

Seaports of the Northwest

(Continued from Friday.)

A specific case of lateral inflow and deposit is the following: On the Hudson river, not a great silt-bearing river, to secure a 26 foot channel at one place a few hundred feet in length, in removing 82,802 cubic yards place measurement, 129,129 scow measurement were dredged. Seven months later, 60,800 cubic yards had to be removed to restore the same depth.

In the Willamette, a river so near its minimum as to volume, width and depth, the plan by scouring is not promising because of the necessity of depositing the scoured material somewhere in the places not artificially contracted, the scoured material must be placed in the slack water reach below the contraction. But the Willamette river has not the superficial depth or width to make this process much different from merely moving the trouble a little further on.

At a river's mouth at the sea, littoral currents, moving laterally to the course of the river current remove the scoured material in cases of successful deepening. Such currents are obviously impossible in the river itself. At the mouth of the Mississippi nearly all the United States engineers contended most emphatically and continuously that the erosion from Col. Eads' jetties would simply move the bar further ahead. It was only through the existence of such lateral currents that this was prevented. Yet the United States engineers are allowing for no such deposit in a river without these currents.

Major Handbury refers to this action in connection with the Willamette. "The high water velocities that carry large quantities of heavy material are diminished where the bed of the river is wider and drop a large portion of this material." The very theory of contraction and scour involve the converse, widening and depositing. The scoured material is much more than the original bed of the river; it included the great amount of annual deposit, and is a continuing evil. The amount of such yearly deposit along a lengthened stretch of four miles would be very great.

Major Handbury speaks further regarding this tendency to deposit, that below Swan Island, although the velocity gained may induce a scour along an extent of 2700 feet below the end of the island, yet beyond that distance "its force has become exhausted by being spread out. The tendency is toward shoaling." At Postoffice bar, at the contraction of Willamette slough, where the opening was reduced to 150 feet, he says "since its construction the water in the Willamette in its immediate vicinity has been shoaling."

Any system of contracting dikes, designed to secure deep water in a river for ocean vessels, places obstacles in the way of the great tows and the small craft. It is a wretched diverting of the inland waterways from their natural function, for the benefit of one locality, and causes serious damage to the people at large of the whole watershed. We quote from Col. Craigbill. He speaks as follows regarding the deep channel to Baltimore: "The idea of such training walls has been considered, but their presence would be strenuously opposed by the great number of navigators in smaller vessels, especially sailing craft and light draught steamers, which need not go in the deep channel, and have occasion to be outside of it."

Besides this direct interference with the boats, there is the danger to the river from the great mass of logs of these temporary dikes, which will ultimately become snags in the river, because (as the board of engineers states) the dikes will last only a few years. The large section of dike will contain 50,000 logs of average twelve feet length, for every 1000 feet of dike. The large piles of stone, after the dike has become partially destroyed and obscurely seen will remain as dangerous obstacles for all small craft.

In this Columbia river improvement we have ten miles of proposed deepening to 25 feet depth. In all the work of the United States government, we find no scoured stretch of a tenth of this length secured for even several times the \$77,000 estimated by Major Handbury. The enormous length of deepening is almost without precedent to such a depth, in the world's history, if indeed it be not altogether so. At Glasgow, with no great destructive river but only quiet water, a less length cost \$35,000,000. At scores of places the government has spent from one to five million dollars upon lengths of less than a mile, in securing five or six feet additional depth, for total depths not exceeding 18 feet.

In regard to uncertainty of result, owing to the complicated nature of an improvement of such a great river, the following testimony from Col. Craigbill is important:

"In some respects the longitudinal walls would be preferable to wing dams, if it could be always known with certainty where to put them. In most cases it is impossible to decide this point with absolute precision. If they are put in water too deep, they become expensive. If placed too far from the channel to be improved, their effect is insufficient. If placed too near, they are likely to be undermined. Inasmuch as the river is seldom the same creature for two successive days, and the variations of regimen in a year are large, there are for these and other reasons, elements which cannot be accurately taken into account. In other words, the best hydraulic formulas give but approximate results. Wee be to the man who follows them strictly."

Observation for a year or more may

show the need of lengthening all the spurs to produce the desired effect. Or, it may be found they are all too long, and must be cut off. Or it may be necessary to lengthen them some, and shorten others."

"Longitudinal walls, especially if high, interfere more with the tidal reservoir, the retention of which in full is of much importance."

"The due regulation of the height of the works is a most important matter. If too low, they control the currents too little. If too high, they obstruct them too much, especially in time of freshets."

"When the river is tidal, and moreover is subject to considerable freshets, the problem of the location of one jetty becomes more complicated. When more than one, a whole set, must be put in, the thing is still more difficult."

"There is always some uncertainty as to the effects of regulating works." Such is the testimony of a veteran. Col. Mendell also says of the most difficult shoal of the Columbia river: "The process by which one channel deteriorates and another is bettered, have not been clearly established. It is by no means certain that the sand which obstructs the channel is brought from above, down stream; nor is it established that the sand is brought from below by the flood tides."

The great Columbia river with its immense width, its vast quantity of suspended material, (unequaled in amount except by such rivers as the Mississippi) its excessive floods, its quickly shifting sands, would certainly be approached by the older engineers with caution. Major Handbury, however, attacks it with the ready assurance that securing the 25 foot channel is a "matter of very easy engineering attainment."

As to the methods proposed, the engineers themselves are not of one mind. At Swan Island bar, Major Handbury advocates closing the chute behind Swan Island, causing all the low water to pass north of the island, by this means maintaining at least 20 feet of water. Col. Mendell pronounces this "a sanguine expectation."

Major Handbury recommends spur dikes or groins at Postoffice bar. Col. Mendell says "that experience has fully demonstrated that the general use of groins is injurious." The board of engineers decided upon the use of groins here.

Martin's Island bar. Major Handbury recommends a dike 2000 feet long. The board says "the dike proposed is not sufficient."

Walker's Island bar. Major Handbury recommends a dike 13,800 feet long. Col. Mendell says "better results would follow if the upper 2000 or 3000 feet were omitted." The board agrees with Col. Mendell.

Cathlamet bay. Major Handbury recommends dredging a curved channel 150 feet wide. Col. Mendell says the dredged channel should be straight and wider than 150 feet. The board agrees with Col. Mendell.

Col. Mendell says the constructions proposed by Major Handbury are temporary and will have a life of a few years. He and the board of engineers recommend a "better and more costly construction."

As for securing the 25 foot channel at an early date, or at all, no one need look for this. The United States engineers have a good dozen years of experimenting before much could be accomplished, even if the project were feasible. If appropriations come as slowly as usual, it will be twice as long. Nor need those whose interests would be adverse to such an inland movement of commerce be uneasy. If the channel were made as deep and broad as the Hudson, it would scarcely be used when a port is opened to transportation lines lower down and great towage systems are organized. But there are two ways in which all the residents of the Columbia watershed are deeply interested. One is from the obstructions noted. The other is from the diversion of appropriations from securing an open river at the Cascades and The Dalles, in favor of this purely speculative and uncertain project, that favors only a very few persons comparatively.

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The worst cases of Chronic Catarrh in the Head, yield to Dr. Sage's Catarrh Remedy. So certain is it that its makers offer \$500 reward for an incurable case.

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Blue Devils



The business man who says that advertising does not pay does not advertise. He is the one that always doubts the prosperous trade reports he hears of his competitor, who does advertise. He sits in the back of his store, smokes his pipe and wonders why he isn't making any money. He has the blues when he should have trade. He not only lets his neighbor get that neighbor's share of the business, but a good part of his also. He sees people whom he thought old friends of his go into his competitor's store and come out with bundles of goods, when he has the same articles on his shelves, and perhaps at lower prices than they paid his competitor for them. Why is this so? It is because his competitor lets the public know in an intelligent way through the local papers what he has to sell and when he has it.

The successful advertiser looks after his advertising space as he does his clerks. He changes his ads in such a way the people are attracted by them. He feels that to make money he must be willing to spend some; that there is strong competition in all lines of business, and to get his share of the trade he must advertise, and to do it in the most skillful and intelligent way. If he cannot write advertising matter himself, he seeks the aid of some one who has made the writing of advertisements a study—some specialist, who will see that it is properly written in a catchy and displayed way—some one whose duty it is to take off the shoulders of a busy man all the worry of making up an ad. No business man attempts to cure his own sickness, pull his own teeth, make his own clothes or attend to his own law cases. He employs specialists for each of these various services, and saves money by doing it. It is through its language and arrangement that an advertisement gets its business-bringing qualities. There must be something to attract public attention and hold it; something of interest, something out of the ordinary, something that is different from others of the same line of business. To give it these peculiar features requires experience, and the owner of The Astorian has engaged the services of such a specialist for the benefit of its advertising customers who may wish to take advantage of his services.

The Evening Star, of Washington, D. C., has an advertisement writer connected with its business department, and its terms to advertisers are, "so much blank space, so much money. The same amount of space, with the assistance of the advertisement writer in getting up an ad. attractively, so much additional."

The Astorian charges nothing extra, the services of the expert being thrown in.

THE music of the trees and wild river waves and all the summer-time singers comes sweetest to the housewife when she knows the 6 o'clock burner all stove instead of the red-hot cooking range. There'll not be an evening from this on till October 1st but she'll be glad she bought one. Have you seen those in our window? \$1.50. That old gentleman who said they were extravagant has changed his mind and has purchased his wife and married daughters each one. NOE & SCULLY.

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