THE WORLD'S NAVIGATION: THE PROBLEM OF RIVER MOUTHS

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649258338

The World's Navigation: The Problem of River Mouths by W. T. Stackpole

Edited by Trieste Publishing Pty Ltd.
Cover @ 2017

www.triestepublishing.com

W. T. STACKPOLE

THE WORLD'S NAVIGATION: THE PROBLEM OF RIVER MOUTHS

Trieste

THE

World's Navigation.

THE

PROBLEM OF RIVER MOUTHS.

A NEW FORCE, PLAN, AND IMPLEMENTS, ADAPTED TO THE IMPROVEMENT OF RIVER MOUTHS: AS THE DANUBE, MISSISSIPPI, VISTULA, ELBE, LA PLATA, COLUMBIA, ETC.; AND FOR SEA-COAST AND INTERIOR CHANNELS, BARS, AND SHOALS; AND FOR EFFECTIVE, RAPID AND ECONOMIC IMPROVEMENT OF ALL EARTH OBSTRUCTED CHANNEL-WAYS.

By W. T. STACKPOLE, FAIRBURY, ILLINOIS.

BLOOMINGTON, ILL.:
PRESS OF THE PANTAGRAPH.
1879.

INTRODUCTION.

In printing and presenting this communication, the writer is prompted and encouraged by the hope of practical results, and wide public benefits through improved navigation—ocean and inland—not less than by personal considerations, and he is cheered by the belief of many, as to the necessity and propriety of this course; and especially, and recently, by the events that have transpired, and by the opinions of eminent men.

The means proposed for accomplishing the long needed work, in its first inception, came to him early in 1874, while laboring to aid the attempt to revive our navigation and promote sound national policies; and from the first it met (as now) the high approval of some distinguished men of national reputation, as well as of many citizens and friends. And from the first also it awakened in his own mind and heart, complete faith in future results; faith since matured (under the most adverse circumstances) by careful and laborious examination for years, and also an examination of the most powerful dredgers in the world, and of the subject at large. But various good and proper reasons—both public and private—have required that it be held in abeyance until the result of other work was known. That time appears now to have arrived. Moreover, a great benificent event in this hemisphere and the world seems about to dawn, when all our interests are so greatly suffering. For now at last, in the Grand Providence of events, the time seems near when France, having opened the great *Eastern Gate* for the world's navigation, is about to open the *Western Gateway*, by constructing the "American Inter-Oceanic Ship Canal," at or near the Isthmus of Darien. This should greatly advance the general economy of navigation throughout the world, and extensive, rapid, and cheap improvement of natural channels is required.

And hoping now very earnestly for the kindly and just consideration and approval of the engineers of the United States, whose skill and fame are known throughout the world, and for the favorable consideration and action of the Congress of his country, and the approval of its people, he would beg leave to submit the annexed brief general view or outline of the subject, and also some specific details as to the work required, and the forces and implements proposed.

Very respectfully,

W. T. STACKPOLE.

FAIRBURY, Ill., Feb. 14, 1879.

NAVIGATION:

THE WORLD'S NEED OF ITS IMPROVEMENT.

"THE GATES OF THE RIVERS."

THE PROBLEM OF THEIR OPENING CAN ONLY BE SOLVED BY THE USE OF IMPROVED IMPLEMENTS AND NATURAL FORCES EXISTING IN ALL WATERS.

The work at the mouth of the Danube, it is at length known, is wholly inadequate to admit heavy shipping into that great river. And so at the mouth of the Mississippi. And so at the mouth of the Vistula, the Rhone, and many other important rivers where improvement with that purpose has been attempted. We might almost say all other rivers are barred at their mouths, unless cleared by frequent artificial aid, or by extraordinary natural conditions. This fact has not seemingly been fully realized by the general public, (if clearly stated) and even the faithful, extended and elaborate labors of engineers at river mouths, in Europe and America, have often, if not usually, seemed to deal with such questions as the mouth of the Mississippi as though it was anomalous and extraordinary, and only to be understood by peculiar illustrations. For example, one learned engineer argues, in an official report, that "the Gulf of Mexico is too large" for the Mississippi, and too large to admit ot keeping the mouth of the river open for heavy shipping. Another declares that "in order to understand the question it is necessary to realize that the river is leveling the continent, and carrying it down to the gulf."

Do such extravagant statements indicate clear conceptions of nature, and of the work required of man? Are they wise, or absurd? And great works (called permanent) are proposed, radi-

cal changes in the river planned, and various and more various, and more costly, become the theories and schemes brought forward, and urged with all the zeal of great talents, concentrated on a single object, and backed by a great public necessity. And there are also great sets of different interests; some anxious to honestly accomplish the object, and improve navigation, and others, (misguided in their aims) secretly wish to defeat it, and therefore will prefer an impracticable theory to a sound and effective plan. And so doubtless in Europe.

But where is the sound plan, among all brought conspicuously forward, and certainly all rightly offered are entitled to just consideration?

If we ask the engineers of Prussia, they will tell us that more than a hundred and fifty years of effort, by various plans, including jetties, a canal, and ordinary dredging, have gained only a moderate degree of success at the mouth of the Vistula; and they will point to the splendid city of Bremen, once so wealthy and prosperous, now in a sad and sorrowing decline, through the shoaling of the Weser, and the increased size of shipping. So Hamburg and Antwerp are sufferring greatly, and in danger, and so are several of our cities, including even New York; indeed we may justly include our whole country in the effects of bars at the mouths of two rivers. And so at the river mouths of famine-stricken China and India, and probably the harbors of Persia. So in the vast rivers of South America, with its great systems of mighty rivers. Even at Buenos Ayers, where La Plata is thirty-six miles wide, vessels drawing only sixteen feet, must lay off seven or eight miles, and receive and discharge cargoes by means of lighters. Here jetties would be lost. And so the mouths of the African rivers are barred like those of Europe, Asia, and America; and of course wholly unimproved because backed by a savage wilderness.

So too on our Pacific coast, where the noble Columbia, CLEAR as any river on earth, very deep, and twelve miles wide at its mouth, and bearing the poetic, historic name of our country—is obstructed by a great bar, a sea coast bar, which the ocean has thrown completely across it. And who would venture to apply jetties there? The very suggestion would awaken derision. And

yet the river does not seem to be "leveling the continent" to any great extent by the flow of its clear waters.

That work everywhere was done long ago by the Great Supreme, the Creator of all worlds, and done before man's tasks began; and mighty indeed were the forces used. The record of that work remains in different and varied forms. And so too do the *natural forces remain*, in subdued and modified forms, awaiting man's use.

And perhaps a statement, a clear brief statement of our problem is somewhere given, and a prophecy of its solution. Is the time at hand? And why should it be unreasonable to believe, that implements, adapted to general work, in full conjunction and harmony with general natural forces, should be devised, and that with them, and the natural forces, the necessary work should be accomplished and maintained? And is it not also reasonable to believe that upon the whole, the world's need of a solution of these problems is greater now than it has ever been? All the great governments of the civilized world seem to have sought their solution, more or less, in some way for centuries, and especially since the eventful year 1848, and most of all, quite recently, perhaps at this very time.

Everywhere, now, the world's navigation is crippled or embarrassed, and hence all legitimate business and labors must suffer, and loss of property, debt, bankruptcy, foreclosure of mortgages, poverty and want, are increased far and wide, by this weakness in the right hand of commerce.

Of course, other causes exist and exert a mighty force, and appeal loudly to our patriotic statesmen, but the great office of navigation, has never been denied. And probably, in the last seven years, FAMINE has destroyed more human lives than in any other similar period on the earth. And of human instrumentalities, nothing, short of improved navigation and land transportation, brought forward and extended by the Christian nations, can banish it from the earth.

And it is the high duty of man to rightly labor, and to rightly use the earth's treasures and resources. So unobtrusive kindness, gentle charity, and relieving the suffering, are placed by the Great Teacher in the front rank of human virtues. Hence,

modern civilization has found its noblest triumphs in utilizing the forces and resources of nature for man's use and advancement; and here our country has filled many a bright page in the record of modern times.

And after such an amazing record of industrial triumphs, and varied productions of art and nature, and such a vast surplus for export for human needs, brought from the rich bosom of the teeming earth by intelligence, labor and fortitude,—after all this, and long after the gift of Washington and his compatriots, *can it be* that partisanship, sectionalism, and demagogism in politics, and hypocrisy in religion, aided by rank treachery to our institutions, gross incompetence, and remorseless external influences, are to conduct our people to the graves of paupers and bankrupts? Shall patriotism give way to partisanship, and then both to influences emanating from feudal interests in another land? Influences that must still for a time deceive, mislead, and overreach nations; and that never yet knew remorse, and rarely defeat, and the instruments of whose diplomacy and aggrandizement, are often bribery, secret treachery, and low disgraceful intrigues, as all history proves; and these are joined with most skillfully organized violence, more dangerous than that of ancient Rome, because more perfidious, and often using others to fight its battles. But though crippled, we can still labor, and one of the present high duties upon us is the revival and improvement of navigation, especially *our* navigation on seas and rivers, which is interlocked also with the world's problem.

And is the task really so great, in comparison with the objects to be gained by its performance, and with the means and natural forces adapted to its reasonable fulfillment?

The bars and shoals we have named are in their extent but as a trifle to the deep waters near each. And so with the bars on the English coast, where vessels are lost by thousands. So also with the bars in our rivers, and at the mouths of small creeks. Everywhere the natural forces that slowly form them, are right at hand, and available for their rapid reduction, to the reasonable extent required for the best practical results in navigation. The extent of work required should never be underrated, nor its difficulties denied; but the tendency is to overrate, partly because of

the magnitude of the subjects, and sometimes of surrounding objects. Especially is this the case on the shore of the ocean, whose power of course is beyond man's control, and impresses the mind with awe. Man can never approach it as a master, for dominion over it was never given to him. But he can approach it as a friend, and its murmuring waves may assist his labors, though they seem to *destroy about all attempts at permanent and purely artificial works to resist their force;* and this on all coasts, and in all time.

In almost all cases, coast and interior, where boats and vessels are most liable to get "aground," the impending shoal is scarcely more than an atom, as compared with the deep water near; rarely so much in proportion as a fine thread to the breadth of a man's coat. Nor does it, if a bar, often require removal, but only a deepened channel way over it. And if a wide and extensive shoal or flat, as in Mobile Bay, then certainly this is all that is required.

Doubtless the bar often fulfills an important and necessary office, and in such cases its complete removal, even if practicable, might be highly injurious, and should not be attempted. Tree Top bar, in the Illinois river, was formed originally by a tree lodging in the channel, obstructing the natural flow of the water and drift, catching sediment and various floating material, and so forming in time the very worst bar in the whole river. The complete removal of such a bar, (if required) would be entirely practicable, and the result no doubt would be permanently beneficial. And so with *many* other bars—*the results of neglect to clear channels of slight obstructions.*

On the other hand, the low land spits that form the banks of the "passes" of the Mississippi, could not resist the great forces of the sea, unless protected by those outworks we call "bars," and through which we need a deepened channel way, sufficient for heavy shipping to safely pass without grounding. This will do, though it may be found advisable to go yet deeper in sweeping out a channel, (which does not need to be very wide) in order to allow under currents, from sea and river to exert themselves, under the varying forces of the sea and river, the oscillations of the tides, &c.