REPORT
OF THE
JOINT COMMITTEE OF THE SENATE
AND
GENERAL ASSEMBLY
OF THE
STATE OF NEW JERSEY
ON THE ENCROACHMENTS UPON THE
BAY AND HARBOR OF NEW YORK.

WITH THE REPORT OF
EGBERT L. VIELE,
STATE TOPOGRAPHICAL ENGINEER.

WITH ACCOMPANYING MAPS.

NEW BRUNSWICK:
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1855.
RE PORT.

The Joint Committee of the two Houses, appointed in conformity with a communication from His Excellency Governor Price, communicating an invitation to meet the Governor and the committee of commerce of the legislature of New York, for the purpose of viewing and considering the encroachments upon the bay and harbor of New York.

RE PORT:

That on the thirtieth day of January last, your committee, accompanied by His Excellency Governor Price, and E. L. Viele, Esq., the engineer of our state geographical survey, proceeded to New York, and at the time appointed met His Excellency Governor Clark, of the state of New York, the committee of commerce of said state, the state engineer, with other gentlemen occupying important offices under the government of that state.

That your committee, in connection with the above-mentioned authorities of the state of New York, the Governors of New Jersey and Connecticut, accompanied also by officers of the Government in charge of the Navy Yard, with other persons representing the commercial interests of New York, proceeded to examine certain encroachments made, and in progress, and contemplated upon the Brooklyn side of the East river.

Your committee upon the first views of the matter regarded such encroachments as matters with which New Jersey had no interest, and should not express any opinion; but upon reflecting they came to the conclusion that such encroachments
were prejudicial to her; inasmuch as they jeopardized the interests which New Jersey has, in common with every other state of the Union, in the Brooklyn Navy Yard, and the immense government expenditures at that point.

And secondly, the effect of these encroachments at this point upon the Sandy Hook channel, in which New Jersey possesses, through her extended water front upon the Hudson river and New York Bay, an undeveloped interest one-third as large as that of the state of New York, an interest that should be diligently cared for, by early and careful legislation, protecting herself alike from the rapacity of her own citizens, and the aggressions of New York.

The committee on viewing these encroachments, and from various other sources of information, find that the East river has been encroached upon on the New York side, more than one thousand feet, while on the Brooklyn side the encroachments have not been much less, if they shall be used to the full extent contemplated by those claiming to have rights or grants for that purpose.

These encroachments have narrowed the East river between New York and Brooklyn to a strait one-half of its original width, through which contracted channel the tide flows and ebbs like a millstream, in fact, running six miles an hour, in which shipping can only be handled safely by steam tow-boats. So narrow is the channel of the East river, and so inadequate to pass, the tides flowing into and from the sound, that the water is raised about one foot above or below the point of greatest encroachment, as the tide may be flowing in and out. The extent and character of these encroachments may be estimated by the fact that they so far impede the free flow of the tide into the East river, that the tide comes in from Long Island Sound and meets the tide coming in from the East river more than six miles this side of the natural point of meeting.

At the Navy Yard, your committee find, that by a grant of the New York land commissioners, they have authorised one
Henry Ruggles, who owns a small triangular piece of land adjoining the Navy Yard, to extend piers into the river in continuation of his shore line, which, if insisted upon and carried out, will impair, if not destroy, the usefulness of the Brooklyn Navy Yard; and Mr. Ruggles is now holding this grant, alleged to have been obtained from the land commissioners of New York by mistake and fraud, over the interest belonging to the United States Government at the Navy Yard, and is demanding exorbitant sums from the government for his right under a grant thus obtained, a matter calling for remonstrance upon the part of New Jersey, and for some kind of action, either legislative or judicial, from the state of New York or the federal government.

The committee also find that the encroachments from the Battery inland, are more than one thousand feet, and that vessels of large burthen and capacity have unloaded upon the site of streets that are now densely populated. Similar encroachments upon the Jersey side would produce the same deplorable results now experienced by encroachments now existing in the East river.

Your committee have mentioned these facts for the purpose, among others, of illustrating the necessity of timely establishing along our New Jersey shore a water line, outside of which no encroachment shall be made, a proposition that seems to be self-evident, in order to restrain individual cupidity from inflicting similar injuries along the Jersey shore.

It is not now denied by any one, even the most disinterested, that the encroachments in the East river are of vital injury to the port of New York and to the navigation of the East river, and that the more glaring encroachments on the Brooklyn side should be removed. It is much easier to restrain encroachments than to remove those that have been made, as it is alleged that it would cost at least six millions of dollars to remove the encroachments on the Brooklyn side, and this would but partially remedy the injury that has now been done.
These various encroachments in New York have been made under and by virtue of an old colonial charter to the city of New York; giving to the municipal authorities of that city jurisdiction and authority over the East river, "to low water mark on the Brooklyn side," and on the North river side, "to low water mark on the west side of North river, or so far as the limits of our said province shall extend there." They have of later date been made by authority of the legislature of New York, and in some cases the board of land commissioners of that state have power to make grants of lands under water, as in the case of the one mentioned to Henry Ruggles aforesaid.

The committee also visited Jersey City for the purpose of examining, if any, and what encroachments had been made there, and it was a matter of just pride to your committee that, comparatively speaking, no encroachments had been made upon the Jersey side. Yet your committee think that the wharves and piers lately erected by the New Jersey Railroad Company are extended farther than well comports with the interests of New Jersey, in this important matter, of keeping unimpaired the harbor of New York.

Your committee call your attention to the Cunard Dock and the dock before spoken of, that they are extended farther into the river than would seem to be absolutely necessary for strictly commercial purposes, having only in view the welfare of the harbor in contradistinction to individual gain. With the exception of these two innovations upon the channel of the Hudson river, your committee are unaware that New Jersey has any self-reproach or responsibility on her own account, for the present impaired condition of the harbor of New York.

By these two docks some encroachment, in the opinion of your committee, has been made on the channel of the Hudson river, narrowing and deepening the river at this point. The same authority which claims the legal right, and which authorized these extensions, could, had they seen fit, have extended them by the same claim of power, some thousand feet further
into the river, producing the same deplorable results now ex­
isting in the East river, between New York and Brooklyn. Your committee are informed that the right by which these innovations are made, or claimed to be made, are claimed under the charter to the Jersey Associates, giving them power to improve their lands lying under water. *It would seem that a power of this kind to impair the great interests of New Jersey in the harbor of New York should be found in a strict construction of explicit legislation,* and if the rights by which these encroachments are made are restrainable, they should, if possible, be restrained by timely legislation for the public good.

The attention of the committee has been called to the alleged effect of these encroachments upon the Sandy Hook or main channel entrance to the harbor of New York and Jersey City, and also as to their injury to the navigation of the Passaic and Hackensack river.

It is the opinion of your committee that the encroachments upon the East river and the New York side of the Hudson, before spoken of, together with the filling in of the Hoboken meadows, that the full volume of the tide no longer ebbs and flows through the Sandy Hook channel, which would seem necessary to keeping the same fully open, and that the said encroachments are most injuriously impairing the Jersey shore for commercial purposes, while at the same time they are en­
dangering the navigation of the Passaic and Hackensack.

The opinions of your committee as to the injury to the Sandy Hook channel are derived from the letter of Major Delafield, of the United States engineer corps, to the New York chamber of commerce. Major Delafield has for many years resided at Staten Island, and from his official position has ample means of judging of this matter, and has given much care and thought to the harbor of New York.

The theory of Major Delafield essentially being that the full flow of the tide through the Hudson, East river, Passaic, and Hackensack, is necessary to keeping unimpaired the Sandy
Hook channel; the committee make the following extract from this letter:—

"Every cubic yard of water above low water line that is displaced by earth or other solid matter, decreases the quantity of water, to the same extent, that otherwise would come in from sea through the channel at Sandy Hook; and as a necessary consequence, decreases either the depth or width of these channels, until an equilibrium is restored.

"On reference to a survey attached to a deed, on the files of the United States Engineer department, made by J. Marschalk, city surveyor, in 1761, of a plot of four acres of ground at Sandy Hook, purchased for the lighthouse, the distance from the lighthouse to high water mark, on a due north line, is 187 yards. Measuring the corresponding distance on the coast survey map of 1848, it is 1,173 yards, the land having gained 986 yards on the channel way in 87 years, on this line; and to the extreme point of the Hook at present, a little to the westward, a distance of 1,548 yards, more than three-quarters of a mile. The question then arises, what has caused this great contraction of the outlet of the Hudson river?

"Originally the flood tide through the Sandy Hook channel, filled the space vacated by the ebb in the Raritan, Hackensack, Passaic, Hudson and East rivers (meeting about Sands' Point,) throwing in and out every twelve hours, with a current of corresponding velocity, a volume of water sufficient to fill all those rivers, with their bays, creeks, and inlets, and thereby keeping open a channel at the Hook corresponding with the movement of such a body of water.

"But since the wants of commerce commenced to change the equilibrium established by nature, we have closed up the East river against the free movement of the flood and ebb about one-fourth the entire distance, and as a consequence, prevented the flow in six hours of the quantity of water that formerly passed to fill that river, Bushwick, Newtown, and Lunswick creeks, and Flushing Bay, with its creeks and
inlets; the results of which must be, that a large volume of water, to fill these basins, no longer comes from Sandy Hook, but is received from the Sound, causing a meeting of the tides at some point this side of Throg's Neck.

"We have, during the same period, dyked the Hoboken meadows, and made fillings between the high and low water levels on all the water courses referred to, shutting up water way to an incalculable amount, all of which was formerly filled by water coming through the Sandy Hook channels.

"Now it is to this filling up of the water way, or the space into which the tide ebbs and flows, that I ascribe, in a great measure, this immense change in the construction of the mouth of the Hudson on entrance into our harbor.

"The existence of such a change does not rest upon the survey for the lighthouse in 1761 for authentication. It is fully confirmed by the surveys of Lieutenant Hill, private draughtsman of the commander-in-chief (of the English army), in 1782, and compilations, in 1776, from the 'Surveys of Captain Gascoyne, Jacob Fisher, Jacob Blayney, and other officers and pilots in his Majesty's service,' (in the library of the Historical Society), and more particularly from the surveys of Messrs. Blunt of this city, in 1822—the survey of Major Le Compt, of the Topographical Engineers, in 1819, and the coast surveys of 1835, '42, '44, and '48: these last five being made expressly to ascertain the changes of Sandy Hook.

"They established the fact of an extraordinary extension, and regularly increasing encroachment of the land upon the channel-way, and a total extension of the Hook of upwards of three-quarters of a mile (or 1548 yards), at high water.

"Secondly. The next great cause for change in the harbor, is the alterations in the directions of current of both the ebb and flood tide, by the present system of docking, and the irregular mode of extending the docks."

Your committee think that the consideration of these encroachments upon the Jersey shore, and Jersey navigation
particularly, demands the earnest and early consideration of the legislature of New Jersey.

By the ruinous innovations upon the East river, the tide which is kept back from entering the Long Island Sound in its full volume (as shown and explained by the accompanying letter or report of Mr. Viele's), empties itself from the Long Island Sound in advance of the tide from the Hudson—the difference of time being one hour—creating a large deposition of sedimentary matter on Robbin's Reef, which is constantly increasing; this, with the innovations upon the channel of the Hudson, deepening the channel at the point encroached upon, is filling in that portion of the bay below Jersey City to a point opposite the head of Staten Island, making it necessary for shore owners, before they can find a water front of sufficient depth, to build their piers and bulkheads far out towards Staten Island, before they can find sufficient depth of water to answer for shipping purposes.

Again, another point of great interest to New Jersey, is shown by the communication or report to the committee from Mr. Viele, to wit, that the point of the meetings of the tides in Staten Island Sound, coming in from the lower end of Staten Island, and around the upper end, is shifting towards the upper end of Staten Island, in such a manner that thereby a sedimentary deposit is gradually being created at the mouth of Newark Bay, sufficiently serious to threaten the navigation of the Passaic and Hackensack rivers.

The committee have not, perhaps, any well-founded facts to form a theory of the cause of the shifting of the tides in this sound, but they would at least suggest for inquiry, if the deposit of sedimentary matter thrown out of the East river by the hastened flow of the tide, the encroachments upon the Hudson deepening it at the point encroached upon at the expense of filling in of the bay on the Jersey side below, and added thereto the deposit at the same point from the sewerage and other matters about the docks in New York, may not have so filled in the natural channel for the tide around the head of
Staten Island, so that the full volume of the tide no longer flows around the head of Staten Island, and that in consequence thereof the tides intended by nature for the filling in of Newark bay, the Passaic and Hackensack rivers, now come in from around the lower end of Staten Island, causing the tides to meet at a different point, and producing those deposits at the mouth, threatening the navigation of said river.

Your committee would also remark that there has been lately erected a dock on the northerly end of Staten Island, one thousand feet in length, and extending into the sound about four hundred feet.

The committee, then, are of the opinion that the encroachments upon the East river diminish its width about one half. The encroachments by authority of the city and legislature of New York, of more than one thousand feet into the Hudson river from the battery up to Courtland Street, have been decidedly injurious to New Jersey in a three-fold point of view.

First. It has impaired the main entrance into the harbor of New York by shifting the Sandy Hook channel and lessening its capacity or depth, and lessening and impairing the value of the Brooklyn Navy Yard.

Second. It has injuriously affected the Jersey shore by filling the bay from a point just below Jersey City out to the head of Staten Island.

Third. It has injuriously affected the entrance into Newark Bay by filling in the same at the mouth of said bay.

Inasmuch as the state of New York has been the cause of this triple injury to New Jersey, your committee are of the opinion that the legislature of the state of New Jersey should by resolution, express her dissatisfaction thereat, and request, in a friendly way, the state of New York to repeal all fraudulent grants improperly obtained from the state to the injury of the navy yard or the harbor, and by purchase, or otherwise, remove other innovations upon the East river that now exist, to the injury of New York and New Jersey.
Your committee recommend, and have prepared a joint resolution for that purpose, and also submit herewith another joint resolution, providing for the appointment by the governor of a commission of three discreet and impartial commissioners, residents of this state, to establish a water front from some point on the Hudson river above Hoboken at the north of the Newark Bay, a water line outside of which no encroachments should be made upon the Hudson river or the bay of New York.

All of which is respectfully submitted.

THOS. D. HOXSEY, { Senate
A. V. BONNELL, } Committee.
JOHN M. BOARD, { House
H. HOLMES, } Committee.
JOINT RESOLUTIONS

IN RELATION TO

ENCROACHMENTS MADE IN THE HARBOR OF NEW YORK.

WHEREAS, it has been represented that the establishment of a water line along the Jersey shore of New York harbor, beyond or outside of which no encroachments should be made, is a matter demanding the early attention of the legislature of this state; therefore,

1. BE IT RESOLVED, by the Senate and General Assembly of the State of New Jersey, That the governor be, and he is hereby authorised to nominate and appoint three discreet citizens of this state, whose duty it shall be to survey, lay out, and establish, subject to the action of the legislature, a water line, extending from the mouth of Newark Bay to a point above Hoboken, on the Hudson river, and to sufficiently designate the location of said line, and to prepare and submit to the next legislature such act or acts as shall be necessary for the establishing of said line.

2. And be it resolved, That it shall be the duty of said commissioners to examine into certain innovations and encroachments made by, and within the jurisdiction of the state of New York, to the injury of the main channel entrance into the harbor of New York, and also diligently investigate
whether any such innovations and encroachments have injuriously affected the commercial interest along the Jersey shore, or impaired the navigation of the Passaic and Hackensack rivers.

3. **And be it resolved**, That the said commissioners shall receive the sum of five dollars for each and every day they are actually employed in the performance of the duties hereby imposed upon them, and the payment of such necessary traveling expenses as they may actually incur therein, to be paid to the said commissioners, respectively, upon an appropriation being made for that purpose by law.
JOINT RESOLUTIONS

IN RELATION TO

ENCROACHMENTS MADE IN THE HARBOR OF NEW YORK.

WHEREAS, it is alleged that by certain erections made and contemplated in the East and the Hudson rivers, under and by authority of the state of New York, the usefulness of the Brooklyn Navy Yard is impaired, if not endangered, and the channels of the East river and the Hudson river much innovated upon and narrowed, to the injury of the main entrance channel of the harbor of New York, and to the injury of the Jersey shore, and also to the navigation of the Passaic river, leading to Newark, the largest port of entry in this state; AND WHEREAS, also, counter encroachments upon the part of New Jersey, would greatly injure the navigation of the Hudson, and impair the usefulness and capacity of the Harbor of New York; AND WHEREAS, also, the establishment of a water line, outside of which no erections should be made, would seem to be necessary to arrest similar innovations in future; therefore,

1. RESOLVED by the Senate and General Assembly of the state of New Jersey, That the legislature of the state of New
York be requested, so far as the same may be within its power, to cancel and repeal all grants to build and erect wharves, piers, bulkheads, and docks in the immediate neighbourhood of the Brooklyn Navy Yard, the erection whereof would injure and impair the usefulness thereof, and to remove the more glaring erections in the East river, to the injury of the commerce and harbor of New York, and also to the injury of New Jersey.

2. And be it resolved, That the legislature of the state of New York be requested in such manner and by such means as it may think best, to survey, lay out, and establish in the rivers and harbor of New York an exterior water-line, beyond which no erections shall hereafter be made, to the injury of the commerce of New York, or to either, directly or indirectly, injure the state of New Jersey.

3. And be it resolved, That the governor of this state be requested to forward an attested copy of the above resolutions to his Excellency the Governor of the state of New York, to be laid before the legislature of said state.
REPORT
of
EGBERT L. VIELE,
STATE TOPOGRAPHICAL ENGINEER.
REPORT.

The harbor of New York consists of the harbor proper and an outer roadstead, called the Lower Bay: the latter being partially protected from the sea by the island of Sandy Hook, (almost a peninsula,) which stretches out from the coast of New Jersey, in a northerly direction. It is about six miles in length, and about three-quarters of a mile wide. The main channel into the bay passes near the extremity of Sandy Hook, between which and the coast of Long Island (a distance of seven miles) is an immense shoal, through which passes three lesser channels into the harbor. The bar to the entrance lies three miles off Sandy Hook; on it there is a depth of from twenty-one to twenty-three feet of water. The Lower Bay contains about one hundred square miles of water surface; receiving from the west the waters of the Raritan river, which is seventy-four miles in length, passing through the red sandstone formation of New Jersey. The Outer Bay connects with the harbor proper, at the Narrows, a strait formed by the approximation of the shores of Staten and Long Islands. There is also another connection formed around the western shore of Staten Island by the Staten Island Sound, which meets at Newark Bay, the united waters of the Passaic and Hackensack rivers. The former is seventy miles in length, passing through the new red sandstone formation, and having at one point, a fall of seventy feet; the latter is about forty miles in length, passing through red sandstone
and conglomerate. Newark Bay is six miles in length and one half in width, connecting with the harbor by the Kill Van Kull, a narrow straight.

The principal affluent of the harbor is the Hudson River, which rises in the mountainous regions of Hamilton and Essex counties, New York, and is three hundred miles in length; passing through granitic and calcareous formations and alluvial deposits; the principal tributary is the Mohawk, a considerable river which empties into it at Waterford, one hundred and fifty-five miles from its mouth; two miles from their junction, the Mohawk has a perpendicular fall of seventy feet. The Hudson is navigable for large ships, a distance of one hundred and eighteen miles; for smaller sailing vessels and steamboats, one hundred and fifty miles; it is connected with the great Western Lakes by the Erie canal, at Albany, and with Lake Champlain and the St. Lawrence River, by the Northern canal. The river divides at the north end of Manhattan Island, forming what is called the Harlem river, which empties into the East river, a strait connecting the harbor with Long Island Sound, and thereby forming a second opening to the ocean. The harbor contains twenty-four square miles of water surface.

For the purpose of comparison, two maps have been prepared to accompany this report; one, a copy of a map published in London, in 1755, obtained from the New York Historical Society; the other, a map of the coast survey of the harbor in 1853. The first of these exhibits the harbor as it existed before the present, or, indeed, any so-called improvements were even in contemplation. The Hudson and the smaller affluents, with their tributaries, flowed through their yet unexplored valleys, with an equable current. The dense forests that covered the area drained by these rivers, served to retard the melting of the snows, the rapid dissolution of which, has since proved so injurious by the annual freshets, not only in immediate damage but in future consequences. The mountain springs were also protected from the influence of the sun,
and served, by their regular flow, to prevent the excessive low stage of water, now so serious an obstacle to navigation. The banks of the rivers were protected by vegetation, from the injurious effects of a rise in the water or the abrasion of the ice. The tide ebbed and flowed with no other obstacles than those which nature opposed. The winds and the waves produced their effects; but nature, ever true to her laws, maintained an equilibrium; and the harbor, as displayed to the admiring gaze of its first discoverers, wanted nothing to its perfection.

The second map exhibits the harbor as it exists at the present time, with the changes created by man, and by nature in her struggles with his innovations. We see that the original shore line has, in a great measure, disappeared; at some points it has given place to wharves and piers; at others, dense blocks of houses now stand where vessels once floated. This is the case, not only with the harbor itself, but along both shores of its affluents, almost to their sources. Some of the smaller streams which flowed into it, are entirely filled up and obliterated. The greater portion of the swampy land in the vicinity, which the flood tide once covered, has been embanked from the water or filled up.

That all this produces a change in the capacity and navigation of the harbor and rivers, does not admit of discussion; it requires no knowledge of hydrostatics, for the most casual observer to see it. That this change is vitally injurious to the commerce of the port of New York; that it has been pursued and persisted in, with a reckless disregard of public interests, by private individuals, acting in some instances under authority—of doubtful legality—can be very easily shown.

In order clearly to comprehend and point out the precise nature of the effects produced by the causes referred to, would require a most thorough and critical examination of the various currents which have been formed, accompanied by a series of observations upon the tides and other natural causes in operation. Still the statement of certain fixed laws of nature and
principles of hydrostatics and their application to certain constructions which have been made, coupled with existing facts, will serve to illustrate the alarming nature and extent of the encroachments now made or in contemplation, in such a manner, it is hoped, as will call for the immediate action of legislative authority. In the first place, with regard to rivers, nature acts by certain fixed laws, from which she never deviates; in accordance with these laws, their beds are established and their channels excavated. Men cannot change them; all his efforts to do so, have but produced modifications; the evil he attempts to remove, reappears with greater force at another point; any construction built in one place, for increasing commercial facilities, operates injuriously upon another portion of the river.

Constructions which narrow the channel at one point, must produce a corresponding increase in the depth of water and a greater velocity; as soon as the channel widens, a fall in the water takes place and the velocity diminishes; the effect of the fall is felt at the bottom, where a hollow is formed, and a corresponding shoal beyond it; eddies are created where the specific gravity of the sedimentary matter, having overcome the force of the current, is deposited.

These effects are as unceasing as the cause which produces them. Not less important is the action of these obstructions upon the semi-diurnal tides; twice a day, under the influence of the flood tide, the waters of the harbor rise from five to seven feet; and, pressing back the waters of the rivers which empty into it, causes its effects to be felt, more or less, for a great portion of their length; after arriving at a maximum height, the tide recedes, and aided by the increased velocity of the rivers, has the effect of scouring or washing out a large portion of the sediment which had been brought down and deposited during the previous six hours.

It is evident that anything that tends to diminish this effect must be seriously felt; that the filling up of land previously under water, and the extension of long solid piers into the
river, has the tendency to obstruct, and if persisted in, eventu­ally to destroy the action of the tides; it is as evident, as the fact that a solid body, placed in a vessel full of water, will dis­place an amount of water proportional to its bulk.

Reference would here be directed, specifically, to the en­croachments that have been made. It is conceded that within the corporate limits of the city of New York, more than seven hundred acres of ground have been filled in where the tide once flowed; that a series of irregular wharves at right angles to the shore, have been extended into the rivers on both sides of the city for several hundred feet; that similar encroach­ments have been and are still being made within the limits of the city of Brooklyn. On the New Jersey shore, with one ex­ception, the encroachments have not been of a serious nature; still, the shutting out of the tide water from the Hoboken and Newark meadows has not been without its effect. On the shores of Staten Island, both on the bay and on the Kill Van Kull, constructions have been made, the effects of which are daily felt, and are of the most alarming character as regards the waters of Newark Bay.

In brief, the quantity of water sent into the bay by the flood-tide, has been diminished, and its passage into the rivers obstructed; thus reducing the quantity and velocity of water, absolutely necessary to clear from the channels the sedimenta­ry deposit. This deposit is materially increased by the wearing away of unprotected portions of the river banks, where the current, deflected by pier constructions, is impinged upon the opposite side; it is also increased by the sewerage of the city, and the refuse matter thrown from the wharves and vessels. Pits, shoals, eddies and counter-currents have been created, rendering navigation difficult, and filling up the space between the piers, making it necessary to build further out, in order to find sufficient depth of water.

The flood tide coming in through Long Island Sound, for­merly meeting that coming in from the bay, at Sands’ Point, now meets it at Throg’s Neck, seven miles nearer the city of
New York, causing the ebb tide to flow from the East River, in advance of that from the Hudson—the difference in time being one hour, creating a large deposition of sedimentary matter at Robin’s Reef, near the shore of New Jersey, and which is constantly increasing.

The point of meeting of the tides through Staten Island Sound and the Kill Van Kull, is shifting in such a manner as by its sedimentary deposit, at the mouth of Newark Bay, seriously to threaten its navigation.

At Sandy Hook the land has encroached upon the channel-way three fourths of a mile, since the date of the survey to determine the position of the lighthouse. This land forms during violent storms on the coast; and, in proportion as the quantity of tide-water admitted into the bay at the flood is diminished, so does the force of the ebb to remove the encroachment decrease. Map number two exhibits the encroachments at the Hook, as determined by various surveys.

This, of itself, is sufficient to show that the capacity of the harbor is contracting.

It would occupy more space than is contemplated by this report, to specify, in detail, the numerous and reckless encroachments that have been made—the outrageous pier extension of a Mr. Wetmore, at Brooklyn—the still more outrageous attempt of a Mr. Ruggles, to block up the most important navy yard in the Union, under the sanction of a grant, of questionable legality—the constructions in progress on Staten Island and at Jersey City, are all of a nature to call for immediate action.

This is not a sectional question: the harbor of New York is of as much importance to the whole United States as it is to those states immediately bordering on it. Nearly four thousand miles of railroad in New York, New Jersey, and Connecticut, have their immediate termini in New York, and stretch out by their connections, west, south, and east, into every state of the Union, bringing the united products of the
country to New York as a depot for shipment to all the ports of the world.

The exports from the port of New York, in 1852, were, of domestic produce, $38,853,757; foreign dutiable, $5,333,572; specie, $37,273,703; making a sum total of $81,461,032. The imports were, of dry goods, $48,900,935; other dutiable goods, $35,444,896; free goods, $11,926,912; specie, $2,528,391; giving a total of $98,801,134; the duties collected at the port, the same year, amounted to $28,678,910, being sixty and six-tenths per cent. of all the duties levied at all the ports of the Union; the aggregate amount, in the same year, having been only $47,320,316.

In 1851, the tonnage belonging to the port was 931,193 tons, or almost one-quarter of the whole tonnage of the Union. The total tonnage which arrived at tide-water, from the Erie canal alone, was 1,644,699 tons.

These figures are sufficient to show the great national character of the harbor of New York; the destruction of which is now threatened by private cupidity.

It is not within the province of this report to point out the remedies for this growing evil. The errors that have been committed are palpable, yet most of them are beyond redemption; it remains for legislation to guard against future repetitions. The commerce of the port of New York requires that constructions of some kind should be made for its accommodation, and as any construction placed in a stream must have a tendency to derange the laws which govern it, these should be made in such a manner that the greatest amount of facilities should be obtained with the least possible injury to navigation. The system of building piers on wooden piles, which decay in a short time and require renewal, leaving some portion of the original material to form a nucleous for sedimentary deposits, is unquestionably bad; stone piers, with arches through which the tides and currents could flow with slight interruptions, should replace the old, and be the character of new constructions. The cover now existing, instead of being
filled up as has been done on the East river, should be converted into wet docks, giving greater facilities for commerce, and by the formation of basins, affording assistance to the ebb tide. A regular and thorough system of dredging between piles should be maintained, the refuse matter of vessels and that which finds its way from other sources to the harbor, should be conveyed to some point above high water mark. The different causes referred to in this report as being injurious to the harbor, when taken separately, may appear insignificant, yet in the aggregate are vitally injurious.

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