, but covered with brush. A wagon road from the Village of Woods comes over the hills and strikes the beach at the south end of the small pond shown upon the sketch. The hills back of this region from Nestucca to Cape Lookout rise higher and higher to the Eastwards until the Culminating summit of Mt. Stevo is reached, and the whole range has been repeatedly burned over, except in the gulches and north sides of ravines and bristles with enormous trunks of whitened trees. An unbroken sand beach extends from Sand Lake to the walls of Cape Lookout, growing narrower towards the northern end, and changing

also in materials from sand to gravel and cobble stones, the debris from Cape Lookout. A continuous wall of perpendicular sand stone cliffs stands along near high water mark with beds of sand on top. These bluffs are from 50 to 125 ft. high and along their whole course the water leaks and trickles from the junction of the beds of sand and the solid sand stones underlying.

The soil ^{on} top of these bluffs is poor and sandy and the wastes of drifting sand extend from the northern spit at Sand Lake, in a direction nearly north in ^a band 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 rock 430 ft. high at the point and over 800 feet near the base.

The basalts of Cape Lookout, unlike those of the Capes to the southwards are solid and homogenous, 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 foot 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 summit 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 gorges & 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 edges of the cliffs and the underbrush is particularly dense and impenetrable rendered worse by numerous windfalls of prostrate trees. Many of the spruce trees are of great age and size.

with enormous limbs of fantastic shape near the ground. The whole mountain mass forming Cape Lookout culminates in a peak, probably 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 500 feet. The whole mountain as far as Natsats-bay is densely timbered, and has never been touched by fire. The debris from the slides on the south side of the Cape form a boulder strewn beach extending out rather more 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. Great numbers of Elk frequent the dense forests of Cape Lookout. The sand beach forming the south spit of Natsats Bay commences at the foot of the Cliffs on the north side of the Cape: the beach is $5\frac{1}{2}$ miles long. The only means of communication between

the north and south side is by a very bad trail which passes over the Cape at the lowest pass near the base at an elevation of 824 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 travelled on foot and by a horse. Natanals 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 wide. No creeks or streams of any considerable size enter the bay as the watershed is very narrow and small. The country east of ^{it} being drained by streams entering Tillamook river. A small area of tide marsh occupies 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 bluffs forming the north shore. These bluffs are covered with sand and clothed with coarse pines 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 mud, 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 these bluffs. This wood, though preserving its natural appearance except being colored by the oxides of iron, will not burn like wood but more like coal, leaving a rusty ash. The flats of the Bay are the natural home of the oyster and clam. Fourteen years since, many cargoes of oysters were taken from this bay to the San Francisco market, and I have been informed that a schooner of 100 tons bought here entered here and departed. From all the information I obtained, I think there may be as much as 9 feet of water on the bar at low tide. There is but one breakers at low water and none 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 or covered with thick groves of Alder. Quite a mile north of the entrance to this bay the sand beach ends abruptly against

the rocks of Cape Mearns. The bald grassy hills on the end of the beach is called by the settlers Bald Mt. but it may properly be considered as a part of Cape Mearns. A narrow beach of Cobble stones of about half a mile long connects this bald rocky point with Cape Mearns. The beach from Hataste Bay to Cape Mearns 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. These sand hills leak everywhere at their base, and in many places large springs and streams of water issue 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. The rocks at the end of this beach as well as the shores of Cape Mearns are of Basalt of the same character as the basalt of Cape Hook and it is probable that the group of arch rocks is of the same material. These outlying rocks and also Haystack rock have been so long the home of great numbers of sea birds that they are stained

with the washings of their manure on guano and in sunlight have a very tawny yellow color.

The largest of these rocks lies nearest shore and is 304 feet high; the middle rock is 258 ft. high with two pinnacles and is pierced by a great arch probably 130 or 160 ft. high. The inner rock is pierced with a low arch perhaps 25 ft. high.

The outer rock is large and 270 feet high, but no arch through it could be observed from the shore.

120 metres to the south west of the outer rock is a low ledge, perhaps 20 ft. high. A group of rocks lies around the base of the inner rock towards shore which were occupied by a tribe of natives estimated at from 500 to 600, and their harsh barking could be heard for two or three miles. The beach was strewn with the dead calves 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 Matak Bay. The end of the sand spit or peninsular entering Matak Bay is narrow 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 is covered with low sand hills of 20 or 25th elevation covered with Coarse grass, low sallow scrub and small bull 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 20 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 salmon berry among a wilderness of fallen dead trees impassable even for a bear. Cape Mearns is $\frac{3}{4}$ ^{the} mile wide between the Cobble beach and the Tillamook beach, composed of hard basalt coppers with reddish drift and clay. Constantly being eroded and slipping into the ocean. Molango rocks are off this Cape, one directly abreast and one about $\frac{1}{2}$ a mile distant. The latter rock is about 109 ft high. The most prominent headland is a fern and brush covered narrow peninsula running down with a gentle slope to the crest about 23 ft high. The northern half of the Cape 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 Nataals Bay and Tillamook Bay except on foot by a very bad trail which crosses the lowest part over the Cape at an altitude of 50 feet. A wagon road with very steep grades runs from Nataals Bay to the Village of Lincoln on the tide slough making up from Tillamook Bay and a horse trail runs from Nataals Bay over the dividing ridge to the Tillamook river. There are a number of old settlers around the shores of Nataals Bay as also a round Sand Lake. They are not progressive. They have often left more civilized communities from having killed a man or two and served the state in the penitentiary. This class of people do not want much - they do not want neighbors, 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 or to drive out a few head of cattle, there is so much the more likely hood that the sand

Hunter will pass by and leave them undisturbed. An uninterrupted sand beach extends from Cape Mearns to the entrance to Tillamook Bay. The north side of Cape Mearns 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 waters of Tillamook Bay at high tide flow to within a mile of Cape Mearns and the peninsula or sand beach, narrow at the North end is quite wide at the northern part. Sand hills from 30 to 100 feet high lie close along high water mark, covered with a thick mat of sallow, shock and stiff and in many places with thick groves of large spruce trees. 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 shores along the South side of the bay are high precipitous bluffs of sandstone cut up with deep gulches, heavily timbered and covered with vegetation wherever it can cling. Five streams enter the Bay

the most southerly of which is the Tillamook river, next in order going north are the Trask, the Wilson, the Kelsey and the Miami. Large areas of salt marshes border the East side of the Bay and back of these lands are still greater areas of low lands, thickly covered with spruce forests and subject to overflow, both from extreme 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 the mountain tops are covered with a grizzled array of white tree trunks left standing by the forest fires.

The end.

Cleveland Rockwell
Osborne.