

## TILLAMOOK HARBOR AND BAR IMPROVEMENTS.

### Some Interesting Facts as to What is Being Done to Make Tillamook a Shipping Port.

By L. A. FERNSWORTH.

When the railroad shall have been completed into Tillamook, but half the necessary factor in her industrial advancement shall have been provided. Co-important with the railroad in the proper development of the wonderful resources of this wonderful county, are the provision and maintenance of deep, convenient and safe harbor facilities on Tillamook Bay. The importing of lumber and of lumber products, transportation facilities to meet every particular shipping requirement, and commercial independence all demand it.

Realizing this the people adjacent to Tillamook Bay are just now more than ever lending their efforts to improve their harbor. Long time ago these efforts first began, but the government aid, which they sought, being steadfastly denied them, their endeavors were vain, and for some time dropped into disuse. Within the past five years they have been revived with renewed vigor and now, although no demand has been granted, they have for the first time been rewarded with any meed of encouragement. The Board of District Army Engineers appointed to investigate conditions relative to harbor improvements reported favorably and recommended in its entirety the plan for improvements offered by the Tillamook Bay people, and although the government engineers at Washington vetoed the findings of the district board, with their veto there went also a glimmer of hope.

#### Ports Work Together.

There are three principal factors working at Tillamook in effecting the harbor improvements. These are the Port of Tillamook and the Port of Bay City, constituted by law, and the Bayocean interests. Bayocean also contemplates organizing itself into a port, and will hold an election for this purpose August 31. The affairs of each of these ports are in the hands of four commissioners appointed upon the incorporation of the port, and elected thereafter by the votes of the port. They hold their offices for terms of four years. The ports are incorporated under the "port act" of the legislature of 1909, and by its provisions are municipal corporations having powers to do anything that would tend to promote the maritime, shipping and commercial interests of their districts.

The present Port of Tillamook was authorized by election September 13, 1909. Its commissioners are all representative men of Tillamook, being: H. T. Botts, lawyer, the president; A. G. Beals, representative in the legislature, the first vice-president; D. Fitzpatrick, dairy farmer, the second vice-president; M. F. Leach, meat dealer and shipper, treasurer; James Walton, jr., cashier of the First National Bank, secretary. The Port of Tillamook has a total area of 210,063 acres, of which 202,635 acres are timber lands, and its assessed valuation is \$6,230,160. It is authorized to issue bonds not to exceed ten per cent of the assessed valuation, or to the amount of \$623,016, and to levy taxes of not to exceed ten mills.

Since its incorporation, the Port of Tillamook has made two tax levies but no bond issue was declared until this Spring, when the commissioners voted to bond the port in the sum of \$450,000.

#### Suits Retard Work.

The decision to bond the port has not pleased sundry citizens, who are residents of the territory added to the new port at its creation, and they have instituted suit attacking the powers of the new port, pending the settlement of which, all efforts of the port are halted.

The first suit was instituted by S. V. and Lillian Anderson. Their principal contentions are that the old port, which, being created by the legislature of 1899, had preceded the present port, has never been dissolved, and that as a consequence the present port is an usurpation of the old port; that the port law under which the new port was incorporated, is unconstitutional; and that the port has not been incorporated in the mode and manner provided in the said port law. The constitutionality of the port law, however, has already been sustained by the Supreme Court in the case of Straw vs. Harris, and in the case of Bennett Trust Co. vs. Stengstacken, a suit involving the validity of the pro-

ceedings taken for the institution of the Port of Coos Bay, the Supreme Court again upheld the constitutionality of the law, as well as the procedure for incorporation. So the contestants have really but one leg to stand on, and that a shaky one, namely, the point regarding the existence of the old port, and the resultant conflict of the new port.

The case will be given a speedy trial in the circuit court, at a special session, after which it will be taken to the Supreme Court, where its quick disposal is expected. The second suit seeks to restrain the port from collecting taxes, or the payment of bonds, and is based on practically the same grounds. Attorney Ralph R. Duniway has been retained to represent the plaintiffs.

#### Bay City Active.

The Port of Bay City was authorized by election May 4, 1910. It extends from Bay City eastward to the county line, embracing a strip about 10 miles wide by 30 miles long, or 300 square miles in all, and has an assessed valuation of \$2,002,620. A ten per cent bond issue, the limit permitted, enables it to raise \$200,262 for harbor improvements. Its board of commissioners consists of John O. Bozorth, the president; Dr. W. C. Hawk, the vice-president; Theodore Jacoby, the secretary; Gust Nelson, the treasurer; and Charles W. Pike. It has collected a one mill tax this year, but has issued no bonds as yet. Attorneys employed by the Port of Bay City have examined into its status, and pronounced all the requirements for legality satisfactory. Suits have not threatened it thus far.

The proposed Port of Bayocean takes in the Bayocean Peninsula, and half of the timber covered mountain known as Cape Meares, from the watershed downward to the Tillamook Bay side. The valuation of the port, according to assessment, is somewhat over one million dollars.

Tillamook Bay is about fifty miles south of the Columbia River. It is said to be the largest bay on the coast, between the mouth of the Columbia River and the Golden Gate. From mouth to head it stretches about six and one-half miles, and its width is three and one-half miles. It has a surface of approximately 23 square miles. The name Tillamook is an Indian appellation of peculiar aptness. It means "the gathering of waters," and Tillamook Bay is that in a singular degree, for five rivers, draining the central and the northern portions of Tillamook County, discharge their waters into it. At its extreme eastern head, the Trask and the Tillamook Rivers flow into the bay, only a short distance from each other and a little further northward and somewhat lower down, the Kelchis and the Wilson Rivers run into it. The Miami River, extending into the Nehalem Valley and draining the Miami Valley, flows into the bay about three miles from the ocean.

#### Bay Has Three Channels.

Tillamook City is at the head of Hoquarton Slough, a very crooked back-water stream and is eastward about two and one-half miles above the bay. Bay City is on the north side of the bay, a little east of midway between the mouth and the head, while further down, two miles from Bay City, is Hobsonville, a lumber town, and three miles down, on a shore line, Garibaldi, a cannery town. On the south side of the bay Cape Meares rises, and at the west, with a reach of not quite four miles, the Bayocean peninsula stretches northward, dividing the bay from the ocean. Between the northern point of this peninsula and the shore on the opposite side is a very deep and narrow pass, forming the channel through which the bay discharges and receives the ocean's tides. At low water it is but a few hundred feet across, from shore to shore. The bar is about one mile further out from this point. There is a heavy growth of timber on Cape Meares, and good mill sites are along the shore line, but neither towns nor roads are on that side of the bay yet.

Tillamook Bay has three principal channels for vessels and two of these are open, while the opening of the third is urged in some quarters. The two open channels are

the Bay City channel, open as far as Bay City, four miles from the entrance to the bay, and skirting the northern shore, touching at the towns of Garibaldi and Hobsonville; and the middle or ship channel, the channel mainly used by vessels, and the channel leading to Tillamook. On the south side of the bay, skirting Bayocean and Cape Meares, is the south or Sturgeon Channel, which is not open, but which is being strongly advocated by many as the expedient channel to open and maintain.

#### Engineers Report Favorably.

The necessary harbor work for keeping the bay and slough in their present state of navigability, is in the hands of Captain John Groat, who has been stationed at Tillamook by the government for many years. He is provided with a small dredge, and has at his disposal a regular annual appropriation of \$5000, which, however, does not go very far. When this appropriation becomes exhausted, the Port of Tillamook or the citizens have been wont to contribute money to the remaining essential work.

Any project for making a good harbor of Tillamook Bay, naturally resolves itself into three parts: first, the improvement of Hoquarton Slough from Tillamook to the head of the bay; second, the maintenance of a deep channel in the bay; and third, the deepening and improvement of the bar.

Last fall a proposal was made to the government by the Ports of Tillamook and Bay City, acting jointly, to deepen the middle channel from Bay City to the bar, and to build a jetty on each side of the bar, so that at low tide there would be 16 feet of water in the channel, and 28 feet on the bar. The two ports offered to bear one fourth of the cost if the government would bear the remainder. A committee of three government engineers was appointed by the Board of Engineers at Washington, to examine into the project, and to report their findings, with their recommendations in the matter. The committee consisted of Col. John Biddle of San Francisco, Major Kutz of Seattle and Major Morrow of Portland.

The special committee found that the proposed improvements would cost about \$1,722,000 and recommended that the plan submitted by the two ports be adopted by the government. The Board of Engineers at Washington, however, refused to sanction the report, but hinted that if the people adjacent to the harbor agree to contribute half of the cost of the work, the plan would be more favorably viewed. The fact that the Washington engineers were not accustomed to receive favorable reports concerning Tillamook Bay harbor improvements, together with the fact that the report was submitted at an inopportune time, at a time when President Taft was insisting on rigid economy in government affairs, were greatly responsible for the rejection of the recommendations.

#### Original Plan Abandoned.

In paying one fourth of the cost of the improvement, Bay City was willing to pledge herself for the limit permitted by law, namely, \$200,262. This would leave \$230,238 to be born by Tillamook, or to be divided between Tillamook and Bayocean, should the latter port be incorporated. As the Port of Tillamook, at its present assessed valuation, can bond itself for \$623,016, by paying the remainder alone, it would still have \$392,778 with which to improve Hoquarton Slough and the channel from the mouth of the slough to Bay City.

But when the plans were rejected at Washington, and that hint about paying one half came, the original plan was abandoned, for it was patent to all that the payment of one half of the cost of the proposed project was considerably more than could be undertaken by the ports. New plans were made—and here comes the parting of the ways.

The Bay City Port offered to contribute its limit of \$200,262 towards building a jetty on the north side of the bar, at an estimated cost of \$600,000, and in maintaining a channel with a 14 foot depth at low tide, as far as Bay City, if what remained towards half of the cost be given by the Tillamook Port, either alone or in conjunction with the proposed Bayocean Port. There are those, however, who favor a jetty on the south side of the bar instead of on the north side and there are those who favor the opening of the Sturgeon channel instead of the middle ship channel, so that the course to be pursued in the improvement of the channels and the bar is just now a fluctuating quantity.

The Tillamook port, however, has decided upon one thing, and that is the immediate improvement of Hoquarton Slough as far as Dry Stocking Bar, which is practically the head of the bay, and the deepening

of one channel or the other at once thereafter. To this end they have resolved to bond themselves for \$450,000, and they will push the work with energy as soon as the pending litigation is decided. What the Tillamook port means to secure just as soon as it possibly can, is a great a depth to the mouth of the bay as is the depth of the water on the bar. They propose at present to leave the deepening of the bar entirely to the government, and to take up the work of slough and channel improvement either independently, or with the aid of the other ports.

#### Slough Easily Improved.

It is generally conceded now that it will be a task allotted in its entirety to Tillamook to improve the Slough, and to deepen and maintain the middle channel as far as Bay City, in case that channel is decided upon. The improvement of the slough involves the elimination of curves, the maintenance, at present, of a channel ten feet deep and 100 feet wide and the digging of a basin 600 feet long and 200 feet wide to provide terminal facilities for vessels at Tillamook. This plan is in keeping with the intention of securing as great a depth in the channels as on the bar. When a greater depth has been secured on the bar, the slough will also be deepened and widened, and the terminal facilities at Tillamook will be enlarged. Ultimately, it is intended to maintain a depth of 16 feet on the slough. Hoquarton Slough from Tillamook to the mouth of Trask River, two miles, has seven big horse shoe bends in it, which, besides just doubling the distance between these two points, present considerable difficulties to vessels attempting to reach Tillamook, and prevent others entirely from getting there. About 120 feet is the maximum length at which vessels can now reach Tillamook. An 116-foot coaster is making regular calls at the port now. The present plans involve the making of entirely new channels at two places on the slough by cutting straight through the land encircled by curves at these points; also, the attaining of a channel width of 150 feet at the other curves. The elimination of these two bends would shorten the distance to the mouth of the Trask River to 9000 feet. When the larger improvements are taken up, most of the other bends will also be eliminated from the channel, and thereby the distance from Tillamook to the head of the bay will be cut in half. The estimated cost of the slough improvements outlined is \$80,000.

#### Sentiment Favors Sturgeon Channel.

The slough itself is already from 100 to 300 feet wide throughout its length, and the 100-foot width and 10-foot depth of the improvement plans refer to the width and depth of the channel at low tide. The present low tide depth is three feet. Large vessels are always obliged to wait for low tides to go to depart from Tillamook thereby hampering shipping considerably. The proposed improvements would obviate this handicap.

From the mouth of the Trask would be another half mile of slough to maintain to the head of the bay, at Dry Stocking Bar, and from this point there will be one and one half mile of bay channel to Dick's Point, where the Sturgeon Channel branches off southward from the middle channel. The distance by channel route from Tillamook to Dick's Point is slightly over four miles and to Bay City just seven miles. From Tillamook to the pass at Garibaldi by the middle channel is ten miles, and to the bar, eleven miles.

A divided opinion exists with regard to the maintenance of either the Sturgeon Channel or the middle channel, but a very strong sentiment of well-informed persons is urging the opening of the Sturgeon Channel. The argument in favor of this channel is that it is the natural channel, is protected from the winds and can beat and most cheaply be maintained.

J. B. C. Lockwood, consulting engineer for the Port of Portland for the last ten years, gives succinctly the reasons for opening the Sturgeon Channel. Mr. Lockwood was employed by the Port of Tillamook in the latter part of May, to advise it as to the best plan to follow in making harbor improvements, and in his report he recommended the opening of the south or Sturgeon Channel. His recommendation says:

"The choice of routes on the lower section lies clearly with the south channel, as the estimated amount of material to be excavated by that route is 240,000 cubic yards as against 380,000 cubic yards via the main channel, and the maintenance charge is sure to be materially less.

"By the south channel you avoid all silt from the Wilson and Kelchis Rivers, and your maintenance expense will be limited to moving the silt from Trask and Tillamook rivers. You will certainly save half of your maintenance charge in

keeping the south channel open as against the expense via the main channel."

#### Disuse Impairs Channel.

About fifteen years ago the Sturgeon channel was a natural deep channel, used regularly by vessels coming to Tillamook. At that time, however, the government undertook a little improvement work on the bay, and proceeded to render the middle channel available by rendering the Sturgeon Channel useless. They closed it by placing a jetty across its head at Dick's Point, and they built several jetties along the middle channel from Dick's Point to Bay City, the evident intention being to force the water towards Bay City.

As a consequence of disuse the Sturgeon channel has been filling up, but it has still a depth of from one to ten feet at low tide. It is held, however, that it could be reopened and maintained a considerably lesser expense than the middle channel can merely be maintained.

The Sturgeon channel runs along the southern shore of the bay, where besides providing means of water communication for that part, which has been hitherto unsettled, but is opening up, it is protected by Cape Meares from the high southwest winds, which menace shipping in time of storms, and also tend to drive sand into the unprotected channel. Besides this, it is the channel now used by the Bayocean interests for a considerable distance up from its mouth. Boats to reach Bayocean from Tillamook, or Tillamook from Bayocean, now are obliged to go down the middle channel and up the Sturgeon, or vice versa, thus giving them a tide to "buck" either way. The Bayocean people, moreover, when their port is organized, will maintain a considerable portion of this channel themselves, thereby further reducing Tillamook's expense by nearly half. Bayocean has already expended a considerable sum of private money in digging a channel nearly a mile long with a 16-foot high tide depth, from the Sturgeon Channel to the Bayocean docks.

#### Rivers Carry Silt.

Should the Sturgeon Channel be agreed upon, the Ports of Tillamook and Bayocean would expect to bear the whole cost of opening and maintenance. The cost of opening to a ten foot depth at low tide has been estimated at from \$35,000 to \$40,000. The distance by this channel from Dick's Point to Bayocean is some three and three-fourths miles, to the Garibaldi pass a little less than six, and to the bar a little less than seven. From Tillamook to Dick's Point is slightly more than four miles, and thus from Tillamook to the bar this way would be just about the same as by the middle channel, eleven miles.

The cost of improving and maintaining the middle channel from Dry Stocking Bar to Bay City, four miles, has been placed at \$60,000. The Kelchis and the Wilson rivers flow into the bay about this point, and their waters merge, making one channel, which constitutes the upper part of the Bay City channel. The channel which they form, bends in an elbow very close to the middle channel, thus tending, and particularly so at high tide, to wash all the sediment and silt from the river into the main channel.

It may be a hard matter to induce the government engineers to permit the opening of the Sturgeon channel, however, for the government plans have always reckoned with the middle channel.

The principal argument of the opponents of the Sturgeon Channel is not that it is not the natural channel, but that it would benefit only Tillamook. They point out that the opening of the Sturgeon Channel would leave the opening of the main channel still a necessity, and that the government would be unwilling to maintain or authorize the maintenance of two channels on the bay.

The middle channel will always be needed to accommodate the towns on the north side of the bay as far as Bay City, and the opening of the Sturgeon channel and the abandonment of the other would cut Bay City off entirely from the head of the bay and from Tillamook. Strong advocates of the middle channel in Tillamook point out that Tillamook could afford this as little as Bay City.

#### North Channel Unimportant.

There are those, also, who think that by diking the main channel on the north side, the side on which the Kelchis and the Wilson rivers flow, and by depositing the material removed from the channel behind this wall or dike, the silt from the rivers could be prevented from washing into the channel, and that thus it could be maintained at a lower cost than at first estimated.

The Bay City channel, with a depth at this time of 10 feet at high

tide, will be left in its present condition. It skirts the north side of the bay and touches Garibaldi, Hobsonville and Bay City. Near its lower part it has a rocky bottom, which would make dredging very difficult. Bay City is reached by water by means of a big dock, 1800 feet long, built out into this channel. The Bay City Port, however, proposes to extend this dock out into the middle channel, by lengthening it to 3000 feet. Bay City is reached at present by water by means of a short and narrow cut of about 1500 feet, leading from the main channel to the Bay City channel. This cut was dredged out about five years ago.

The abandonment of the Bay City channel would effect only Hobsonville, as all the channels consolidated at Garibaldi. There are no forces which would tend to fill up this channel, and the Miami river emptying into the bay in a swift current midway between Hobsonville and Garibaldi, tends to keep a part of the channel clear. Hobsonville could always be reached, as at present, by vessels and lumber schooners of goodly size.

With regard to bar improvements, a division of opinion also exists, being as between the merits of a jetty on the south side of the bar and a jetty on the north side. A jetty on both sides would of course be the best plan, but it is conceded that this is too big an undertaking for some time. The government engineers have recommended the north jetty, and the Port of Bay City is also favoring that plan, but while the Port of Tillamook has not gone on record, pro or con, a strong sentiment exists in Tillamook favoring the south jetty.

#### Bar Presents Difficulties.

The Tillamook bar is at present constantly shifting, both as to position and to depth. The heavy southwestern gales of the winter time drive the channel far north, sometimes causing it to divide into many small channels, while the northwestern winds of the summer drive it southward. The range of fluctuation is more than two miles, and the shifting to the north is much more pronounced than to the south. Part of the summer time the channel extends straight out to sea.

The advantage of a south channel's exponents say, is that it prevents the southern currents from shifting the channel northward, and that it would also offer a comparatively safe conduit for vessels making Tillamook Bay in stormy weather. All big storms are from the southwest, and the south jetty would tend to check the force of the wind on the water of the channel, making them less turbulent, while this effect would be just reversed with a north jetty.

The north jetty advocates, however, say that a north jetty would act as a bulwark against the northerly shifting of the channel, and that the additional impetus given to the current by the jetty would check the slight shifting to the south. They point out as an additional argument that the north jetty, with a railroad constructed to the north side, and with suitable rock nearby, could be constructed much more cheaply than the south jetty. A rough estimate has placed the cost of constructing a jetty on the north side sufficient to maintain a 14-foot depth on the bar, at \$600,000, and that of building a similar jetty on the south side at \$1,000,000.

Captain Paul Schrader, master of the Sue H. Elmore, who has been running into Tillamook for many years, and who is undoubtedly the best informed man of Tillamook bay and harbor conditions, thinks that the south jetty is the proper one, but concedes a superior knowledge to the government engineers in their decision.

#### Captain Favors North Jetty.

Captain F. E. Dodge, an old-time mariner on the Oregon coast, and particularly on Tillamook bay, favors, on the other hand, the north jetty. Captain Dodge says that when he came to Tillamook first, in 1892, there was a depth of 24 feet on the bar, and that the northern shore line extended much further seaward than it does at present. The water in those years, he says, has been washing the northern shore away, allowing current to spread, and vitiating its force in washing the channel clear, until now the channel is becoming obliterated. His theory is that a north jetty should be built, thus not only preventing the channel from shifting northward, but confining the shore line with somewhat the same effect as had the shore line in early days, so that the force of the water could keep the channel clear. He thinks that sand will begin to pile up against the north side of the jetty and that thus the former seaward shore line will again be established on the north side.